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ORIGINAL ARTICLE

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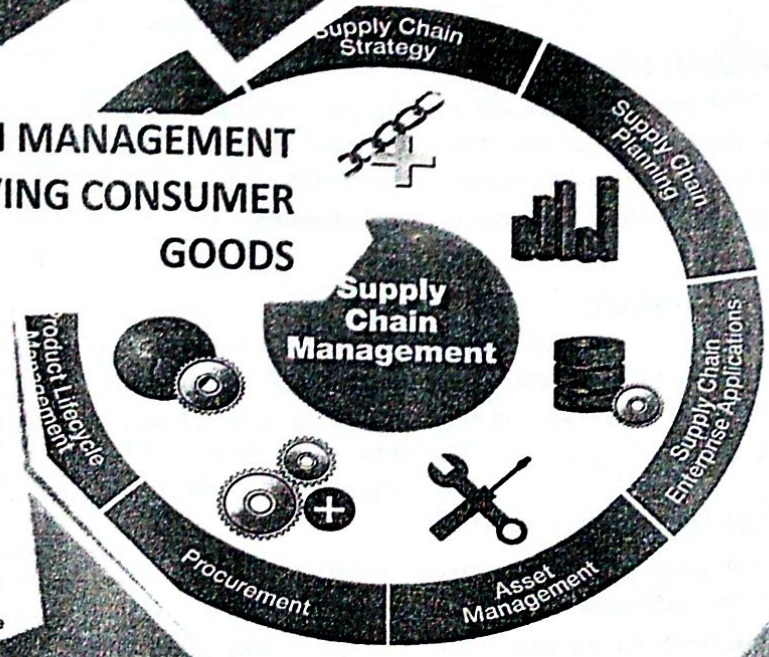
SUPPLY CHAIN MANAGEMENT IN FAST MOVING CONSUMER GOODS



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Sangeeta Pawar

ABSTRACT

Supply chain management is an essential part of business today. The idea is to apply a the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through the factories and warehouses to the end customers.In the broadest sense, a supply chain refers to the way that materials flow through different organisations starting from with raw materials and ending with finished products delivered to ultimate customers.A supply chain is the sequence of suppliers, transporters, ware houses, manufacturers, wholesalers, distributors, retailers and final consumers.

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Correspondence to **Sangeeta Pawar[1] and Manglani Kiran[2]**

Designation:-[1]**Associate Professor in Commerce ,(Selection Grade), Dept. of Commerce , University of Mumbai.**

[2]**Ph. D Scholar**

REVIEW OF THE ARTICLE

Supply Chain Management In Fast Moving Consumer Goods

Sangeeta Pawar and
Manglani Kiran

STUDY BACKGROUND:

Supply chain management is an essential part of business today. The idea is to apply a the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through the factories and warehouses to the end customers.

INTRODUCTION:

The problem statement was clear and well articulated. The conceptual framework was explicit and justified. The traditional approach to SCM was the fragmented sub optimization within departments or within the company. The typicality in this approach is the local dominance and absence of global sense.

METHODOLOGY:

This paper was based on secondary data. Secondary data was collected from various web sites and important reference books of supply chain management for which reference is added in the End notes . Author has given a brief amount of the methodology in the study.

PRESENTATION OF RESULTS:

The amount of data presented was sufficient and appropriate. Tables, graphs, or figures were used judiciously and agree with the text. Poor roads and unreliable transport systems have an adverse impact on costs and uncertainties. Non-availability of infrastructure, like cold chains affects certain product categories significantly

REFERENCES:

Prior publication by the author(s) of substantial portions of the data or study was appropriately acknowledged.

The paper was properly organized and demands appreciation. I think the paper will satisfy the interest of the readers

SUMMARY OF ARTICLE

No.		Very High	High	Aver-age	Low	Very Low
1.	Interest of the topic to the readers	✓				
2.	Originally & Novelty of the ideas		✓			
3.	Importance of the proposed ideas	✓				
4.	Timelines			✓		
5.	Sufficient information to support the assertions made & conclusion drawn		✓			
6.	Quality of writing (Organization, Clarity, Accuracy Grammer)		✓			
7.	References & Citation (Up-to-date, Appropriate Sufficient)		✓			

FUTURE RESEARCH SCOPE:

1.Fast Moving Consumer Goods - Global Supply Chain Group.

2.Influence Of Supply Chain Management Practices To Branding In Fast Moving Consumer Goods Industry In India- A Case Study.

3.Quantitative Models For Value-based Supply Chain Management System.

4.The Lean Supply Chain: Managing The Challenges.

5.Design of Closed-Loop Supply Chain And Product Recovery.

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This is to certify our Editorial, Advisory and Review Board accepted research paper of Sangeeta Pawar and Manglani Kiran Topic:- Supply Chain Management In Fast Moving Consumer Goods College:-Associate Professor in Commerce ,(Selection grade)Dept. of Commerce , University of Mumbai. The research paper is Original & Innovation it is done Double Blind Peer Reviewed. Your article is published in the month of Nov. Year 2015.

Authorized Signature

Dr. Ashok Yakkaldevi
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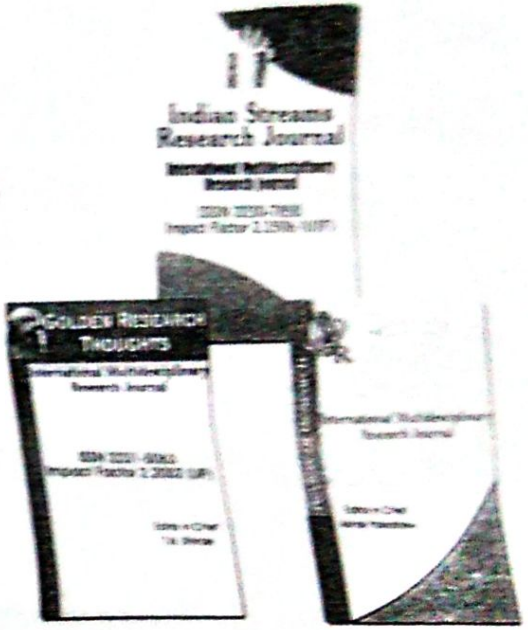

SUPPLY CHAIN MANAGEMENT IN FAST MOVING CONSUMER GOODS

Awarded to

SANGEETA PAWAR AND MANGLANI KIRAN

In recognition of an outstanding contribution to the quality of the journal

J. Watumull Sadhubella Girls College Ulhasnagar 421 001 Thane (India)

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Ulhasnagar - 421 001

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Sangeeta Pawar

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Supply chain management is an essential part of business today. The idea is to apply a the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through the factories and warehouses to the end customers.

In the broadest sense, a supply chain refers to the way that materials flow through different organisations starting from with raw materials and ending with finished products delivered to ultimate customers.

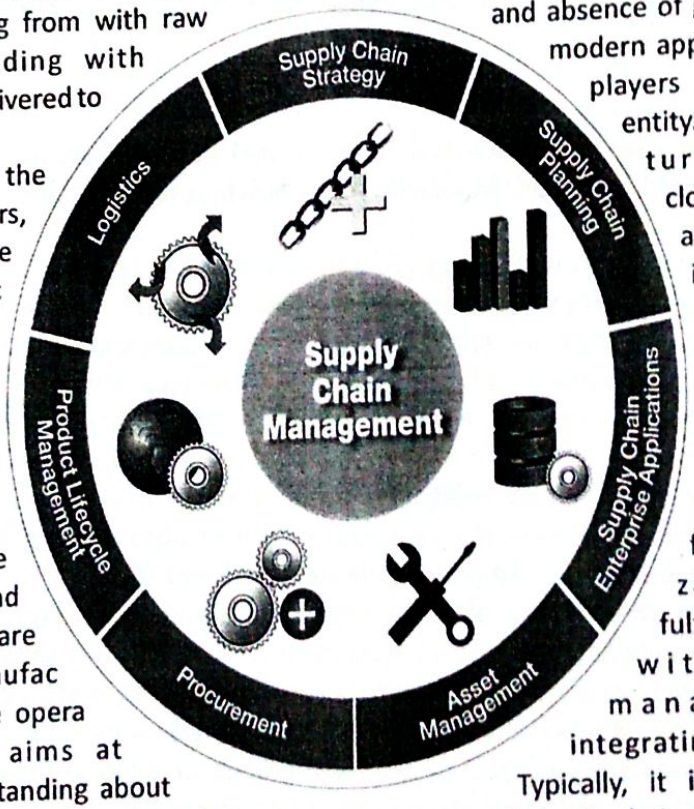
A supply chain is the sequence of suppliers, transporters, ware houses, manufac turers, wholesalers, distributors, retai lers and final consu mers. Different companies may have different supply chains due to nature of their operations and whether they ey are primarily a manufac turing or a service opera tion. The paper aims at providing an understanding about the key issues involved in the supply chain management of FMCG sector with case example of Amul diary products.

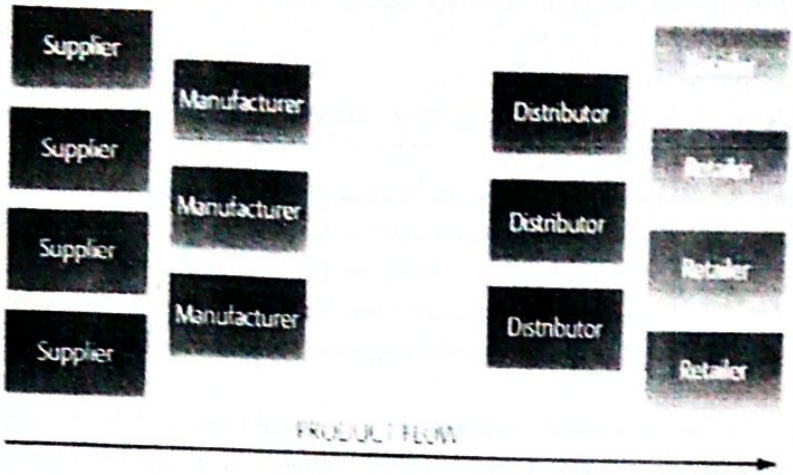
KEY WORDS:
Supply chain management
FMCG
Amul products

INTRODUCTION:

Supply chain management approach

The traditional approach to SCM was the fragmented sub optimization within departments or within the company. The typicality in this approach is the local dominance and absence of global sense. In the modern approach all organized players are seen as one entity. In this manbufac turing operations closely operates with all trading partners including customers at one side and suppliers at other side.In fact, the well defined customer demands are known and main focus of organi-zations becomes fulfilling this demand with the supply management thus integrating suppliers side. Typically, it integrates all of its internal supply chain operations as well as external supply chain oprations to deliver value to final consumers.





OBJECTIVES OF STUDY

1.To gain knowledge about supply chain management of FMCG Products.
2.To know the functions of SCM .
3.To study the nature and characteristics of FMCG Companies supply chain practices.

RESEARCH METHODOLOGY

This paper is based on secondary data..Secondary data was collected from various websites and important reference books of supply chain management for which reference is added in the End notes .

REVIEW OF LITERATURE

a) Supply chain management challenges for FMCG in retail sector in india, thesis, Parnaganti Renuka, Department of commerce, Shri Jagdishprasad Jhabarmal Tibarewala University, 19 th September 2013.

This research report outlines the objective of every supply chain should be to maximize the overall value generated. The value a supply chain generates is the difference between what the final product is worth to the customer and the costs the supply chain incurs in filling the customer's request. For most commercial supply chains, value will be strongly correlated with supply chain profitability (also known as supply chain surplus), the difference between the revenue generated from the customer and the overall cost across the supply chain.

Retailers face many challenges: time-to-market reductions are necessary due to shorter and shorter product life cycles, greater product variety causing more fluctuation in demand calls for high responsiveness in supply chains, and the ever increasing need for shorter lead times continues. However, as a result of the power that comes with control over consumer contacts, retailers today have the opportunity to organize the work in their supply chains in suitable ways. newline newlineThis thesis focus on how retailers organize their supply chains challenges they face to compete in consumer markets, and asks the question: how are supply chains affected by retail value propositions? Three case studies have been conducted in order to answer this question. Two of the case companies were considered to utilize cost-based competition, and it was investigated that how they had organized activities in order to deliver their specific value propositions. Equivalent research of a third case company utilizing time-based competition was conducted. The study s findings are in line with theories in this field, i.e. that the nature of products demand pattern is crucial for that which should be focused

on, and that physical efficiency is important in cost based competition and market responsiveness in time-based competition.

b) Supply chain management in Indian FMCG sector, B.S. Sahay & Arun K. Gupta ,productivity journal(2002):

In this paper, the development and trends of supply chain management practices followed by FMCG sector are highlighted. Further, it is the researchers through the survey results have proved that corporate recognition of importance of supply chain is growing rapidly. The supply chain process includes demand management, customer service, distribution management, inventory management , manufacturing, order processing, transportation, warehousing, promotion planning .

c)RFID adoption in the FMCG supply chain: An interpretative framework, Raffaello Balocco, Giovanni Miragliotta, Alessandro Perego and Angela Tumino, supply chain management:An international journal, (2011):

The study focused on the comprehensive analysis of RFID potential in FMCG supply chain, also it tried to establish the difference between traditional bar codes and RFID and their implications on effective Supply chain management

SUPPLY CHAIN MANAGEMENT IN FMCG PRODUCTS

The Indian FMCG sector is a low margin business where volume holds a key to success. With domestic consumption close to USD 17 billion, the fmcg sector today is one of the largest in the country and accounts for about 14.5 percent of the GDP. In the current scenario of global slow down, increasing uncertainty in demand and supply, changing customer preference and shortening of product life cycle besides rigourous competition from multinationals, this sector has been forced to reconfigure its supply chain management strategies for survival and growth.

Hence while considering any company dealing in FMCG, basic concern of the same would be effective distribution to the end customer so that it can manage the demand and supply equitably. If in case of maintaining equitable supply of goods the Collabrative replenishment or Vendor managed inventory is used. In both the cases the role of distributors is very much essential so the companies try to manage their supply chain by closely working with their supply chain partners i.e. Wholesalers and retailers.

The fast moving consumer goods (FMCG) sector is the fourth largest sector of the economy with the size of about more than Rs 500 billion. FMCG sector generally includes a wide range of frequently purchased consumer product such as soaps, dairy products, confectionary, soft drinks, fruits and vegetables and batteries. FMCG products usually have a low unit cost but large volumes. Top ten FMCG companies in India consist of both global players such as HUL, Nestle, Cadbury, P&G and Indian companies such as Amul, Asian Paints, Dabur etc. In the FMCG sector the supply chain performance is a key factor. The FMCG industry is characterized by complex distribution network and intense competition forcing firms to constantly work on supply chain innovation. Companies with better supply chain system will perform well, whereas those with poorly managed supply chains will find it tough to even survive in the competitive market.

Some of the major challenges are the following:

Managing availability in the complex distribution Set Up

The Indian FMCG sector has to work with very complex distribution system comprising multiple

layers of numerous small retailers between company and end customer. For example a company like, Marico has to ensure reach to 1.6 million retailers spread throughout the country. As the number of SKUs (Stock keeping Units) have been increasing exponentially, just ensuring availability at the last stage of distribution has become a nightmare for companies. Standard solutions applicable in developed countries are not suitable for a country like India. Working with smaller pack Sizes Unlike in developed countries ,where companies have been trying to work with large pack sizes (reduction in transportation ,handling and packaging costs for large pack sizes can be passed on as price cuts to price sensitive customers),in India the trend is in the opposite direction. To increase market penetration, Indian companies have realized that they need to reach out to consumers present at the lower end of the economic pyramid. This consumer base can be tapped in to only by offering small pack sizes. However smaller pack sizes mean higher packaging and transportation costs for the companies. Eventually companies will have to find innovative ways of balancing market penetration and logistics cost

Entry of National Players in the Traditional Fresh Products sector

National players want to market "fresh" products that have been traditionally handled by local players in each region. For example, ITC wants to make inroads in the market for 'ATTA' and Nestle for yoghurt. In these items, the freshness of the product is an important requirement from the consumer's point of view. Traditionally national companies have worked with centralized plants, where they can manage quality and also enjoy big economies of scale. As freshness is one of the most important criteria from the customer's point of view, national players will have to work with decentralized manufacturing plants. Balancing quality, freshness and cost is a major issue for national players. The following is an important case of AMUL where a local firm has successfully managed the complex tradeoffs by building superior supply chain capabilities.

AMUL

Milk is a perishable commodity and poor farmers from rural India had no means of storing excess milk. The farmers were forced to sell milk through middlemen and had to settle for very low prices. To improve the returns a cooperative society was set up in each village. As each village level society would not have enough volume to justify setting up a milk processing plant ,all the village cooperative societies in a district formed a union ,which in turn collected milk from all the societies and processed it in a centralized processing plant and liquid milk and milk products were marketed to customers all over India even though Amul came into existence in 1946 ,over the years Amul has setup a very efficient and effective supply chains in the rural areas of Gujarat and more than 5 lakhs retailers who make Amul products available throughout India

Dealing with complex taxations structures

Because of the complex taxation structure, it is difficult to treat India as one market. Varying local tax structures across states encourage traders to indulge in the smuggling of goods across states, leading to the creation of grey markets. Experts are of the view that smuggled goods account for about 15 percent of the total goods flow. Such activities distort the plans and activities of FMCG companies. Further because of the tax on the interstate sales, companies can never ship goods to customers located outside the state. They first have to transfer goods to the state level warehouses on a consignment basis and then supply the goods to the customers. With the introduction of VAT, harmonization of taxes across states and the possible removal of tax on inter-state sales, FMCG

companies will see lots of changes in the way they have been managing their supply chains.

Dealing with Counterfeit Goods

According to recent study conducted, counterfeits accounted for loss of sale worth more than Rs 300 billion for the FMCG sector every year. P&G found that various counterfeit products of Vicks Vaporub raked in sales equivalent to 54 percent of the original. To prevent such losses, FMCG companies in India have to ensure that they exercise greater control over their distribution channel and not just leave it to the market forces.

Opportunistic Games played by the Distribution Channel

It is a common notion in distribution that only 50 percent of the promotion actually reaches the final customer. This is due to the fact that many distributors work unscrupulously. Rather than playing the role of the facilitator, they try to grab a significant part of the promotion budget for themselves. One FMCG company found that it ended up paying significant amounts as rebate to its trade channel because of illegal printing of coupons by some wholesalers and distributors. Some of these distributors also indulge in the illegal movement of goods from one market to another during local promotions. Due to which companies lose control of the sales of their products (the company may want to target a specific market but the distributors might divert the goods to different region). Thus, FMCG companies end up wasting a significant part of their resources on these issues, which do not really add any value to their customers.

Infrastructure

Poor roads and unreliable transport systems have an adverse impact on costs and uncertainties. Non-availability of infrastructure, like cold chains affects certain product categories significantly .even if the cold chain is available, power problems add to the uncertainty. For example in the ice-cream business, if the ice-cream melts even once because of the non-availability of power, the quality in general and the taste in particular, of the ice-cream are adversely affected. Most Indian cities face power problems in summer and ice-cream manufacturers have to live with these problems in their distribution network. In general FMCG companies have to take these issues into account while planning their supply chains.

REFERENCE BOOKS

1.Ayers, James B and Odeord "Retail supply chain management", Auerbech publishers, 2008.
2.Bowersox, D.J., Closs, D. J., & Cooper, M. B- Supply Chain Logistics Management, Publisher: McGraw-Hill, 2005.
3.Sahay B.S. "Supply Chain Management for global competitiveness",Macmillan india ltd., 2000
4.Productivity journals – supply chain management – the concept & technology- vol 42, no 4, Jan Mar 2002
5.Subrata mitra- productivity journal Dynamics and prospects of Indian logistics industry –Vol 48, No 4, Jan Mar 2008
6.Santosh Venkatraman and Albert Blum – productivity journal Business process re engineering and supply chain management systems, Vol 39, No 1, April June 1998.
7.Supply Chain Management: Text and Cases By Janat Shah, pearson education, 2009
8.www.amul.com

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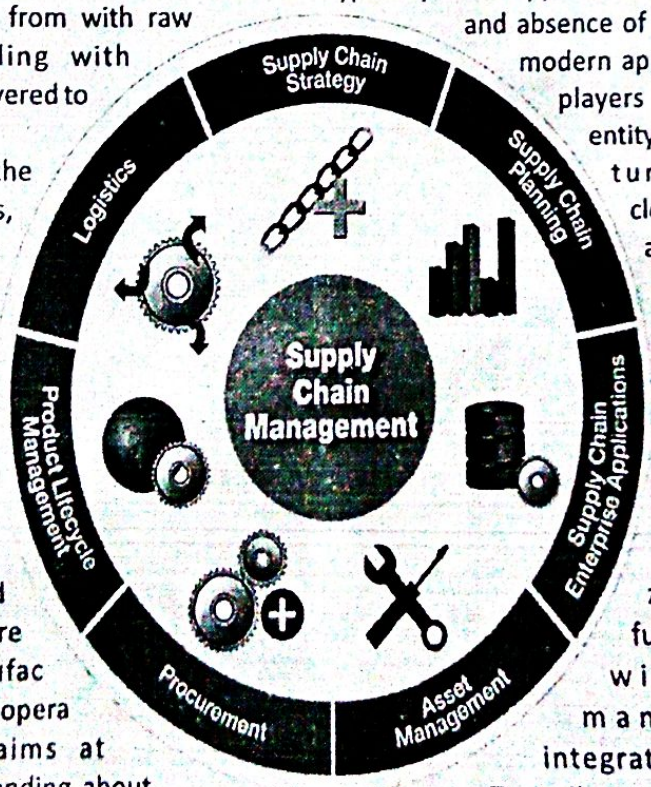

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SUPPLY CHAIN MANAGEMENT: A WORKING PATTERN OF DISTRIBUTORS AND WHOLESALERS IN EDIBLE OIL BUSINESS

Manglani Kiran

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Abstract : This paper highlights effectiveness of supply chain management process which basically considers companies dealing in FMCG like Edible oil, basic concern of the same would be effective distribution to the end customer so that it can manage the demand and supply equitably. For maintaining equitable supply of goods, the Collabrative replenishment or Vendor managed inventory in SCM is used. The Distributor is the keystone. He is called by various nomenclatures like Distributor, redistributors, dealer, wholesale dealer etc...but broadly defined and generally acceptable definition of the distributor is 'A person or a firm who links the manufacturer/marketing company with the retailers.' He is the one who purchases from the manufacturing company in bulk quantity and re-distribute it in small quantities to retailers. But, in case of edible oil, the companies prefer multiple supply chain partners, as there is thin line difference between all intermediaries mentioned above. In all the cases, the role of distributors is very much essential so the companies try to manage their supply chain by closely working with their supply chain partners i.e. Wholesalers and retailers.

Keywords: FMCG,Distributor,SCM,Wholesaler,Edible Oil.

I)INTRODUCTION

Supply chain management is an essential part of business today. The idea is to apply a the total systems approach to managing the entire flow of information, materials and services from raw materials suppliers through the factories and warehouses to the end customers.

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OBJECTIVES OF STUDY

1.To gain knowledge about supply chain management of Edible oil.
2.To know the functions of Upstream and Downstream intermediaries in supply chain.
3.To study the Working pattern of wholesale units dealing in Edible oil.

RESEARCH DESIGN

Tool used was Questionnaire and interview method. Their working pattern and dealings with company brokers and stockists were studied through a structured Questionnaire.

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Original Research Article

Diversity in Host Susceptibility to *Phellinus badius* from Marathwada, Maharashtra (India)

Faisal Hamad Chouse[1*], Vasant Pandit Mali[2]

[1] Milliya Junior College of Arts and Science, Beed, Maharashtra State, 431122, India
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Received: 13 September 2016 Revised: 02 October 2016 Accepted: 04 October 2016

ABSTRACT

In present study 3 districts including Beed, Osmanabad and Latur in Marathwada, Maharashtra state of India were selected by random to investigate the diversity of host susceptibility to *Phellinus badius*, which belonging to the family Hymenochaetaceae from order Aphyllophorales. This fungus causes white rot to various kinds of live standing or dead angiospermic wood. About 5 families show the susceptibility to this fungus.

Keyword: *Phellinus badius*; Beed; Osmanabad; Latur; Marathwada.

INTRODUCTION

The consolidated survey was carried out from the different forest areas, road sides & saw mills of Beed, Osmanabad and Latur districts from Marathwada (Plate 1, Map 1 & 2). The Study areas are generally rocky in formation with a lesser forest areas and the land tends to be well drained and dried except for the rainy season. Beed district (Plate 1, Map 3) is located between 18°30'19.30" North Latitude and 74°54'76.60" East Longitudes, Osmanabad district (Plate 1, Map 4) lies between the 18°10'12.00" North Latitude and 76°3'00.00" East Longitudes and Latur district (Plate 1, Map 5) is located between 18°23'5.65" North Latitude and 76°34'51.50" East Longitudes. During the investigation it was observed that the same fungus i.e. *Phellinus badius* found on different hosts at same or different localities. The coexistence of several wood-rotting fungi in nature is frequent and may reflect that: (a) the species have merely the same ecological optima [1] rather than any process of replacement or other invasive interaction or (b) certain species may parasitize the sporocarps of other species [2; 3] or (c) simply using the earlier dead species only as substrate [2] or (d) more accidental or naturalistic association because of limited space of growing on a single piece of wood [4].

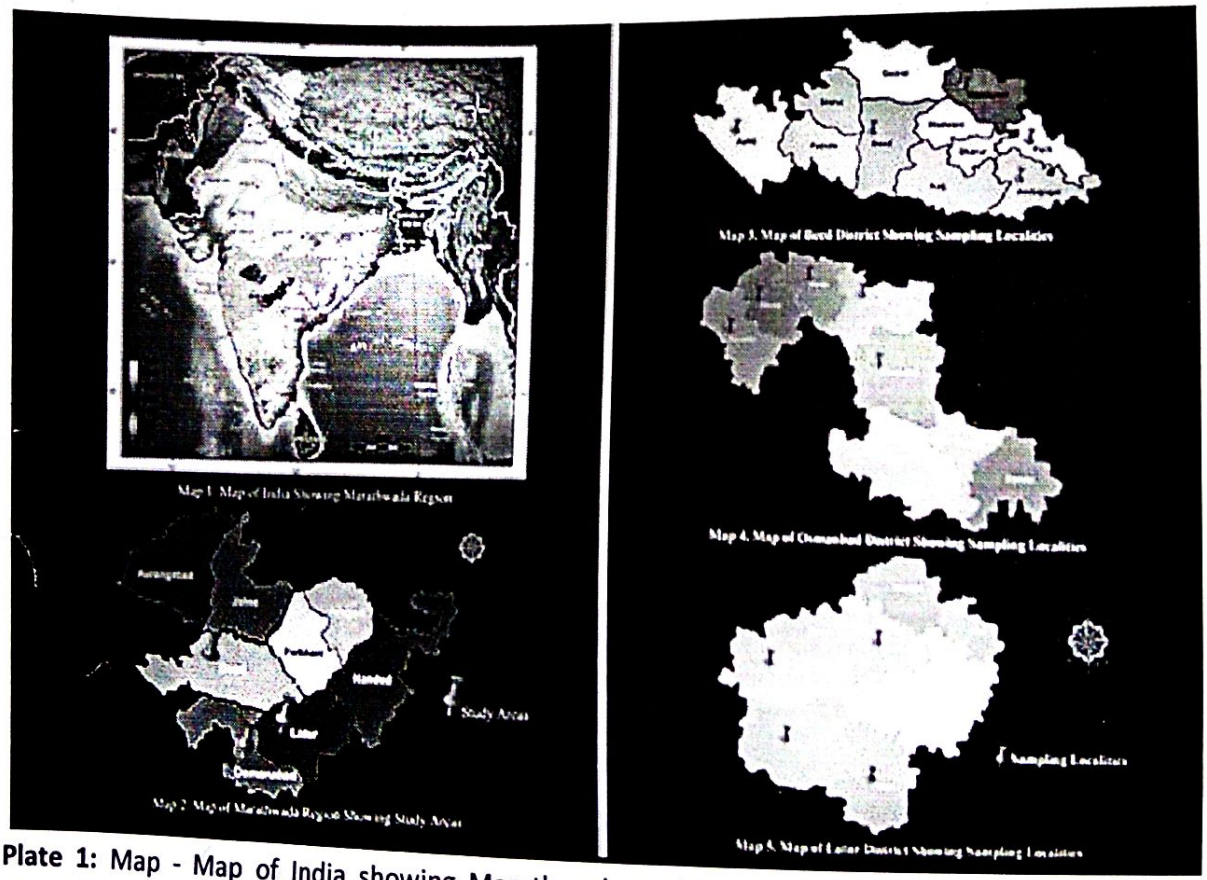

Plate 1: Map - Map of India showing Marathwada region, Map 2- Map of Marathwada region showing study areas, Map 3- Map of Beed district showing sampling localities, Map 4- Map of Osmanabad district showing sampling localities, Map 5- Map of Latur district showing sampling localities

Table 1: List of Host Infected by *Phellinus badius*

Sr. No.	Name of the Host	Location	Altitude	Latitude	Longitude	Date of collection	Code
01	*Acacia arabica* (Lamk.) Willd.	Maharana Pratap Nagar, Latur	622 m	N 18°24'16.3"	E 76°36'23.5"	20/09/13	FHC/VPM*–17
		Saw mill, Nilanga	615 m	N 18°19'86.5"	E 76°54'37.4"	24/09/13	FHC/VPM–40
		Yermala, Kalamb	674 m	N 18°39'60.8"	E 75°87'37.3"	30/09/13	FHC/VPM–58
		Ramling wild life sanctuary, Yedshi	693 m	N 18°18'60.7"	E 76°04'19.3"	1/10/13	FHC/VPM–60, 62
		Golegaon, Bhoom	528 m	N 18°44'95.1"	E 75°67'58.2"	3/10/13	FHC/VPM–78
		Waradwadi, Paranda	531 m	N 18°32'39.6"	E 75°68'28.5"	11/10/13	FHC/VPM–79
		Dhoki road, Latur	626 m	N 18°30'78.4"	E 76°00'38.7"	12/10/13	FHC/VPM–103
		Khazana well, Beed	464 m	N 18°56'47.1"	E 75°45'4.7"	2/08/14	FHC/VPM–114
		Saw mill, MIDC, Beed	458 m	N 19°00'62.3"	E 75°76'31.5"	26/09/14	FHC/VPM–156
		Jalna road, Beed	405 m	N 19°72'48.2"	E 75°74'21.8"	28/09/14	FHC/VPM–162, 163, 164
		Khapar pangri, Beed	431 m	N 19°01'58.6"	E 75°73'10.2"	30/09/14	FHC/VPM–166
		Mukundraj Forest, Ambejogai	540 m	N 18°44' 52.5"	E 76°22'35.3"	24/10/14	FHC/VPM–180
		Gevrai	530 m	N 19°34' 01.5"	E 75°71'55.9"	27/10/14	FHC/VPM–190
		Jayakwadi Stage II Dam, Majalgaon	419 m	N 19°20' 24.8"	E 75°80'71.5"	27/10/14	FHC/VPM–192
		Majalgaon-Telgaon road	385 m	N 19°00' 14.1"	E 76°18'47.5"	27/10/14	FHC/VPM–193
		Saw mill, Neknoor	662 m	N 18°80' 03.4"	E 75°79'80.1"	29/10/14	FHC/VPM–200, 201
		Kakadhira phata, Beed	460 m	N 18°99'15.5"	E 75°72'79.4"	8/11/14	FHC/VPM–221
		Ravgan Rajuri, Beed	462 m	N 18°98'92.6"	E 75°63'60.4"	8/11/14	FHC/VPM–222

MATERIALS AND METHODS

Random collection of mycofloral specimens were done during the month of July- August just after the first rainfall and up to November. All the specimens were sun and air dried and kept in brown paper packet as per the international mycological herbarium guidelines. Morphological and microscopic characters were recorded from fresh materials in the field and dried materials in the laboratory. The morphological observations were carried out using Cosmo Compound light Microscope under 10X objective. Thin sections of basidiocarps were cut with the help of sharp blades and studied in 10 % KOH, Lactophenol, Cotton Blue and Melzer's reagent successively. Microscopic observations were made under 40X and 100X (oil immersion) magnification (Olympus CX 41) at Botanical survey of India, Howrah, Kolkata. All the measurements were recorded in 5% KOH using Micrometer. All the specimens are deposited in department of Botany, Anandrao Dhonde Alias Babaji Mahavidyalaya, Kada Dist. Beed, Maharashtra. Hosts were identified with the help Flora of Marathwada Vol. I & II [5]. Specimens were identified with the help of following the manual and floras found suitable to identify the tropical specimens [6; 7; 8; 9; 10; 11].

OBSERVATIONS

Taxonomic Description

Phelllinus badius (Cooke) Cunn., *Bull. N.Z. Dept. Sci. Industr. Res.*, Pl. Dis. Divs. 164: 273 (165).

Basidiocarps perennial, sessile, hoof–shaped to ungulate or appearing somewhat pendent, easily detachable from the host, up to 170 mm wide, upto 115 mm broad and upto 20 mm thick, hard woody; pilear surface yellowish brown (5E8) when young, soon brownish black (8F3), glabrous, weakly zonate, rimose, crust up to 0.2 mm thick; margin obtuse, paler than the pilear surface, sterile; pore surface dark brown (7F8) to reddish brown (9A8), glancing; tubes ferruginous brown (7D7), paler than pore surface, stratified distinctly, up to 3 mm deep in each layer; pores 4–6 per mm, pore walls thick; context bright, lustrous, yellowish brown (5E8), corky when fresh, hard on drying, up to 15 mm thick, faintly zonate, granular core of dull yellowish brown (5E8) mycelium with patches of white mycelium, hard glossy granules scattered throughout.

Hyphal system dimitic, generative hyphae hyaline to pale yellow, simple septate, moderately branched, 3–4 µm wide, skeletal hyphae thick–walled, 4–5 µm wide; hymenial setae absent or very rarely present in older species, ventricose, 15–25 x 4–8 µm, dark reddish brown (9F8); basidia broadly clavate, 12–14 x 6–7 µm, 4–sterigmate; spores broadly ellipsoid to subglobose, moderately thick–walled, 6.5–7.5 (8) x 6–6.5 µm, yellowish brown (5E8), dark reddish brown (9F8) in KOH.

Specimens examined

India, Maharashtra, Marathwada from Beed, Osmanabad and Latur districts on different host like *Acacia arabica* (Plate-2, fig-a), *Albizia lebbeck* (Plate-2, fig-b), *Casurina equisetifolia* (Plate-2, fig-c), *Diospyros melanoxylon* (Plate-2, fig-d), *Gliricidia sepium* (Plate-2, fig-e) , *Leucaena leucocephala* (Plate-2, fig-f) and *Peltophorum pterocarpum* during the year 2013 to 2016 (Table 1). These hosts belonging to different families like Caesalpinaceae, Casurinaceae, Ebenaceae, Fabaceae and Mimosaceae (Table 2)

07	*Peltophorum pterocarpum* (DC.) Baker ex K. Heyne	Ramling wild life sanctuary, Yedshi	693 m	N 18°18'60.7"	E 76°04'19.3"	17/08/16	FHC/VPM–251

**FHC/VPM –Faisal Hamad Chouse/Vasant Pandit Mali.*

Table 2: Family wise distribution of *Phellinus badius* host

Sr. No.	Family (Naik, 1998)	Susceptible Hosts
01	Caesalpinaceae R. Br.	*Peltophorum pterocarpum* (DC.) Baker ex K. Heyne
02	Casurinaceae R. Br.	*Casurina equisetifoilia* J. R. & G. Forst.
03	Ebenaceae Gruke	*Diospyros melanoxylon* Clarke
04	Fabaceae Lindl.	*Gliricidia sepium* (Jacq.) Kunth ex Steud.
05	Mimosaceae R. Br.	*Acacia arabica* (Lamk.) Willd.
		Albizia lebbeck (L.) Willd.
		Leucaena leucocephala (Lamk.) de. Wit

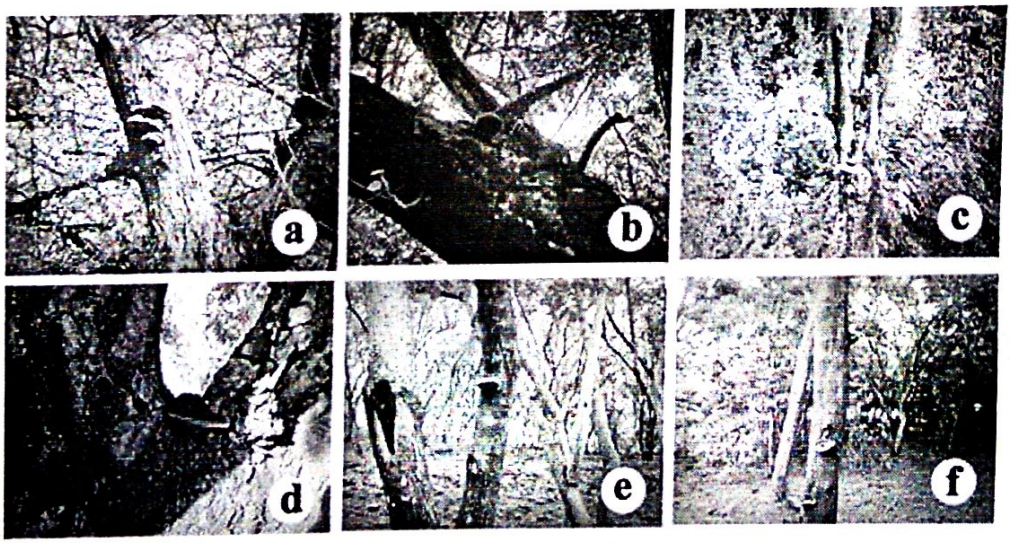

Plate 2 Hosts of *Phellinus badius*, fig. a- *Acacia arabica*, fig. b- *Albizia lebbeck*, fig. c- *Casurina equisetifoilia*, fig. d- *Diospyros melanoxylon*, fig. e- *Gliricidia sepium*, fig. f- *Leucaena leucocephala*.

DISCUSSION

Phellinus badius is a member of family Hymenochaetaceae. The members of Hymenochaetaceae form a cosmopolitan group of wood inhibiting fungi, capable of utilizing components of wood cell walls for their growth and reproduction. Wood is composed of the structural polymer cellulose, lignin, and hemicellulose. However, there is considerable variation, which is particularly evident in the heartwood of living trees in which a wide array of non-structural extraneous materials are

02	*Albizia lebbeck* (L.) Willd.	Uplayi, Kalamb	675 m	N 18°39'71.5"	E 75°87'38.3"	30/09/13	FHC/VPM–59
		Parli Vaijyanath	405 m	N 18°84'24.2"	E 76°51'72.1"	1/11/14	FHC/VPM–209
03	*Casurina equisetifolia* J. R. & G. Forst.	MSEB guest house, Parli	400 m	N 18°86'00.1"	E 76°52'33.1"	1/11/14	FHC/VPM–211
04	*Diospyros melanoxylon* Clarke	Naigaon Wild life sanctuary, Patoda	592 m	N 18°90'36.9"	E 75°59'69.2"	8/11/14	FHC/VPM–220
05	*Gliricidia sepium* (Jacq.) Kunth ex Steud.	Ramling wild life sanctuary, Yedshi	693 m	N 18°18'60.7"	E 76°04'19.3"	16/08/16	FHC/VPM–242
		Beed–Solapur road, Osmanabad	617 m	N 18°29'52.1"	E 76°00'17.9"	12/10/13	FHC/VPM–95
		Dhoki road, Latur	626 m	N 18°30'78.4"	E 76°00'38.7"	12/10/13	FHC/VPM–98
		Buttenath Forest, Ambejogai	545 m	N 18°45' 8.33"	E 76°22'9.3"	24/10/14	FHC/VPM–174
		Mukundraj Forest, Ambejogai	540 m	N 18°44' 52.5"	E 76°22'35.3"	24/10/14	FHC/VPM–181, 183
		Renukadevi Forest, Ambejogai	530 m	N 18°44' 48.6"	E 76°22'47.5"	25/10/14	FHC/VPM–189
06	*Leucaena leucocephala* (Lamk.) de. Wit	Bhada village, Ausa	599m	N 18°27'00.8"	E 76°38'83.3"	23/09/13	FHC/VPM–37
		Paranda	449 m	N 18°28'94.3"	E 75°43'79.9"	11/10/13	FHC/VPM–83
		Aadhni village, Osmanabad	621 m	N 18°29'59.1"	E 76°00'17.6"	12/10/13	FHC/VPM–96
		Bendsura dam, Beed	515 m	N 18°90'07.7"	E 75°72'56.9"	2/08/14	FHC/VPM–106
		Khazana well, Beed	464 m	N 18°56'47.1"	E 75°45'4.7"	2/08/14	FHC/VPM–108, 111
		Mukundraj Forest, Ambejogai	540 m	N 18°44' 52.5"	E 76°22'35.3"	24/10/14	FHC/VPM–176, 179, 184, 185
		Agricultural farm, Neknoor	648 m	N 18°80' 27.5"	E 75°77'74.1"	29/10/14	FHC/VPM–198
		D.Ed. college campus, Neknoor	663 m	N 18°80' 08.4"	E 75°79'35.3"	29/10/14	FHC/VPM–199

14. Larsen MJ, Cobb-Poulle LA. Phellinus (Hymenochaetaceae) A survey of the world taxa (Synopsis Fungorum 3). Fungiflora, Oslo. Madison: USDA, Forest Service, Forest Products Laboratory, One Gifford Pinchot Drive; 1971.
15. Rabba AS. Studies in the genus *Phellinus Quel* from Maharashtra. Ph.D. Thesis. Pune: University of Pune; 1994, p 1
16. Vaidya JG, Bhor GL. Medicinally important wood Rotting Fungi with special emphasis on Phansomba. Deerghyu 1990; 6: 1-4.
17. Vaidya JG, Rabba AS. Fungi in Folk Medicine. Mycologist 1993 a; 7: 131-133.
18. Vaidya JG, Nanda MK, Rabba AS. Community and substratum composition for wood Rotting Aphyllophorales from Bhimashankar, Western Ghats. Proceedings of the Sixth Engineering Congress on Transidisciplinary premise of Ecology and Environment, Institute of Engineers, Pune, India 1991; 2: 56-70.
19. Wagner T, Fischer M. Proceedings towards a natural classification of the worldwide taxa Phellinus S.I. and Inonotus S.I., and phylogenetic relationships of allied genera. Mycologia 2002a; 94: 998–1016.
20. Vasant Mali. Wood Rotting Fungi (Aphyllophorales) from Ashti-1. J Med Chem Drug Discov 2015; 699-705.
21. Mali V P, Raibhole U K, Hembrome Manoj, Parihar Arvind. Taxonomy and Diversity of Trametes from the Marathwada (Maharashtra) India. J Medi Chem Drug Discov 2016; 1(2): 537-546.

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deposited, as the maturing cells die. This species decay heartwood and causes white rot of live standing trees and dead logs of angiospermic. No other class of forest diseases cause more timber damage heart decays [12; 13]. Species of *Phellinus* are probably responsible for more timber loss than any other genus of wood destroying fungi [14]. Species of *Phellinus* are parasitic, perthophytic and/or saprobic causing white rot that degrade both lignin and cellulose [15; 16-18]. They dwell on a wide variety of angiosperms and/or gymnosperms [19; 20; 21] causing heart rot disease in live standing trees.

CONCLUSION

During the investigation it was observed that *Phellinus badius* has a wide host range. The total 7 host genera are observed from Angiosperms. The dominating genera amongst the host diversity are *Acacia arabica*, *Leucaena leucocephala* and *Gliricidia sepium*. Mimosaceae has the maximum no. of genera (36) are infected by *Phellinus badius* followed by Fabaceae (7), Caesalpinaceae (1), Casurinaceae (1) and Ebenaceae (1). It can be stated that dominant families infected by *Phellinus badius* seem to be Mimosaceae and Fabaceae. As far as host species range of *Phellinus badius* from Marathwada is concerned, the most frequently attacked host is *Acacia arabica* following *Leucaena leucocephala, Gliricidia sepium* and *Albizia lebbeck.* The white rot caused by *Phellinus badius* leads to serious wood deterioration. The outcome of this investigation could be helpful in future in forest pathology and medicinal research point of view.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interests.

REFERENCES

1. Jahn H. Pilze die an holz wachsen. Germany: Busse, Herford; 1979.
2. Helfer W. Pilze auf Pilzfruchtkörpern. Untersuchungen zur Ökologie, Systematik und Chemie. Libri Botanici 1991; 1-157.
3. Jeffries P, Young JWK. Interfungal parasitic relationships. Cambridge: Cab international; 1994.
4. Cooke RC, Rayner ADM. Ecology of Saprophytic fungi. London and New York: Longman; 1984.
5. Naik VN. Flora of Marathwada. India: Amrut prakashan; 1998, p 1182.
6. Rattan SS. Resupinate Aphyllophorales of North Western Himalaya. Bibliotheca Mycologica 1977; 60: 1–427.
7. Ryvarden L, Johansen I. A preliminary polypore flora of East Africa. Oslo:Fungiflora; 1980, p 1.
8. Natarajan K, Kolandavelu K. Resupinate Aphyllophorales of Tamil Nadu, India. India: Centre for Advance Study in Botany University of Madras; 1998, p 133.
9. Leelavathy KM, Ganesh PN. Polypores of Kerala. Delhi, India: Daya Publishing House; 2000, p 166.
10. Sharma JR. Hymenochaetaceae of India. Calcutta, India: Botanical Survey of India; 1995, p 1.
11. Dai YC. Hymenochaetaceae (Basidiomycota) in China. Fungal Diversity 2010; 45: 131-343.
12. Ranadive et al. Host Distribution of Phellinus from India. Indian J Forestry 2012; 35(1):67-72.
13. Mali VP. Preliminary Investigation of Aphyllophorales from Saurashtra University Campus, Rajkot (Gujarat) India. Int J Sci Info 2016; 1 (3): 144-150.

PRELIMINARY STUDIES ON TYPES OF WOOD DECAY BY SOME WOOD DECACY FUNGI FROM SOUTH EASTERN MARATHWADA (MAHARASHTRA)

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ABSTRACT : Wood decay is a major cause of damage in trees. Wood rot fungi are integral part of ecosystem associated with the recycling of the dead wood biomass of earth. This survey will enrich the treasure of unexplored Marathwada mycobiota wealth.

Key words: Wood decay, Brown rot, White rot, Marathwada

INTRODUCTION:

Tropical forests of Beed, Osmanabad and Latur districts of the Marathwada (Plate. 1) have moderate fungal flora, but there are only a few references concerning enumeration of wood decaying mycobiota and there is no comprehensive account on Wood Decaying which include a large number of genera and species which are most interesting from the point of view of their habitats, nutrition requirements and capacity to decompose the lignin.

A tree has its own strong survival system that allows it to live longer and grow larger than any other creature on the earth. Wood perennials constitute a very large fraction of the total biomass of the earth which is yearly 80 X 10^9 metric ton (Basham, 1975). However, determination of wood tissue has received a scanty attention, compared to that of herbaceous plants, which leads to great loss of commercial timber (Cooke and Rayner, 1984).

Spread of disease in managed forests often occurs when air-borne basidiospores colonize freshly cut stump surfaces during thinning operations. The fungus then grows through the stump and infects other trees at the point of stem grafts or contact. This disease goes on for many years inside the trees and is unseen. Strength is lost as wood is decomposed by microorganisms for wood. Finally results are seen as big hollow cores in old trees which come crashing down in storms.

MATERIALS AND METHODS :

For the present investigation, the specimens of wood decaying fungi were collected from different forest areas and saw mills of Marathwada, mainly from the tropical forests and saw mills of the Beed, Osmanabad and Latur districts (Plate. 1.) The host list of specimens collected therein and examined for the present studies are listed in table 1. Mature fruit bodies along with their host substrate were collected in plastic bags, noting locality, date, colour of the material and type of attachment as suggested by Gilbertson and Ryvarden (1986).

Macroscopic data of host and specimen was noted in the field such as distinctive shape, texture, colour, strength of the fruiting bodies that form on trees. Collected specimens along with host substrate were brought to laboratory; sun dried and labelled neatly the date of collection, location and host of each specimen. Standard chemical tests were done such as spraying of 1% benzidine in 90% ethanol (Hintikka and Laine, 1970) on decaying wood samples to compare the type of rot (Table 1).

To find out the utilization of host substrate resources by each type of fungus regarding Cellulose, Lignin, protein, simple sugars grinded host substrate were tested with Benedict's solution, Biuret's reagent and 1% iodine to infer presence or absence of simple sugars, protein and polysaccharides

OBSERVATIONS

Fungi that break down woody plants into their basic elements are a critical part of the tropical ecosystem (Plate 2). Without them, dead trees and shrubs would cover the soil and decompose very slowly. New seedlings not only need a clear path to the sunlight, they need the nutrients locked away in dead plants: Rotted wood enriches the soil for plant growth and improves its structure.

Wood decay fungi also damage living trees. In the tropics, millions of hectares of plantations are affected, as are fruit trees and woody landscape plants. Trees with internal decay (Plate 3, 4) often lose limbs or blow over in strong winds. They are a hazard around people and buildings.

Wood refers to both the dead xylem cells in the centre of the tree responsible for structural support (heartwood), and the living xylem cells beneath the bark that carry water and nutrients up the tree (sapwood). Most wood rot fungi degrade the heartwood. Brown rot fungi have enzymes that break down polysaccharides, but leave most of the brown-coloured lignin. Although these fungi have been primarily considered as destroyer of timber, they may have positive applications beside their value of recycling process of decomposed wood (Mali (2015, 2016); Mali *et. al.* (2016), Chouse & Mali (2016).

Fungi namely *Ganoderma* are medicinally important cause white rot, degrading lignin along with the polysaccharides, leaving wood spongy and bleached. Pathogenic fungi attack sapwood and can kill the tree (Plate 5).

Most wood decay fungi are in the order Aphyllophorales. They form spores on narrow gills or in pores on the underside of fruiting bodies (Plate 5). Wood rot fungi enter trees either as spores landing in wounds, or by root to root contact. After spores germinate, thread-like strands of the fungus body called hyphae colonize the heartwood. At some time after the wood is well colonized, the fungus forms

fruiting bodies that produce more spores.

Wood Decay Species : Limited information exists on wood decay fungi in Marathwada (Table 1). The consolidated survey of Taxonomic data of the wood decaying fungi was carried out from the different forest areas of Marathwada, especially from Beed, Osmanabad and Latur districts. It was revealed that among the collections; the Aphyllophorales were the major causal members.

TYPES OF WOOD DECAYS

The wood-rotting fungi are grouped into two categories, i.e. white rot fungi and brown rot fungi depending upon the way in which they decay wood. Since these substances differ markedly in their physical characters, so the effect of wood decaying fungi is different depending upon which substance is removed. The wood which has been acted upon by a lignin dissolving fungus contains a relatively high remainder of cellulose, becoming soft and spongy in texture and is whitened in contrast to normal wood. A decay of this type is called white rot. A wood from which, the cellulose components have been removed, is darker than the normal wood, will be dry, brittle and of charcoal consistency. The decay of this sort is called brown rot.

Brown rot fungi utilize the hemicellulose of the cell walls leaving the lignin essentially undigested, but slightly modified (Kirk, 1975; Kirk & Alder 1970). Evidently, the differences between the conditions in culture and decaying wood profoundly affect the lignin degrading ability of brown rot fungi. The mechanism of hemicelluloses break down by brown rot fungi appears similar to that of white rot fungi (Highley, 1976; Keilich *et al.*1970). But these fungi evidently employ a different mechanism than white rot fungi for attacking the cellulose in the wood (Cowling & Brown, 1969; Highley, 1977; Koenigs, 1974). Hyphae of the brown rot fungi like those of the white rot fungi grow inside the lumina in contact with the tertiary wall, into the capillaries of which the secreted enzymes are able to diffuse (Bailey *et al.*, 1968; Liese, 1970; Wilcox, 1970). Unlike the white rot fungi, the enzyme attack is not localized near the hyphae but is wide spread and deeply diffused. As the decay proceeds, the cellulose and hemicelluloses are gradually destroyed at approximately the same relative rate. Brown rotted wood tends to shrink abnormally when dried giving rise to a characteristic cubical pattern of checking. The brown rot fungi reduce the strength of wood much more than white rot fungi and at the advanced stages, the wood is reduced to a residue of amorphous crumbly brown cubical pieces with excessive vertical and horizontal splitting (Brown cubical rot) composed largely of slightly modified lignin. Brown rot fungi do not produce extracellular phenol oxidases and generally give negative oxidase tests on gallic and tannic acid media and with gum guaic and syringaldazine reagents. Brown rot residues are extremely stable and are important organic compounds in forest soils (Gilbertson, 1981).

White rot fungi degrade cellulose and hemicelluloses at approximately the same rates relative to the original amounts present (Kirk & Highley, 1973) whereas the lignin is decomposed at a similar rate or usually somewhat at faster rate on a relative basis (Blanchette, 1980; Setliff& Eudy, 1979). Hyphae of the white rot fungi are concentrated in the ray cells and vessels although; other cells are invaded very earlier in the decay. The hyphae initially invade other cells from ray cells and vessels via pits or directly by penetration of cell walls (Wilcox, 1970; Liese, 1970).White rot fungi have cellulose and lignase enzyme systems secreted at hyphal tips and on lateral surfaces. These enzymes assist cell wall penetration and enlarge bore holes to perforations. Along the young hyphae, lyses furrows are produced. The degradation products of various cell wall layers are completely absorbed by the hyphae. White rot fungi successively depolymerise cell wall substances only to the extent that the products can be utilized consecutively for metabolism (Cowling, 1961). The action of the enzyme system of white rot fungi is restricted to the cell wall layers in the immediate vicinity of the hyphae.

RESULTS AND DISCUSSION :

Most of the species of wood decaying fungi cause white rot and degrade both lignin and cellulose from the woody tissue. Some of the species cause brown rot, buttrot and heart rot. Systematic surveys in the saw mills and forest areas from Beed, Osmanabad and Latur districts during different seasons revealed over 200 specimens found on 33 different hosts and they fall into 21 species (Table 1)

It is noted that the genera like *Cellulariella acuta*, *Coriolopsis brunneoleuca*, *Duportella* tristicula, *Funalia caperata*, *Favolus tenuiculus*, *Earliella scabrosa*, *Rhodofomitopsis feei*, *Ganoderma colossus*, *Inonotus rickii*, *Loweporus tephroporus*, *Navisporus floccosus*, *Irpex vellereus*, *Phellinus allardii* and *Phellinus gilvus* (www.indexfungorum.org/, 2016) were rare species (Table 1).

The genera like *Flavodon flavus*, *Ganoderma lucidum*, *Hexagonia tenuis*, *Phellinus badius*, *Pleurotus ostreatus*, *Schizophyllum commune*, *Trametes cingulata* and *Trametes leonina* (Table 1) were found abundantly in study areas.

Present study revealed that the wood decaying genera like *Coriolopsis brunneoleuca*, *Funalia caperata*, *Favolus tenuiculus*, *Flavodon flavus*, *Earliella scabrosa*, *Flavodon flavus*, *Ganoderma colossus*, *Ganoderma lucidum*, *Hexagonia tenuis*, *Inonotus rickii*, *Loweporus tephroporus*, *Navisporus floccosus*, *Irpex vellereus*, *Phellinus allardii*, *Phellinus badius*, *Phellinus gilvus*, *Pleurotus ostreatus*, *Schizophyllum commune*, *Trametes cingulata* and *Trametes leonina* causes White rot (Table 2) while *Rhodofomitopsis feei* causes brown rot; the species like *Ganoderma colossus* causes buttrot (Table 2)to the living host and the species like *Pleurotus ostreatus* causes the heart rot to the host (Table 2).

It can be concluded that wood decay usually is a disease of old, large trees. It is very difficult to manage, but a number of factors can reduce the risk of serious damage. First, trees should receive proper cultural care to keep them vigorous. Minimize wood decay by protecting trees from injuries. Properly prune young trees to promote good structures and avoid the need to remove large limbs from older trees, which creates large wounds. Cut out dead or diseased limbs. Keep trees healthy so they can defend against disease.

Table 1 - Wood decay fungi from south eastern Marathwada

Fungus	Common hosts	Collection Nos.
Cellulariella acuta (Berk.) Zmitr. & Malysheva	*Mangifera indica* L.	*FHC/VPM -137
Coriolopsis brunneoleuca (Berk.) Ryv.	*Acacia sps*	FHC/VPM -12
Funalia caperata (Berk.) Zmitr & Malysheva	*Grevillea robusta* A. Cunn. ex R. Br.	FHC/VPM -15
Earliella scabrosa (Pers.) Gilb. & Ryv.	*Ficus religiosa* L.	FHC/VPM -158
Favolus tenuiculus P. Beauv.	*Lantana camara* L., *Gliricidia sepium*(Jacq.) Kunth ex Steud. , *Ficus elastica* Roxb.	FHC/VPM - 170,182,213
Flavodon flavus (Kl.) Ryv.	*Leucaena leucocephala* (Lamk.) de. Wit, *Albizia lebbeck* (L.) Willd., *Grevillea robusta* A. Cunn. ex R. Br., *Ficus religiosa* L., *Dalbergia sissoo* Roxb. ex DC., *Azadirachta indica* A. Juss., *Acacia arabica* (Lamk.) Willd., *Acacia nilotica* (L) Del., *Tamarandus indica* L., *Gliricidia sepium* (Jacq.) Kunth ex Steud., *Balanites roxburghii* Planch., *Ficus benghalensis* L., *Acacia leucophloea* (Roxb.) Willd.	FHC/VPM - 5,6,8,29,30, 31,32,34,35, 38,47,48,49, 61,64,73,74, 82,86,91,93, 99,102,105, 145,165,178, 188,202,203
Rhodofomitopsis feei (Fr.) Cui, Han & Dai	*Acacia arabica* (Lamk.) Willd.	FHC/VPM -136
Ganoderma colossus (Fr.) Baker	*Acacia arabica* (Lamk.) Willd.	FHC/VPM -148
Ganoderma lucidum (Curt.) Karst.	*Citrus medica* L., *Gliricidia sepium* (Jacq.) Kunth ex Steud., *Leucaena leucocephala* (Lamk.) de. Wit, *Mangifera indica* L., *Acacia farnesiana* (L.) Willd., *Casurina equisetifoilia* J. R. & G. Forst.	FHC/VPM - 18,44,85,87, 100,120, 172,177, 186,187, 210
Hexagonia tenius (Hooke) Fr.	*Mangifera indica* L., *Ficus elastica* Roxb.	FHC/VPM - 22,41,128,131, 141,151,161, 169,171,214
Inonotus rickii (Pat.) Reid	*Tamaradus indica* L., *Delonix regia* (Boj. ex Hook.) Raf.	FHC/VPM -39,212
Loweporus tephroporus (Mont.) Ryv.	*Acacia arabica* (Lamk.) Willd.	FHC/VPM -63,134
Navisporus floccosus (Bres.) Ryv.	*Ficus racemosa* L.	FHC/VPM -153
Irpex vellereus Berk. & Broome	*Annona reticulata* L.	FHC/VPM -75
Phellinus allardii (Bres.) Ahmad	*Psidium guajava* L.	FHC/VPM -205
Phellinus badius (Cooke) Cunn.	*Leucaena leucocephala* (Lamk.) de. Wit, *Albizia lebbeck* (L.) Willd., *Acacia arabica* (Lamk.) Willd., *Gliricidia sepium* (Jacq.) Kunth ex Steud., *Casurina equisetifoilia* J. R. & G. Forst., *Diospyros melanoxylon* Clarke.	FHC/VPM - 17,37,40,58,59, 60,62,78,79,83, 95,96,98, 103, 106,108,111, 156, 162, 163,164,166, 174,176,179, 180, 181,183, 184, 185 189, 190, 192,193, 198,199,200, 201, 209, 211, 220,221,222
Phellinus gilvus (Schwein.) Pat.	*Mangifera indica* L.	FHC/VPM -196
Pleurotus ostreatus (Jacq.) P. Kumm.	*Mangifera indica* L., *Ficus benghalensis* L., Plywood	FHC/VPM - 196,72,

		126,191,116
Schizophyllum commune Fr.	*Mangifera indica* L., *Leucaena leucocephala* (Lamk.) de. Wit, *Albizia lebbeck* (L.) Willd., *Grevillea robusta* A. Cunn. ex R. Br., *Azadirachta indica* A. Juss., *Acacia arabica* (Lamk.) Willd., *Acacia nilotica* (L) Del., *Tamarandus indica* L. ,*Annona squamosa* L., *Acacia leucophloea* (Roxb.) Willd., *Agave americana* L., *Tectona grandis* L.f., *Vitex negundo* L., *Ficus racemosa* L., *Delonix regia* (Boj. ex Hook.) Raf.	FHC/VPM - 1,4,10,16,25, 26, 28,43,45, 46, 65,67, 69, 76, 77,80,81, 84,88, 90,92, 115 119, 121,122, 124, 130, 144,146, 150,194
Trametes cingulata Berk.	*Acacia sps, Santalum album* L., *Ziziphus mauritiana* Lamk.	FHC/VPM - 7,11,104,218, 135,142,159
Trametes leonina(Kl.) Imazeki	*Mangifera indica* L.	FHC/VPM - 167,168,195, 219,21,42

FHC - Faisal Hamad Chouse, VPM - Vasant Pandit Mali

Table 2 - Wood decay fungi and type of rot

Name of the Fungus	Type of Rot
Cellulariella acuta (Berk.)Zmitr. & V. Malysheva	White rot
Coriolopsis brunneoleuca (Berk.) Ryvarden	White rot
Funalia caperata (Berk.)Zmitr. & V. Malysheva	White rot
Earliella scabrosa (Prers.)Gilb. & Ryvarden	White rot
Favolus tenuiculus P. Beauv.	White rot
Flavodon flavus (Klotzsch) Ryvarden	White rot
Rhodofomitopsis feei (Fr.) . Cui, Han & Dai	Brown rot
Ganoderma colossus (Fr.)C.F. Baker	Buttrot (living), white rot (dead)
Ganoderma lucidum (Curtis) P. Karst	White rot
Hexagonia tenius (Hook.) Fr.	White rot
Inonotus rickii (Pat.) D.A. Reid	White rot
Loweporus tephroporus (Mont.) Ryvarden	White rot
Navisporus floccosus (Bres.) Ryvarden	White rot
Irpex vellereus Berk. & Broome	White rot
Phellinus allardii ((Bres.) S. Ahmed	White rot
Phellinus badius (Cooke) G. Cunn.	White rot
Phellinus gilvus (Schwein.) Pat.	White rot
Pleurotus ostreatus (Jacq.) P. Kumm.	White rot, Heart rot,
Schizophyllum commune Fr.	White rot
Trametes cingulata Berk.	White rot
Trametes leonina (Klotzsch) Imazeki	White rot

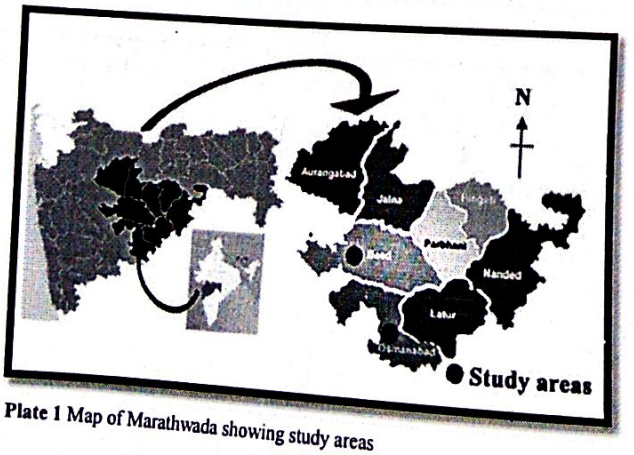

Plate 1 Map of Marathwada showing study areas

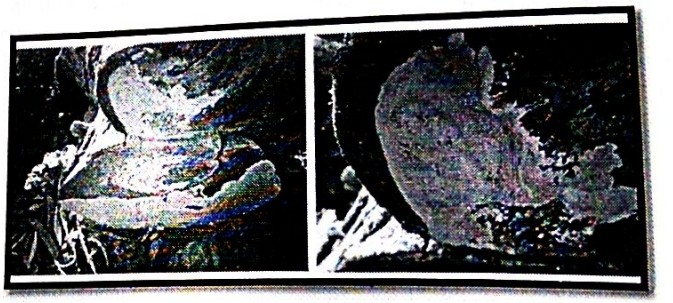

Plate 2 *Earliella scabrosa*, often found consuming logs, spores are formed on the underside of fruiting bodies (inset)

Plate 3 Heartrot fungi (*Pleurotus ostreatus*) growing form old tree wound and emerging

Plate 4 The pathogen *Ganoderma lucidum*, has already killed tree.

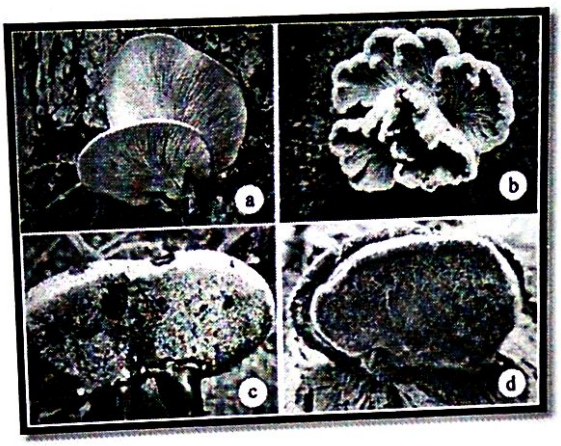

Plate 5 Spore producing surfaces: a-b spores on narrow gills, c-d.

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REFERENCES :

Bailey, P.J., Liese W. and Rosch, R. (1968). Some aspects of cellulose degradation in lignified cell walls. In: *Biodeterioration of materials;* pp 546-557(Essex, England: Elsvier Publ. Corporation).

Basham, J.A. (1975). *Biotechnology and bioengineering Symposium.* pp 9-19 ed. By C.R. Wilkes.

Blanchette, R. A. (1980). Wood decomposition by *Phellinus pini*- a scanning electron microscopy study. *Can. J. Bot.* 58 1496-1503.

Chouse, F. H. and Mali, V. P. (2016). Diversity in host susceptibility *Phellinus badius* from Marathwada, Maharashtra (India). *J. pharm. chem. bio. sci.*4(3): 342-349.

Cook, W.A. and Rayner, A.D.M. (1984). Ecology of saprophytic fungi. London and New York: Longman.

Cowling, E.B. (1961). *Comparative biochemistry of the decay of sweetgum by white rot and brown rot fungi.* (Washington, USA:USDA).

Cowling, E.B. and Brown, W. (1969). Structural features of cellulosic materials in relation to enzymatic hydrolysis. *Adv. Chem. Ser.* 95 152-187.

Gilbertson, R.L. and Ryvarden, L. (1986). North American Polyporaceae vol. 1. *Fungi-Flora-Oslo-Norway.*433 pp.

Gilbertson, R.L. (1981). North American Wood-rotting fungi that cause brown rots. *Mycotaxon* 12 372-416.

Highley, T.L. (1976). Hemicellulases of white and brown rot fungi in relation to host preferences. *Mater. Org.* 1133-46.

Highley, T. L. (1977). Requirements for cellulose degradation by a brown rot fungus. *Mater.Org.* 12 25-36.

Hintikka, J. and Laine, L. (1970). Notes on the detection of different types of decay in wood. *Metsart Julk.* 70:1-15.

Keilich, G., Bailey P. and Liese, M. (1970). Enzymatic degradation of cellulose, cellulose derivatives and hemicelluloses in relation to the fungal decay of wood. *Wood Science Technol.* 4 273-283.

Kirk, T.K. (1975). Effects of a brown rot fungus *Lenzites trabea* on lignin in spruce wood. *Holzforschung* 29 99-107.

Kirk, T.K. and Alder, E. (1970). Methoxyl-deficient structural elements in lignin of Sweet gum decayed by a brown rot fungus. *Acta. Chem. Scand.* 24 3379-3390.

Kirk, T.K. and Highley, T.L. (1973). Quantitative changes in structural components of conifer woods during decay by white and brown rot fungi. *Phytopathology* 631338-342.

Koenigs, J.W. (1974). Hydrogen peroxide and iron: A proposed system for decomposition of wood by brown rot basidiomycetes. *Wood Fiber* 6 66-79.

Liese, W. (1970). Ultrastructural aspects of woody tissue disintegration. *Ann. Rev. Phytopath.* 8 231-258.

Mali V. P., Raibhole U. K. , Hembrome Manoj & Parihar Arvind (2016), Taxonomy and Diversity of *Trametes* from the Marathwada (Maharashtra) India , *Journal of Medicinal Chemistry and Drug Discovery.* Vol.1 (2):537-546.

Setliff, E. and Eudy, W.E. (1979). Screening white-rot fungi for their capacity to delignify wood. In: *Lignin Biodegradation Microbiology. Chemistry and Practical Applications;* pp. 135-149; (eds.) T.K. Kirk, T. Higuchi and H.M. Chang (Miami. USA : Chemical Rubber Company Press).

Vasant Mali (2016), Preliminary investigation of Aphyllophorales from Saurashtra University campus, Rajkot (Gujrat) India. *International Journal of Science Info* (IJSI) Vol. 1(3): 144-149.

Vasant Mali, (2015), Wood Rotting Fungi (Aphyllophorales) from Ashti-1. *Journal of Medicinal Chemistry and Drug Discovery.* Pp-699-705.

Wilcox, W.W. Anatomical changes in wood cell walls attacked by fungi and bacteria. *Bot. Rev.* 36 (1970) 128.

www. Indexfungorum.org/ (2016).

ICT Skills among Agricultural College Librarians: A Comparative Study

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Abstract

Now we are living in 21st century & present century is called ICT age. In the ICT era peoples are used the ICT tools in the day to day activities, for example e-purchasing, e-selling, e-prayers, e-friendship with the help of ICT tools. Like that libraries also used varies new ICT tools for provide the quality, instant library services to the users. Now a day's library users not need to come library but library will come to the user's desktop with the help of modern IT tools, software's & Hardware's. In this paper it is highlighted that ICT skills among the librarians.

Keywords: *Information Communication Technology, Agricultural College Libraries, Automation, LMS.*

Introduction

The current development in science and technology has led to a new staggering condition about information created in the world. In the present ICT era, it becomes necessary for librarians to use the computers and other devices in the day-to-day work. In this context, the librarians shall possess, in addition to the academic and professional qualifications, certain ICT skills, such as handiness in operating systems, use of application software packages, knowledge of databases and programming, acquaintance in webpage design, library automation software, technical skills, and managerial skills. This survey has been

using the N-LIST programme , as per the their results it it is found that most of the students not aware about the N-LIST facility also they have need the training regarding development of the ICT skills as well as Internet facility. However,

Sahu (2013) surveyed the traditional and technical skill. Traditional skill involves in Collection & Development, Preparing budget, Classification & Cataloguing, Indexing Service, Reference Service, Library Supervision while Technical skill emphasized on Digital projects/initiatives, Website Designing, Library Automation, Open Source Software Development, and Networking. ***Ramaiah & Pillai (2013)*** identified the importance of IT Skills, Net Skills, reading, Information seeking skills, teaching & learning, Management; media resources use skills etc particularly in school libraries in India. Also the researcher discussed the importance of the training in development of the skills among the students as well as school teachers. However, ***Popoola & Olalude (2013)*** discussed the Symptoms of techno stress being manifested by the Library personnel & through this symptoms they have get the level of the ICT skills as well as computer literacy skills among the library professionals from the automated university libraries in Nigeria. ***Ejedafiru & Oghenetega (2013)*** identified the level of professional librarians in ICT skills hence 85% of respondents claimed that they can operate computer effectively, while 80% and 75% said they use online information for research and are capable of using www search engines respectively. ***Kumar (2013)*** investigate in his study entitled "Knowledge on ICT Skills among LIS Professionals of Engineering Institutions of Andhra Pradesh State: A Survey" in his study he shown the skills regarding operating system, operating/ programming language, library management software, web design tools, technical skills, managerial skills, subject skills & lack of ICT related skills, constraints on ICT practice by Library & Information Professionals.

Data Analysis

Table No. 1 ICT Skills among Librarians

Sr. No	ICT Skills	High	Medium	Low
1	Operating System	12 (30)	25 (62.5)	3(7.5)
2	Library Automation & Networking	14 (35)	19 (47.5)	7 (17.5)

aimed to estimate the level of knowledge on ICT skills by the respondent librarians. This paper analyses various ICT skills possessed by librarians like programming languages, application software packages, Database management system (DBMS), library management software and web design and also finds out the constraints encountered by librarians in acquiring ICT skills.

Objectives

1. To analyze the ICT skills among Librarians working in Agriculture College Libraries.
2. Find out Librarians skills in operating systems, use of application softw packages, programming languages, technical skills, managerial skills and other ICT related activities.
3. To study the problems faced by Librarians in the effective use of ICT applications.

Hypothesis

1. There is a significant difference in ICT Skills among the librarians of constituent colleges and Self-Financed colleges.

Review of Literature

Khan & Idrees (2014) in their paper they have discussed the importance of professionals training for LIS professionals Conducted by Pakistan Academy for rural Developme (PARD). Also they have elaborate the PARD play a vital role through training programme to developed the library automation skills, Information/Computer literacy skills, Knowledge Management skills, Communication Skills, Leadership Skills, etc in the LIS professionals in Pakistan Country. while, ***Bhatti, Chohan & Naeem (2014)*** discussed the Factors Affecting Library Usage Frequency by Students in University Libraries of Developing Countries including Pakistan. In this study it is investigated the lack of Information Literacy skills, lack of reading skills, lack of training, Lack of awareness of ICT tools etc these factors are affect the library usage in developing countries. ***Sinha & Bhattacharjee (2013)*** discussed the ICT & Internet Literacy skills for

Table No. 2 ICT Skills VS Category of Colleges

These ICT skills were further evaluated between Constituents and Self Finance institutions and the same is shown in Table 2

Sr. No	ICT Skills	Constituents Colleges (n=6)			Self Finance Colleges (n=34)			Chi. sq	P-Value
		High	Medium	Low	High	Medium	Low		
1	Operating System	5 (83.33)	1 (16.17)	0 (0)	7 (20.59)	24 (70.59)	3 (8.82)	41.622	0.000
2	Library Automation & Networking (LMS)	6 (100)	0 (0)	0 (0)	8 (23.53)	19 (55.88)	7 (20.59)		
3	Institutional Repository/Digital Library	2 (33.33)	4 (66.37)	0 (0)	3 (8.82)	15 (44.12)	16 (47.6)		
4	Web Technologies	3 (50)	2 (33.33)	1 (16.67)	3 (8.82)	12 (35.29)	19 (55.88)		
5	Network Technologies	5 (83.33)	1 (16.67)	0 (0)	8 (23.53)	19 (55.88)	7 (20.59)		
6	Office Automation	6 (100)	0 (0)	0 (0)	20 (58.82)	12 (35.29)	2 (5.88)		
7	Content Management System	4 (66.37)	2(33.33)	0 (0)	9 (26.47)	15 (44.12)	10 (29.41)		

Note:-Note:-Chi-Sq = 41.622, DF = 1, P-Value = 0.000

The Table 2 and Following Figure 1 observed that there is out of 6 Constituents college librarians 6 (100%) librarians have high level ICT skills in the Library Automation and Networking as well as in Office Automation followed by 5 (83.33%) having high level ICT Skills among the Operating System and Networking Technologies. Only 1 (16.67%) librarian has Low level ICT Skills in the Web Technologies.

	(LMS)			
3	Institutional Repository/Digital Library	5 (12.5)	19 (47.5)	16 (40)
4	Web Technologies	6 (15)	14 (35)	20 (50)
5	Network Technologies	13 (32.5)	20 (50)	7 (17.5)
6	Office Automation	26 (65)	12 (30)	2 (5)
7	Content Management System	13 (32.5)	17 (42.5)	10 (25)

The Table 1 it can be seen that High level of ICT Skills 26 (65%) has been given Office Automation. It is followed by operating system 12 (30%) and library automation and networking (LMS) 14 (35%). However content management system 13 (32.5%), Networking Technologies 13 (32.5%). Least importance has been given to Web Technologies only 6 (15%) and Institutional Repository/Digital Library only 5 (12.5%) librarians have high level ICT Skills. It is also shows that Low level of ICT Skills 3 (7.5%) Operating System and only 2 (5%) office automation and 20 (50%) of the librarians have low ICT skills regarding Web Technologies.

And in the Self -financed college libraries only 7 (20.59%) Librarians have high level ICT Skills in Operating System, 8 (23.53%) in Library Automation and Networking, 20 (58.82%) in Office Automation. It also seen that 19 (55.88%) librarians have low level skills in web technologies. The chi-square test is also administered to test the hypothesis that there is significant difference in ICT skills among the librarians of 'Constituents Colleges' and 'Self-Finance colleges' institutions. Level of significance (α) = 0.05, P-Value = 0.000 is less than level of significance. **Hence the hypothesis no 1"there is significant difference in ICT skills among the librarians of 'Constituents Colleges' and 'Self-Finance colleges' is valid.**

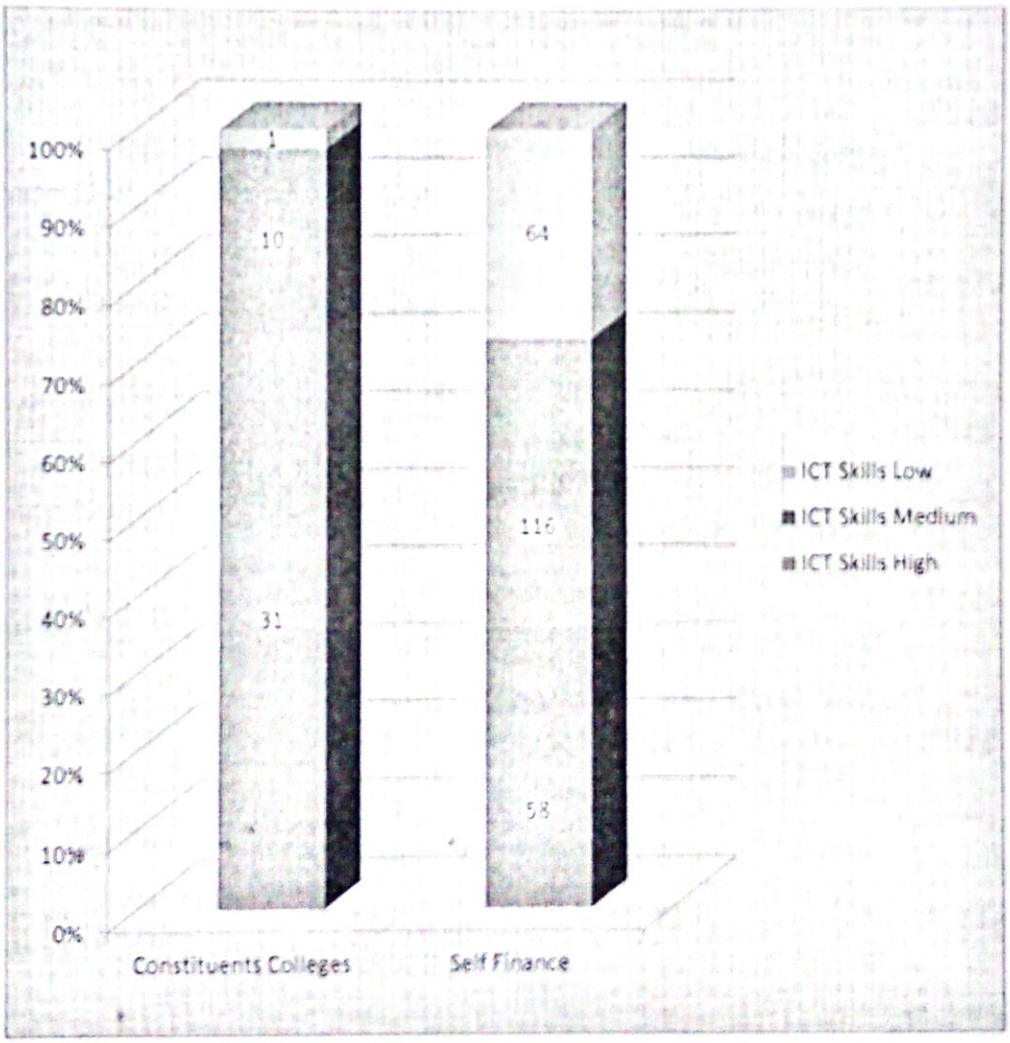

Fig. No.1 ICT Skills VS Category of Colleges

Conclusion

In this current situation, whereby ICT are being continuously updated, and the traditional formats, regular training for the librarians in changing technology is inevitable. In-house training programmes are more effective in libraries. From the present survey it is clear that most of the ICT technologies which are taken for this study are not yet been introduced in the library system. Therefore the library professionals are not in a position to use these technologies in their work. This will create a low level of technologies skill development among the professionals working in this library system. Concerning the implementation of the technologies, lack of support form the authority is the major issue in university library. This study concludes that the librarians need proper ICT infrastructure and training to using the digital resources effectively.

REFERENCES:-

- Bhatti, R., Tariq Mahmood, C., & Salman Bin, N. (2014). A Study of Factors Affecting Library Usage Frequency by Students in University Libraries of Developing Countries including Pakistan. *Pakistan Library & Information Science Journal*, *45*(1), 9-17.
- Ejedafiru,E.F & Oghenetega,L.U. (2013). Attitude of Professional Librarians towards the Use of Information and Communication Technology (ICT) In Delta State University Library. *International Research: Journal of Library & Information Science*, 3(4), 751-760.
- Kalbande,D.T & S.P. Chavan (2015). "Use of Digital Library Resources by Faculty Members: A Case Study. In: *International Research Journal of Library & Information Science (IRJLIS),* Vol. 5 No 1. Pp. 28-38. ISSN No: 2249-0213.
- Kalbande,D.T., Madanshng D Golwal & Subhash P Chavan. (2013). Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. In: *International Journal of Digital Information & Knowledge Management*, Vol. 1 No 2. Pp. 63-72. ISSN No: 2320-5059.
- Kalbande,D.T., Subhash P Chavan & Madanshng D Golwal. (2012). Use of CD ROM Databases: A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 3. (July- Sept, 2012). Pp. 55-62. ISSN No: 2231-4911.

- Kalbande,D.T., & Shashank.S.Sonwane.(2011). "Information Seeking Behaviour of the studentds at MPKV,Rahuri (M.S): A case Study In: *International Journal of Digital Library Services (IJODLS)*. Oct-Dec 2011, Vol.1 Issue. 2:PP.21-31. ISSN NO: 2250-1142.
- Kalbande,D.T., Shashank.S.Sonwane. & Madanshing D Golwal. (2012) "The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study." In: *International Research Journal of Library and Information Science (IRJLIS)*. Vol.2 No.1 (June 2012). Pp.65-75. ISSN NO: 2249- 0213.
- Kalbande,D.T., Shinde,P.A. & Ingle,R.N. (2013) "Use of E-Resources by Faculty Members:A Case Study." In: *International Research Journal of Library and Information Science (IRJLIS)*. Vol.3 No.3 (Sep 2013). Pp.459-469. ISSN NO: 2249- 0213.
- Kalbande,D.T., Syed, F.M., & Shashank S Sonwane. (2012). Use of Consortium for Resources In Agriculture (CERA): A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 1. (Jan-March, 2012). Pp. 33-41. ISSN No: 2231-4911
- Khan, A., & Idrees, H. (2014). Professional Training Programs for LIS Professionals Conducted at PARD: an overview. *Pakistan Library & Information Science Journal*, *45*(2), 23-32.
- Kumar, K. (2013). Knowledge on ICT Skills among LIS Professionals of Engineering Institutions of Andhra Pradesh State: A Survey. *DESIDOC Journal of Library & Information Technology*, *33*(6), 480-487.
- Madanshing D Golwal, Kalbande,D.T. & Subhash P. Chavan. (2012). "Role of LIS Professionals in Today's Digital Era". In *Aarhat Multidisciplinary International Education Research Journal(AMIERJ)*. Vol. 1 Issue.2. Pp. 132-140. ISSN NO:2278-5655.
- Madanshing D Golwal. and Kalbande,D.T.(2012). "Right to Information, Information Literacy & Public Libraries". In: *Asia Pacific Journal of Management and Entrepreneurship Research. (Special Issue on Human Rights)*. Vol.1. No. 1.P.p 89-99. ISSN NO: 2277-8098.
- Popoola, s., & Olalude, f. (2013). Work values, achievement motivation and technostress as determinants of job burnout among library personnel in automated federal university libraries in Nigeria. *Library Philosophy & Practice*, 1-31.
- Ramaiah, C., & Pillai, K. (2013). Training Needs of School Librarians in India. *DESIDOC Journal of Library & Information Technology*, *33*(5), 367-377.

- Shivshankar Ghumre, Dharamraj K Veer & Kalbande,D.T.,(2013). "Expenditure of College Library Budgets in Marathwada Region: A case Study In: *International Journal of Digital Library Services (IJODLS)*. Jan-March 2013, Vol.3 Issue. 1:PP.23-32. ISSN NO: 2250-1142.
- Sinha, M., Bhattacharjee, S., & Bhattacharjee, S. (2013). ICT and Internet Literacy Skills for Accessing to E-Resources available under N-LIST Programme. *Library Philosophy & Practice*, 20.

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ICT INFRASTRUCTURE FACILITY IN AGRICULTURAL COLLEGE LIBRARIES IN MAHARASHTRA: A STUDY

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Abstract

This study attempt to examine the ICT infrastructure facilities available in Agricultural college libraries affiliated to Mahatma Phule Krishi Vidyapeeth, Rahuri. For the present study there were 40 colleges selected. From this study it was found that majority of the libraries don't have necessary infrastructure facilities to access the e-resources for their users.

Keywords:- *ICT, Hardware, Software, ICT Infrastructure, Library Services*

INTRODUCTION:-

Information Communication Technology (ICT) is being increasingly used in library and information services for the acquisition, processing dissemination of information. Libraries and Information centers have been using ICT infrastructures and services to satisfy the diverse information need of their users. However, these infrastructures and services are not used fully. Under usage of these infrastructures and services has been a cause of concern to librarian worldwide. The use of Information Communication Technology infrastructures has become increasingly important in self-financing engineering college libraries. Self-financing engineering college libraries are switching over to ICT infrastructures at an accelerated pace. E-Journals, CD-ROM databases, online data bases, e-books, web based infrastructures and a variety of other electronic resources are fast replacing the traditional resources of self-financing engineering college libraries.

OBJECTIVES:-

1. To assess the nature and quantum of Resources available in the Agriculture College Libraries.
2. To identify the ICT infrastructure in Agriculture College Libraries.

HYPOTHESIS:_

1. There is Significant Difference in ICT Infrastructure Facility in Self-Financed and Constituents Agricultural College

REVIEW OF LITERATURE:--

The lot of researchers are conducted a study on ICT facilities/Infrastructure available in libraries.

Real & et...al (2014) have studied the status of the ICT Facilities available in Rural public libraries & its challenges. The researchers found that lot of the public rural libraries are adopted ICT infrastructure like they have access internet facility with bandwidth, lot of the libraries have computer terminals etc.

However, **Prakash, Ramanna& Rajkumar (2014)** in their study entitled "Library Collection, Facilities and Services of the Central University of Karnataka: A Survey" demonstrate the varies aspects of use of collection & services, availability of the ICT infrastructure, print & electronic resources, databases.

While, **Okeke, Oghenetega & Umeji (2014)** in their paper they discovered that the most of the students in the faculty of social sciences are awre of the ITC tools like computer & etc also they explored students used GSM & social media commonly in Madonna University Okija Campus.

Nazi & et..al (2014). Surveyed that the mobile facility implementation in national library at Iran & they stated that the 68% respondents supported to the adopt this facility for the all events, overdue date intimation, OPAC facility etc. in short the users recommended to increase the ICT infrastructure for the library services through cell phone.

Mondal & Bandyopadhyay (2014) have studied the status of ICT infrastructure in the university libraries of west Bengal, India. It is concluded that the most of the libraries are in different stages of the development also they have faced lot of problems for the development of the ICT infrastructure in the libraries.

While, **Kruse (2014)** conduct a survey on Research libraries' new role in research data management, current trends and visions in Denmark. They it is fond that no any library used common ICT Infrastructure to manage the all resources it may be e-resources as well print resources.

Tiwari & Sahoo (2013) investigated the Infrastructure & Use of ICT in University Libraries in Rajastan state. It was found that all the university libraries are in developing stage. Also ICT infrastructure was the need of the present era for the change the status & to give the quick services to the users. The researchers stated that the library staffs have needed to get the ICT training as well as practices.

Siddiqui & Walia (2013) in their study highlighted Comparatively in India & UK regarding the ICT Papers in LIS Syllabus & they it is found that in UK LIS curriculum

more weight age is given to ICT papers while in Indian LIS curriculum more traditional type papers are still part of the curriculum.

Mohd, Esmail & Nagrajan (2013) have studied the attitude of the users regarding e-resources & services in engineering colleges affiliated to north Maharashtra University & then it is stated that the lack of ICT infrastructure in engineering college libraries for the access of e-resources. The library users suggested that to develop the current & adequate ICT facilities in the knowledge resource centers/ Libraries.

DATA ANALYSIS

ICT INFRASTRUCTURE

Table No. 1, Hardware Available in Libraries

Library Code	Computers	Laptop	Tablets	Server	Printer	Scanner	Barcode Reader	E-Book Reader	L.C.D. Projector	Television with VCR	Photo Copy Machine	Audio Visual Equipment's	CCTV	Telephone	Fax	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1 to 15
A	43	1	1	2	4	2	2	2	1	0	1	1	12	1	1	74
B	40	1	0	1	2	2	1	1	0	1	2	1	19	1	0	72
C	80	1	0	4	4	2	1	4	2	1	2	1	20	10	1	133
D	47	1	0	3	5	3	2	2	1	1	1	4	15	1	1	87
E	4	0	0	0	1	1	0	0	1	0	1	0	0	1	1	10
F	3	0	0	1	1	1	0	0	1	0	1	0	0	2	0	10
G	2	0	0	1	1	0	1	0	0	0	0	0	0	0	0	5
H	5	0	0	0	1	1	1	0	0	0	0	0	0	0	0	8
I	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
J	40	1	0	0	1	1	1	0	0	0	1	0	5	1	1	52
K	1	0	0	0	1	0	0	0	0	0	1	0	3	1	1	8
L	1	0	0	0	1	1	0	0	0	0	1	0	1	1	1	7
M	5	1	0	1	0	1	1	0	6	1	1	2	0	1	1	21

Cont.....

Library Code	Computers	Laptop	Tablets	Server	Printer	Scanner	Barcode Reader	E-Book Reader	L.C.D. Projector	Television with VCR	Photo Copy Machine	Audio Visual Equipment's	CCTV	Telephone	Fax	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1 to 15
N	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3
O	2	0	0	1	1	1	0	0	1	1	0	0	0	1	1	9
P	2	0	0	1	1	1	0	0	1	1	0	0	0	1	1	9
Q	53	25	0	1	1	0	1	0	0	1	0	0	10	0	0	92
R	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
S	2	0	0	0	0	0	0	0	0	0	2	1	0	0	0	5
T	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3
U	6	0	0	1	1	1	0	0	1	0	1	1	0	1	0	13
V	13	0	0	0	1	1	0	0	0	0	1	0	0	0	0	16
W	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
X	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3
Y	5	0	0	0	1	1	1	0	0	0	0	0	0	0	0	8
Z	5	0	0	0	1	1	0	0	1	1	1	0	0	1	1	12
AA	1	0	0	1	1	1	0	0	1	1	1	0	5	1	1	14
AB	1	0	0	1	1	1	0	0	1	1	1	0	5	1	1	14

Library Code	Computers	Laptop	Tablets	Server	Printer	Scanner	Barcode Reader	E-Book Reader	L.C.D. Projector	Television with VCR	Photo CopyMachine	Audio Visual Equipment's	CCTV	Telephone	Fax	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1 to 15
AC	10	0	0	0	1	1	0	0	2	1	1	1	2	1	1	21
AD	5	1	1	0	1	1	1	0	6	1	1	1	0	1	1	21
AE	1	0	0	0	1	1	0	0	1	1	1	0	0	0	0	6

AF	5	0	0	0	1	1	0	0	1	1	1	0	0	1	1	12
AG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AH	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4
AI	1	1	0	0	0	0	0	0	1	0	1	0	0	1	0	5
AJ	20	0	0	0	1	1	0	0	1	1	1	1	0	2	1	29
AK	4	0	0	1	1	0	1	0	0	1	0	0	0	0	0	8
AL	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
AM	20	1	0	0	1	1	0	0	1	0	1	1	0	1	1	28
AN	2	0	0	1	1	1	1	0	0	0	0	0	0	0	0	6

The table no. 1 reveals that total no of Hardware's available in the Agricultural College Libraries. The Code no A to F indicated Constituents Colleges and Code G to AN Indicated all the Self Financed College. In the out of 6 Constituents Colleges Mahatma PhuleKrishiVidyapeeth Library on rank first with 133 hardware's including 80 Computers, and 4 Servers, and 20 CCTV Cameras for the Security Purpose, Followed by Agriculture College Library of Dhule with 87 Hardware's including 47 computers and 3 servers. On a rank three have Agriculture College Library Pune with 74 hardware's including 43 Computers, 1 Laptop, 2 Separate Library servers and etc.

It is also shows that the Self Financed College Libraries situation regarding the hardware's, that is only one library have 92 hardware'sthat is Agricultural College Library Baramati followed by Pad. Dr. D. Y.Patil College of Agricultural Business management College Library with 52 hardware's including 40 Computers.

Out of 6 Constituents College Libraries all have good ICT Infrastructure but out of 34 Self Financed College Libraries 18 libraries have only 1 to 2 Computers and One library don't have till any desktop in the library, Most of the Self Financed College Libraries don't have separate Library servers, and CCTV cameras for the Security Purpose.

Hence the **Hypothesis No.1 There is Significant Difference in ICT Infrastructure Facility in Self Financed and Constituents Agricultural College Libraries is Valid.**

Table No. 1.1 Total Hardware VS Category of the Colleges

Sr. No	Hardware	Constituents College (N=6)	Percentage	Self-Finance College (N= 34)	Percentage
1	Computers	217	**56.22**	222	**49.22**
2	Laptop	4	**1.04**	30	**6.65**
3	Tablets	1	**0.26**	1	**0.22**
4	Server	11	**2.85**	10	**2.22**
5	Printer	17	**4.40**	24	**5.32**
6	Scanner	11	**2.85**	21	**4.66**
7	Barcode Reader	6	**1.55**	9	**2.00**

8	E-Book Reader	9	2.33	0	0.00
9	L.C.D. Projector	6	1.55	26	5.76
10	Television with VCR	3	0.78	13	2.88
11	Photo Copy Machine	8	2.07	19	4.21
12	Audio Visual Equipment's	7	1.81	10	2.22
13	CCTV	66	17.10	31	6.87
14	Telephone	16	4.15	20	4.43
15	Fax	4	1.04	14	3.10
16	Other	0	0.00	1	0.22
	Total	**386**	**100.00**	**451**	**100.00**

The table 1.1 shows the Total Hardware VS Category of the Colleges. It is reveals that in the 6 Constituents colleges having 386 total hardware's out of this 217 (56.22%) having Computers; however 66 (17.10%)having CCTV. 4 (1.04%) colleges having Fax. And in the 34 Self Financed Colleges having total 451 hardware's out of this 222 (49.22%) have Computers, 10 (2.22%) servers and etc. Hence the **Hypothesis No.1 "There is Significant Difference in ICT Infrastructure Facility in Self Financed and Constituents Agricultural College Libraries" is Valid.**

Table No. 2 Library Automation Software

Sr. No	Type of Library Software	Automation Software	Percentage
1	In House	3	7.5
2	Only Commercial	19	47.5
3	Only Open Source Software	3	7.5
4	Commercial & Open Source Both	1	2.5
5	Not Available	14	35
	Total	**40**	**100**

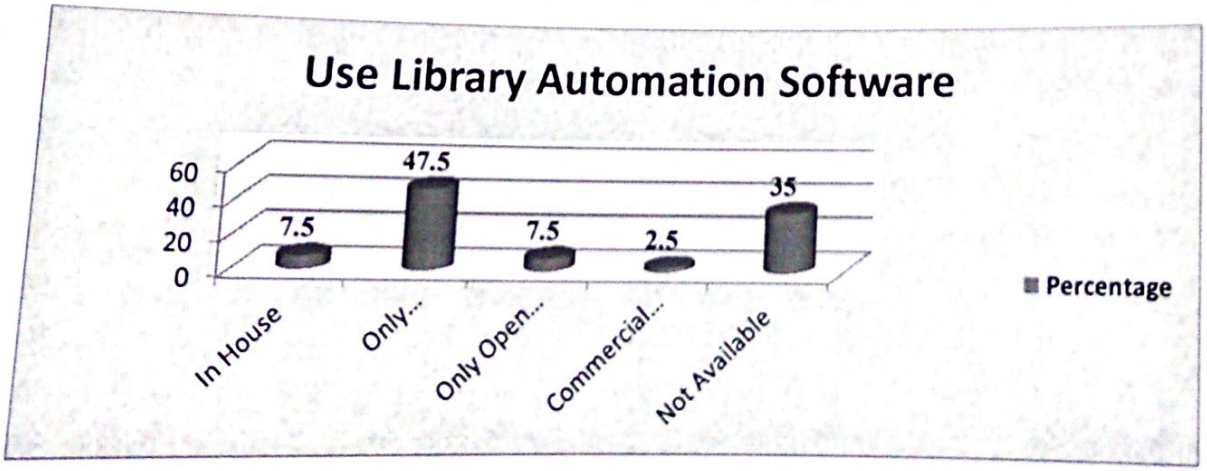

Fig. No. 1 Use Library Automation Software

The table 2 and graph 1 shows the out of 40 libraries 19 (47.5%) libraries used only commercial software, followed by 3 (7.5%) libraries have In House Software and only 1 Library have open source as well as commercial software for the library Automation, and it is observed that 14 (35%) libraries don't have any Library Automation software and all the 14 Libraries are the Self Financed College Libraries.

Table No. 3 Digital Library Software

Sr. No	Type of Library Software	Digital Library Software	Percentage
1	In House	2	5
2	Only Commercial	6	15
3	Only Open Source Software	0	0
4	Commercial & Open Source Both	2	5
5	Not Available	30	75
	Total	**40**	**100**

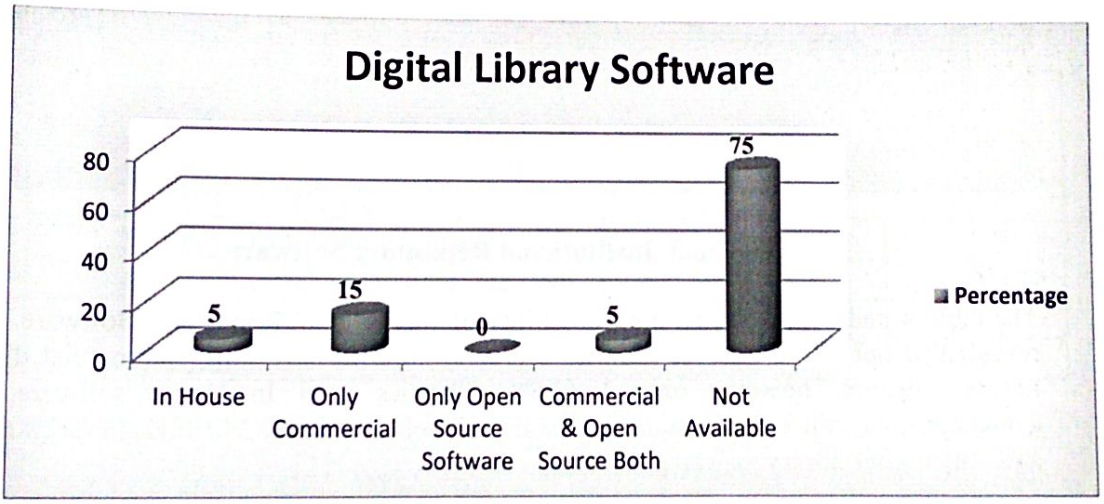

Fig.No.2 Digital Library Software

The table 3 and graph 2 shows theAvailability of Digital Library Software's. It is seen that out of the total 40 libraries 6 (15%) libraries used commercial Digital library software, followed by 2 (5%) libraries have In House Software and Commercial as well as Open Source Software. And it is observed that 30 (75%) libraries don't have any digital library software.

Table No. 4 Institutional Repository Software

Sr. No	Type of Library Software	Institutional Repository Software	Percentage
1	In House	1	2.5
2	Only Commercial	3	7.5
3	Only Open Source Software	1	2.5
4	Commercial & Open Source Both	1	2.5
5	Not Available	34	85
	Total	**40**	**100**

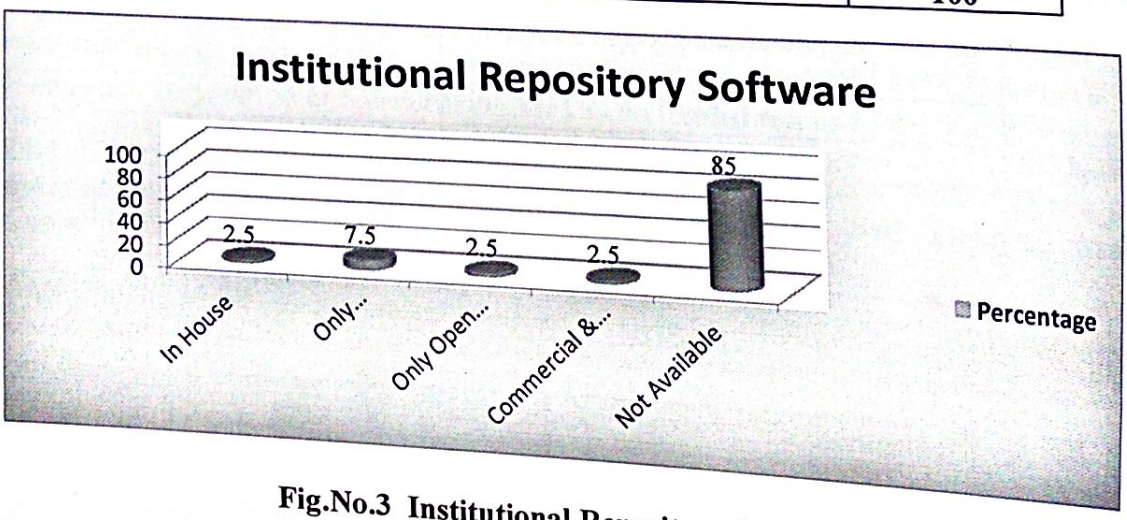

Fig.No.3 Institutional Repository Software

The table 4 and Fig. 3 shows the availability of Institutional Repository Software. It is reveals that out of the total 40 libraries 3 (7.5%) libraries have only commercial digital library software, however only 1 (2.5%) libraries used In House software and Commercial as well as Open source software. It is observed that 34 (85%) libraries don't have any digital library software.

Table No. 5 E-Learning Software

Sr. No	Type of Library Software	E-Learning Software	Percentage
1	In House	1	2.5
2	Only Commercial	2	5
3	Only Open Source Software	2	5
4	Commercial & Open Source Both	0	0
5	Not Available	35	87.5
	Total	**40**	**100**

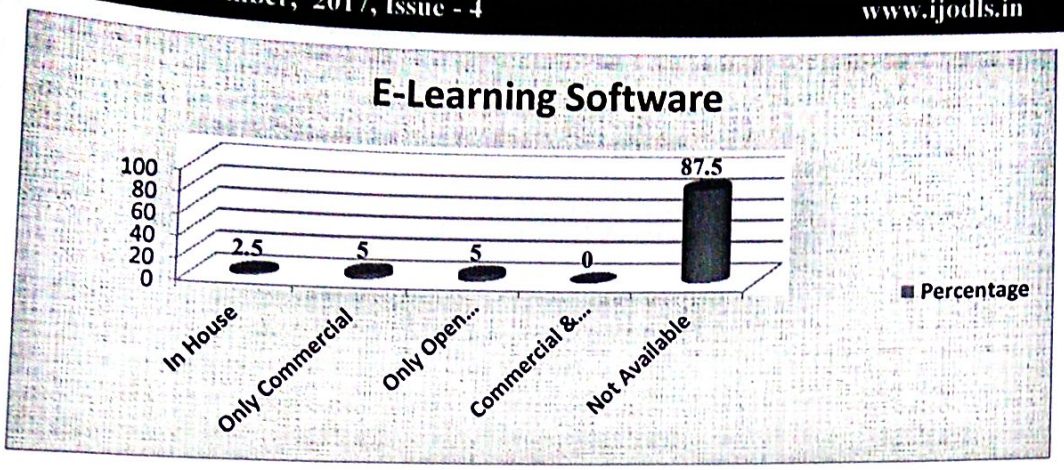

Fig. No.4 E-Learning Software

The table 5 and Fig.4 shows the Use of E-Learning Software. It is reveals that out of the total 40 libraries only 2 (5%) libraries used commercial software as well as Open Source Software for the E-Learning purpose, and 35(87.5%) libraries don't used any e-learning software in their libraries.

Table No. 6 Office Automation Software

Sr. No	Type of Library Software	Office Automation Software	Percentage
1	In House	1	2.5
2	Only Commercial	2	5
3	Only Open Source Software	2	5
4	Commercial & Open Source Both	0	0
5	Not Available	35	87.5
	Total	**40**	**100**

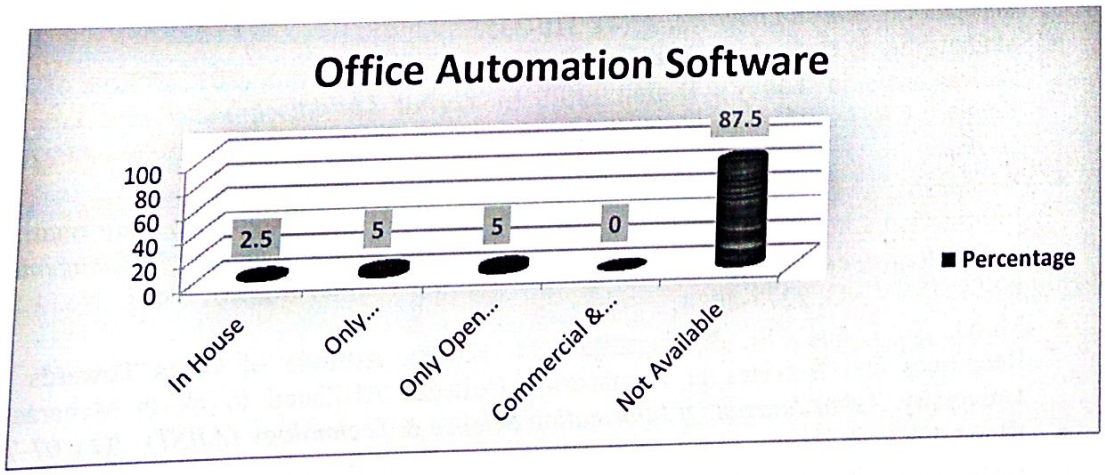

Fig.No 5 Office Automation Software

The table 6 and Fig. 5 shows the Use of Office Automation Software. It is reveals that out of the total 40 libraries 2 (5%) libraries have only commercial software, followed by only 2 (5%) libraries have Open source office automation software. It is observed that 35 (87.5%) libraries not used any office automation software.

CONCLUSION:-

All libraries having computers facilities. The libraries are possessing internet connection facilities for accessing e-resources. From the study it is concluded that all the sample Agricultural libraries don't have necessary ICT infrastructure facilities to access the e-resources for the benefit of their users.

REFERENCES:-

- Kalbande,D.T & S.P. Chavan (2015). "Use of Digital Library Resources by Faculty Members: A Case Study. In: *International Research Journal of Library & Information Science (IRJLIS),* Vol. 5 No 1. Pp. 28-38. ISSN No: 2249-0213.
- Kalbande,D.T., Madanshng D Golwal & Subhash P Chavan. (2013). Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. In: *International Journal of Digital Information & Knowledge Management*, Vol. 1 No 2. Pp. 63-72. ISSN No: 2320-5059.
- Kalbande,D.T., Subhash P Chavan & Madanshng D Golwal. (2012). Use of CD ROM Databases: A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 3. (July- Sept, 2012). Pp. 55-62. ISSN No: 2231-4911.
- Kalbande,D.T., & Shashank.S.Sonwane.(2011). "Information Seeking Behaviour of the studentds at MPKV,Rahuri (M.S): A case Study In: *International Journal of Digital Library Services (IJODLS)*. Oct-Dec 2011, Vol.1 Issue. 2:PP.21-31. ISSN NO: 2250-1142.
- Kalbande,D.T., Shashank.S.Sonwane. & Madanshing D Golwal. (2012) "The Benefits of
- Kruse, F., & Boserup T, J. (2014). Research libraries' new role in research data management, current trends and visions in Denmark. *Liber Quarterly: The Journal Of European Research Libraries*, *23*(4), 310-335.
- Madanshing D Golwal, Kalbande,D.T. & Subhash P. Chavan. (2012). "Role of LIS Professionals in Today's Digital Era". In *Aarhat Multidisciplinary International Education Research Journal(AMIERJ)*. Vol. 1 Issue.2. Pp. 132-140. ISSN NO:2278-5655.
- Madanshing D Golwal. and Kalbande,D.T.(2012). "Right to Information, Information Literacy & Public Libraries". In: *Asia Pacific Journal of Management and Entrepreneurship Research. (Special Issue on Human Rights)*. Vol.1. No. 1.P.p 89-99. ISSN NO: 2277-8098.
- Mohd, S., Esmail, S., & Nagarajan, M. (2013). Attitude of Users Towards E-Resources and Services in Engineering Colleges Affiliated to North Maharastra University. *Asian Journal Of Information Science & Technology (AJIST)*, *3*(2), 67-71.
- Mondal,A.K.& Bandoypathya,A.K. (2014). Availability of ICT Infrastructure in the University Libraries of West Bengal, India. *International: Journal of Lirary & Information Science*.4 (2), 287-295.

- Nazi, A., Ghasempour, S., & Asgari, L. (2014). A Feasibility Study of Mobile Services Implementation in National Library and Archives of Iran: user's trends. *Library Philosophy & Practice*, 1-10.
- Okeke,I.E, Oghenetega,L.U & Umeji,E.C. (2014). Availability and Uses of ICT Facilities among Students in Faculty of Social Science, Madonna University, Okija. *International Research: Journal of Library & Information Science*,4(2), 346-356.
- Prakash,B, Ramanna, S & Rajkumar (2014). Library Collection, Facilities and Services of the Central University of Karnataka:A Survey. *International Research: Journal of Library & Information Science*, 4(1), 170-181.
- Real, B., Bertot, J., & Jaeger, P. T. (2014). Rural Public Libraries and Digital Inclusion: Issues and Challenges. *Information Technology & Libraries, 33*(1), 6-24.
- Siddiqui, S. & Walia, P., (2013). A Comparative Analysis of Library and Information Science Post Graduate Education in India and UK. *Library Philosophy & Practice*, 15.
- Ghumre,S., Dharamraj K Veer & Kalbande,D.T.,(2013). "Expenditure of College Library Budgets in Marathwada Region: A case Study In: *International Journal of Digital Library Services (IJODLS)*. Jan-March 2013, Vol.3 Issue. 1:PP.23-32. ISSN NO: 2250-1142.
- Tiwari, B., & Sahoo, K. (2013). Infrastructure and Use of ICT in University Libraries of Rajasthan (India). *Library Philosophy & Practice*, 1-16.

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USE OF THE ONLINE PUBLIC ACCESS CATALOGUE IN AGRICULTURAL UNIVERSITY

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QR Code

Abstract: - *This paper examines Online Public Access Catalogue of MPKV University Library, Rahuri. OPAC is an information retrieval system, has revolutionized access to bibliographic information through search capabilities such as keyword searching, Boolean searching, truncation, proximity searching, and item identity number searches. The paper discusses various aspects of OPAC such as how to search, options of OPAC use etc., application of open source software (Koha) as a form of resource sharing tool and a single authoritative source of MPKV University library resources.*

Keywords : ***Open Source Software, Online Catalogue, Library Networks, Koha, Document Delivery, OPAC.***

INTRODUCTION

During the recent period quite a large number of libraries and information centers are forming union catalogue for sharing the resources among the participating Libraries. The advent of computer networking as an accepted part of the library and information infrastructure has had a very significant impact on the way in which library and information systems are perceived. India is thus on the threshold to a new era of computer communication networks both for general purposes and for library and information purposes. The following principles are motivated behind the union catalogue:

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- ❖ Maximizing the utilization of existing information resources / collection by sharing
- ❖ Providing speedy access to information resources located at different places through communications channels for mutual benefit.
- ❖ To avoid duplication in the information process and control over the collection.

The escalating cost of information resource materials, increasing cost of processing documents and their information contents, decreasing budgets in terms of real worth and wide use of computers have also contributed to the development of union catalogue.

CONCEPT OF UNION CATALOGUE

Union catalogue in the broader sense can be any formalized system of information exchange. But, in modern union catalogue, technology is utilized to link libraries, specialized data resources, or individuals to the persons or institutions in need of information. An union catalogue usually consists of a formal arrangement whereby materials, information, and services provided by a variety of libraries and other organizations are available to all potential users. Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them tonic document sources in MPKV University library.

OBJECTIVES

1. To develop a union catalogue database of print and electronic document sources in MPKV Library.
2. To provide bibliographic access to the information resources available in the University Library.
3. To utilize the resources in a better way, by disseminating the specific areas of interest available in the region.
4. To generate new services and to improve the efficiency of existing ones.
5. To develop forums for interaction among information professionals and users and thereby, helping them seeking solutions to common problems.
6. To promote and support adoption of standards in library operations.
7. To provide a common platform for document supply requests.

REVIEW OF LITERATURE

Banieghbal (2001) investigated the situation of 34 libraries affiliated with Tehran University in terms of their organizational structure, information and human resources, and facilities and services. Also examines the feasibility of establishing an information network, and discusses the grounds for cooperation among libraries and its impact on resource sharing in order to offer information services more

effectively and quickly. Finally established an information network among libraries affiliated with Tehran University could considerably improve the status of information and technical services. describes the Penang Library Network (PLN) is a network of private and public higher education libraries formed with the aim of bringing Penang"s citizens to the forefront of uniform access to a knowledge warehouse through the use of information and communication technologies. Khan (2005) describes the resource sharing and networking activities among universities in Pakistan in 2005. The Pakistan Education and Research Network connect all the public and private universities in the nation through a high-speed network. It allows real time transfer of audio and video, multimedia-enabled lectures and remote research partnership. Zhang (2009) describes the construction of resource library based network teaching platform of English extensive reading course is the actual manifestation of the rapid development of network communication technology and multimedia technology. The network-teaching platform mainly is composed by curriculum-teaching platform, the management system and auxiliary teaching resource library.

SCOPE

MPKV library have already computerized their housekeeping operations and have created bibliographical databases of their collections. MPKV will develop a resource-sharing model. MPKV Library can avail inter-library loan and document delivery services. The study also aims at collects academic and research interest of the user. The bibliographic records of Books will be updated in union catalogue of books under ICAR-e-Granth Project. The author has given an overview of proposed network model.

METHODOLOGY

The methodology employed for developing MPKV is outlined as follows;

Technology Platform

- Linux operating system: Linux li355-94
- Open source library management system: KOHA
- Database: MySQL Ver. 14.14
- Programming Language: Perl
- Server Version: Apache/2.2.17
- Search engine: Zebra

The online union catalogue has developed based on open source software. KOHA Open Source Integrated Library Automation Software has installed at the University Central Library. Koha library management system modules were customized for online union catalogue model. Metadata was created as to the MARC 21 format and multiple library databases were created. 1,09,764. Bibliographic records pertinent to selected library surveyed were converted into MARC 21 format and the same has been imported into KOHA.

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The following MARC tag has been used to describe the respective records

Tag Name	Description
082$a	Call No
100$a	Personal Author Name
245$a	Title of the Book
250$a	Edition Statement
260$a	Place of Publication
260$b	Name of Publisher
260$c	Date of Publication
850$c	Holding Institution
942$c	Item Number
952$a	Home Branch
952$b	Holding Branch
952$p	Accession No
952$0	Available
952$c	Shelving Location
952$g	Price

MPKV – HOME PAGE

The below picture is a main page of MPKV Library web and it gives the information about all types of resources available with the libraries and instructions to search the catalogues effectively.

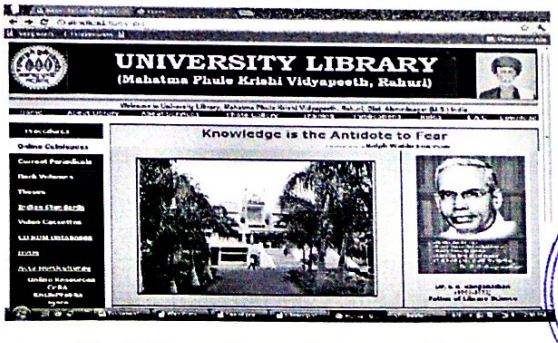

Fig:1 Home Page of MPKV Library

SEARCH / BROWSE INTERFACE

This user interface allows the faculty and students to search the bibliographic details of books, journals and other bibliographic records from MPKV server. There are eight search fields are given such as Keyword, Subject, Title, Author, Publisher, Publisher Location, ISBN and Barcode.

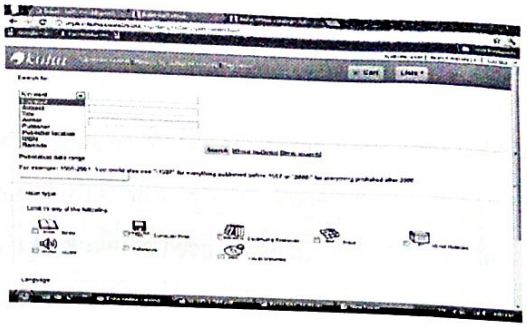

Fig. 2 : Opening Screen of the mpkv user interface

DISPLAY OF OPAC OUTPUT

OPAC and online union catalogue of mpkv can be accessed and viewed by selecting field name then enter the search term and click on 'search' button. It will show all the bibliographic record of books on the basis of search term with respect to search field. Book jacket is also enabled for better visualization. As shown on below fig.3.

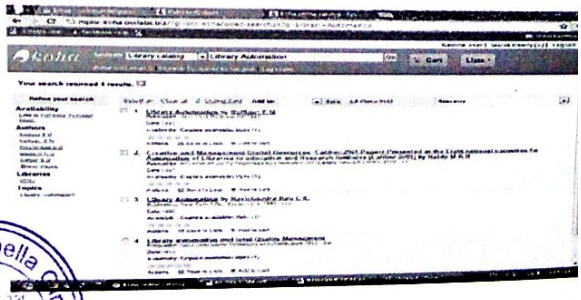

Fig. 3 : OPAC – Output Search

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SELECTION OF LANGUAGE AND TYPE OF DOCUMENTS

Unicode system has been enabled in this networked model to search user's respective language, also can select / search the resources by selecting the library database for a quick retrieval. As shown below fig 4.

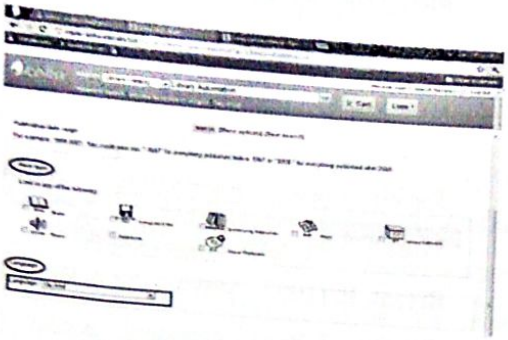

Fig. 4 : Selection of Type of documents and Language - OPAC Search Screen

BIBLIOGRAPHIC DETAILS AND ITS LOCATIONS

The below figure displays the bibliographic details of a selected record with its available locations like institution name, status, call number and other relevant information.

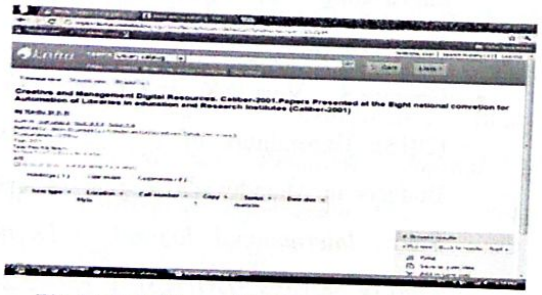

Fig. No 5: Bibliographic Details and its Location

SERVICES PROVIDED BY MPKV LIBRARY

- The Union Catalog is a source for searching for and finding a particular document, or gathering information about documents concerning certain topics that are available in the institutions of this region.
- Provision of reference and inter-library services, i.e. sending a loan request to ILS, where the identifying data for a library are generated from the directory and the document data from the record in the Union Catalog;
- The Union Catalog allows the user to locate the library that holds the document in question, and possibly also to obtain detailed data about the documents shelf mark, usually facilitating the borrowing of the document.
- The Union Catalog makes it possible to act on a request to borrow a document or request its copy (Inter-library Loan Service—ILS).

FUTURE PLAN

1. All databases of constituent colleges are to be incorporated in Union Catalogue
2. Institutional Repository is to be linked to the Union Catalogue
3. AgriCat and WorldCat (OCLC) is to be linked to the Union Catalogue

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CONCLUSION

The free flow of information and knowledge is a basic prerequisite for the development of modern societies. The coordinated creation of and access to library catalogs, relying on modern technology, make significant contributions to the society development. Long-term practice supports the belief that one of the most effective instruments for promoting the free flow of knowledge is the union catalog and the best method for creating it is cooperative cataloging, which is labor-saving and contributes to the quality education. The fundamental principle in creating a union catalog is the controlled harvesting of data of the broadest possible scope, with the aim of creating a concentrated information base and a qualitatively and quantitatively rich source of secondary documents (records). This principle, if followed, allows for the introduction and development of additional services for the users of libraries and information institutions, as well as for librarians themselves. This kind of initiative in regional and root level would integrate the rich information environment with ease access of sustained quality in Library and Information Services.

REFERENCES

- Alam, M.N., and Pandey, P. (2010). SpaceCat: An online union catalogue for space science serials in India. *Interlending and Document Supply,* 38(4):200- 209.
- Athavale S. Kalbande, D.T. & Hemke, D. (2018). Agricultural College Library Budget: A Statistical Overview. *Knowledge Librarian An International Peer Reviewed Bilingual E-Journal of Library and Information Science.* (05),02, Mar. – Apr. 2018 Pg. No. 177-192.
- Avram, Henriette D. and McCallum, Sally H. (1980). Directions in Library Networking. *Journal of the American Society for Information Science,* 31(6):438-444.
- Bryant, P. (1997). Making the most of our libraries. Library catalogue access--the issues and the opportunities. *Library Review,* 46(8):554-560.
- Chand, P., & Chaudhan, S. K. (2008). The union catalogue of academic libraries in India: an initiative by INFLIBNET. *Interlending & Document Supply,* 36(3):142-148.
- Chelak, A., & Azadeh, F. (2010). The development of union catalogues in Iran: the need for a web based catalogue. *Interlending & Document Supply,* 38(2):118-125.
- Ghumre,S., Veer,D.K. & Kalbande,D.T., (2013). Expenditure of College Library Budgets in Marathwada Region: A case Study. *International Journal of Digital Library Services (IJODLS).* I. (3):PP.23-32.
- Golwal,M.D, Kalbande,D.T. & Chavan,S.P. (2012). Role of LIS Professionals in Today's Digital Era.

Aarhat Multidisciplinary International Education Research Journal(AMIERJ). 1 (2). Pp. 132-140.

- Golwal,M.D. & Kalbande,D.T (2013). Security Measures to Control Vandalism in Engineering College Libraries. *International Journal of Emerging Trends in Library and Information Society,* 1 (3). Pp. 273-284.
- Golwal,M.D. and Kalbande,D.T.(2012). Right to Information, Information Literacy & Public Libraries. *Asia Pacific Journal of Management and Entrepreneurship Research. (Special Issue on Human Rights).* 1(1).P.p 89-99.
- Golwal,M.D., Kalbande,D.T & Sonwane,S.S. (2012). Lis Professionals and Role of Facebook: Social Networking Site in Awareness. *Barzillian Journal of Information Science,* 6 (1). Pp. 79-92.
- Kalbande, D. T and Chavan, S. P. (2017). ICT Infrastructure Facility in Agricultural College Libraries in Maharashtra: A Study. *International Journal of Digital Library Services.* Vol.7 No.4, 45-55 pp.
- Kalbande, D. T and Chavan, S. P. (2017). ICT Skills among Agricultural College Librarians: A Comparative Study. *International Research: Journal of Library & Information Science.* Vol.6 No.4, 674-682 pp.
- Kalbande, D. T and Chavan, S. P. (2018). Status of Library Automation in Agricultural College Libraries. *Knowledge Librarian.* Special Issue 2018, 364-371 pp.
- Kalbande, D. T and Chavan, S. P. (2018). Status of Library Automation in Agricultural College Libraries. *Knowledge Librarian.* Special Issue 2018, 364-371 pp.
- Kalbande, D. T. (2018). Resource Sharing and Networking in Agricultural College Libraries Under Jurisdiction of Mahatma Phule Krishi Vidyapeeth: A Study. *International Research: Journal of Library & Information Science.* Vol.8 No.1, (March 2018) 100-113 pp.
- Kalbande,D.T & Chavan, S.P. (2015). Use of Digital Library Resources by Faculty Members: A Case Study. *International Research Journal of Library & Information Science (IRJLIS),* 5 (1). Pp. 28-38.
- Kalbande,D.T & Dr. S.P. Chavan (2015). Use of Digital Library Resources by Faculty Members: A Case Study. *International Research Journal of Library & Information Science (IRJLIS),* Vol. 5 No 1. Pp. 28-38.
- Kalbande,D.T. (2012). Institutional Repositories in India: An Overview. *Online International Interdisciplinary Research Journal.* 2 (4). Pp.194-203.
- Kalbande,D.T. (2013). Collection of Prof. S Seetharama Information Centre: A

Bibliometric Study. *e-Library Science Research Journal*, 1(3). Pp. 1-8.

- Kalbande,D.T., Chavan,S.P. & Golwal, M.D. (2012). Use of CD ROM Databases: A Case Study. *International Journal of Library and Information Studies*, 2 (3). Pp. 55-62.
- Kalbande,D.T., Golwal,M.D & Chavan,S.P. (2013). Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. *International Journal of Digital Information & Knowledge Management*, 1 (2). Pp. 63-72.
- Kalbande,D.T., & Sonwane, S.S. (2012). Citation Analysis of Ph.D Thesis on Economics Submitted to Babasaheb Ambedkar Marathwada University. *Electronic International Interdisciplinary Research Journal (EIIRJ)*. 1 (3): PP.17-36.
- Kalbande,D.T., & Sonwane,S.S.(2011). Information Seeking Behavior of the students at MPKV,Rahuri (M.S): A case Study. *International Journal of Digital Library Services (IJODLS)*. 1 (2):PP.21-31.
- Kalbande,D.T., Shinde,P.A. & Ingle,R.N. (2013). Use of E-Resources by Faculty Members: A Case Study. *International Research Journal of Library and Information Science (IRJLIS)*. 3 (3). Pp.459-469.
- Kalbande,D.T., Sonwane, S.S. & Golwal,M.D. (2012). The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study. *International Research Journal of Library and Information Science (IRJLIS)*. 2 (1). Pp.65-75.
- Kalbande,D.T., Syed, F.M., & Sonwane, S.S. (2012). Use of Consortium for E-Resources In Agriculture (CERA): A Case Study. *International Journal of Library and Information Studies*, 2 (1). Pp. 33-41.

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AGRICULTURAL COLLEGE LIBRARY BUDGET: A STATISTICAL OVERVIEW

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Abstract: - *The objective of the present research paper is to highlight Agricultural college library budgets under the jurisdiction of Mahatma Phule Agricultural University, Rahuri. It includes expenditure of library budgets under varies heads. The present study has various aspects. One of them is the assessment of the present budgetary status of Agricultural college libraries and to find out need of change, to suggest practical solutions to the prevailing problems of the college libraries with the help of the questionnaire method, the questionnaire was sent to all 49 Agricultural College Libraries along with self addressed duly stamped envelope with return postage by the researcher. The respondents were asked to return the questionnaire within 3 Months. Out of 49 only 40 (81.63%) questionnaires were received within a stipulated period.*

Keywords : Agricultural Libraries, Library Budget, Print Resources, E-Resources.

1. INTRODUCTION

The central Campus of MPKV , Rahuri is located about 35km. away from Ahmednagar on State Highway No.19 leading to Manamad. The Jurisdiction of MPKV, Rahuri extends over Western Maharashtra consisting of 10 districts viz., Jalgoon, Dhule, Nandurbar, Nashik, Ahmednagar, Pune, Solapur, Satara, Sangali and Kolhapur. The unique feature of this university jurisdiction is the wide variability in agro-climatic conditions of farming. Four out of nine agro-climatic zones of Maharashtra fall in this region. These are Western Ghat Zone, Sub-montance Zone, Western Maharashtra plain zone and scarcity zone. The total geographical area distributed among the 10 districts of this university is about 116 lakh ha (37.5 % of total geographical area of State). Out of this, about 72

lakh ha (62.4%) area is under cultivation. The area under kharif cropping is about 42 lakh ha (58%) while in rabi, it is about 30 lakh ha (42%) the Total irrigated are is 13 lakh ha (18%).

To improve library services there is a need of the sufficient Library budget. For the access of the e-books, e-journals, Online Databases, and other resources include journal articles, electronic text, images, video and audio files, scientific and technical data and so on. There has been a voluminous growth of published documents in the recent and past. Henceforth to fulfill users need there is a need of the required budget to the library.

2. OBJECTIVE OF THE STUDY:

The present study is undertaken with the following objectives:

a) To examine the budgetary provision of libraries.

c) To study the Expenditure of the budgets under varies heads.

3. SCOPE AND LIMITATIONS

The population of the study mainly comprised 40 Affiliated and Constituents Agricultural Colleges of Mahatma Phule Krishi Vidyapeeth, Rahuri, which have responded to the questionnaire sent.

4. RESEARCH METHODOLOGY

Present study was done with the help of survey method. "The survey method is one of the most effective and sensitive instruments of research …survey research can produce much needed knowledge." (Kasyap, 1969).

5. DATA ANALYSIS AND INTERPRETATION:-

Table No. 1 Range of Library Budget of 2014-15 in (RS)

Sr. No	Budget	No of Libraries	Percentage
1	1000-50000	1	2.5
2	50001-100000	12	30
3	100001-150000	4	10
4	150001-200000	6	15
5	200001-250000	3	7.5
6	250001-300000	3	7.5
7	300001-350000	1	2.5
8	350001-400000	2	5
9	400001-450000	0	0
10	450001-500000	3	7.5
11	500001-550000	0	0
12	550001-600000	0	0
13	600001-650000	2	5
14	Above 650001	3	7.5
	Total	**40**	**100**

The table 1 shows the Library Budget for the year 2014-2015 in Rs. It reveals that out of the total 40 libraries only 1 (2.5%) libraries Budget has in the range Rs.1000-50000, followed by12 (30%) libraries Budget have in the range of Rs.50001-100000. It is also shows that 6 (15%)

Table No. 2 Library Budget on Print Resources in 2011 to 2014

Library Code	Books			Periodicals			Back Volumes			Magazines			Other			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
A	3394074	2795316	504785	0	0	0	15000	0	7000	3000	5000	2000	0	0	0	6726175
B	2636941	1738423	800000	45000	49900	40000	0	0	0	15000	20000	25000	0	0	0	5370264
C	4678316	3925320	2000000	95431	116403	15000	46725	0	0	0	0	0	0	0	0	10877195
D	2000000	2300000	1000000	500000	500000	350000	0	0	0	10000	10000	10000	0	0	0	6680000
E	0	0	1000000	0	0	50000	0	0	0	0	0	0	0	0	0	1050000
F	0	0	1000000	0	0	50000	0	0	0	0	0	0	0	0	0	1050000
G	35000	35000	35000	5000	5000	5000	5000	5000	5000	0	0	0	0	0	0	135000
H	235000	320000	380000	12000	18000	18000	30000	30000	33000	32000	30000	30000	80000	100000	130000	1478000
I	150000	175000	100000	50000	60000	70000	0	0	0	0	0	0	0	0	0	605000
J	40000	35000	65849	0	0	0	0	0	0	10000	10000	10000	0	0	0	170849
K	10000	100000	200000	4000	4000	4000	0	0	0	4000	4000	4000	0	0	400000	734000
L	50000	75000	80000	70000	9000	10000	0	0	0	5000	8000	15000	0	0	0	322000
M	150000	300000	400000	10000	15000	15000	0	0	0	1500	2000	2000	0	0	0	895500
N	300000	350000	400000	40000	50000	60000	5000	5500	6000	4400	5200	6200	0	0	0	1232300
O	0	25380	4160	0	0	437	0	0	0	0	0	5439	0	0	2315	37731
P	39631	39420	39165	0	0	0	0	0	0	0	0	5939	0	0	2315	126470
Q	100000	100000	100000	20000	20000	20000	10000	10000	10000	0	0	0	0	0	0	390000
R	145000	250000	300000	0	0	0	0	0	0	10000	10000	10000	0	0	0	725000
S	45766	90885	121339	30526	21720	24040	0	0	0	0	0	0	0	0	0	334276
T	170000	200000	250000	10000	11500	12000	1500	2000	2500	2500	2700	3300	0	0	0	668000
U	200000	250000	300000	0	30000	30000	0	0	0	0	0	0	0	0	0	810000
V	70840	78583	90978	12560	10340	18298	0	0	0	7000	5000	7890	0	0	0	301489

Library Code	Books			Periodicals			Back Volumes			Magazines			Other			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
W	22356	81579	317115	5800	6820	15720	0	0	0	0	0	0	0	0	0	449390
X	43487	49575	78989	6540	7990	12578	0	0	0	7863	9990	9990	0	0	0	227002
Y	200000	345000	400000	10000	18000	25000	30000	35000	35000	38000	40000	50000	10000	12000	15000	1263000
Z	113985	46762	38780	0	0	0	10000	0	0	1500	1600	3000	0	0	0	215627
AA	43444	20500	70300	3000	2000	5000	0	0	0	2300	4300	7000	0	0	0	157844
AB	38900	470000	52500	7000	9000	12000	0	0	0	3400	6300	7900	0	0	0	607000
AC	75000	85000	120000	10000	15000	25000	5000	0	0	2000	2000	2000	0	0	0	341000
AD	125000	300000	300000	10000	15000	15000	0	0	0	1500	2000	2000	0	0	0	770500
AE	45500	23300	78000	4000	6000	9000	0	0	0	7000	9000	5000	0	0	0	186800
AF	35000	47970	32765	0	0	0	0	0	0	1000	1300	1000	800	2800	1000	123635
AG	13764	52742	127000	0	0	0	0	0	0	600	600	1000	0	0	0	195706
AH	50000	60000	40000	5000	3000	7000	0	0	0	2000	0	2000	0	0	0	169000
AI	0	70000	80000	0	10000	12000	0	5000	5000	0	2000	2000	3000	0	0	189000
AJ	0	50044	79000	0	0	0	0	0	0	0	0	5000	0	0	0	134044
AK	0	30000	89000	0	20000	20000	0	0	0	0	0	0	0	0	0	159000
AL	0	0	27350	0	0	14000	0	0	0	0	0	0	0	0	0	41350
AM	0	0	300000	0	0	7000	0	0	0	0	0	0	0	0	10000	317000
AN	0	0	100000	0	0	10000	0	0	0	0	0	0	0	0	0	110000

In the table no. 2 researchers evaluated that the total budgets spent on the print resources in the year of 2011-14. And it is found that out of the all 40 libraries all the libraries spent their budgets on the Text books as well as on the on the Current Periodicals. The Constituents College Libraries (Code A to F) have very high budgets with compare to the Self financed college libraries. In the Constituents colleges Mahatma Phule Krishi Vidyapeeth Library has on Rank first with the budget of Rs. 1, 08, 77,195.And they have spent the budget on books, current periodicals. Followed by Agriculture College Library with Rs.67, 26,175.

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In the self financed colleges only few libraries have spent good budgets on the print resources in the year of 2011-2014. i.e Pad. Dr. D.Y. Patil Agriculture College of Business Management on rank first with Rs.14,7800, Followed by Loknete Mohanrao Kadam College of Agriculture on rank second with Rs.12,32,300, and other all self financed libraries (Code G to AN) have below 10 Lacks budgets spent of the Print resources in the year of 2011-2014.

Table No. 2.1 Range of Library Budgets in Lacks on Print Resources (2011-2014)

Sr. No	Budget in Rs.	No of Libraries	Percentage
1	100000-200000	14	35
2	200001-300000	2	5
3	300001-400000	6	15
4	400001-500000	1	2.5
5	500001-600000	0	0
6	600001-700000	3	7.5
7	700001-800000	3	7.5
8	800001-900000	2	5
9	900001-100000	0	0
10	100001-110000	2	5
11	110001-120000	0	0
12	120001-130000	2	5
13	130001-1500000	1	2.5
14	Above 1500001	4	10
	Total	**40**	**100**

The table 2.1 shows the Library Budget in Lacks on Print Resources in the year of 2011-2014. It reveals that out of the total 40 libraries 14 (3.5%) libraries Budget has in the range of Rs.100000-200000, followed by 6 (15%) libraries Budget have in the range of Rs. 300001-400000. It also shows that 3 (7.5%) libraries Budget have in the range of Rs.600001-700000.

Table No.3 Library Budget on E-Resources in 2011 to 2014

Library Code	E-Books			E-Journals			CD/DVD ROM Databases			Other Educational CD/DVD			Other			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
A	0	204426	0	49050	0	0	20000	15000	0	31158	0	0	0	0	0	319634
B	0	680458	0	0	406659	38800	0	6300	0	15000	265400	0	0	0	0	1412617
C	4098080	0	0	1000000	0	700000	0	1726663	0	0	0	0	0	0	0	7524743
D	270000	500000	200000	0	0	0	0	0	0	500000	700000	0	500000	200000	100000	2970000
E	200000	0	0	700000	0	700000	0	0	0	0	0	0	0	0	0	1600000
F	200000	0	0	0	0	700000	0	0	0	0	0	0	0	0	0	900000
G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Library	E-Books			E-Journals			CD/DVD ROM Databases			Other Educational CD/DVD			Other			Total

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Code	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
Q	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AF	0	0	0	0	0	0	0	0	0	2000	4000	5000	0	0	0	11000
AG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Library	E-Books			E-Journals			CD/DVD ROM Databases			Other Educational CD/DVD			Other			Total

Code	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
AI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

In the research it is investigated that in table No. 3 library budgets spent under the head of E-Resources that is E-Books, E-Journals, CD/DVD ROM Databases and Educational CD's and DVD's. And it is found that only Constituents College Libraries (Code A to F) spent their budgets on the purchasing of E-Resources in the year of 2011-14. Mahatma Phule Krishi Vidyapeeth Library spent total Rs. 29, 70,000, followed by Agriculture College of Pune with the budget of Rs.3, 19,634.

If we see the status of the self financed college libraries (Code G to AN) only one library spent their budget on purchasing of the Educational CD'S and DVS's that is only Rs.11,000, and other 33 self financed libraries have 0 budget in the year of 2011-14 under the head of E-Resources.

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Table No. 3.1 Range of Library Budget on E-Resources in 2011 to 2014 (In Rs.)

Sr. No	Budget in Rs.	No of Libraries	Percentage
1	0	33	28.33
2	1-100000	1	3.75
3	100001-200000	0	3.75
4	200001-300000	0	5.00
5	300001-400000	0	6.25
6	400001-500000	1	8.75
7	500001-600000	0	8.75
8	Above 600001	5	16.25
	Total	**40**	**100.00**

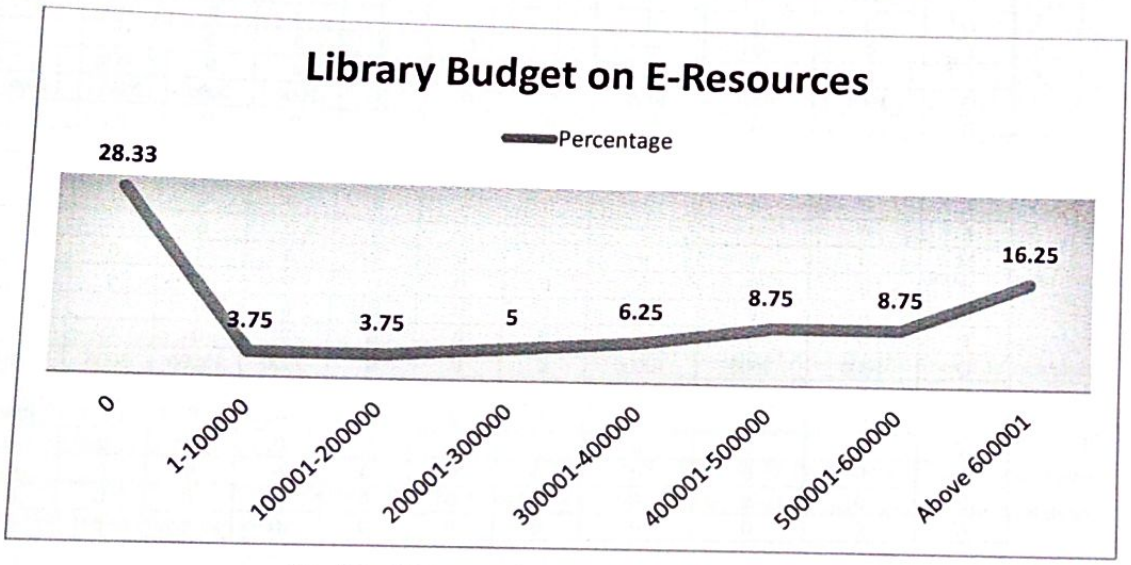

Fig No.1 Library Budget on E-Resources

The table no. 3.1 and fig. No. 1 shows the Library Budget in Lacks on E-Resources (2011-2014). It is reveals that out of the total 40 libraries 33 (28.33%) libraries Budget have0, followed by 5 (16.25%) libraries Budget have Above Rs. 500001. It is also shows that 3 (7.5%) libraries Budget have in the range of Rs.600001-700000, while only 1 (2.5%) libraries Budget has in the range of Rs. 300001-400000 in the year of 2011-14.

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Table No. 4 Library Budget on Academic Activities in 2011 to 2014

Library Code	Conferences			Training			Workshop			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
A	0	0	0	2000	0	7000	0	0	0	9000
B	0	0	0	0	0	0	0		0	0
C	50000	0	0	0	0	0	0	0	10000	60000
D	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0
G	3000	3000	3000	0	0	0	2000	2000	2000	15000
H	0	0	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0	0	0	0
K	0	0	0	0	0	0	0	0	0	0
L	0	0	0	0	0	0	0	0	0	0
M	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0
O	0	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0	0
Q	5000	7000	10000	0	0	0	7000	15000	3000	47000
R	0	0	0	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	1000	1000
T	0	0	0	0	0	0	0	0	0	0
U	0	0	0	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0

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Library Code	Conferences			Training			Workshop			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
X	0	0		0	0	0	0	0	0	0
Y	0	0	0	0	0	0	0	0	0	0
Z	0	0	0	0	0	0	0	0	0	0
AA	0	0	0	0	0	0	0	0	0	0
AB	0	0	0	0	0	0	0	0	0	0
AC	0	0	0	0	0	0	0	0	0	0
AD	0	0	0	0	0	0	0	0	0	0
AE	0	0	0	0	0	0	0	0	0	0
AF	0	0	0	0	0	0	0	0	0	0
AG	0	0	0	0	0	0	0	0	0	0
AH	0	0	0	0	0	0	0	0	0	0
AI	0	0	0	0	0	0	0	0	0	0
AJ	0	0	0	0	0	0	0	0	0	0
AK	0	0	0	0	0	3000	0	0	2000	5000
AL	0	0	0	0	0	0	0	0	0	0
AM	0	0	0	0	0	0	0	0	0	0
AN	0	0	7000	0	0	0	0	0	3000	10000

In the research it is evaluated that in table No.4 library budgets under the head of Academic Activities i.e Conference, Seminar, Workshop, Trainings etc..For attending as well as organizing. And it is found that out of 40 Agricultural College Libraries only 7 (17.5%) libraries have provision and 33 (82.5%) don't have budgets on academic activities in the year of 2011-14. Mahatma Phule Krishi Vidyapeeth Library spent total Rs.60,000, followed by Padmashree Dr. Appasaheb Pawar College of Agriculture Library, Baramati with the budget of Rs.47,000 for the attending and organizing the workshops, seminars and training programmes.

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Table No.4.1 Range of Library Budget on Academic Activities in 2011 to 2014

Sr. No	Budget in Rs.	No of Libraries	Percentage
1	0	33	82.5
2	1001-5000	1	2.5
3	50001-10000	3	7.5
4	10001-15000	1	2.5
5	Above 15001	2	5
	Total	**40**	**100**

The table 4.1 shows the Library Budget on Academic Activities in (2011-2014).It reveals that out of the total 40 libraries 33 (82.5%) libraries Budget have0, followed by 3 (7.5%) libraries Budget have in the range of Rs. 50001-10000. It also shows that 2 (5%) libraries Budget have in the range of Rs. Above-15001, while only 1 (2.5%) library's budget is in the range of Rs.10001-150000.

Table No.5 Library Budget on Hardware/ Software & ICT Infrastructure.

Library Code	Hardware / Software			ICT Infrastructure			Total
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	
A	0	0	61726	550516	574163	681090	**1867495**
B	0	0	0	64000	99281	25000	**188281**
C	120000	500000	600000	119392	753764	0	**2093156**
D	600000	500000	100000	700000	900000	150000	**2950000**
E	0	0	85000	0	0	155900	**240900**
F	0	0	85000	0	0	155900	**240900**
G	30000	45000	50000	10000	0	0	**135000**
H	20000	50000	0	150000	0	70000	**290000**
I	50000	25000	0	70000	70000	0	**215000**
J	0	0	0	0	0	0	**0**
K	0	0	15000	0	0	0	**15000**
L	0	0	0	0	0	0	**0**
M	0	33000	0	0	0	0	**33000**
N	0	0	0	0	0	0	**0**
O	0	0	0	0	0	0	**0**
P	0	0	0	0	0	0	**0**

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Q	30000	0	0	100000	75000	80000	**285000**
R	0	0	0	0	0	0	**0**
S	0	0	0	0	0	0	**0**
T	0	0	0	0	0	0	**0**
U	0	50000	225000	0	50000	100000	**425000**
V	48000	35000	43000	23000	21500	17890	**188390**
W	0	0	0	0	0	0	**0**
X	0	0	0	0	0	0	**0**
Y	0	0	0	0	0	0	**0**
Z	50000	50000	75000	0	0	0	**175000**
AA	0	0	0	0	0	0	**0**
AB	30000	0	0	25000	0	15000	**70000**
AC	35000	25000	0	0	0	0	**60000**
AD	0	0	0	0	0	0	**0**
AE	0	0	0	0	0	0	**0**
AF	0	0	20000	0	0	0	**20000**
AG	0	0	0	0	0	0	**0**
AH	30000	0	50000	20000	0	10000	**110000**
AI	0	30000	20000	0	0	0	**50000**
AJ	0	0	85000	0	0	80000	**165000**
AK	0	0	85000	0	0	45000	**130000**
AL	0	0	30000	0	0	35000	**65000**
AM	0	0	430000	0	0	200000	**630000**
AN	0	0	30000	0	0	78000	**108000**

The table No.5 shows library budgets on Hardware, Software and Information Communication Technology, it reveals that out of 40 Agricultural College Libraries only 15 (37.5%) libraries have provision and 25 (62.5%) have not spent budgets on purchasing of the Hardware, Software and ICT Infrastructure in the year of 2011-14. College of Agriculture Dhule Library spent total Rs.29, 50,000, followed by Mahatma Phule Krishi Vidyapeeth Library with the budget of Rs.20, 93,156for the purchasing Hardware, Software & ICT Tools.

Table No. 5.1 Range of Budget on Hardware/ Software & ICT Infrastructure in 2011-14 (In Rs.)

Sr. No	Budget in Rs.	No of Libraries	Percentage
1	0	15	13.33
2	1-100000	7	11.25
3	100001-1000000	15	37.50
4	1000001-2000000	1	5.00
5	2000001-3000000	2	7.50
	Total	**40**	**100.00**

The table 5.1 shows the range of Library Budgets spent on Hardware, Software and ICT Infrastructure. It reveals that out of the total 40 libraries 15 (13.33%) libraries Budget have Rs.0; followed by 7 (11.25%) libraries Budget is in the range of Rs.1-100000. It is also shows that 2 (7.50%) libraries Budget is in the range of Rs. above-2000001-3000000, while only 1 (5%) libraries Budget is in the range of Rs. 1000001-2000000.

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7. CONCLUSIONS AND IMPLICATIONS

1. Out of the all 40 libraries all the libraries spent their budgets on the Text books as well as on the on the Current Periodicals. The Constituents College Libraries (Code A to F) have very high budgets with compare to the Self financed college libraries. In the Constituents colleges Mahatma Phule Krishi Vidyapeeth Library is on Rank first with the budget of Rs. 1, 08, 77,195 and have spent the budget on books, current periodicals. Followed by Agriculture College Library with Rs.67, 26,175.
2. It is observed that only Constituents College Libraries (Code A to F) spent their budgets on the purchasing of E-Resources
3. All libraries were spending more on books compared to periodicals, binding, furniture, computers etc.

REFERENCES:-

1. MCAER, (2011). The Academic Regulations for the award of Bachelor's Degree, 84th Meeting Report. Held on 24/02/2011. Pp.1-16.
2. Kasyap, M M (1969). Planning of survey. *Library Herald*, 2 (1&2): 195-199.
3. Kalbande,D.T & Chavan, S.P. (2015). Use of Digital Library Resources by Faculty Members: A Case Study. *International Research Journal of Library & Information Science (IRJLIS)*, 5 (1). Pp. 28-38.
4. Kalbande,D.T. (2012). Institutional Repositories in India: An Overview. *Online International Interdisciplinary Research Journal*. 2 (4). Pp.194-203.
5. Kalbande,D.T. (2013). Collection of Prof. S Seetharama Information Centre: A Bibliometric Study. *e-Library Science Research Journal*, 1(3). Pp. 1-8.
6. Kalbande,D.T., Golwal,M.D & Chavan,S.P. (2013). Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. *International Journal of Digital Information & Knowledge Management*, 1 (2). Pp. 63-72.
7. Kalbande,D.T., Chavan,S.P. & Golwal, M.D. (2012). Use of CD ROM Databases: A Case Study. *International Journal of Library and Information Studies*, 2 (3). Pp. 55-62.
8. Kalbande,D.T., & Sonwane,S.S.(2011). Information Seeking Behavior of the students at MPKV,Rahuri (M.S): A case Study. *International Journal of Digital Library Services (IJODLS)*. 1 (2):PP.21-31.
9. Kalbande,D.T., & Sonwane, S.S. (2012). Citation Analysis of Ph.D Thesis on Economics Submitted to Babasaheb Ambedkar Marathwada University.

Electronic International Interdisciplinary Research Journal (EIIRJ). 1 (3): PP.17-36.

10. Kalbande,D.T., Sonwane, S.S. & Golwal,M.D. (2012). The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study. *International Research Journal of Library and Information Science (IRJLIS).* 2 (1). Pp.65-75.
11. Kalbande,D.T., Shinde,P.A. & Ingle,R.N. (2013). Use of E-Resources by Faculty Members: A Case Study. *International Research Journal of Library and Information Science (IRJLIS).* 3 (3). Pp.459-469.
12. Kalbande,D.T., Syed, F.M., & Sonwane, S.S. (2012). Use of Consortium for E-Resources In Agriculture (CERA): A Case Study. *International Journal of Library and Information Studies*, 2 (1). Pp. 33-41.
13. Golwal,M.D. & Kalbande,D.T (2013). Security Measures to Control Vandalism in Engineering College Libraries. *International Journal of Emerging Trends in Library and Information Society*, 1 (3). Pp. 273-284.
14. Golwal,M.D, Kalbande,D.T. & Chavan,S.P. (2012). Role of LIS Professionals in Today's Digital Era. *Aarhat Multidisciplinary International Education Research Journal(AMIERJ).* 1 (2). Pp. 132-140.
15. Golwal,M.D. and Kalbande,D.T.(2012). Right to Information, Information Literacy & Public Libraries. *Asia Pacific Journal of Management and Entrepreneurship Research. (Special Issue on Human Rights).* 1(1).P.p 89-99.
16. Golwal,M.D., Kalbande,D.T & Sonwane,S.S. (2012). Lis Professionals and Role of Facebook: Social Networking Site in Awareness. *Barzillian Journal of Information Science*, 6 (1). Pp. 79-92.
17. Ghumre,S., Veer,D.K. & Kalbande,D.T., (2013). Expenditure of College Library Budgets in Marathwada Region: A case Study. *International Journal of Digital Library Services (IJODLS).* 1. (3):PP.23-32.
18. Kalbande, D. T and Chavan, S. P. (2018). Status of Library Automation in Agricultural College Libraries. *Knowledge Librarian.* Special Issue 2018, 364-371 pp.

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Resource Sharing and Networking in Agricultural College Libraries Under Jurisdiction of Mahatma Phule Krishi Vidyapeeth: A Study

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Abstract

No library today can be expected to directly hold all of the resources to fulfill all the needs of its users. Rather, most libraries supplement their local collections through resource-sharing arrangements that allow them to offer their clientele access to a broader universe of materials. Libraries participate in local, regional, or global services for the borrowing and lending of materials, supported by different types of organizational relationships and technical infrastructure. Hence in this paper is investigated that the librarians opinion regarding library networking and resource sharing as well willingness for sharing of various types of resources and academic activities. Present survey conducted in the month of January 2014 to December 2014 with the help of well sturctured questionair as well as personal interview.

Keywords: *Resource Sharing, Library Networking, Agricultural Libraries, Resources.*

Introduction

The library professional has never been exposed so much in past to the changing information scenario as it has been done now. In this age of information explosion, the technology has progressively replaced the old method of information collection, storage and retrieval. Today the walls of the library are giving way to electronic environments to establish links with information and virtual libraries that are getting shaped on the resource sharing and networking. Each individual library is acting as a place for storage and services to the users while the trend is to provide shared information to the users. Emphasis is given to access to information rather than owning it.

It is also possible to create their own institutional digital repositories by transforming their institutional publications which are in print. All this needs cooperation and support from the authorities of the colleges and active participate of library professionals.

Academic libraries in India have long desired one-stop shopping for their customers and in this electronic age their customers are demanding it to search from a single point at any physical location, and retrieve information from the library catalogue, citation form journal indexes and full text information electronic resources.

Review of Literature

Islam (2013)[1] studied the 29 research, university libraries from the Bangladesh & concluded that most of the libraries are participated in the resource sharing network as well he found the librarians have positive attitude towards the resource sharing. Breeding (2013)[2] in his document entitle "Introduction to resource sharing" highlighted the conceptual framework, procedure of the Inter Library loan services, consortial resource sharing, & work flow of the ILS in detailed with example as well as its importance in the present era because none of the library able to purchase the all documents published in the world due to fund, space, maintenance etc. however, Akparoabore (2013)[3] surveyed the 202 library processionals regarding to find out the motivational factors to knowledge sharing & it found that those librarians have 1-10 years experience used more technology for knowledge sharing. While, Thakur & Gupta (2012)[4] in their paper entitle "Knowledge Sharing: A tool for Networking" descried the Importance of the Knowldege Sharing in Short " The more you share the more knowledge you gain". Randor & Shrauger (2012)[5] explained the three models for providing access to e-books include borrowing, buying, and renting. Also some barriers faced by librarians for e-book resource sharing include reviewing local license agreements for e-books, gathering information on customer preferences, providing feedback to vendors and licensing librarians on customer needs. However, Islam (2012)[6] discussed the status of the academic & research libraries regarding Networking & Resource Sharing in the present era form the Bangladesh & he highlighted that most of the research libraries having fully automated libraries comparatively academic libraries the same position found in the participation in the resource sharing system via consortia based as well as personally. Hales (2012)[7] reported the impact of electronic resources on resource sharing. In this document author explored the historical development of Inter Library Loan, Legal Barriers of Inter Library Loan, Future of the ILL & resource sharing with the help of electronic resources in the present era its impact & usefulness, need of the resource sharing.

Objectives

1. To find out Opinion of Librarians regarding Networking and Resource Sharing.
2. To find out Willingness to Share Print Resources
3. To find out Willingness to Share Electronic Resources
4. To find out Willingness to Share Academic Activities.
5. To find out Methods using for Resource Sharing

Hypothesis

1. There is a significant difference in opinion of resource sharing activities among the libraries of 'constituents ', and 'self-financing' institutions.
2. There is a significant difference in willingness to share print resources among the libraries of 'constituents ', and 'self-financing' institutions
3. There is a significant difference in resource sharing methods among the libraries of 'constituents ', and 'self-financing' institutions.

Data Analysis & Interpretation

Resource Sharing & Networking

Table No. 1 Opinion on Resource Sharing & Networking Programme

Sr. No	Description	Yes	No
1	Resource sharing models are adequate for Libraries	30 (75)	10(25)
2	Resource sharing and Network activity in increasing becoming important into next Generation Libraries	38 (95)	2(05)
3	Would you like to share you Resources under Networking Programme	39(97.5)	1(2.5)

The table 1 shows the Opinion on Resource Sharing & Networking programme. It is reveals that out of the total 40 libraries 30(75%) respondents says Resource sharing models are adequate for Libraries and only 10 (25%) says its not adequate for libraries, however 38 (95%) librarians agree on the opinion of Resource sharing and Network activity in increasing becoming important into next Generation Libraries and only 2(05%) respondents are not agree, while 39 (97.5%) respondents like to share Resources under Networking Programme and 1 (2.5%) respondents disagree with this opinion.

Table No. 1.1Opinion on Resource Sharing & Networking Programme VS Category of Colleges

Sr. No	Opinions	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Yes	No	Yes	No		
1	Resource sharing models are adequate for Libraries	5 (83.33)	1(16.67)	25(73.53)	9(26.47)	0.611	0.435
2	Resource sharing and Network activity in increasing becoming important into next Generation Libraries	6(100)	0(0)	32(94.12)	8(5.88)		
3	Would you like to share you Resources under Networking Programme	6(100)	0(0)	33(97.6)	1(2.94)		

Note:-Chi-Sq = 0.611, DF = 1, P-Value = 0.435

The table 1.1 shows the Opinion on resource sharing & Networking programme VS Categories of the Colleges. It is reveals that All 6 (100%) constituents college libraries said Resource Sharing and Network activity in increasing becoming important into next Generation Libraries and they would like to share Resources under Networking Programme. It is also shows that 5 (83.33%) libraries say Resource sharing models are adequate for Libraries, while only 1 (16.67%) respondents not agree with the opinion of Resource sharing models are adequate for Libraries. It is also observed that the out of the total 34self financed colleges 25 (73.53%) libraries agree with Resource sharing models are adequate for Libraries and 9 (26.47%) libraries not agree, However 32 (94.12%) libraries said Resource sharing and Network activity in increasing becoming important

into next Generation Libraries and 8(5.58%) said it's not helpful to the next generation libraries. The chi-square test is also administered to test the hypothesis that **"There is a significant difference in opinion of resource sharing activities among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.435 is greater than level of significance. Hence the hypothesis is Invalid.**

Table No. 2 Willingness to Share Print Resources

Sr. No	Print Resources	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Books	32(80)	6(15)	1(2.5)	0(0)	1(2.5)
2	Reference Sources	22(55)	17(42.5)	0(0)	1(2.5)	0(0)
3	Current Periodicals	22(55)	11(27.5)	3(7.5)	3(7.5)	1(2.5)
4	Back Volumes	20(50)	14(35)	5(12.5)	1(2.5)	0(0)
5	Thesis/Dissertations	14(35)	14(35)	4(10)	5(12.5)	3(7.5)
6	Reprints/Preprints	10(25)	11(27.5)	8(20)	7(17.5)	4(10)
7	Patents	7(17.5)	6(15)	7(17.5)	11(27.5)	9(22.5)
8	Standards	8(20)	7(17.5)	7(17.5)	11(27.5)	7(17.5)

Note:- Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree Ratio = 5.4:3.44:1.4:1.56:1

- Strongly Agree ratio = 135/25 5.4
- Agree ratio = 86/25 3.44
- Neutral ratio = 35/25 1.4
- Disagree ratio = 39/25 1.56
- Strongly Disagree ratio = 25/25 1

The table 2 shows the Wiliness to share print resources. It is reveals that out of the total 40 libraries 32 (80%) libraries have strongly agree to share Books, followed by6 (15%) libraries only agree, only 1 (2.5%) not decided till and 1 (2.5%) strongly disagree. Also7 (17.5%) libraries strongly agree to share Patent, followed by 6 (15%) libraries agree, 7 (17.5%) libraries Neutral, 11 (27.5%) libraries Disagree and 9 (22.5%) libraries with strongly disagree to share Patents. However 22 (55%) respondents strongly agree to share Reference Sources and Current Periodicals, and 0 (0%) libraries strongly disagree to share reference sources and back volumes.

The 'Strongly Disagree' total 25 and 'Strongly Agree' total 135 have been divided by number ofrespondents (N: 25) and Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagreevalue has beencalculated. The ratio between Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree works out to 5.4:3.44:1.4:1.56:1 the strongly disagree ratio (1) is negligible. Therefore it seems that the most of librarians prefer for sharing of resources undernetworking programmeof libraries.

2.1 Willingness to Share Print Resources Vs Category of Colleges

The table 2.1 shows the Wiliness to share print resources VS Categories of the Colleges. It is reveals that 6 (100%) constituents college libraries strongly agree to share books, followed by 5 (83.33%) libraries have strongly agree to share reference sources, only 1 (16.67%) libraries only agree to share reference sources. However only 1 (16.67%) library strongly agree to share Patents and 2 (33.33%) libraries with strongly disagree.

Table No. 2.1Willingness to Share Print Resources Vs Category of Colleges

Sr. No	Print Resources	Constituents Colleges (n=6)					Self-Financed Colleges (n=34)					Chi-Sq.	P-Valu
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
1	Books	6 (100)	0(0)	0(0)	0(0)	0(0)	26(74.47)	6(17.65)	1(2.94)	0(0)	1(2.94)	5.092	0.278
2	Reference Sources	5(83.33)	1(16.67)	0(0)	0(0)	0(0)	17(50.00)	16(47.06)	0(0)	1(2.94)	0(0)		
3	Current Periodicals	2(33.33)	1(16.67)	0(0)	2(33.33)	1(16.67)	20(58.82)	10(29.39)	3(8.82)	1(2.94)	0(0)		
4	Back Volumes	4(66.67)	2(33.33)	0(0)	0(0)	0(0)	16(47.06)	12(35.29)	5(14.71)	1(2.94)	0(0)		
5	Thesis/Dissertations	2(33.33)	2(33.33)	0(0)	1(16.67)	1(16.67)	12(35.29)	12(35.29)	4(11.76)	1(2.94)	2(5.88)		
6	Reprints/Preprints	2(33.33)	3(50.00)	0(0)	0(0)	1(16.67)	8(23.53)	8(23.53)	8(23.53)	7(20.29)	3(8.82)		
7	Patents	1(16.67)	1(16.67)	1(16.67)	1(16.67)	2(33.33)	6(17.65)	5(14.71)	6(17.65)	10(29.39)	7(20.29)		
8	Standards	2(33.33)	1(16.67)	1(16.67)	1(16.67)	1(16.67)	6(17.65)	6(17.65)	6(17.65)	10(29.39)	6(17.65)		

Note:-Chi-Sq = 5.092, DF = 4, P-Value = 0.278

The chi-square test is also administered to test the **hypothesis that "There is a significant difference in willingness to share print resources among the libraries of 'constituents ', and 'self-financing' institutions.Level of significance (α) = 0.05, P-Value = 0.278 is greater than level of significance. Hence the hypothesis is Invalid.**

Table No. 3 Willingness to Share E-Resources

Sr. No	E-Resources	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	E-Books	22(55.00)	9(22.50)	5(12.50)	3(7.50)	1(2.50)
2	E-Journals	20(50.00)	10(25.00)	7(17.50)	2(5.00)	1(2.50)
3	E-Theses/Dissertations	19(47.50)	6(15.00)	12(30.00)	1(2.50)	2(5.00)
4	CD's/DVD's ROM	19(47.50)	11(27.50)	6(15.00)	4(10.00)	0(0.00)
5	E-Full Text Databases	17(42.50)	5(12.50)	13(32.50)	5(12.50)	0(0.00)
6	E-Bibliographical Databases	16(40.00)	6(15.00)	13(32.50)	3(7.50)	2(5.00)
7	E-Learning Services	14(35.00)	7(17.50)	13(32.50)	3(7.50)	3(7.50)
8	Institutional Repositories	12(30.00)	8(12.00)	16(40.00)	3(7.50)	1(2.50)
9	E-Project Reports	17(42.50)	7(17.50)	8(12.00)	4(10.00)	4(10.00)

Note:- Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree Ratio = 11.14:4.93:6.64:2: 1

- **Strongly Agree ratio =** 156/14 11.14
- **Agree ratio =** 69/14 4.93
- **Neutral ratio =** 93/14 6.64
- **Disagree ratio =** 28/14 2.00
- **Strongly Disagree ratio =** 14/14 1.00

In the table No. 3 calculate the ratio between the 'Strongly Disagree' total 14 and 'Strongly Agree' total 156 have been divided by number of respondents (N: 14) and Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree value has been calculated. The ratio between Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree works out to 11.14:4.93:6.64:2: 1 the strongly disagree ratio (1) is negligible. Therefore it seems that the most of librarians prefer for sharing of e-resources in networking of libraries.

Table No. 3.1Willingness to Share E-Resources Vs Category of Colleges

Note:-SA= Strongly Agree; A= Agree; N= Neutral; D= Disagree; SD= Strongly Disagree.

Sr. No	E-Resources	Constituents Colleges (n=6)					Self-Financed Colleges (n=34)					Chi-Sq.	P-Value
		SA	A	N	D	SD	SA	A	N	D	SD		
1	E-Books	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	20(58.82)	7(20.59)	4(11.76)	3(8.82)	0(0)		
2	E-Journals	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	18(52.94)	8(23.53)	6(17.65)	2(5.88)	0(0)		
3	E-Theses/Dissertations	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	17(50.00)	4(11.76)	11(32.35)	1(2.94)	1(2.94)		
4	CD's/DVD's ROM	3(50.00)	2(33.33)	0(0)	1(16.67)	0(0)	16(47.06)	9(26.47)	6(17.65)	3(8.82)	0(0)	62.681	0.000
5	E-Full Text Databases	4(66.67)	1(16.67)	1(16.67)	0(0)	0(0)	13(38.24)	4(11.76)	12(35.29)	5(14.71)	0(0)		
6	E-Biblio. Databases	2(33.33)	1(16.67)	1(16.67)	0(0)	2(33.33)	14(41.18)	5(14.71)	12(35.29)	3(8.82)	0(0)		
7	E-Learning Services	2(33.33)	0(0)	1(16.67)	1(16.67)	2(33.33)	12(35.29)	7(20.59)	12(35.29)	2(5.88)	1(2.94)		
8	IR	3(50.00)	2(33.33)	0(0)	0(0)	1(16.67)	9(26.47)	6(17.65)	16(47.06)	3(8.82)	0(0)		
9	E-Project Reports	1(16.67)	1(16.67)	0(0)	0(0)	4(66.67)	16(47.06)	6(17.65)	8(23.53)	4(11.76)	0(0)		

Note 1:-Chi-Sq = 62.681, DF = 4, P-Value = 0.000

The table 3.1 shows the Willingness to share E- resources VS Categories of the Colleges. It is reveals that out of the total 6 Constituents colleges 2 (33.33%) respondents are agree to share E-Books, E-Journals, E-Theses, E-Databases and E-Learning services respectively.

Also in the self-financed college libraries 20 (58.82%) respondents strongly agree to share e-books, followed by e-journals i.e 18 (52.94%), E-Theses 17 (50.00, however only 1 (2.94%) respondents strongly disagree to share E-Theses and E-Learning resources.

The chi-square test is also administered to test the **hypothesis that "There is a significant difference in willingness to share e-resources among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.000 is less than level of significance. Hence the hypothesis is valid.**

Table No. 4 Willingness to Share Academic Activity

Sr. No	Academic Activities	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Staff Training	31(77.50)	6(15.00)	2(5.00)	1(2.50)	0(0.00)
2	Expertise of Library Staff	27(67.50)	8(20.00)	4(10.00)	1(2.50)	0(0.00)
3	Workshop/Seminar /Conferences	27(67.50)	5(12.50)	7(17.50)	1(2.50)	0(0.00)

Note:-Strongly Agree: Agree: Neutral: Disagree Ratio = 28.33:6.33:4.33: 1

- **Strongly Agree ratio =** 85/3 28.33
- **Agree ratio =** 19/3 6.33
- **Neutral ratio =** 13/3 4.33
- **Disagree ratio =** 3/3 1.00

The table 4 shows the Willingness to share Academic Activities. It is reveals that out of the total 40 libraries 31 (77.50%) libraries strongly agree to shareStaff Training, followed by6 (15%) librariesagree, 2(5%) libraries with Neutral and 1 (1.50%) libraries with disagree. However27 (67.50%) libraries strongly agreeto share Workshop/Seminar/Conferences, followed by 5 (12.50%) libraries only agree, 7 (17.50%) libraries Neutral and 1(2.50%) libraries with Disagree.

The 'Strongly Disagree' respondents are total 0, so here 'Disagree' respondents value conceder for calculating Ratio. Disagree total value is 2 and 'Strongly Agree' total 85 have been divided by number of respondents (N: 3) and Strongly Agree, Agree, Neutral, and Disagree, value has been calculated. The ratio between Strongly Agree: Agree: Neutral: Disagree works out to 28.33:6.33:4.33: 1the disagree ratio (1) is negligible.

Therefore it seems that the most of librarians prefer for sharing of academic activities in networking of libraries.

Table No. 4.1Willingness to Share Academic Activity Vs Category of Colleges

Note:-SA= Strongly Agree; A= Agree; N= Neutral; D= Disagree; SD= Strongly Disagree.

Sr. No	Academic Activities	Constituents Colleges (n=6)					Self-Financed Colleges (n=34)					Chi-Sq.	P-Value
		SA	A	N	D	SD	SA	A	N	D	SD		
1	Staff Training	5(83.33)	1(16.67)	0 (0)	0(0)	0(0)	26(76.47)	5(14.71)	2(5.88)	1(2.94)	0(0)	4.206	0.122
2	Expertise of Library Staff	4(66.67)	2(33.33)	0 (0)	0(0)	0(0)	26(76.47)	6(17.65)	4(11.76)	1(2.94)	0(0)		
3	Workshop/ Seminar /Conferences	4(66.67)	2(33.33)	0 (0)	0(0)	0(0)	23(67.65)	3(8.82)	7(20.29)	1(2.94)	0(0)		

Note:-Chi-Sq = 4.206, DF = 2, P-Value = 0.122

The table 4.1 shows the Willingness to share Academic Activity VS Categories of the Colleges. It is reveals that out of the total 6 libraries Constituents college libraries 5 (83.33%) libraries strongly agree to share staff trainings only 1 (16.67%) library agree, however 4 (66.67%) libraries are strongly agree to share Expertise of Library staff as well as Workshop/Seminar/Conferences under the networking & resource sharing programme. It is also shows that out of the 34 self financed institutions 26 (76.47%) libraries strongly agree to share Staff Trainings and expertise of staff.

The chi-square test is also administered to test the hypothesis that "**There is a significant difference in willingness to share academic activities among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) =0.05, P-Value=0.000 is less than level of significance. Hence hypothesis is valid**

Table No. 5 Methods for Resource Sharing

Sr. No	Methods	Yes	No
1	Face to Face	7(17.5)	33(82.5)
2	Postal/ Currier	25(62.5)	15(37.5)
3	Web Bases	24(60)	16(40)

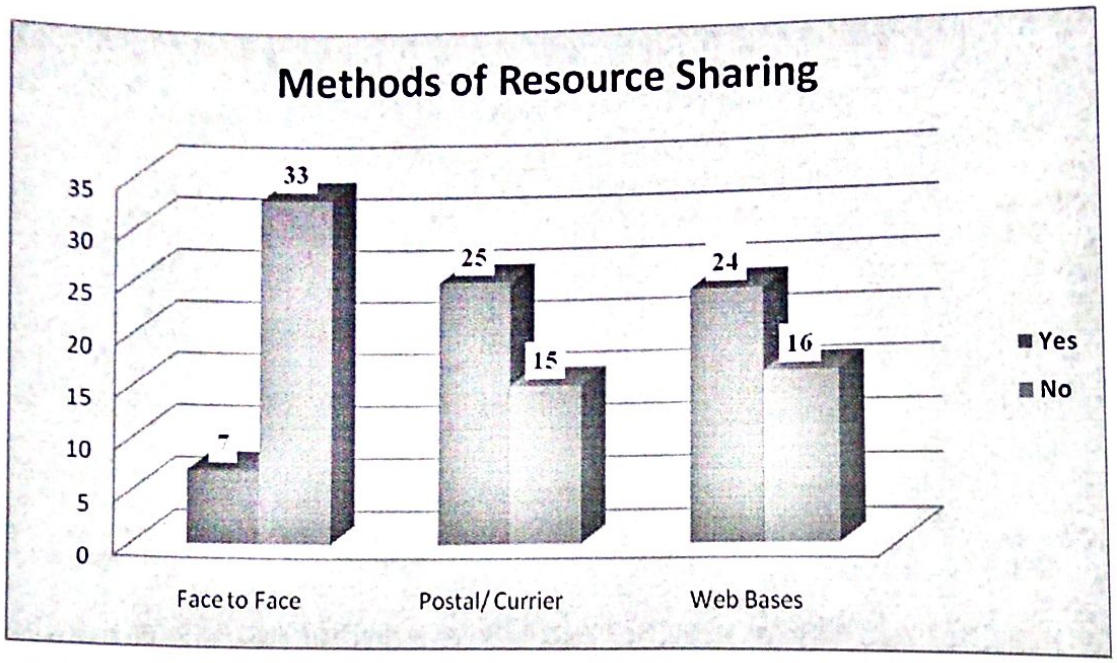

Fig. No.1 Methods for Resource Sharing

The table 5 and fig. 1 shows the preferred methods for Resource Sharing. It is reveals that out of the total 40 libraries only 7(17.5%) libraries have preferred Face to Face method and 25(62.5%) libraries have preferred Postal and Currier and while 24 (60%) libraries have preferred Web Based resource sharing method for sharing resources among each other's.

Table No. 5.1 Methods for Resource Sharing Vs Category of colleges

Sr. No	Methods	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Yes	No	Yes	No		

1	Face to Face	1(16.67)	5(83.33)	6(17.65)	28(82.35)	0.672	0.412
2	Postal/ Currier	3(50.00)	3(50.00)	22(64.71)	12(35.29)		
3	Web Bases	6(100)	0(0)	18(52.94)	16(47.06)		

Note:-Chi-Sq = 0.672, DF = 1, P-Value = 0.412

The table 5.1 shows the Methods for Resource Sharing VS Categories of the Colleges. It is reveals that out of the total 6 libraries only 1(16.67%) library preferred Face to Face method and 5(83.33%) libraries have not preferred this method, 3 (50%) libraries preferred postal/ currier method and 6 (100%) libraries preferred web based method for the resource sharing

It is also found that all out of the 34 self-financed college libraries 6 (17.65%) preferred face to face method, 22 (64.71%) preferred Postal/ Currier methods and 18 (52.94%) preferred web based method for the sharing of the resources.

The chi-square test is also administered to test the hypothesis that "**There is a significant difference in resource sharing methods among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.004 is less than level of significance. Hence hypothesis is Invalid**

Conclusion

The present study aimed at assessing the Networking and resource sharing of the agricultural college libraries under the jurisdiction of Mahatma Phule Krishi Vidyapeeth. The findings illustrate that most of the librarians agree to share print resources, electronic resources and academic activities among the network. And for sharing of the resources librarians favorable for the web based method that is E-Mail, Fax, etc.

References

- AKPAROBORE (D). Motivating Factors For Knowledge Sharing Of Librarians In University Libraries In Nigeria. *Information Technologist, 10,*2; 2013; 33-37.
- BREEDING (M). Introduction to Resource Sharing. *Library Technology Reports, 4,*1; 2013; 5-11.
- HALES (K). Rebuilding Walls to Access and Service: The Impact of Electronic Resources on Resource Sharing. *Journal Of Interlibrary Loan, Document Delivery & Electronic Reserves, 22,*3/4; 2012;123-136
- ISLAM (M). Present Status of Library Cooperation, Networking, and Resource Sharing in Bangladesh: Web-based Library Cooperation for Access to World-wide Information. *Library Philosophy & Practice*, 2013; 10.

- ISLAM, (M). Present Status of Library Cooperation, Networking, and Resource Sharing in Bangladesh: Web-based Library Cooperation for Access to World-wide Information. *Library Philosophy & Practice*,2012, 1-11.
- ISLAM, (M). Present Status of Library Cooperation, Networking, and Resource Sharing in Bangladesh: Web-based Library Cooperation for Access to World-wide Information. *Library Philosophy & Practice*, 2013, 10.
- KALBANDE,D.T & S.P. CHAVAN.Use of Digital Library Resources by Faculty Members: A Case Study. In: *International Research Journal of Library & Information Science (IRJLIS)*, Vol. 5 No 1. 2015. Pp. 28-38. ISSN No: 2249-0213.
- KALBANDE,D.T., MADANSHNG D GOLWAL & SUBHASH P CHAVAN. Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. In: *International Journal of Digital Information & Knowledge Management*, Vol. 1 No 2. 2013. Pp. 63-72. ISSN No: 2320-5059.
- KALBANDE,D.T., SUBHASH P CHAVAN & MADANSHNG D GOLWAL. Use of CD ROM Databases: A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 3. (July- Sept, 2012). Pp. 55-62. ISSN No: 2231-4911.
- KALBANDE,D.T., & SHASHANK.S.SONWANE. Information Seeking Behaviour of the studentds at MPKV,Rahuri (M.S): A case Study In: *International Journal of Digital Library Services (IJODLS)*. Oct-Dec 2011, Vol.1 Issue. 2:PP.21-31. ISSN NO: 2250-1142.
- KALBANDE,D.T., SHASHANK.S.SONWANE. & MADANSHING D GOLWAL. The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study. In: *International Research Journal of Library and Information Science (IRJLIS)*. Vol.2 No.1 (June 2012). Pp.65-75. ISSN NO: 2249- 0213.
- KALBANDE,D.T., SHINDE,P.A. & INGLE,R.N. Use of E-Resources by Faculty Members:A Case Study. *International Research Journal of Library and Information Science (IRJLIS)*. Vol.3 No.3 (Sep 2013). Pp.459-469. ISSN NO: 2249- 0213.
- KALBANDE,D.T., SYED, F.M., & SHASHANK S SONWANE. Use of Consortium for E-Resources In Agriculture (CERA): A Case Study. *International Journal of Library and Information Studies*, Vol. 2 No 1. (Jan-March, 2012). Pp. 33-41. ISSN No: 2231-4911
- MADANSHING D GOLWAL, KALBANDE,D.T. & SUBHASH P. CHAVAN. Role of LIS Professionals in Today's Digital Era. *Aarhat Multidisciplinary International Education Research Journal(AMIERJ)*. Vol. 1 Issue.2.2012, Pp. 132-140. ISSN NO:2278-5655.
- MADANSHING D GOLWAL. AND KALBANDE,D.T. Right to Information, Information Literacy & Public Libraries. *Asia Pacific Journal of Management and Entrepreneurship Research. (Special Issue on Human Rights)*. Vol.1. No. 1.2012,P.p 89-99. ISSN NO: 2277-8098.
- RADNOR (M) and SHRAUGER (K). Ebook Resource Sharing Models: Borrow, Buy, or Rent. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserves, 2* ;2012; 155-161.
- THAKIR (P) and GUPTA (S). Knowledge Sharing: A tool for Networking. Future of Libraries in Digital Age. 2012. Indore : KBD Publication, New Delhi.

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Status of Automation in Agricultural College Libraries

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Abstract: - *The growth and development of Information and Communication Technology (ICT) is playing vital role in the field of library and information science. The present paper shows the status and problems of library automation in agricultural college libraries under the jurisdiction of MPKV, Rahuri. It shows that only 65% of Libraries are automated and main problems for library automation are inadequate staff, lack of infrastructure, insufficient funds and lack of training to library staff. This study also gives a status view of the software packages used by libraries and modules of library automation that they are using. It was found that Automation of libraries is still in formative stages in self financed colleges. These libraries are using only for few modules of library automation like acquisition, circulation and cataloguing*

Keywords: Library Automation, problems of Library Automation, Library Management Software

1. Introduction

Library is considered as heart and soul of any learning institution, which is a pivot of the teaching-learning process. A well-equipped and well maintained library is the foundation of modern education structure. The college library plays an important role in providing overall library and information services to the patrons. College libraries are the hub of the teaching and learning activities where students and teachers can explore the vast resources of information. In the traditional libraries users have to spend more time for searching a small piece of information and for that have to depend mainly on the library professional or library staff. But in the age of information communication technology, computers are being used for day-to-day housekeeping activity of the library which saves the time avoid duplication of work and make the library service smooth and effective.

2. Objectives of the study

This paper reports of a study of the status and problems of library automation in agricultural college libraries under the jurisdiction of MPKV, Rahuri.

The major objectives of the study are:

- To find out how many libraries have undertaken automation.
- To find out which areas library functions and services are automated.
- To find out present status of library automation.
- To find out barriers to library automation faced by library staff.
- To find out whether sufficient staff is available to carry out automation.
- To know about the software used in the library automation?

3. Hypothesis of study

1. Most of the Libraries are automated.
2. Most of the Constituent College Libraries are fully automated.

4. Data analysis

The statistics in the table 4.1 show the distribution of library staff on the basis of designation. It is seen that, 23 (24.21%) are Assistant Librarian, 5 (5.26%) are Technical Assistants. There are 6 (6.32%) having Chief Cataloguer, 15 (15.79%) Issue Assistants. It is observed that, 18 (18.95%) are Library Attendants, while 28 (29.47%) are others i.e. Peon etc.

The table 4.2 shows the distribution of digital library area (Sq. ft.) made available in the library. It is observed that, 10 (25%) libraries have in the range of 101-200 Sq. ft. area, followed by 8(20%) libraries having in the range of 1-100 and 201-300 Sq. ft. area, however only 1 (2.5%) library havs in the range of 501-600 and 1001-2400, 2401-5500 Sq. ft. area. It also shows that only 2 (5%) libraries having in the range of 301-400, 701-800, 901-1000 Sq. ft. area.

Table No. 4.1: Designation wise Distribution of Library Staff

Sr. No	Designation	No of Staff	Percentage
1	Assistant Librarian	23	24.21
2	Technical Assistant	5	5.26
3	Chief Cataloguer	6	6.32
4	Issue Assistant	15	15.79
5	Library Attendants	18	18.95
6	Others	28	29.47
	Total	**95**	**100.00**

Table No. 4.2: Digital Library Area

Sr. No	Digital Library Area (Sq. fit.)	No of Libraries	Percentage
1	< 0	2	5
2	1-100	8	20
3	101-200	10	25
4	201-300	8	20
5	301-400	2	5
6	401-500	3	7.5
7	501-600	1	2.5
8	601-700	0	0
9	701-800	2	5
10	801-900	2	5
11	901-1000	0	0
12	1001-2400	1	2.5
13	2401-5500	1	2.5
	Total	**40**	**100**

Table No. 4.3: Library Automation Status

Sr. No	Library Automated	No of Libraries	Chi. Sq.	P. Value
1	Yes	26(65)	3.801	0.051
2	No	14(35)		
	Total	**(40) 100**		

Note:-Note:-Chi-Sq = 3.801, DF = 1, P-Value = 0.051

The analysis of the data as shown in the table 4.3 reveals that out of 40 libraries, 26 (65%) libraries are automated and 14 (35%) libraries are non-automated libraries.

The chi-square test is also administered to test the hypothesis that there is Level of significance (α) = 0.05, P-Value = 0.050 is less than level of significance. Hence the hypothesis 1 "**Most of the Libraries are automated"** is valid.

Table No.4.4: Present Status of Library Automation

Sr. No	Present Status	No of Libraries	Percentage
1	Completely Automated	8	20
2	Partially Automated	6	15
3	Initial Stages	26	65
	Total	**40**	**100**

In order to ascertain the extent of the automation of the libraries the librarians were asked to indicate the extent of automation of the libraries. It is observed from the data as shown in the table 4.4 that out of 40 libraries, 8 (20%) libraries are completely automated and 6 (15%) libraries are partially automated. It is observed that only 26 (65%) libraries are in Initial stage of the Library Automation.

Table No. 4.5: Library Software

Sr. No	Library Software	No of Libraries	Percentage
1	Library Manager	5	12.5
2	SOUL 2.0	4	10
3	KOHA	3	7.5
4	SLIM 21	3	7.5
5	AUTOLIB	3	7.5
6	Vriddhi	2	5
7	E-Campus	2	5
8	Godavari- agri-tech	2	5
9	E-Granthalaya	1	2.5
10	e-Krishi	1	2.5
11	No any	14	35
	Total	**40**	**100**

Librarians were asked to provide the details about the use of software in their libraries. It is observed from the data as shown in the table 4.5. Out of 40 libraries, it is observed that 5 (12.5%) libraries use Library Manager Software and 4 (10%) libraries use SOUL 2.0 software, 3 (7.5%) libraries use KOHA, SLIM 21 and AUTOLIB software. However 2 (5%) libraries use Vriddhi, E-Campus, Godavari-agri-techsoftware. It also shows that only 1 (2.5%) libraries are using E-Granthalaya and e-Krishi, while 14 (35%) libraries are not using any single software for the library automation as well as library housekeeping operations.

The table 4.6 shows the Areas of Library Automation. It is observed that 27 (67.5%) are in initial stage in the automation of the Acquisition, and 13 (32.5 %) libraries completed the acquisition with the help of library software. Followed by 17 (42.5%) initial stage in

Cataloguing and 23 (57.5%) are completed the cataloguing, 24 (60%) libraries are in initial stage providing Circulation with the help of Software and only 16 (40%) libraries are in the Complete stage, only 3 (7.5%) libraries completely automated in Budgeting and SDI/CAS.

Table No.4.6: Areas of Automation

Sr. No	Areas of Automation	Initial	Completed	Total
1	Acquisition	27 (67.5)	13 (32.5)	40 (100)
2	Cataloguing	17 (42.5)	23 (57.5)	40 (100)
3	Circulation	24 (60)	16 (40)	40 (100)
4	Serials Control	31 (77.5)	9 (22.5)	40 (100)
5	Information Retrieval Service	32 (80)	8 (20)	40 (100)
6	SDI/CAS	37 (92.5)	3 (7.5)	40 (100)
7	OPAC	26 (65)	14 (35)	40 (100)
8	Administration	32 (80)	8 (20)	40 (100)
9	Budgeting	37 (92.5)	3 (7.5)	40 (100)

Table No. 4.6. 1: Areas of Library Automation VS Category of Colleges

Sr. No	Library Areas	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Initial	Completed	Initial	Completed		
1	Acquisition	3 (50)	3 (50)	24(70.59)	10(29.41)	50.924	0.000
2	Cataloguing	0 (0)	6(100)	17(50.00)	17(50.00)		
3	Circulation	1 (16.67)	5 (83.33)	23(67.65)	11(32.35)		
4	Serials Control	2 (33.33)	4(66.67)	29(85.29)	5(14.71)		
5	Information Retrieval Service	1 (16.67)	5 (83.33)	31(91.18)	3(8.82)		
6	SDI/CAS	3 (50)	3 (50)	34(100)	0(0)		
7	OPAC	0 (0)	6(100)	26(76.47)	8(23.53)		
8	Administration	3 (50)	3 (50)	29(85.29)	5(14.71)		
9	Budgeting	5 (83.33)	1 (16.67)	32(94.12)	2(5.88)		

Note:-Note:-Chi-Sq = 50.924, DF = 1, P-Value = 0.000

The table 4.6.1 shows the Areas of Library Automation Vs Category of Colleges. It reveals that out of the total 6 Constituents libraries, 3 (50%) libraries are in initial stage in Acquisition, SDI/CAS Services and

Administration service. However 2 (33.33%) libraries are in initial stage of Serials control. It is observed that only 1 (16.67%) library is in initial stage in Budgeting while 5 (83.33%) are completed. It reveals that only 1 (16.67%) library is in initial stage in Circulation and Information Retrieval Service, while 5(83.33%) libraries completed respectively. So it is concluded that Constituents College libraries are mostly fully automated.

Apart from this the Self-Financed College libraries initially started their work on SDI/CAS Service. This was followed by Budgeting 32 (94.12%), Serials Control and Administration 29 (85.29%) in the Initial stage, and 17 (50%) libraries completed their cataloguing in the Automation followed by Circulation 11 (32.35%).

The chi-square test is also administered to test the hypothesis that there is **Level of significance (α) = 0.05, P-Value = 0.000 is less than level of significance.** Hence the hypothesis **"Most of the Constituents College Libraries are fully automated" is Valid.**

Table No. 4.7: Back-end Database of Automation Software

Sr. No	Database	No of Libraries	Percentage
1	MySQL	18	45
2	Oracle	7	17.5
3	MS Access	1	2.5
4	No any	14	35
	Total	**40**	**100**

The table 4.7 shows the Back-end Database. It is reveals that out of the total 40 libraries 18 (45%) libraries have MySQL, while 7 (17.5%) libraries have Oracle. It is observed that only 1 (2.5%) library has My Access back end database and it also shows that 14 (35%) libraries don't have any backend database because they don't have any library management software.

Table No. 4.8: Total Records in Database

Sr. No	No of Records	No of Libraries	Percentage
1	0	14	35
2	1-1000	8	20
3	1001-2000	6	15
4	2001-3000	2	5
5	3001-4000	4	10
6	4001-5000	2	5
7	5001-50000	2	5
8	50001-115000	2	5
	Total	**40**	**100**

The table 4.8 shows the No. of Records available in Database. It is reveals that out of the total 40 libraries 14 (35%) libraries have 0 record in the database. However 8 (20%) libraries have 1-100 range of record, followed by 6 (15%) libraries having 1001-2000 range of record. It is observed that only 2(5%) libraries have 2001-3000 and 4001-115000 range of record in the Database.

Table No. 4.9: Frequency of Updating Database

Sr. No	Frequency	No of Libraries	Percentage
1	Always	20	50
2	Sometime	3	7.5
3	Rarely	3	7.5
4	Never	14	35
	Total	**40**	**100**

The table 4.9 shows the Frequency of Updating the Database. It is observed that out of the total 40 libraries 20 (50%) libraries have Always Update; 3 (7.5%) libraries have Sometime Update and Rarely Update. It is observed that only 14 (35%) libraries have Never Update.

Table No. 4.10: Separate Library Server

Sr. No	Separate Library Server	No of Libraries	P-Test	P-Value
1	Yes	17 (42.5)	Test of p = 0.5 vs p < 0.5	0.215
2	No	23 (57.5)		
	Total	**40 (100)**		

Note:-Test of p = 0.5 vs p < 0.5; p value= 0.215

The table 4.10 shows the availability of Separate Library Server. It is examined that out of the total 40 libraries 17 (42.5%) libraries have Separate Library Server; 23 (57.5%) libraries don't have Separate Library Server. The P-test is also administered to test the hypothesis that there is p = 0.5 vs p < 0.5.value of Separate Library Server. The parameter value is (0.215).

Table No. 4.11: LAN Connectivity

Sr. No	LAN Connectivity	No of Libraries	P-Test	P-Value
1	Yes	20 (50)	Test of p = 0.5 vs p not = 0.5	1.000
2	No	20 (50)		
	Total	**40 (100)**		

Note:- Test of p = 0.5 vs p not = 0.5, P-Value = 1.000

The table 4.11 shows the Availability of Local Area Network in the Agricultural College Libraries. It is observed that out of the total 40 Agricultural College libraries 20 (50%) libraries have LAN Connectivity; while 20 (50%) libraries don't have LAN Connectivity. The P-test is also administered for testing of the data that there is p = 0.5 vs p not= 0.5.value of Separate Library Server. The parameter value is (1.000).

The table 4.12 shows the Separate Web Page. It is observed that out of the total 40 libraries only 5 (12.5%) libraries have Separate Web Page; however 35 (87.5%) libraries don't have Separate Web Page for the libraries.

Table No. 4.12: Separate Web Page

Sr. No	Separate Web Page	No of Libraries	Percentage
1	Yes	5	12.5
2	No	35	87.5
	Total	**40**	**100**

Table No. 4.13: Availability of Internet Facility

Sr. No	Internet Facility	No of Librarie s	P-Test	P-Val ue
1	Yes	39(97.5)	Test of p = 0.99 vs p < 0.99	0.33 1
2	No	1(2.5)		
	Total	**40(100)**		

Note:-Test of p = 0.99 vs p < 0.99, P-Value= 0.331

The table 4.13 shows the availability of separate Web Sites for the libraries. It is observed that out of the total 40 libraries 39 (97.5%) libraries provide the Internet Facility to the users as well as staff; however only 1 (2.5%) library don't have Internet Facility in the Library. Test of p = 0.99 vs p < 0.99 P-Value 0.331. The 99% collages have Internet Facility. Hence the hypothesis is significant.

Table No. 4.14: Types of Internet Connectivity

Sr. No	Internet Connectivity	No of Libraries	Percenta ge
1	Broadband	32	80
2	Dial-up	1	2.5
3	Leased Line	6	15
4	Other	1	2.5
	Total	**40**	**100**

The table 4.14 18 shows the type of Internet Connectivity used in the library. It is observed that out of the total 40 libraries 32 (80%) libraries use Broadband connectivity; followed by 6 (15%) libraries using Leased Line connection. However only 1 (2.5%) library uses Dial-up connection of Internet Connectivity.

Table No. 4.15: Speed of Internet Connectivity

Sr. No	Speed	No of Libraries	Percentage
1	64 kb	9	22.5
2	128 kb	7	17.5
3	1 mbps	4	10
4	4.2 mbps	7	17.5
5	10 mbps	4	10
6	Other	9	22.5
	Total	**40**	**100**

The table 4.15 shows the Internet Connectivity Speed. It is observed that out of the total 40 libraries 9 (22.5%) libraries have 64 kb speed; followed by 7 (17.5%) libraries having 128 kb and 4.2 mbps speed respectively. However only 4 (10%) libraries have 1mbps and 10 mbps speed of the Internet Connectivity.

5. Conclusion

Library automation brings great changes in the functioning of the library and providing effective and efficient library services. Automation of libraries is still in formative stages in self financed colleges. By library automation, librarians can handle library functions more effectively and can provide good services to the users. Some of libraries are using only for few modules of library automation like acquisition, circulation and cataloguing. Libraries should introduce all modules in their library automation like OPAC, Serial Control, stock verification, budgeting and etc.

Bibliography

1. Kalbande,D.T & S.P. Chavan (2015). "Use of Digital Library Resources by Faculty Members: A Case Study. In: *International Research Journal of Library & Information Science (IRJLIS)*, Vol. 5 No 1. Pp. 28-38. ISSN No: 2249-0213.
2. Kalbande,D.T., Golwad,M.D, Chavan, S.P. (2013). Skills and Competencies for New Generation of Library & Information Science Professionals: An Analytical Study. In: *International Journal of Digital Information & Knowledge Management*, Vol. 1 No 2. Pp. 63-72. ISSN No: 2320-5059.
3. Kalbande,D.T., Chavan, S.P. Golwad,M.D. (2012). Use of CD ROM Databases: A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 3. (July- Sept, 2012). Pp. 55-62. ISSN No: 2231-4911.
4. Kalbande,D.T & Sonwane, S.S.(2011). "Information Seeking Behaviour of the studentds at MPKV,Rahuri (M.S): A case Study In: *International Journal of Digital Library Services (IJODLS)*. Oct-Dec 2011, Vol.1 Issue. 2:PP.21-31. ISSN NO: 2250-1142.
5. Kalbande,D.T., Sonwane,S.S. and Golwal, M.D. (2012) "The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study." In: *International Research Journal of Library and Information Science (IRJLIS)*. Vol.2 No.1 (June 2012). Pp.65-75. ISSN NO: 2249- 0213.
6. Kalbande,D.T., Shinde,P.A. & Ingle,R.N. (2013) "Use of E-Resources by Faculty Members:A Case Study." In: *International Research Journal of Library and Information Science (IRJLIS)*. Vol.3 No.3 (Sep 2013). Pp.459-469. ISSN NO: 2249- 0213.
7. Kalbande,D.T., Syed, F.M., & Sonwane, S. S. (2012). Use of Consortium for E-Resources In Agriculture (CERA): A Case Study. In: *International Journal of Library and Information Studies*, Vol. 2 No 1. (Jan-March, 2012). Pp. 33-41. ISSN No: 2231-4911
8. Naveen C. L and Nagesh R. Status and Problems of Library Automation In Govt. First Grade Colleges of Hassan District, Karnataka: A Study. *International Journal of Library & Information Science*, **5**(1), 2016, pp. 28-35.
9. Ghumre, Shivshankar, Veer, Dharamraj K & Kalbande,D.T.,(2013). "Expenditure of College Library Budgets in Marathwada Region: A case Study In: *International Journal of Digital Library Services (IJODLS)*. Jan-March 2013, Vol.3 Issue. 1:PP.23-32. ISSN NO: 2250-1142.

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Common Environmental Allergens Causing Respiratory Allergy

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Abstract: In India, most of the population lives in villages and their chief occupation are farming and agriculture. People from rural areas have migrated to urban for their settlement for the sake of their job opportunities. However, today more than 20 % of the population in India suffers from Allergic Biomorpho types like fungal spores, Cladosporium, Penicillium nigricans, Aspergillus niger, Aspergillus flavus and smut spores pollen grains, insect parts, house dust mites. In various surveys carried out all over the world have established the presence of the fungi in air, about 10 to 20% population of the world is known to suffer from allergic rhinitis, bronchial asthma and eczema.

Keywords:-*Environmental Allergens, Cladosporium*, Aspergilli, Penicilli, *Curvularia* , *Rhizopus*, allergic rhinitis, bronchial asthma.

1. INTRODUCTION

In Indian environment, a rich diversity of fungi and other bio components in indoor and outdoor atmosphere is reported. The most pre dominant types in extramural air are *Cladosporium*, Aspergilli, Penicilli, *Curvularia, Rhizopus*, and *Helminthosporium*, while some of the allergenic fungi reported in intramural air are Aspergilli, Penicilli, *Cladosporium, Penicillium nigricans, Aspergillus niger, Aspergillus flavus* and smut spores. In different parts of the world, there is an urgent need to organize all the information available in the form of seasonal calendars and all allergic fungal spore types enlisted and made readily available for the use of acommon man and medical practitioners asa diagnostic tool. Important airborne fungi of different working environment have been studied and enlisted for their seasonal and annual variations.

In India, most of the population lives in villages and their chief occupation is farming and agriculture. Since independence, people from rural areas have migrated to urban for their settlement for the sake of their job opportunities. However, today more than 20 % of the population in India suffers from Allergic Biomorpho types like fungal spores, pollen grains, insect parts, house dust mites animal danders chemicals, foods, etc. have already been proved to cause allergic disorders (Kino and Singh,1978; Gravesen, 1979; Kang *et al.* 1979, Shivpuri,1980; Burge,1890).The seasonal and annual variations of these bioaersols have been extensively studied in different parts o the world including India. Many reports from India have provided information on prevalence of airborne fungi in ambient air (Ramalingam,1971; Agarwal and Shivpuri,1974; Tilak and Kulkarni,1980; Maribhat and Rajasab,1988; Pandit and Singh, 1992; Gupta and Chanda,1989; Singh and Singh,1994; Rawat *etal*,2000; Pande,2001;). The air inside the building is often contaminated with particles and chemicals that adversely affect the health of the occupants. These pollutants are brought indoors from the outside or from indoor sources. Outdooraeroallergens appeared to be originated from vegetation above ground, but not significantly from the soil. To a large extent, therefore, their origin is an agricultural problem, aggravated by our need to cultivate plants in pure stands. Fortunately the interests of farmers and allergic patients are to some extent, is identical (Peterson *et al*, 1958).

2. EPIDEMIOLOGY OF ALLERGIC DISEASES

Various surveys carried out all over the world have established the presence of the fungi in air, about 10 to 20% population of the world is known to suffer from allergic rhinitis, bronchial asthma, atopic dermatitis and urticarial. An increase in seasonal allergic rhinitis has also been reported from different European countries (Blenkinshop and Blenkinshop, 1989 ;).

In U.K., allergologists observed a four fold increase in allergic rhinitis over the past 20 years. Burr *etal.*(1989) observed 6% and 12% increase in prevalence of asthma,5% to 16% for eczema and 9% to 15% for hay fever (allergic rhinitis). Ninam and Russel (1992) conducted a study to investigate the prevalence of respiratory symptoms and Atopy in Abredeen (U.K.) school children based on analysis of questionnaire completed in 1964 and 1989 and revealed that diagnosis of asthma rose from 4.1% 10.2% and prevalence of hay fever increased from 3.2% to 11.9%. Eczema also became more common (5.3% to 12.00% over the years. Charpin *et al.*2000), from Franc, reported that hay fever affects 6% of the children. In Istanbul, incidence of allergic rhinitis was 20.6% as reported by Dotterud *et al.* (1994). Whereas only after 5 years Keles *et al.* (1991) reported 62 and 51 % prevalence of rhinitis in 1994 and 1996 respectively.

3. AEROMYCOLOGY AND STUDY OF ALLERGENS IN INDIA

Aerobiological surveys from different parts of India were undertaken to study air borne fungal allergens. The dominant forms include *Cladosporium, Aspergillus, Nigrospora, Alternaria, Curvularia*, basidiospores ascospores, *Helminthosporium* etc.(Ramalingam from Visakhapatnam and Mirabhat annd Rajasab 1988 from Gulbarga).

In India, many reports provide information of prevalence of fungi in ambient indoor air (Ramalingam, 1971; Agarwal and Shivpuri, 1974; Tilal and Kulkarni, 1980; Singh and Pandit ,2003). *Cladosporium, Alternaria, Aspergillus, Curvularia* etc. have been reported as the dominant spore types from Delhi, Dehradun (Agarwal, 1970; Sandhu, 1964; Singh, 1980). From Lucknow (North India)(Anonimous,1998), reported *Aspergillus, Penicillium, Cladosporium, Epicoccum and Drechslera* as dominant spore types. Tilak and his co workers 1969 and on words from Maharashtra, have undertaken aerobiological surveys from western India and have reported the members of Deuteromycotina as the most dominant types contributing 70% of the total catch.. Survey from Pune and Aurangabad by Tilak and Pande was undertaken and reported *Cladosporium, Aspergillus, Penicillium, Curvularia, Rhizopus* etc. as the dominant fungal types.

In Central India, surveys were conducted at Gwalior, Aurangabad and Nagpur and 15, 18 and 25 fungal types were recorded, respectively. Prominent spore types were Aspergilli- Penicilli, *Cladosporium, Helminthosporium, Curvularia, Drechslera, Pyricularia, Synephalastrum*, and uredospores etc.(Anonymous,1998). Dere Pravin, B. N. Pande and Vasant Mali (2012). Mali V. P., Pathare and *et al* (2012) and Pathare G. M. , Mali V. P. and Pande B. N. (2012).

Studies carried out from Eastern India i.e. at Gaya, Gauhati, Imphal, Kolkata, Gorakhpur Anonymous,1998;), revealed *Aspergillus, Penicillium, Cladosporium*, Ascospores rust spores and smut spores as the dominant types.

4. EPIDEMIOLOGY

The first epidemiological study in India, carried out 5-decads ago, revealed that nearly 10% population of India suffer from major allergic disorders (Vishwanathan, 1964). After a long gap i.e.late in nineties, epidemiological surveys were undertaken. During the period 1994 -1998 the study based on the survey conducted in 7 cities in India under the All India Co Ordinated Project on " Aeroallergens and Human Health: Aerobiological Studies", sponsored by the Ministry of Environment and Forests, Government of India, New Delhi, 20 to 30% people have been found to suffer from various respiratory allergic disorders (Anonymous,2000). The survey was mostly based on medical questionnaire, Pulmonary Function Test (PFT) and skin tests on selected groups of patients. Survey included urban and rural populations, adults , school children and industry workers as such. In Delhi, asthma was observed in 10.8% and allergic rhinitis was reported in 11.1% of 11,000 surveyed populations.

Besides the outdoor environments, Indoor and work environments are also greatly influenced byfungi especially occupational sites employing organic raw materials e.g. Granary, poultry, flour mills dwelling houses, cattle sheds dairy farm etc.

5. ASSESSMENT OF ALLERGENICITY TO FUNGI (Bio Assay)

Some new analytical methods are the Enzyme- Linked Immunosorbent Assay (ELISA) and the Radioalleosorbent test (RAST)used to measure the presence in human serum of antibodies that indicate exposure to specific micro- organisms.The RAST technique measures the amount of circulating allergen specific immunoglobulin E (IgE) in blood serum.

The ELSA test uses an enzyme label rather than the radioactive tag of the RAST technique to measure IgE , and is therefore , safer and is also less expensive.
Skin test with antigenic extracts, Skin prick test, Intradermal tests etc. Skin test is an important tool in allergy diagnosis. The wheel and flare reactions to crude fungal extracts have been documented in patients with respiratory allergy.

Interpretation of positive allergy testing results must be incorporated with historical and physical findings. It is only in this context that the diagnosis of allergic disease can be made and specific therapies initiated.

6. TREATMENT OF ALLRGIC DISEASES

As a matter of fact there are three common methods for treatment of allergic patients:

1) Allergen avoidance: Pollen and outdoor moulds house dust mites, animal dander, cockroach allergen and indoor molds allergen etc.
2) Medication: Antihistamines, decongestants, Topical nasel steroids, hormones, Anti-cholinergics, Antleucotrienes etc.
3) Immunotherapy (Allergy vaccine or allergy shots)
4) Surgery.

Over the past 60 years aerobiological studies in India, have been carried out continuously. However main thrust has been on aerial surveys. Future studies may be focused on the following points;

- Productivity of allergenic pollen and fungal spores in different parts of the country
- Preparation of pollen calendars for different parts of the country, particularly to the rural areas.
- Studies on the improvement of sampling devices.
- Preparation of pollen antigens from different regions of the country and their testing on regional basis.
- Biochemical analysis of the pollen and fungal spores, particularly for the protein part.
- Monitoring and forecasting of airborne pollen and mold spores.
- Computer aided studies on meteorological parameters and their influence on aeroallergens and kids health.

7. CONCLUSIONS

It is thus concluded that there is a rich fungal biodiversity in Indian environment both outdoors and indoors. However, in different parts of the world there is an urgent need to organize all the information available for the use of common man and physicians as a diagnostic tool. Important air borne fungi of different work environments have been studied and enlisted for their seasonal and annual variations.

REFERENCES

1. *Agarwal, M. K. and D .N. Shivpuri,"Fungal spores: There role in respiratory allergy". Adv. Pollen-Spore Res, 1, (1974), 78-128.*
2. *Agarwal, M.K. "Studies on the allergenic fungal spores of Delhi Atmosphere". Ph.D. Thesis. (1970).University of Delhi.*
3. *Anonymous, "Worl wide variations in the prevalence of asthma symptoms" The International Study of Asthma and Allergies inChildhood(ISSAC). Eur. Respir J, 12(2), (1998), 315-335.*
4. *Anonymous, "All India Coordinated Project on Aeroallergns and Human Health: Aerobiological studies". Report. Ministry of Environment and Forests, (2000), New Delhi.*
5. *Blenkinsopp, A. and Blenkinsopp, J. "Continuing Education". Pharm J, 20, (1989), 5.*
6. *Burge, H, "Bioaerosols prevalence and health effects in the indoor environments". J. Allergy Clin Immunol,86, (1990), 687-701.*
7. *Burr, M. L., Butland,B. K., King, S. and Vaughan- Williams, E, "Changes in asthma prevalence: two surveys 15years apart". Arch.Dis.Child, 64(10), (1989), 1452-1456.*
8. *Charpin, D., Raberison, D., Duttau,H, and Vaytard, A, "Epidemiology of respiratory allergies: current data". Review Mal Respir; 17(1pt2), (2000), 138-158.*
9. *Dew Pravin, B. N. Pande and Vasant Mali, "Incidence of Fungal Airspora In The Vegetable Market Area of Aurangabad (M.S.)". International Journal of Science and Technology, Bionano Frontier, vol. 5(1), (2012), 87-92, Jan-June 2012.*
10. *Dotterud, L., Knammem, B. and Bolle ,R, "A survey of atopic diseases among school children in Sor- Varanger community". Acta- Dermato, G Venereio,74, (1994), 124-128.*
11. *Graresen, S, "Fungi as a cause of allergic diseases". Allergy, 34, (1979), 135-154.*
12. *Gupta, S. and Chanda, S, "Aeropalynological survey in subtropical Eastern Himalayas,Kurseong". Grana, 28, (1989), 219-221.*
13. *Kang, Hamburger, H. and Yunnger, J.W, "Analysis of indoor environment and atopic allergy in urban population with bronchial asthma". J. Allergy Clin Immunol.63, (1979), 80-89.*
14. *Kino, T. and Singh, S.O.J. "Allergy Clin Immun"01, 61, (1978), 10-16.*

15. Mali V. P., Pathare G. M. , Sumia Fatima and B. N. Pande, "Fungal Diversity in Ambient Air Over Bajra Fields". Bionano Frontier Special Issue, (2012), 154-157. (Int. Conf. on Environment and Humanities Eco Revolution 2012, Colombo, Srilanka).
16. Maribhat, M. and Rajasab, A. H, "Airspora of commercial location of Gulbarga". In J Aerobiol. 1, (1988), 59-65.
17. Ninan, S. and Russel, G, "Respiratory symptoms and atopy in Aberdeen School children" (1992).
18. Pande, B.N, Mycology of India. Frontiers in Microbial Biotechnology and Plant Pathology. (Prof. S. M. Reddy Commemoration Volume).eds. C. Manoharachariya, D.K. Purohit, S. Ram Reddy,, M. A. Singarachariya and S. Girisham. (2000), Pp: 53-68.
19. Pathare G. M. , Mali V. P. and Pande B. N. "Atmospheric Mycoflora Over Sunflower Fields at Kada (M.S.) India". Bionano Frontier Special Issue, (2012), 162-164. (Int. Conf. on Environment and Humanities Eco Revolution 2012, Colombo, Srilanka).
20. Ramalingam,A, Proc. Ind. Academy of Science. B 74, (1971), 227-240.
21. Rawat, A., Singh, A., Singh, A. B., Gaur, S.N. Kumar, L., Roy, I. and Ravindran, P, "Clinical Immunological evaluation of Cedrus deodara pollen: A new allergen from India". Allergy, 55, (2000), 1-7.
22. Sandhu, S. K., Shirpuri, D.N. and Sandhu, R.S, Studies on the airborne fungal spores in Delhi. Ann. Allergy. 22, (1964), 374-384.
23. Shirpuri, D.N, "Clinically important pollen, fungal and insect allergens for naso bronchial allergy patients in India". Asp Allergy ApplImmunol xiii, (1980),29-23.
24. Singh, A.B. and Babu, C.R, "Pollen types in the atmosphere of Delhi". Phytomorphology,30, (1980), 180-189.
25. Singh, A.B. and Pandit, T, "Aerial Fungal Biodiversity and Allergic Diseases. Frontiers of Fungal Diversity in India".(Prof. Kamal Festschrift volume), (2003),741-767.
26. Singh, A.B., Singh, A. "Pollen Allergy – A Global Scenario". In Recent Trends in Aerobiology, Allergy and Immunology; ed. S. N. Agashe, Oxford IBH, (1994),New Delhi.
27. Tilak, S.T. and Kulkarni, R.L, Addition in the Fungal Flora of the air. Ind. Phytpathol.,34, (1980), 69-71.
28. Vishwanathan, R, "Definition, incidence, etiology and natural history of asthma". Ind.J.Chest.Dis.,6, (1964), 108-124.

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Traditional Medicines for Diabetes from Villages in Balaghat Region and its Modern Approach with S Patanjali Medicinal Products.

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ABSTRACT

Present paper deals with Traditional medicinal practices for diabetes in Balaghat Region of Marathwada, Maharashtra, India. Balaghat range originates from western Ghat at Harichandra range Balaghat extends southeastward for about 320 km to the border of Maharashtra and Karnataka states. It occupies parts of Ahmadnagar, Beed, Osmanabad and Solapur distract. I had collected the traditional knowledge from villages, rural areas, and hilly areas of this region. Some medicinal plant like *Aegle marmelos, Argyreia nervosa, Azadirachta indica, Carissa carandas, Eugenia jambolana, Ficus benghalensis, Gymnema sylvestre, Momordica charantia, Punica granatum, Tinospora cordifolia* and *Trigonella foenum-graceum.* Practioners were interviewed and recorded the valuable traditional Knowledge of vaidya, Janata. Such valuable knowledge of vaidya is compared to another research workers for its authentification.

Keywords- Traditional medicine, vaidya, diabetes, Marathwada Balaghat ranges.

INTRODUCTION

Diabetes is a metabolic disease on of its early symptoms is increased urination. Diabetes is recognized as a disease that cannot be completely cured but as a condition whose progress could be checked and kept well under control by diet. An active life and certain specific home remedies would come in handy. Even when the disease is in a more advanced state the very same home remedies could be used in combination with conventional allopathic treatment to the patient's advantage.(Girja Khanna, 1982).

Most bitter are indicated in diabetes while all sugars are prohibited. Karla , Methi seeds and leaves, jamun seeds, gudmar, Leaves of samudra shok, flower of nivdung,bark of fig, Neem and Gulvel. All help the diabetic to fight this disease. There must be included liberally in the diet. All these have the property to use up sugar in the body and lower the level of circulating sugar.

Medicinal plants are of great value in the field of treatment and cure of diseases. Over the years, scientific research has expanded our knowledge of medicinal plants and chemical effects and composition of the active constituents which determines medicinal properties of plant. From ancient time, medicinal plants like *Argyreia nervosa, Ficus benghalensis, Gymnema sylvestre Eugenia jambolana, Momordica charantia, . Tinospora cordifolia* and *Trigonella foenum-graecum* one of the etiologic factors implicated in the development of diabetes and its complications is the damage indices by free radicals and so antidiabetic compound with antioxidant properties would be more beneficial.

In Ayurveda, it is known as Prameha which means profuse urinations It is Metabolic disorder reflections. It is metabolic disorder reflecting in abnormality of urine according to modern science, Diabetes referred to by doctors as Diabetes mellitus, describes group of metabolic diseases in which person has high blood glucose blood sugar either because of insulin production in inadequate or because of the body cells do not respond properly to insulin or both. The body does not produce insulin.

Symptoms of diabetic patient includes, frequent urination intense thirst and hunger weight gain unusual weight loss, fatigue, cut and bruises do not head, male sexual dysfunction, numbness and fingling in handles and feet .

There are three types of diabetes.

1) Type 1 diabetes.
2) Type 2 diabetes.
3) Gestational diabetes.

MATERIAL AND METHODS

The present study was based on the extensive field surveys was done by frequently arranged collection tours to different villages of the Balaghat region during different seasons, winter, summer and rainy seasons of the years from July 2012 and continued up to July 2016. In four years frequent visit, where made in order to cover different locality area of Beed, Latur and Osmanabad was study area for diabetes practioners in this area in Balaghat region . All these medicinal practioners in rural areas are called vaidyas. During survey participatory interview tools including group discussion informal meetings questionnaire, survey and field observation were used for primary data collection survey were done in Balaghat.

Interviews were taken with consideration to uses, Preservation and evaluation of traditional knowledge. The medicinal plants were collected, identified and scientific validity is compared to available literature. Medicinal plants, Jain S. K. (1968). Flora of Presidency of Bombay, I-III by T. Cooke, Flora of Osmanabad - V. N. Naik (1979), Flora of

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(2015), Flora of Kolhapur District - S. R. Yadav and M. M. Sardesai (2002) and Flora of Solapur District - Gaikwad S. P. & K. U. Garud (2015), Flora of Beed District Rothe S. P. (1984). There are various methods of traditional practices for diabetes still in Balaghat region which is purely based on Ayurvedic practice.

RESULT AND DISCUSSION

Adhatoda vasica Nees.
Family-Acanthaceae
Common name-Adulsa
Take fresh leaves extract juice mixed with honey is referred orally twice in a day. Consume empty *stomach* for better results to cure diabetes (Mane Mandodari Dattatrya, Latur).
Argyreia nervosa (Burm F) Boj.
Family- Convolvulaceae
Common name-Samudra shok.
Plant part used: Leaves.
Uses: Collect leaves washed in water then dried in shade. Crushed powder take 1 tea spoon powders twice in day for 7-8 days for reduce sugar in diabetic patient. Vaidya Wagh (Ahmednagar).
Azadirachta indica
Family: Meliaceae
Common name : Neem
Take fresh leaves crush and extract juice consume 100 ml juice twice a day to cure diabetes. (Hakim Dastagir Mandihar Ausa).
Carissa carandas Linn
Family-Apocynaceae
Common name-Karvand
Plant parts: Fruits.
Uses- Fruits dried in shade and crushed consume two teaspoons powder twice a day for one month to cure diabetes (Vaidya Wagh, Ahmednagar).
Ficus benghalensis Linn.
Family :Moraceae
Common name: Umbar
Plant parts: Bark
Grind a stem bark up to fine powder Take teaspoonful powder with 50 ml warm milk thrice a day daily for diabetes. (Kurup V.N.K. , 1979).
Gymnema sylvestre (Retz.) R. Br. ex Schult.
Family- Asclepiadaceae
Common name- Aphu mari, Gudmar
Plants parts: Leaves
Uses: Collect leaves dry in shade after drying crushed in powder form. Consume 1 teaspoon powder per day in morning for 15 days in diabetes (Vaidya Ghute shriram Baliram, Sai Dhoki).
Momordica charantia Linn.
Family- Cucurbitaceae
Common name- Karle
Plant part used: Leaves and fruits
Uses: Take 2 gm dried powder of Karle with 2 gm pulp of Bel fruit. This Mixture is given for one month to cure diabetes. (Vaidya, Sahane Narhari Dadarao. (Ghat Nandur), Ghute shriram Baliram (Sai Dhoki). Take fresh fruit obtained 1 cup juice and take twice a day to cure diabetes. (Sheikh Zain-ul-Abidin et al, 2018).
Opuntia elatior Mill
Family- Cactaceae
Common name- Phadya Nivdung
Uses: Fruit are edible and used traditional folk medicine because of its role in treating diabetes.
Syzygium cumini (L.) Skeel
Family-Myrtaceae
Common name- Jambhul.
Plant parts used: Leaves and seeds
Uses:- Grind the seeds and take one teaspoon powder evening and morning to reduce blood sugar . 4 green leaves crushed to powder are mixed with 50 ml water. After sieving consume it in the morning 10 days to cure diabetes. (Vaidya Wagh , Ahmednagar).
Punica granatum Linn.
Family: Punicaceae
Common name : Dalim

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Tinospora cordifolia (L). Merr.
Family: Menispermaceae
Vernacular name: Gulwel
Take a 2 gm root powder of Gulwel with dried fruit powder 3gm of Karle is given to diabetic patient twice in a day for one month during this period, patients are not allowed to drink tea and coffee and non-veg during the administration of medicines. (Vaidya Waze Vinayak Ashokrao, Beed.)

Trigonella foenum-graceum L.
Family: Fabaceae
Common name: Methi
He advised to take *Trigonella foenum-graceum* (Methi) after flowering methi is important due to nourishing capacity of pancreas. It helps to balance the sugar levels in both diabetes, type- 1 and type -2. Take entire plants dry in shade. Grind fine powder. Take two teaspoonful powder twice day daily to balance sugar level in diabetes (Vaidya Maske Madhav Jairam , Lamjana).

Discussion

As far as traditional practices in Balaghat region is concerned, all the Practioners of this area has the faith in ayurvedic treatment. All these practices are developed from their generation to generation. All these practices are developed from their plants like Samudra shok, Dalimb, Aadulsa, Neem, Methi, Gulwel, Nivdung, Karvand, Umbar and Jabhul are utilized from ancient time to our present time.

In our Modern age also, swami Ramdev Baba formulated Various ayurvedic products like Diuya modhu kalp vati. It controls diabetes and related complications. In this formulation also he used various medicinal plants which is already utilized in Balaghat region except some rare plants which are not found in Balaghat region, of Marathwada, Maharashtra. He used *Sweritia chirata* (Chairayat) *Picrorhiza kurroa* (kutki), Shilajeet (Asphalatum) *Aconitum heterophyllum* (Atees). For this diabetic Patients, Patanjali yog vidhyapeth provided various Ayurvedic Products live Sugar Ghatak, Madhunashini vati, Madhu Kusumkar Ras and Madhumehari granules for the treatment of Diabetes.

The present work is mainly based on information gathered from the interview with the tribal and local medicinal practitioner on the plant used in the treatment of diabetes and relevant plant species collected from the study area. Most of the peoples living in villages of the study area are poor and illiterate. Also they are out of the reach of modern medicines and on other hand, the market price of most available medicines are very expansive. As a result, these medicinal plants are used by them to cure diabetes. In the present study our data is compared with the available data of Indian literature and earlier workers. Aher R. K. et al (2004), Jagtap S. D. et al (2006), Dey Abhijit (2010), Ghorband et al (2011), Gupta *et al* (2010), Kosalge S.B. & Fursule R.A. (2009), Kshirsagar Anil A. et al (2012), Kumar R. et al (2004)., Patil M. V. & Patil D. A. (2006), Patil M. V. and D. A. Patil (2005), Patil M. V. et al (2006), Patil S. L. and D. A. Patil (2007), Pawar, S. & Patil, D. A. (2007), Patil, M.V. & Patil D. A. (2007), Pawar Subhangi & Patil D. A. (2008), Patil D. A. (2008), Vasant Mali (2016). Mali P.Y. & Bhadane V.V. (2008), Survase S. A. et al (2013). Hassan Mukhtair et al (2018), Sheikh Zain-ul-Abidin et al (2018). Kurup P. N. V.(1977), Khyade M. S. *et al* ((2010), Kachare (2010), Suravase S.A. (2011), Shaikh *et al* (2015), Uniyal, S. et al (2006), Ayyanar, et al (2009), Sharma, P.P. & Mujundar, A.M. (2003). Shisode S. B. and D. A. Patil (1993). Shalini Vidyarthi et al (2013), Upadhyay, P.B. & et al (2007.

Conclusion

Due to practices of Allopathy, Various side effects are occurred. So Now a days, the new era of Herbal Medicinal Products are introduced by Swami Ramdev Baba. The Medicinal plants used by Ramdev Baba and Medicinal Practioners in Balaghat region are near about same with some exceptional cases. But the actual formulations, it's Percentage of products, the method of administration is different due to lack of modern knowledge of plant's constituents and it's properties, phytochemical constituents and ingredients.

References :-

1. Jain S.K, (1995). A manual of *ethno botany* Scientific Publisher, Jodhpur, New Delhi, India.
2. Patil D. A. , (2008), *Herbalcures* Traditional approach, Aavishkar Publications Distributors Jaipur, 302003 (Rajasthan) India.
3. Aher R. K., B. K. Auti, R. N. Deshmukh, G. B. Borkar, S. K. Aher and S. L. Khapke (2004). Survey of medicinal plants from areas of Ahmednagar district (M.S.), *Asian J. of Microbiol. Biotech. Env. Sc.* Vol.6, No.(1) pp-83-86.
4. Ayyanar, M. & Ignacimuthu, S. (2005): Traditional knowledge of Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India. *Journal of Ethnopharmacology*, 102:246-55.
5. Anuradha, U., Kumbhojkar, M.S. & Vartak, V.D. (1986). Observations on wild plants used in folk medicine in the rural areas of the Kolhapur district. *Ancient Science of Life* 1986, 6:119-121.
6. Chavre B. W. and Markandeya, S. K. (2002). Resources and utility of forest wealth in Beed district, Ph. D. Thesis, Dr. Babasaheb Ambedkar Marathwada University,

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7. Cooke T. (1901-1908) The Flora of the Presidency of Bombay, Vol. I & II, London (B.S.I. reprint 1958. Vol. I – III, Calcutta).
8. Dey, S.K., De, A., Karmakar, S., De, P. K., Chakraborty, S., Samanta, A. & Mukherjee, A. (2009). Ethnobotanical study in a remote district of West Bengal, India. *Pharmbit*, 20(2): 91-96.
9. Dey Abhiji and Jitendra Nath De (2010). A survey of Ethnomedicinal plants used by the tribals of Ajoydha hill region, Purulia district, India. *American-Eurasian Journal of sustainable Agriculture*. 4(3):pp-280-290.
10. Gaikwad Sayajirao, Ramchandra Gore and Krushnadeoray Garad (2014). Checklist of the tree flora of the Balaghat Ranges, Maharashtra, India10(5): 1071–1082.
11. Khanna Girja (1982) Herbal Remedies Vikas publishing House Pvt Ltd, New Delhi.
12. Gore Ramchandra, and S. P Gaikwad. (2015).Tree flora of the Balaghat Ranges (Ramling Hills) of Maharashtra. Laxami publisher Solapur.
13. Ghorband Dnyaneshwar and Sharad D Biradar (2012). Folk medicine used by the tribes of Kinwat forest of Nanded district, Maharashtra, India. *Indian Journal of Natural products and Resources*, vol. 3(1),pp-118-122.
14. Gupta Rakhi, M. G. Vairale, R. R. Deshmukh, P. R. Chaudhary and S. R. Wate (2010) Ethnomedicinal uses of plants used by Gond tribe of Bhandara district, Maharashtra.
15. Hasan Mukhtiar, Aneela Tariq Niaz, Samiullah Khan and Farzana Gul. (2018). Antidiabetic and antihyperlipidemic effect of *Artemisia absinthium* L., *Citrullus colocynthis* (L.) Schrad. and *Gymnema sylvestre* (Retz.) R. Br. Ex. Sm. on type II diabetes hyperlipidemic patients. Indian Journal of Traditional Knowledge. Vol. 17(2) pp.233-239.
16. Jagtap, S. D., Deokule, S. S. & Bhosle, S.V. (2006). Some unique ethnomedicinal uses of plants used by the Korku tribe of Amravati district of Maharashtra, India. *Journal of Ethnopharmacology* 107: 463-469.
17. Jain S. K. (1968). Medicinal plants, published by National Book Trust, New Delhi India,
18. Jain S. K. , (1991). Dictionary of Indian Folk Medicine and Ethnobotany, Deep publication, New Delhi.
19. Kachare S. V., S. R. Suryawanshi and K. S. Raut (2010). Traditional Medicines for Diabetes from villages in Marathwada. *Botany Research International* 3(1):pp.14-16.
20. Kachare S. V. Raut K. S. and Surywanshi S. R. (2010) Medicinal plants used by local Inhabitants in Marathwada. *International Journal of Current Research*. Vol. 4: 049-051 pp.
21. Khyade M. S., Awasarkar U. D., Deshmukh R. R. And Petkar A. S. (2010). Ethnobotanical Reports about few Important Diseases from Akole Tehasil of Ahmednagar District (MS) India. *Asian J. Exp. Biol. Sci.*, Vol. 1(2):pp393-404.
22. Kosalge, S.B. & Fursule, R.A. (2009) 'Investigation of ethnomedicinal claims of some plants used by tribals of Satpuda Hills in India', *J. of Ethnopharmacology*. 121, 456-461.
23. Kshirsagar Anil A., Sanjay M. Pawar, Nirmala P. Patil and Vasant Mali (2012). Diversity of Medicinal Plants in Gautala Sanctuary of Kannad, District Aurangabad (MS) India. Bioscience Discovery, 3(3): 355-361.
24. Kumar, R., Suman, N,R. & Dash, S.S. (2004). Traditional uses of plants by the tribals of Amarkantak region, Madhya Pradesh. . *Ind. J. Trad. Knowledge*, 3(4):383-390.
25. Kurup P. N. V. (1977). Hand Book of Medicinal Plants Vol. II, Central Council for Research In Indian Medicine and Homeopathy, New Delhi. Published by CCRIM, Page. 115.
26. Vasant Mali (2016) "Conservation of Indigenous Medicinal Plants and their Traditional Knowledge Found in Beed District" Bionano Frontier Vol. 9(1) pp.82-86.
27. Mali, P.Y. & Bhadane, V.V. (2008). Some rare plants of ethnomedicinal properties from Jalgaon district of Maharashtra. *International Journal of Green Pharmacy*, 2(2):76-78.
28. Marie D'Souza (1993) Tribal Medicine. Publisher Society for Promotion of wastelands Developments, New Delhi.
29. Naik, V. N. (1979) Flora of Osmanabad, Aurangabad: Venus publisher, 464 pp.

602. pp.:Vol. 2: 603-1182 pp.
31. Patil H. M. and V. V. Bhaskar (2005). Medicinal Uses of Plants by Tribal Medicine Men of Nandurbar District in Maharashtra, Natural Product Radiance, Vol. 5 (2), pp. 125-130.
32. Patil M. V. and D. A. Patil (2005). Ethnomedicinal practices of Nashik District, Maharashtra, Indian Journal of Traditional Knowledge, Vol. 4 (3), pp. 287-290.
33. Patil M. V. & Patil D. A. (2006). Ethnobotany of Nashik District, Maharashtra, Daya Publishing House, Delhi.
34. Patil S. L. and D. A. Patil (2007). Ethnomedicinal Plants of Dhule district, Maharashtra, Natural Product Radiance, Vol. 6 (2), pp. 148-151.
35. Patil, M.V. & Patil, D.A. (2007). Some herbal remedies used by the tribals of Nasik district, Maharashtra. *Natural Product Radiance*, 6(2):152-157.
36. Pawar Subhangi & Patil D. A. (2008). Ethnobotany of Jalgaon District, Maharashtra, Daya Publishing House, Delhi.
37. Rothe S. P. (1984) Flora of Beed District A Florestic Survey of Flowering Plants,
38. Sheikh Zain-ul-Abidin, Raees Khan Mushtaq Ahmad, Muhammad Zeeshan Bhatti, Mumhammad Zafar, Asma Saeed and Nazar Khan (2018). Ethnomedicinal survey of highly effective medicinal plants and phytotherapies to treat diabetes mellitus II in South-west Pakistan. Indian Journal of Traditional Knowledge. Vol. 17(4) pp. 682-690.
39. Shalini Vidyarthi, S. S. Samant and Pankaj Sharma (2013). Traditional and indigenous uses of medicinal plants by local residents in Himachal Pradesh, North Western Himalaya, India. *International Journal of Biodiversity Science, Ecosystem Services & Management*. Vol. 9, No. 3, 185–200.
40. Sharma, P.P., Mujundar, A.M. (2003). Traditional knowledge on plants from Toranmal Plateau of Maharastra, Indian *J. Trad. Knowledge*, 2: 292- 296.
41. Shaikh Rafique ,Vasant Mali and Chaus Faisal (2015). Medicinal plants from Deolali forest and its surrounding areas Journal of Advance in Applied Sciences and Technology. Page 39-48.
42. Shisode S. B. And D. A. Patil (1993). Native Medicinal plants of Jalgaon District (Maharashtra). *Biojournal*. Vol. 3, 1 and 2, pp-79-82.
43. Upadhyay, P.B., Roy, S. & Kumar, A. (2007). Traditional uses of medicinal plants among the rural communities of Churu district in the Thar Desert, India. *Journal of Ethnopharmacology*, 113:387-399.
44. Yadav, S. R. and Sardesai, M. M. (2002), Flora of Kolhapur District. Shivaji University, Kolhapur, India.

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Status of Services in Agricultural Libraries: Special Reference to Maharashtra State

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Abstract

This study attempt to examine the Library Services provided to the users in Agricultural College libraries affiliated to Mahatma Phule Krishi Vidyapeeth, Rahuri. In Library services it is focus on Manual Library Services, Computerized Library Services, ICT Based Library Services and ad on services. For the present study there were 40 colleges selected. Out forty 6 are Government Colleges and 34 Self financed Colleges. From this study it was found that majority of the libraries don't have necessary infrastructure facilities to provide ICT Based Services for their users.

Keywords: *Library Services, Manual Services, ICT Based Services, ad on Services*

Introduction

User satisfaction of library services has become an imperative concern in recent times. There is no doubt that satisfaction of library services influences the degree in which the services are used and it has been found to be an important factor that affects the use or non-use of library services . The dawn of 21st century witnessed the digital revolution and gained an extraordinary significance as an indispensable tool in pursuit of knowledge and information. The Internet has remarkably come up as the most powerful medium of storage and retrieval of information needed for various purposes. In the changing scenario, the academic institutions have been adopting many novel technologies for fulfilling their commitments and needs. The concept of 'digital library' or an 'electronic library' has got sudden importance not only in the academic scenario but also in the private sectors and government organizations. In today's rapid changing world, information needs of learners and knowledge seekers are met through a plethora of sources. The digital resources available in a library play a prominent role in facilitating access to required information to the users in an easy and expeditious manner by using various types of library services i.e Manual Services, Computerized Services as well as ICT Based Services. (Kalbande, 2015)

Objectives of the Study

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PURCHASING POLICY OF PRINT RESOURCES IN UNIVERSITY LIBRARIES OF MAHARASHTRA

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ABSTRACT:-

This study commits to examine the Policy of the getting of print resources in University libraries from the state of geographical area. In Library getting policy it's target written Books, Print e-journals (Indian) and print e-journals from the foreign countries. For this study there have been ten university libraries from the state of geographical area hand-picked. From this study it absolutely was found that libraries don't have same getting policy to get print resources.

Keywords:- Print Resources, Library Services, University Libraries, Maharashtra

INTRODUCTION

The accessibility and handiness of collections area unit usually matched with the user's satisfaction. Assortment building involves variety of activities by that a library acquires material of all kinds by implementing the choice policy and also the plans for document acquisition. The choice policies and also the acquisition programmes kind the contents of the gathering development method. Assortment development may be a dynamic and continuous method. It involves the users, the library employees and also the subject consultants on choice team. it's not associate finish in itself however a way to develop a necessity based mostly, up so far and balanced assortment fit meet the document and knowledge wants of the users. The standard of the collections and also the services that they provide in any info institute depends on the method of choosing and getting the data sources. {The info the knowledge the data} polices need to accommodates the need of the

Paper Published (1)

7. "ACADEMIC FOOTPRINT: NEED FOR THE RESEARCHERS IDENTITY"

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Abstract

The use of academic profiling sites is becoming more common, and emerging technologies boost researchers' visibility and exchange of ideas. In this paper highlighted profiling sites. These sites are ResearchGate, Academia.edu, Google Scholar Citations, ResearcherID and ORCID, Scopus ID, Blogs, Personal Websites etc.

Keywords:- Academic Footprint, Social Media, Open Access, Researcher ID, Google Scholar Citation

1. Introduction

Information and communications technologies are rapidly changing how academic achievements and reputation can be assessed. The internet is becoming an all-purpose source for scholarship. "Web mentions" and URL citations are an analog to journal citations for scholarly work appearing or referenced on web sites or blogs. Like article citations, web citations can represent the noteworthiness of a scholar's contributions. And like frequent academic journal citations, a wide range of web mentions adds to an academic's reputation and prestige.

The advantage of assessing a wider range of academic output conveys the breadth and reach takes a more holistic view of an academic's body of work, or figuratively, an overall "academic footprint". An assessment of the academic footprint and/or visibility approaches that of the actual tenure review process because it can include nearly all of the activities undertaken by a faculty member, including but not limited to: dissertation, book reviews, conference

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INFORMATION SEEKING BEHAVIOR OF RESEARCH STUDENTS OF DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

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QR Code

Abstract: - *The major purpose of this study was to examine the Information Seeking Behavior of Dr Babasaheb Ambedkar marathwada university Aurangabad. Information seeking behavior is expressed in various forms, from reading printed material to research and experimentation. Information-seeking behavior Play the vital role for developing library collections, upgrading facilities, and improving services to effectively meet the information needs of users. The present era is an era of information and knowledge revolution. Many electronic resources have been made most available in the libraries. The increase in availability of information on the Web has affected Information seeking behavior*

Keywords: Information Seeking Behavior, Information Needs, Information, Research Students, etc.

Introduction:

The aim of the study was to broaden our understanding of Information Seeking Behavior (ISB) by linking patterns of information seeking to personality and approach into psychological characteristics can shed light on variability and patterns in Information–Seeking Behavior.

The present era is the era of information and knowledge revolution. Many electronic resources are available in the library. The increase in information available on the Web has affected information seeking Behavior. Innumerable types of information, in a large variety of containers and in many different locations, are all available in one place.

In the modern society, the types of information and the media which present them have become manifold and multifarious, offering men and women a vast selection.

Information seeking behavior involves personal reasons for seeking information, the kinds of information which are being sought, and the ways and sources with which needed information is being sought. Information seeking

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DIVERSITY OF APHYLLOPHORALES FROM LATUR DISTRICT, MAHARASHTRA

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ABSTRACT

Wood rotting is normally caused by fungi belonging to the order Aphyllophorales. Present survey deals the availability of Aphyllophoraceous fungi from different tehsils of Latur district of Maharashtra state.

Key Words : Wood rotting fungi, Aphyllophorales, Latur, Maharashtra.

Introduction

Many researchers studied wood decaying fungi occurring in India (Bose, 1938; Banerjee, 1947; Bagchee and Bakshi 1951; Bakshi, 1971; Thind and Dhanda, 1980; Roy and De, 1996 and Sharma 1995). In South West India, these fungi have been studied from Western Ghats of Maharahtra (Randive *et al.*, 2011), and in addition from, Ashti (Mali, 2015) and Beed (Mali, 2019). Present paper gives an account on the occurrence of these fungi from Latur district of Maharashtra state.

Materials and Methods :

Survey and collection of specimens was done from July 2014 till December 2017. Specimens were collected from injured stems and branches, living and dead stem, dead and rotting logs of wood. Those specimens were brought to the laboratory; dried and packed in polythene bags. Morphological characters and microscopic details were recorded. and the fungi were following Rattan (1977); Ryvarden and Johansen (1980); Ryvarden (1991); Natrajan and Kolandavelu (1998); Lim *et al.*, (2001) and Zmitrovich *et al.*, (2006).

Results and Discussion :

Deterioration of wood is mainly caused by wood decaying fungi. Among them Aphyllophoraceous fungi are major decomposers. They cause white and brown rot; degrade lignin and cellulose in the wood.

During present survey, over 400 specimens belonging to order Aphyllophorales were recorded on woods of 32 angiosperm plant species. In all 34 genera and 47 species of wood rotting fungi were identified (Table 1).

Out of the species identified *Ganoderma multipileum*, *Hymenochaete rheicolor* and *Phylloporia chrysites* have been reported for the first time from Maharashtra. Wide diversity in the susceptibility of host was observed. The species *Trametes leonina* was found to be associated with only *Mangifera indica*, while *Grammothele fuligo* was found on the blogs of *Cocos nucifera* which is the monocotyledonous hosts (Table 2).

Some of the hosts were found susceptible to a single fungus, viz. *Acacia farnesiana* to *Ganoderma curtisii; Balanites roxburghii and Citrus sinensis* to *Flavodon flavus; Butea monosperma* to *Favolus tenuiculus; Eucalyptus globulus* to *Scopuloides hydnoides; Jatropha curcas* to *Schizophyllum commune; Manilkara zapota* to *Earliella scabrosa; Melia azedarach* to *Trametes pubescens; Moringa pterygosperma* to *Daedaleopsis confragosa; Nerium oleander* to *Flavodon flavus; Prosopis julifera* to *Amylosporus campbellii; Psidium guajava* to *Phellinus allardii; Samanea saman* to *Trametes cingulata; Swietenia mahogany* to *Ipex velliereus; Tectona grandis and Vitex negundo* to *Schizophyllum commune.*

(Table2). The study reealed that specimens like *Flavodon flavus, Ganoderma lucidum, Hexagonia tenius, Phellinus badius, Phellinus pomaceous, Schizophyllum commune, Scytinostroma rhizomorpharum, Trametes cingulata, Trametes leonina and Trametes variegata* were found to be dominant wood rotting fungi (Table 1). The Aphyllophoraceous members like *Cellulariella acuta, Ceriporia xylostromatoides, Coriolopsis telfairii, Fuscoporia senex, Hymenochaete rheicolor, Inonotus poncei, Leiotrametes lactinea, Loweporus tephroporus, Navisporus floccosus, Peniophora nuda, Polyporus philippinensis, Phlebiopsis friesii, Phlebia ludoviciana, Phylloporia chrysites, Rigidoporus vinctus and Scopuloides hydnoides* were recorded to be rare in the study area (Table 1).

References :

Bagchee, K. and Bakshi, B. K. (1951). *Nature (London)* **167:** 4255.

Bakshi, B. K. (1971). *"Indian Polyporaceae on tree and timber "*. Indian Council of Agriculture Research, New Delhi, pp 246.

Banerjee, S. N. (1947). *Bulletin of Botanical Society of Bengal* **1:** 37

Bose, S. R. (1938). *Bulletin of Carmichael Medical College*, **11:** 1

Lim, Y. W., Kim, H. Y. and Jung, H. S. (2001). *Mycobiology*, **28(3):** 142

Mali, V. P. (2015). *Journal of medicinal chemistry and drug discovery*. **699**

Mali Vasant Pandit (2019). *Bioinfolet*, **16 (1+2) :** 100

Natarajan, K. and Kolandavelu, K. (1998). *"Resupinate Aphyllophorales of Tamil Nadu, India"*. Centre For Advance Study in Botany University of Madras, pp133.

Ranadive, K. R., Vaidya, J. G., Jite, P. K., Ranade, V. D., Bhosale, S. R., Rabba, A. S., Hakimi, M., Deshpande, G. S., Rathod, M. M., Forutan, A., Kaur, M., Naik-Vaidya, C. D., Bapat, G. S. and Lamrood, P. (2011). *Mycosphere*, **2(2)** 91

Rattan, S. S. (1977). *Bibliotheca Mycologica*, **60:** 1

Roy, A. and De, A. B. (1996). *" Polyporaceae of India "*. International Book Distributors, Dehradun, pp 309.

Ryvarden, L. and Johansen, I. (1980). *"A preliminary polypore flora of East Africa". Fungiflora*, Oslo, pp 1-636.

Sharma, J. R. (1995). *"Hymenochaetaceae of India"*. Botanical Survey of India, Calcutta, pp 291.

Thind, K. S. and Dhanda, R. S. (1980). *Indian Phytopathology*, **28:** 57

Zmitrovich, I. V., Malysheva, V. F. and Wjacheslay (2006). *Mycena*, **6:** 4

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Table 1 : Distribution of Aphyllophorales in different Tehsil's of Latur district.

Sr. No.	Name of the Fungus	Tehsil with fungal frequency									
		LAT	AUS	NIL	CHA	REN	AHE	UDG	JAL	DEO	SHI
01	*Amylosporus campbellii* (Berk.) Ryv.	+	–	–	–	+	–	–	–	–	–
02	*Cellulariella acuta* (Berk.) Zmitr. & Malysheva	–	–	–	–	–	+	–	–	–	–
03	*Ceriporia xylostromatoides* (Berk.) Ryv.	–	–	–	–	–	+	–	–	–	–
04	*Coriolopsis brunneoleuca* (Berk.) Ryv.	+	–	–	–	–	–	–	–	–	–
05	*Coriolopsis telfairii* (Klotzsch) Ryvarden	–	–	–	–	+	–	–	–	–	–
06	*Daedaleopsis confragosa* (Bolt. : Fr.) Schroet.	+	–	–	–	–	+	–	–	–	–
07	*Dichomitus leucoplacus* (Berk.) Ryv.	+	–	–	–	–	–	–	+	–	–
08	*Earliella scabrosa* (Pers.) Gilb. & Ryv.	+	–	–	–	+	–	–	–	–	–
09	*Epithele interrupta* Bres.	+	–	–	–	–	+	–	–	–	–
10	*Favolus tenuiculus* P. Beauv.	–	–	–	–	–	–	+	+	+	–
11	*Flavodon flavus* (Kl.) Ryv.	+	–	+	+	+	+	+	+	+	+
12	*Funalia caperata* (Berk.) Zmitr & Malysheva	+	–	–	–	–	–	+	–	–	–
13	*Fuscoporia senex* (Nees & Mont.) Ghob.-Nejh.	–	–	–	–	–	+	–	–	–	–
14	*Ganoderma colossus* (Fr.) Baker	–	–	–	–	–	–	+	+	–	–
15	*Ganoderma curtisii* (Berk.) Murril	+	–	+	–	+	–	–	–	–	–
16	*Ganoderma lucidum* (Curt.) Karst.	+	–	+	+	–	–	+	–	+	+
17	*Ganoderma multipileum* Ding Hou	+	–	–	–	–	–	+	–	–	–
18	*Grammothele fuligo* (Berk. & Broome) Ryv.	+	–	–	–	–	+	–	–	–	–
19	*Hexagonia tenuis* (Hooke) Fr.	+	–	+	–	+	+	–	+	–	–
20	*Hymenochaete rheicolor* (Mont.) Lév.	–	–	–	–	–	–	+	–	–	–
21	*Inonotus poncei* (Lloyd) Ryv.	–	–	–	–	+	–	–	–	–	–
22	*Inonotus rickii* (Pat.) Reid	–	+	+	–	+	–	–	–	+	–
23	*Irpex vellereus* Berk. & Broome	+	–	–	–	–	–	+	–	–	–
24	*Leiotrametes lactinea* (Berk.) Welti & Courtec.	–	–	–	–	–	+	–	–	–	–
25	*Lopharia cinerascens* (Schw.) Cunn.	+	–	–	–	–	–	–	+	–	–
26	*Loweporus tephroporus* (Mont.) Ryv.	–	–	–	–	–	+	–	–	–	–
27	*Navisporus floccosus* (Bres.) Ryv.	–	–	–	–	–	–	–	+	–	–

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Sr. No.	Name of the Fungus	Collection Localities									
		LAT	AUS	NIL	CHA	REN	AHE	UDG	JAL	DEO	SHI
28	*Peniophora nuda* (Fr.) Bres.	–	–	+	–	–	–	–	–	–	–
29	*Phellinus allardii* (Bres.) Ahmad	–	–	–	–	+	–	+	–	+	–
30	*Phellinus badius* (Cooke) Cunn.	+	+	+	–	+	–	+	+	+	+
31	*Phellinus gilvus* (Schwein.) Pat.	+	–	–	–	–	–	+	–	–	–
32	*Phellinus pomaceus* (Pers.) Maire	+	–	+	–	+	–	+	+	–	–
33	*Phellinus rimosus* (Berk.) Pilát	+	–	–	–	+	–	–	+	–	+
34	*Phlebia ludoviciana* (Burt) Nakasone & Burds.	–	–	–	–	+	–	–	–	–	–
35	*Phlebiopsis friesii* (Lev.) Spirin & Miettinen	–	–	–	–	–	–	–	+	–	–
36	*Phylloporia chrysites* (Berk.) Ryvarden	–	–	–	–	–	–	+	–	–	–
37	*Polyporus philippinensis* Berk.	-	–	–	–	–	–	+	–	–	–
38	*Rhodofomitopsis feei* Cui, Han & Dai	–	–	–	–	+	+	+	–	–	–
39	*Rigidoporus vinctus* (Berk.) Ryv.	–	–	–	–	–	–	+	–	–	–
40	*Schizophyllum commune* Fr.	+	–	+	–	+	+	+	+	–	–
41	*Scopuloides hydnoides* (Cooke & Mass.) Hortst. & Ryv.	–	–	+	–	–	–	–	–	–	–
42	*Scytinostroma duriusculum* (Berk. & Br.) Donk	–	–	–	–	–	–	–	+	–	–
43	*Scytinostroma rhizomorpharum* Rattan	–	–	+	–	+	+	–	–	+	–
44	*Trametes cingulata* Berk.	+	–	–	–	–	+	+	+	–	+
45	*Trametes leonina* (Kl.) Imazeki	+	–	+	–	+	–	+	+	–	+
46	*Trametes pubescens* (Schw. : Fr.) Pilat.	+	–	–	–	–	+	–	–	–	–
47.	*Trametes variegata* (Berk.) Zmitr., Wasser & Ezhov	–	–	–	–	+	+	+	+	+	–

Latur (LAT), Ausa (AUS), Nilanga (NIL), Chakur (CHA), Renapur (REN), Ahmedpur (AHE), Udgir(UDG), Jalkot (JAL), Deoni (DEO), Shirur-Anantpal (SHI)

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Table 2 : Aphyllophoraceous fungi from Latur district

Sr. No	Taxa	Host	Locality	Specimen No.
1.	*Amylosporus campbellii* (Berk.) Ryv.	*Leucaena leucocephala* (Lamk.) de. Wit	Latur	FHC/VPM- 13, 267
			Renapur	FHC/VPM- 109, 112, 113
2.	*Cellulariella acuta* (Berk.) Zmitr. & Malysheva	*Acacia arabica* (Lamk.) Willd.	Ahmedpur	FHC/VPM-137
3.	*Ceriporia xylostromatoides* (Berk.) Ryv.	*Santalum album* L.		FHC/VPM- 125
4.	*Coriolopsis brunneoleuca* (Berk.) Ryv.	*Acacia arabica* (Lamk.) Willd.	Latur	FHC/VPM- 12
		Diospyros melanoxylon Clarke		FHC/VPM- 264
5.	*Coriolopsis telfairii* (Klotzsch) Ryvarden	*Leucaena leucocephala* (Lamk.) de. Wit	Renapur	FHC/VPM- 118
6.	*Daedaleopsis confragosa* (Bolt. : Fr.) Schroet.	*Mangifera indica* L.	Ahmedpur	FHC/VPM- 126
		Moringa pterygosperma Gaert.	Latur	FHC/VPM- 261
7.	*Dichomitus leucoplacus* (Berk.) Ryv.	*Acacia leucophloea* (Roxb.) Willd		FHC/VPM- 127
8.	*Earliella scabrosa* (Pers.) Gilb. & Ryv.	*Ficus religiosa* L.		FHC/VPM- 14
		Manilkara zapota (L.) P. van Royen		FHC/VPM- 27
		Ficus religiosa L.	Jalkot	FHC/VPM- 158
		Ficus religiosa L.	Renapur	FHC/VPM- 276
9.	*Epithele interrupta* Bres.	*Mangifera indica* L.	Ahmedpur	FHC/VPM- 129
		Dalbergia sissoo Roxb.ex DC.	Latur	FHC/VPM- 253
10.	*Favolus tenuiculus* P. Beauv.	*Mangifera indica* L.	Jalkot	FHC/VPM- 149
		Lantana camara L.	Udgir	FHC/VPM- 170
		Gliricidia sepium (Jacq.) Kunth ex Steud.		FHC/VPM-182
		Ficus elastica Roxb.		FHC/VPM- 277
			Deoni	FHC/VPM- 213
11.	*Flavodon flavus* (Kl.) Ryv.	*Leucaena leucocephala* (Lamk.) de. Wit	Latur	FHC/VPM-05, 30
		Albizia lebbeck (L.) Willd.		FHC/VPM- 06, 32, 38
		Grevillea robusta A. Cunn. ex R. Br.		FHC/VPM- 08
		Ficus religiosa L.		FHC/VPM- 29
		Dalbergia sissoo Roxb.ex DC.		FHC/VPM- 34
		Azadirachta indica A. Juss.		FHC/VPM- 35
		Ficus benghalensis L.	Ahmedpur	FHC/VPM- 145
		Acacia leucophloea (Roxb.) Willd	Jalkot	FHC/VPM- 165
		Santalum album L.	Deoni	FHC/VPM- 207
		Azadirachta indica A. Juss.		FHC/VPM- 202
		Leucaena leucocephala (Lamk.) de. Wit		FHC/VPM- 203
		Citrus sinensis (L.) Osbeck		FHC/VPM- 204

11.	*Flavodon flavus* (Kl.) Ryv.	*Gliricidia sepium* (Jacq.) Kunth ex Steud	Udgir	FHC/VPM- 188
		Citrus sinensis (L.) Osbeck	Shirur-Anantpal	FHC/VPM- 216
		Nerium oleander L.	Chakur	FHC/VPM- 233
		Balanites roxburghii Planch.	Renapur	FHC/VPM- 271
12.	*Funalia caperata* (Berk.) Zmitr & Malysheva	*Grevillea robusta* A. Cunn. ex R. Br	Latur	FHC/VPM- 09, 15
13.	*Fuscoporia senex* (Nees & Mont.) Ghob.-Nejh.	*Leucaena leucocephala* (Lamk.) de. Wit	Udgir	FHC/VPM- 281
14.	*Ganoderma colossus* (Fr.) Baker	*Acacia arabica* (Lamk.) Willd.	Ahmedpur	FHC/VPM- 132
15.	*Ganoderma curtisii* (Berk.) Murril	*Citrus medica* L.	Jalkot	FHC/VPM- 148
		Acacia farnesiana (L.) Willd.	Udgir	FHC/VPM- 283
16.	*Ganoderma lucidum* (Curt.) Karst.	*Acacia arabica* (Lamk.) Willd.	Latur	FHC/VPM- 19
		Citrus medica L.	Renapur	FHC/VPM- 120
		Azadirachta indica A. Juss.	Latur	FHC/VPM- 254
		Leucaena leucocephala (Lamk.) de. Wit	Latur	FHC/VPM- 18
		Casurina equisetifolia J. R. & G. Forst.		FHC/VPM- 252,, 257
		Citrus sinensis (L.) Osbeck	Udgir	FHC/VPM- 172, 177
16.	*Ganoderma lucidum* (Curt.) Karst.	*Azadirachta indica* A. Juss.	Deoni	FHC/VPM- 210
		Delonix regia (Boj. ex Hook.) Raf.	Shirur-Anantpal	FHC/VPM- 217
		Casurina equisetifolia J. R. & G. Forst.	Chakur	FHC/VPM- 234
17.	*Ganoderma multipileum* Ding Hou	*Gliricidia sepium* (Jacq.) Kunth ex Steud		FHC/VPM- 235
			Udgir	FHC/VPM- 282
18.	*Grammothele fuligo* (Berk. & Broome) Ryv.	*Cocos nucifera* L.	Latur	FHC/VPM- 260
19.	*Hexagonia tenuis* (Hooke) Fr.	*Mangifera indica* L.	Udgir	FHC/VPM- 186, 187
				FHC/VPM- 279
			Latur	FHC/VPM- 133
			Nilanga	FHC/VPM- 03, 22
			Renapur	FHC/VPM- 117
			Ahmedpur	FHC/VPM- 131, 141
			Jalkot	FHC/VPM- 151
		Gliricidia sepium (Jacq.) Kunth ex Steud.	Latur	FHC/VPM- 258

20.	*Hymenochaete rheicolor* (Mont.) Lév.	*Ficus benghalensis* L.	Udgir	FHC/VPM- 191
21.	*Inonotus poncei* (Lloyd) Ryv.	*Leucaena leucocephala* (Lamk.) de. Wit	Renapur	FHC/VPM- 110
22.	*Inonotus rickii* (Pat.) Reid	*Tamarindus indica* L.	Ausa	FHC/VPM- 36
			Nilanga	FHC/VPM- 39
		Delonix regia (Boj. ex Hook.) Raf.	Deoni	FHC/VPM- 212
			Renapur	FHC/VPM- 275
23.	*Irpex vellereus* Berk. & Broome	*Swietenia mahogany* (L.) Jacq. Enum. Pl. Cairb.	Latur	FHC/VPM- 31
		Santalum album L.		FHC/VPM- 259
24.	*Leiotrametes lactinea* (Berk.) Welti & Courtec.	*Leucaena leucocephala* (Lamk.) de. Wit	Udgir	FHC/VPM- 178
25.	*Lopharia cinerascens* (Schw.) Cunn	*Mangifera indica* L.	Ahmedpur	FHC/VPM- 139
26.	*Loweporus tephroporus* (Mont.) Ryv.	*Tamarindus indica* L.	Jalkot	FHC/VPM- 147
		Bougainvillea spectabilis Willd.	Latur	FHC/VPM- 256
27.	*Navisporus floccosus* (Bres.) Ryv.	*Acacia arabica* (Lamk.) Willd.	Ahmedpur	FHC/VPM- 134
28.	*Peniophora nuda* (Fr.) Bres.	*Ficus racemosa* L.	Jalkot	FHC/VPM- 153
29.	*Phellinus allardii* (Bres.) Ahmad	*Ziziphus mauritiana* Lamk.	Nilanga	FHC/VPM- 24
		Psidium guajava L.	Deoni	FHC/VPM- 205, 206
			Renapur	FHC/VPM- 270
30.	*Phellinus badius* (Cooke) Cunn.	*Leucaena leucocephala* (Lamk.) de. Wit	Udgir	FHC/VPM- 284
		Albizia lebbeck (L.) Willd.	Latur	FHC/VPM- 33
			Deoni	FHC/VPM- 209
			Renapur	FHC/VPM- 108
		Acacia arabica (Lamk.) Willd.	Nilanga	FHC/VPM- 40
			Udgir	FHC/VPM- 180, 190, 192, 193, 200, 201
			Jalkot	FHC/VPM- 156, 162, 166
			Shirur-Anantpal	FHC/VPM- 221, 222
		Gliricidia sepium (Jacq.) Kunth ex Steud.	Udgir	FHC/VPM- 174, 181, 189
		Leucaena leucocephala (Lamk.) de. Wit	Latur	FHC/VPM- 37
			Udgir	FHC/VPM- 176, 184, 198, 199,
		Casurina equisetifolia J. R. & G. Forst.	Deoni	FHC /VPM- 211
31.	*Phellinus gilvus* (Schwein.) Pat.	*Azadirachta indica* A. Juss.	Latur	FHC/VPM- 266,
		Acacia arabica (Lamk.) Willd.	Udgir	FHC/VPM- 278
		Mangifera indica L.		FHC/VPM- 196

32.	*Phellinus pomaceus* (Pers.) Maire	*Acacia arabica* (Lamk.) Willd.	Latur	FHC/VPM- 17
			Jalkot	FHC/VPM- 164
		Leucaena leucocephala (Lamk.) de. Wit	Renapur	FHC/VPM- 111
			Nilanga	FHC/VPM- 225
			Udgir	FHC/VPM- 179, 185
		Gliricidia sepium (Jacq.) Kunth ex Steud.	Udgir	FHC/VPM- 183
31.	*Phellinus gilvus* (Schwein.) Pat.	*Azadirachta indica* A. Juss.	Latur	FHC/VPM- 266,
		Acacia arabica (Lamk.) Willd.	Udgir	FHC/VPM- 278
		Mangifera indica L.		FHC/VPM- 196
32.	*Phellinus pomaceus* (Pers.) Maire	*Acacia arabica* (Lamk.) Willd.	Latur	FHC/VPM- 17
			Jalkot	FHC/VPM- 164
		Leucaena leucocephala (Lamk.) de. Wit	Renapur	FHC/VPM- 111
			Nilanga	FHC/VPM- 225
			Udgir	FHC/VPM- 179, 185
		Gliricidia sepium (Jacq.) Kunth ex Steud.	Udgir	FHC/VPM- 183
33.	*Phellinus rimosus* (Berk.) Pilát	*Leucaena leucocephala* (Lamk.) de. Wit	Renapur	FHC/VPM- 114
		Diospyros melanoxylon Clarke	Shirur-Anantpal	FHC/VPM- 220
		Acacia arabica (Lamk.) Willd.	Latur	FHC/VPM- 255
			Jalkot	FHC/VPM- 163
34.	*Phlebia ludoviciana* (Burt) Nakasone & Burds.	*Bougainvillea spectabilis* Willd.	Renapur	FHC/VPM- 274
35.	*Phlebiopsis friesii* (Lev.) Spirin & Miettinen	*Ficus benghalensis* L.	Jalkot	FHC/VPM- 154
36.	*Phylloporia chrysites* (Berk.) Ryvarden	*Annona reticulata* L.	Udgir	FHC/VPM- 197
37.	*Polyporus philippinensis* Berk.	*Gliricidia sepium* (Jacq.) Kunth ex Steud.		FHC/VPM- 173
38.	*Rhodofomitopsis feei* Cui, Han & Dai	*Tamarindus indica* L.	Renapur	FHC/VPM- 123
		Acacia arabica (Lamk.) Willd.	Udgir	FHC/VPM- 280
			Ahmedpur	FHC/VPM- 136
39.	*Rigidoporus vinctus* (Berk.) Ryv.	*Gliricidia sepium* (Jacq.) Kunth ex Steud.	Udgir	FHC/VPM- 175
40.	*Schizophyllum commune* Fr.	*Mangifera indica* L.	Latur	FHC/VPM- 01
		Albizia lebbeck (L.) Willd.		FHC/VPM- 04
		Grevillea robusta A. Cunn. ex R. Br.		FHC/VPM- 10
		Tectona grandis L.f.		FHC/VPM- 16
		Tamarindus indica L.	Nilanga	FHC/VPM- 25
		Mangifera indica L.		FHC/VPM- 26
		Annona squamosa L.	Ausa	FHC/VPM- 28
		Tamarindus indica L.	Renapur	FHC/VPM- 115
		Azadirachta indica A. Juss.		FHC/VPM- 119
		Acacia arabica (Lamk.) Willd.	Jalkot	FHC/VPM- 146
			Renapur	FHC/VPM-122

		Acacia leucophloea (Roxb.) Willd	Ahmedpur	FHC/VPM- 124
		Mangifera indica L.		FHC/VPM- 130, 144
			Renapur	FHC/VPM- 121
			Jalkot	FHC/VPM- 150
	Schizophyllum commune Fr.	*Mangifera indica* L.	Udgir	FHC/VPM- 169
		Tamarindus indica L.		FHC/VPM- 194
		Jatropha curcas L.	Nilanga	FHC/VPM- 227
41.	*Scopuloides hydnoides* (Cooke & Mass.) Hortst. & Ryv.	*Eucalyptus globulus* Labill.	Nilanga	FHC/VPM- 20
42.	*Scytinostroma duriusculum* (Berk. & Br.) Donk	*Ficus religiosa* L.	Jalkot	FHC/VPM- 152, 155
		Dalbergia sissoo Roxb.ex DC.		FHC/VPM- 157
43.	*Scytinostroma rhizomorpharum* Rattan	*Azadirachta indica* A. Juss.	Nilanga	FHC/VPM- 23
		Albizia lebbeck (L.) Willd.	Deoni	FHC/VPM- 208
		Leucaena leucocephala (Lamk.) de. Wit	Renapur	FHC/VPM- 107
44.	*Trametes cingulata* Berk.	*Mangifera indica* L.	Ahmedpur	FHC/VPM- 138
		Ziziphus mauritiana Lamk.	Renapur	FHC/VPM- 272
		Acacia nilotica (L.) Del.	Latur	FHC/VPM- 02
		Tamarindus indica L.	Jalkot	FHC/VPM- 160
		Acacia arabica (Lamk.) Willd.	Latur	FHC/VPM- 07
	Trametes cingulata Berk.	*Acacia arabica* (Lamk.) Willd.	Ahmedpur	FHC/VPM- 11
			Ahmedpur	FHC/VPM- 143
			Jalkot	FHC/VPM- 159
			Ahmedpur	FHC/VPM- 135, 142
			Shirur-Anantpal	FHC/VPM- 218
		Samanea saman (Jacq) Merr.	Latur	FHC/VPM- 263
45.	*Trametes leonina* (Kl.) Imazeki	*Mangifera indica* L.	Nilanga	FHC/VPM- 21
			Jalkot	FHC/VPM- 167, 168
			Udgir	FHC/VPM- 195
			Shirur-Anantpal	FHC/VPM- 219
			Latur	FHC/VPM- 265
			Renapur	FHC/VPM- 273
46.	*Trametes pubescens* (Schw. : Fr.) Pilat.	*Acacia arabica* (Lamk.) Willd.	Ahmedpur	FHC/VPM- 140
		Melia azedarach L.	Latur	FHC/VPM- 262

47.	*Trametes variegata* (Berk.) Zmitr., Wasser & Ezhov	*Mangifera indica* L.	Renapur	FHC/VPM- 116
				FHC/VPM- 269
			Ahmedpur	FHC/VPM- 128
			Jalkot	FHC/VPM- 161
			Udgir	FHC/VPM- 171
		Ficus elastica Roxb.	Deoni	FHC/VPM- 214

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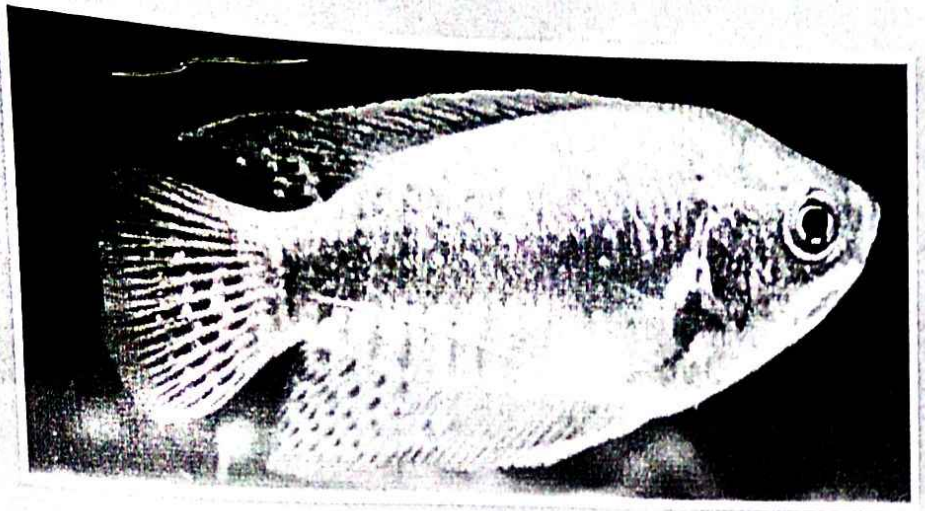

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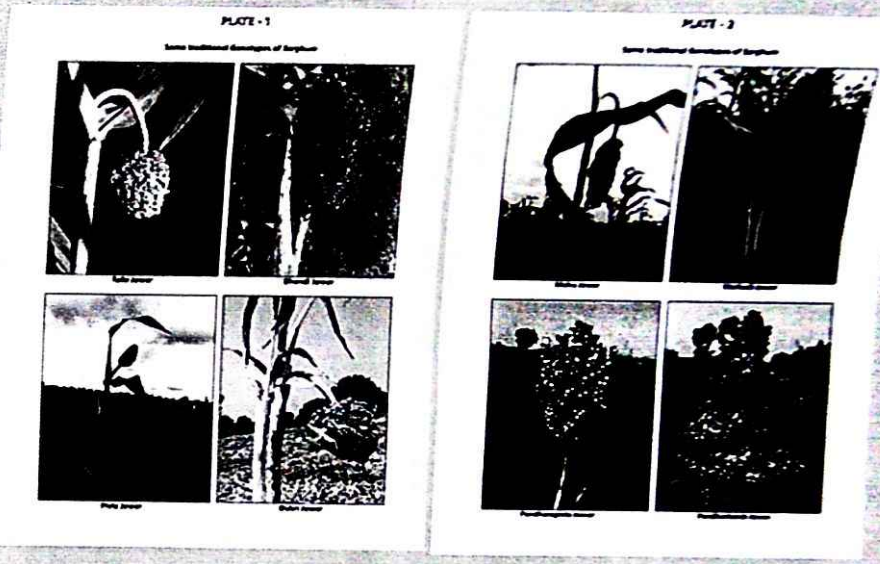

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Amylosporus campbelli (Berk.) Ryvarden *Norw. Jl. Bot.* 24: 217, 1977; *Polyporus campbellii* Berk., *Hooker's J. Bot. Kew, Gard. Misc.* 6: 228, 1854.
Description: Roy & De (1996), Leelavathy & Ganesh (2008) & Sharma (2012).
Distribution in India: Tamilnadu; Madhya Pradesh; Maharashtra; West Bengal and Tropical Himalaya.
Remarks: Rare. This taxon serves as type material for the genus Amylosporus Ryvarden and for such specimens which are having characteristic annual growth tendency, annual growth habit, poroid basidiocarps, simple septate and clamped generative hyphae, hymenial hyphae without clamp connections, and finely asperulate and amyloid basidiospores (David and Rajchenberg, 1985, 1987; Roy and De, 1996; Leelavathy and Ganesh, 2008; Hattori, 2008; Sharma, 2012). Macro and microscopic characters of present specimens are fairly within the range of type material such as stipitate to pileate basidiocarps with tapered base which are sappy, heavy and pinkish white to ochraceous when fresh, whereas turns light weight and brittle when dried, including monomitic clamped generative hyphae and amyloid ornamented basidiospores. Moreover, its context is having a malodor of decaying vegetables or garbage. It has been Reported as mycorrhizic fungi associated with grass's root (Sharma, 2012) whereas, few others believe that it causes rot (Chen and Shen, 2014). However, during present investigation most of the specimens were collected from soil, attached with underground roots of Prosopis julifera. In field Amylosporus campbellii can be easily confused with A. succulentus, Jia J. Chen & L.L. Shen,due to similarity in macro and micromorphology but, molecular data and dextrinoid pale golden yellow skeletal hyphae clearly establishes later as independent taxon.

Auricularia auricula-judae (Bull.) Quél., Enchir. fung. (Paris): 207 (1886).
Description: Lowy (1952)
Distribution in India: Many parts of India
Remarks: This is one of the common jelly fungi on dead woods and trees which can be easily identified on the basis of jelly consistency and ear like appearance.

Auricularia mesenterica (Dicks.) Pers., Mycol. eur. (Erlanga) 1: 97 (1822).
Description: Lowy (1952)
Distribution in India: Tropical to subtropical India
Remarks: Comparatively less common, and encountered only once. It can be identified due to its effused fleshy and more or less thick fruiting bodies which turns into thin cracked crust on drying.

Cellulariella acuta (Berk.) Zmitr. & V. Malysheva, Index Fungorum 180: 1 (2014).
Description: Bakshi (1971), Roy and Mitra (1982), Roy and De (1996), Leelavathy and Ganesh (2000).
Distribution in India: North western Himalaya, Chhattisgarh, Madhya Pradesh, West Bengal, Maharashtra.
Remarks: Abundant. Common wood rot fungi, causing white spongy rot on dead and living trees. Literature survey in India (Bakshi 1971; Roy and Mitra,1982 Roy and De, 1996 Leelavathy and Ganesh, 2012; Sharma 2012) and abroad (Llyod, 1910; Cunningham 1965; Ryvarden and Johansen 1980; Zhao and Zhang 1992) reveals that hymenophore of present taxon is highly variable feature creating confusion and results in numerous synonyms in the text. Every collection has different hymeneal form (Lloyd, 1898-1925). During this study too, there was confusion due to poroid, daedaloid, labyrinthine or irpicoid to partly lamellate hymenophore. However, microscopic features like trimitic hyphal system with highly branched bovista type binding hyphae, broadly cylindrical relatively medium sized basidiospores were constant and trustworthy features, which forced the author to place it under present taxon. Zmitrovich and Malaysheva (2013) placed it under Cellulariella on the basis of molecular phylogeny.

Ceriporia xylostromatoides (Berk.) Ryvarden, in Ryvarden & Johansen, Prelim. Polyp. Fl. E. Afr. (Oslo): 276 (1980); *Polyporus xylostromatoides* Berk., J. Linn. Soc., Bot. 2: 537 (1873).
Description: Roy and De (1996), Sharma 2012)
Distribution in India: West Bengal, Maharashtra, Tropical north western India.
Remarks: Rare. Inhabiting various kinds of woods in tropical areas of India. Widely resupinate white to cream colored basidiocarps with fimbriate to lacerate pores with variable size (2-5 per mm) are macroscopic field characters, useful to identify present species. Microscopically, monomitic hyphal system with thin to thick walled septate generative hyphae branched at right angles can also treated as identification features.

Coriolopsis brunneoleuca (Berk.) Ryvarden, Persoonia. Jl. Bot. **19:** 230 (1972).
Description: Sharma (2012)
Distribution in India: Tropical north western India.
Remarks: Common. This species usually grows on dead thin branches but also found to grow on dead tree trunks and covers almost entire host which may reach to several meters long and wide. The Basidiocarps are usually thin, widely effused, effused reflexed with pale orange to light brown. Hymenophore, in which pores become decurrent, round to sub-angular is characteristic feature of Coriolopsis. Microscopic characters like thick-walled, clamped trinoid binding hyphae and large cylindrical cyanoline basidiospores are also identifying features of this species.

Coriolopsis telfarii (Klotzsch.) Ryvarden, Persoonia. Jl. Bot. **19** (34): 230, 1972; *Polyporus telfarii* Klotzsch, Linnaea 8: 484, 1833.
Description: Sharma (2012)
Distribution in India: North western Himalaya.
Remarks: This Commonly appearing species usually grow on dead hardwood and cause white rot (Roy and De, 1996; Leelavathy and Ganesh, 2008 and Sharma, 2012). Distinctly zonate pilear surface, decorated with strigose bifurcate hairs, which are brown to golden brown in young, while grayish brown to black pilear surface towards the maturity are unique feature of this species which makes it easy for identification in the field. Microscopically, thick-walled, pale yellow to pale brown skeletal hyphae and oblong ellipsoid basidiospores are important to identify.

Daedaleopsis confragosa (Bolton) J. Schröt., in Cohn, Krypt. -Fl. Schlesien (Breslau) 3.1 (25-32): 492 (1888).
Description: Sharma, 2012
Distribution in India: Western ghat, Maharashtra; Illandu Timber Depot, Telangana.
Remarks: Rathod (2011) and Krishna et al. (2015) also reported it from southern peninsula India. Daedaleopsis tricolor and D. confragosa were formerly treated either as separate species or as nonspecific one. Previous could be mistaken by the presence of a lamellate hymenophore and mostly dark pileus surface with small network of grains macromorphologically. But, micro-morphologically it was similarity in many respects, which was the reason for separate identity of D. tricolor (Ko and Jung, 1999). Further evidence gathers from sequences of its rDNA, RPB2 and TEF by Koukol et al. (2014), who treated D. tricolor as variety of D. confragosa, however, index fungorum (2015) considers it as a synonym.

Daldinia concentrica (Bolton) Ces. & De Not., Comm. Soc. crittog. Ital. 1(4): 197 (1863)
Description: Stadler et al. (2014)
Distribution in India: Throughout tropical to subtropical to temperate regions of India.
Remarks: Ascocarps appears commonly throughout the year. Its concentric rings are characteristic feature to identify in the field when breaks transversely.

Dichomitus leucoplacus (Berk.) Ryvarden.
Description: Sharma (2012)
Distribution in India: Throughout tropical to subtropical regions of India.
Remarks: Macro and microscopically present species which is closely related to Antrodia, but, dimitic hyphal system coupled with arboriform binding hyphae segregate it. Further large size of basidiospores confirms its identity.

Duportella tristicula (Berk. & Broome) Reinking, Philipp. J. Sci., C, Bot. 17: 364 (1920); Corticium tristiculum Berk. & Broome, J. Linn. Soc., Bot. 14 (no. 74): 71 (1873) [1875]
Description: De (1985).
Distribution in India: Rajasthan, West Bengal.
Remarks: Common. Annual, resupinate, membranous, adnate, basidiomata initially develops as scattered, irregular patches which later merge to form irregular areas and finally effused to cover entire host surface especially in thin branches. Velvety hymenial surface are dark brown while thin and fimbriate margin remains yellowish white. Microscopically, clamped septate thick-walled, branched generative hyphae, and skeletal hyphae thick-walled, yellowish brown along with acuminate, long, encrusted, thick-walled, with pseudosetae and cylindrical to acute gloeocystidia are unique combination which makes easy identification. Present species well agrees with the description of De (1985).

Earliella scabrosa (Pers.) Gilb. & Ryvarden, Mycotaxon 22(2): 364 (1985); *Polyporus corrugatus* Pers., in Gaudichaud-Beaupré in Freycinet, Voy. Uranie., Bot.: 172 (1827) [1826-1830].
Description: Bakshi (1971), Thind & Chatrath (1960), Roy & De (1996), Leelavathy & Ganesh (2000), Sharma (2012).
Distribution in India: Throughout the tropical India.
Remarks: Common in occurrence. As far as macromorphology is concerned, it has highly variable basidiocarps ranging from resupinate to effused-reflexed to applante pileate and even imbricate. Resupinate ones are very difficult to identify because most of the times they lacks abhymenial surface where red cuticle develops from the base but, of course well visible in reflexed and pileate ones. Similarly, hymenial surface are also highly polymorphic showing irpicoid to sinuous and decurrent on sloping substrate whereas pileate ones are with poroid to partially lenzitoid. Due to polymorphic shape and size of pilear and hymenial surface which were source of major taxonomic characters in traditional taxonomy, it is obvious to recognize the present taxon with numerous synonyms in India and abroad (www.indexfungorum.org). But, red cuticle at the pilear base macroscopically and highly branched zig-zag shaped binding hyphae coupled with cylindrical large size basidiospores microscopically are few constant features to identify.

Epithele interrupta Bres., Bull. Jard. bot. État Brux. 4(1): 25 (1914)
Description: Natarajan & Kolandavelu (1998)
Distribution in India: Tamilnadu, North western Himalaya.
Remarks: This is widely distributed species in India (Natarajan & Kolandavelu, 1998;) and abroad (Naksone, 2013) with morphologically highly variable features. Resupinate subceraceous to membranous denticulate to verruculose yellowish brown basidiocarps shows similarity with many other corticoid wood rotting fungi. But, dimitic hyphal system with hyphal pegs composed of dendritic hyphae and presence of gloeocystidia makes this species distinct among the members of Epithele (Boquiren, 1971; Boiding & Lanquetin, 1983, Hjorstam & Ryvarden, 2005; Wang et al., 2010 and Naksone, 2013).

Favolus tenuiculus P. Beauv., Fl. Oware 1(8): 74; Favolus brasilensis (Fr.) Fr. Linnaea 5: 511 (1830).
Description: Sharma (2012)
Distribution in India: Kerala, Tropical north western Himalaya.
Remarks: Rare. The laterally stipitate, yellowish white basidiocarps with big hexagonal pores are distinguishing feature of this species. Its tropical distributions and taxonomic features are closer as well as within

ıe acceptable limits of circumscription ıferred from Indian (Bose, 1937; Bakshi, 971; Leelavathy and Ganesh, 2000 and harma, 2013) as well as abroad (Ryvarden, 980) counterparts except the monomitic yphal system reported by Bakshi (1971). owever, the size of basidiospores (5.57.5 × .53.5 μm) recorded from present specimens slightly smaller as compared to that recorded y Ryvarden (1980) and Sharma (2012).

lavodon flavus (Klotzsch) Ryvarden, orw. Jl. Bot. 20: 3 (1973)
escription: Bakshi (1971) as Irpex flavus Roy De (1996), Natarajan & Kolandavelu (1998), eelavathy & Ganesh (2000) and Sharma 2012)
istribution in India: Kerala, Tamilnadu, North estern Himalaya, Punjab, West Bengal.
emarks: Abundant. Well studied and eported by Curry (1876), Hennings (1901), loyd (1898-1925), Theissen (1911) and akshi (1971) as Irpex flavus as well as Roy & e (1996), Natarajan & Kolandavelu (1998), eelavathy and Ganesh (2000) and Sharma 2000 & 2012) as Flavodon flavus in national nd regional mycoflora. Macro and icromorphological features of present pecimens are well fitted with above worker's escriptions with few negligible and cceptable variations. In the field it is an easily dentifiable wood rotting fungi attacking arious kinds of dead woods throughout the opical and subtropical areas of India. Widely ffused to reflexed basidiocarps with yellowish olored irpicoid to sinous hymenial surface nakes its identification easy. In reflexed parts omentose abhymenial surface becomes eakly to distinctly zonate whereas icroscopically dimitic hyphal system and hick-walled apically encrusted skeletal yphae protruding into the hymenium forming keleton cystidia are very characteristic.

uscoporia senex (Nees & Mont.) Ghob.-Nejh., in Ghobad-Nejhad & Dai, Mycotaxon 01: 208 (2007)
axonomic description: Leelavathy & Ganesh 2000), Sharma (2012)
Distribution in India: Throughout the tropical India.
Remarks: Common. A serious parasite growing on woods and trunks of different tree species. It's resupinate, effused reflexed to pileate basidiocarps cause confusion to identify them in field. But, macro-morphologically presence of thin tomentose and narrowly concentrically sulcate pileus are strong enough to separate it from closer allied Phellinus gilvus in which pileus surface remains hispid to scrupose.

Ganoderma lucidum (Curtis) P. Karst., Revue. mycol., Toulouse 3 (no. 9): 17 (1881)
Taxonomic description: Bakshi (1971), Leelavathy & Ganesh (2000), Bhosle et al. (2010), Sharma (2012)
Distribution in India: Throughout the tropical India.
Remarks: Common. One of the most common and widespread species growing on woods and trunks of different tree species. The stipitate to sessile and broadly attached basidiocarps, with bright red and laccate pilear surface and light cream coloured pore surface are the distinct and identifying characters of this species. Micro-morphological characters like dimitic hyphal system with clamped generative hyphae and dendroid skeletal binding hyphae with truncate, thick-walled basidiospores are unique for this species.

Grammothele fuligo (Berk. & Broome) Ryvarden, Trans. Br. Mycol. Soc. 73 (1): 15 (1979); Polyporus fuligo Berk. & Broome, J. Linn. Soc., Bot. 14(no. 73): 53 (1873).
Description: Ryvarden (1979).
Distribution in India: Throughout the tropical India.
Remarks: Abundant. Collected exclusively from many monocots fallen woods perhaps due to host specific so far reported from India (Sharma, 2005, 2012) and abroad (Ryvardon and Johansen, 1979, 1980). Generic epithet Grammothele circumscribe such species in which basidiocarps consists of shallow poroid hymenophore consisting of angular, partly sinuous, irregular or incomplete pores macroscopically while microscopically characterized by a dimitic or trimitic hyphal system with clamped generative hyphae, darkening with age and dextrinoid skeletals, presence of dendrohyphidia, and thin-walled, smooth and hyaline basidiospores not reacting in Melzer's reagent and in Cotton Blue (Ryvarden, 1979; Ryvarden and Johansen, 1980; Rajchebverg, 1983; Hjortstam and Ryvarden, 1984 Hjortstam et al., 2009; Dai, 2012; Zhou and Dai, 2012; Li and Cui, 2013; Karasinski, 2015).

Hexagonia tenuis (Hook.) Fr., Epicr. syst. mycol. (Upsaliae): 498 (1838)
Description: Leelavathy & Ganesh (2000), Sharma (2012).
Distribution in India: Kerala, Tropical north western Himalaya
Remarks: Common. This species can be easily identified by its effused reflexed to pileate basidiomata with light brown to dark brown pilear surface (with a dark reddish brown to almost black cuticle near the base) and big hexagonal hymenophore. Trametes veriegata is another species which shares the above macro-morphological characters with this species but absence of red cuticle on pileus, slightly paler color of pileus and comparatively small size of basidiospores separate it from the present species.

Lopharia cinerascens (Schwein.) G. Cunn., Trans. Roy. Soc. N.Z. 83: 622 (1956).
Description: Rattan (1977), Natarajan & Kolandavelu (1998), Sharma (2012)
Distribution in India: Jammu & Kashmir, Himachal Pradesh, Tamilnadu.
Remarks: Literature survey (Rattan, 1977; Natarajan & Kolandavelu, 1998; Sharma, 2012 and Parashar, 2015) revealed that present taxon is widely distributed throughout the India from temperate to tropical regions on various kind of host. So far its morphology is concerned it is closely related to Lopharia mirabilis due to similarity in basidiocarps gross macro and micromorphology like temperate to tropical habitat, resupinate habit, shape and size of

cystidia and of course *basidiospores as well. As a result there was debate on the identity of these two closely allied taxa (Boidin, 1960; Hjortstam and Ryvarden, 1990 and Dai, 2002) and even combined as single taxon. Welden (1975). However, effused-reflexed basidiocarps with smooth to slightly tuberculate hymenophore, abundant cystidia* and cylindrical basidiospores make this species distinct.

Loweporus tephroporus (Mont.) Ryvarden, in Ryvarden & Johansen, Prelim. Polyp. Fl. E. Afr. (Oslo): 416 (1980);
Description: Natarajan & Kolandavelu (1998); Roy & De (1996); Leelavathy & Ganesh (2008) and Sharma (2012)
Distribution in India: Throughout the tropical to subtropical India.
Remarks: Abundant. Present species usually grows on living or dead standing tree trunks. Initially it arises in the form of small patches and soon spread over a large area and causes serious damage to the trees. The whitish cream to yellowish white, resupinate thick basidiomata with cracked pore surface some times, and regular small, round pores are the characters which makes this species distinct. Microscopically, trimitic hyphal system with abundant, thick-walled, olivaceous in KOH, skeletal hyphae and truncate, hyaline basidiospores are important characters.

Oxyporus vellereus (Berk. & Broome) Roy & De
Description: De (1998)
Distribution in India: Tropical North-Western Himalaya, Hariyana, Uttar-Pradesh & Maharashtra.
Remarks: Index fungorum treat this species as Irpex vellereus with dimitic hyphal system but, thorough microscopic investigation reveals it with monomitic hyphal system and hence we are supporting the view of De (1998) and placing it under Oxyporus. This species can be easily identified with the help of adnate, coriaceous, and leathery to corky, flexible basidiomata with tomentose faintly zonate pilears surface and irpicoid hymenial surface.

Peniophora nuda (Fr.) Bres., Atti Acad. Agiato Rovereto 3(3): 114 (1897); Thelephora nuda Fr., Syst. mycol. (Lundae) 1: 447 (1821).
Description: Natarajan & Kolandavelu (1998)
Distribution in India: Tamilnadu; Maharashtra.
Remarks: Peniophora nuda is earlier reported from India by Natarajan and Kolandavelu 1998) further by Sharma (2012). Its habitat is variable because host preference ranges from various kinds of angiospermic wood (mostly) to rarely on gymnospermic wood (Eriksson et al., 1978) in temperate to tropical region. Microscopically, abundant rounded sulphocystidia in subiculum is unique feature of present species while macroscopically clearly demarkéd reddish marginal zones are good field features to identify.

Phellinus allardii (Bres.) Ryverden.
Description: Sharma (1995)
Distribution in India: Tamilnadu; Maharashtra; North Western Himalaya.
Remarks: Rare. Macroscopically present species can be characterized by woody hard basidiocarps with minutes pores (78) per mm and microscopically thick walled brown coloured basidiospores.

Phellinus badius (Cooke) G. Cunn., Bull. N.Z. Dept. Sci. Industr. Res., Pl Dis. Div. 164: 233 1965).
Description: Sharma (1995)
Distribution in India: Throughout the subtropical to tropical India.
Remarks: Common. Ungulate basidiocarps, absence of setae and large subglobose spores are the characteristic features of this species. Like other reports from India (Sharma, 1995 and 2012, Singh et al. 2014) and neighboring Pakistan (Ahmad 1972) it is common in occurrences throughout the tropical regions and very distinct due to radiately striate and shallow cracks on pilear surface. Phellinus mosus (Berk.) Pilát is closer relative to P. badius due similarities of macro and microscopic features as well as habitat. Though, comparatively deep cracked pilear surface appear as polygonal woody scales at maturity and smaller pore size immediately keys out previous one.

Phellinus gilvus (Schwein.) Pat., Essai. Tax. Hyménomyc. (Lons-le-Saunier): 82 (1900).
Description: Sharma (1995)
Distribution in India: Throughout the subtropical to tropical India.
Remarks: Abundant. This species can be distinguished on the basis of the presence of abundant hymenial setae and ellipsoid spores. Monocot and Dicot dead trees are commonly infected by present species in the study area causes white rot on them. Basidiocarps with golden yellow to brownish yellow pilear surface with a reddish tint which are often imbricate and yellowish brown minute pores and short tubes are distinct macro-morphological characters. Microscopically, presence of abundant hymenial setae and ellipsoid, hyaline to pale yellow basidiospores are the character which makes this species distinct. Above characters of present species are well agrees with the views of few remarkable Indian workers (Bakshi, 1966; Roy and De 1996 and Sharma 1995, 2013) however, few minor characters like crenate and enturned margin (Sharma, 2005; 2013) and long tubes (19 mm (Bakshi, 1966) were not observed in the specimens examined but the presence of abundant hymenial setae and globose to ellipsoid to ovoid basidiospores confirmed its identity.

Phlebia ludoviciana (Burt) Nakasone & Burds., in Nakasone, Burdsall & Noll, Mycotaxon 14(1): 3 (1982); Peniophora ludoviciana Burt, Ann. Mo. bot. Gdn 12: 244 (1926).
Description: Natarajan & Kolandavelu (1998), Punugu et al. (1980)
Distribution in India: Tamilnadu; Thirunelveli, Mundanthurai sanctuary.
Remarks: Present species was introduced by Burt (1926) it as Peniophora ludoviciana but based on phleboid habit of basidiocarps and cultural characteristic Nakasone et al. (1982) recombined it as per present status. It is widely distributed and equally attacks the angiospermic as well as gymnospermic wood and causes white rot on it (Burt, 1926; Martin and Gilbertson, 1977 and Nakasone et al., 1982). Usually basidiocarps are underdeveloped while collection hence poorly developed and rare encrusted cystidia may mislead identification towards Phlebia subochracea (Alb. & Schwein.) J. Erikss. & Ryvarden; which are temperate species.

Porogramme ravenalae (Berk. & Br.) Pat.
Description: Rattan (1977), Natarajan & Kolandavelu (1998), Sharma (2012)
Distribution in India: Chandigarh, Haryana, Tamilnadu.
Remarks: Rare. Light grayish to bluish grey hymenophore with minute pores which remains shallow (may be called as pseudopores) and long ellipsoidal cylindrical basidiospores are remarkable features.

Porostereum spadiceum (Pers.) Hjortstam & Ryvarden, Syn. Fung. (Oslo) 4: 51 (1990); Thelephora spadicea Pers., Syn. meth. fung. (Gottingen) 2: 568 (1801).
Description: Natarajan & Kolandavelu (1998), Sharma (2012)
Distribution in India: Tamilnadu; Maharashtra
Remarks: Not common. Recently with the advent of molecular tools many taxa of wood rotting fungi have been reclassified and Lopharia spadiceus in one of them. This species has gone through the series of taxonomic recombination (www.indexfungorum.org). Hjortstam and Ryvarden (1990) while reviewing the genus Lopharia separated taxa with colored cystidia and placed them under Porostereum and hence we are following this justification in present study. However, recent studies based on morphotaxonomy and molecular taxonomy its position is fluctuating in between Phlebioid clade and Polyporoid clade (Binder et al, 2005; Jang et al, 2012).

Pyrofomes albo-marginatus (Zipp. ex Lév.) Ryvarden, Norw. Jl. Bot. 19: 236 (1972)
Description: Roy & De (1996), Sharma (2012)
Distribution in India: Tropical North-Western Himalaya, Assam, West Bengal, Andman.
Remarks: Annual to perennial solitarily or imbricated basidiocarps with pinkish brown to dark reddish brown to brick in overall color coupled with orange pink or red hymenophore macroscopically and abundant thick-walled reddish brown colored skeletal hyphae microscopically gives it appearance as a member of Hymenochaetaceae. But, clamped generative hyphae coupled with branched thick-walled binding hyphae and truncate thick-walled basidiospores are unique microscopic characters gives it unique identity.

Schizophyllum commune Fr., Observ. Mycol. (Havniae) 1: 103 (1815).
Description: Cooke (1961), Pegler (1977)
Distribution in India: Throughout the subtropical to tropical India.
Remarks: Abundant. Reported from almost many bio-geographical regions of the globe except both polar continents causing rot on various categories of dead wood (Cooke, 1961 and Pegler, 1977). In tropical deckfuous forest present taxon equally prefers monocot and dicot as the host. It dorsally attached, cupulate, tough, coriaceous, light cream basidiocarps turning rapidly into pleurotoid shape. Hymenial surface initially remains smooth then becoming falsely lamellate by proliferation. Microscopically, monomitic hyphal system with interwoven clamped generative hyphae and cylindrical smooth hyaline basidiospores are identifying features.

Scopuloides hydnoides (Cooke & Mass.) Hjortstam & Ryvarden
Description: Sharma (2012)
Distribution in India: Himalaya
Remarks: Single specimen was examined and found macro- and microscopically fairly closer to the reports of India (Sharma, 2012) hence placed under the present taxon. Earlier reports of its distribution are mainly known to

emperate regions therefore identification is rovisional which could be made perfect in ıture survey and collection.

icytinostroma duriusculam (Berk. & roome) Donk, Fungus 26: 20 (1956); tereum duriusculam Berk. & Broome, J. inn. Soc., Bot. 14: 66 (1873).
)escription: Rattan (1977)
)istribution in India: North western Himalaya.
Remarks: Common. Whitish cream to ellowish white, resupinate basidiocarps with mooth hymenial surface distinguishing nacro-morphological feature of this species. Microscopically, dimitic hyphal systems with eptate generative hyphae and thick-walled keletal hyphae are the important characters f this species. The microscopic characters ıre well resembles with the description given y Rattan (1977) however, the size of haracteristic amyloid basidiospores are lightly larger (57 × 57 µm as Rattan, 1977 and Sharma, 2012) as compare to the present specimen.

Scytinostroma rhizomorpharum Rattan ,
)escription: Rattan (1977)
)istribution in India: North western Himalaya.
Remarks: Rare. Though, earlier it is reported rom temperate regions of North western Himalaya. But, taxonomic features such as presence of resupinate habit, tough and leathery consistency, dimitic hyphal system with dichotomously branched skeletal hyphae which turns reddish brown with Melzer's reagent immediately secures its generic status under Scytinostroma. Moreover, microscopically narrow ellipsoid to cylindrical smooth and non amyloid basidiospores and macroscopically resupinate basidiocarps with rhizomorphic margin makes easy identification and separates it from other smooth walled basidiospore species within the genus. However, its identity is proposed provisionally here due to characterization based on small basidiocarps which could be further made sure after more collections from the study areas.

Trametes cingulata Berk., Hooker's. J. Bot.

Kew Gard. Misc.6: 164 (1854).
Description: Roy & De (1996), Leelavathy & Ganesh (2000), Sharma (2012)
Distribution in India: Tropical north western Himalaya, Chattishgarh, West Bengal.
Remarks: Common. Trametes is a cosmopolitan and most familiar genus among polypores with unsettled species level taxonomy (Carlson et al. 2014) but, present taxon is very distinct due to tapered base or short stipe of basidicarps with sooty black pilear surface near the base. Further, apically swelled generative hyphae filled with dark brown contents confined at the dark pilear surface and medium size basidiospores (4.56 × 24 µm) of present taxon as compare to its allied under this genus makes it characteristic.

Leiotrametes lactinea (Berk.) Welti & Courted., in Welti, Moreau, Favel, Courtecuisse, Haon Navarro, Taussac & Lesage-Meessen, Fungal Diversity 55 (1) : 60 (2012).
Description: Roy & De (1996), Leelavathy & Ganesh (2000), Sharma (2012)
Distribution in India: North western Himalaya, West Bengal & Kerala.
Remarks: Rare. Trametes lactinea is morphologically similar to Lenzites elegans (Spreng.) Pat. Due to nature of habit and habitat occupying similar kind of host as substratum. But, presence of comparatively thicker basidiomata and variable hymenial surface ranging from lamellate to sinous to poroid to angular in shape in later are separating features. Moreover, thick white azonate pilear surface remains velvety when young becomes uneven & nodulose at maturity and bovista type binding hyphae are replaced with tortuous type binding hyphae in the present species.

Trametes leonina (Klotzsch) Imazeki, Bull. Gov. Forest Exp. Stn Tokyo 57: 120 (1952)
Description: Sharma (2012)
Distribution in India: Throughout the tropical India
Remarks: In most of the Indian taxonomic literature present species is known as Funalia leonina (Klotzsch) Pat. (Sharma, 2005 & 2012). But, based on detailed morphological features as well as molecular studies (Zmitrovich et al., 2012; Zmitrovich & Malysheva, 2013 and Carlson et al., 2014) this taxon has been shifted under genus Trametes. Because, as per recent trends, specimens with sympodially branched non amyloid sclerohyphae, deeply brown to tan coloured context and medium to small sized more or less circular pores are suitable for Funalia and present species is not qualifying these criteria. Trametes as per recent generic circumscription like, corioloid to trametoid habit of basidiocarps with strigose to tomentose pilear surface, under differentiated subpellis or not, poroid hymenophore and cylindrical or ellipsoid basidiospores are obliviously suitable genus for present taxon.

Trametes pubescens (Schumach.) Pilát., in Kavina & Pilát, Atlas Champ. l'Europe, III, Polyporaceae (Praha) 1: 268 (1939).
Description: Sharma (2012)
Distribution in India: Tropical North western Himalaya.
Remarks: Uncommon. Zmitrovich et al. (2012) based on morphological, taxonomical and biodiversity information the genus Trametes has been summarized on a global scale and inferred identification key for 64 recognized species. Following morphological features like white to cream coloured coroloid, zonation absent or without prominent coloration of pilei with white-cream context and thin-walled at maturity giving angular shape pores are field identifying characters. Whereas, cylindric basidiospores (sometimes with fusoid, amygdaloid, or sigmoid tendency within the range of 36.5 × 1.53 µm (cylindric); 2.54.5 µm wide sympodially branched sclerohyphae are good additional microscopic features which confirm its identity. However, clamped generative hyphae are often collapsed in present collections and difficult to observe and hyaline medium sized basidiospores were managed to observe only in fresh material. But, broadly effused to dimidiate basidiomata occasionally with a narrow contracted base coupled with tomentose to hispid, light brown colored pilear surface makes it distinct from its closer allied T. cotonea. Further, molecular studies undertaken by Zmitrovich & Malysheva (2013) confirm its independent identity.

Trametes variegata (Berk.) Zmitr, Wasser & Ezhov., International Journal of Medicinal Mushrooms (Redding) 14(3): 307-319 (2012).
Description: Sharma (2012)
Distribution in India: Throughout tropical to subtropical regions of India.
Remarks: Rare. Basidiocarps grayish white upper surface remains azonate and scrupose while lower poroid hymenophore remains white with small pore size are characteristic features

Xylaria hypoxylon (L.) Grev., Fl. Edin.: 355 (1824)
Description: Karun & Sridhar (2015)
Distribution in India: Throughout tropical to subtropical regions of India.
Remarks: After first shower of rains characteristic antler shaped ascocarps commonly grows on humus.

Xylaria multiplex (Kunze) Fr., Nova Acta R. Soc. Scient. upsal., Ser. 3 1(1): 127 (1851) [1855]
Description: Karun & Sridhar (2015)
Distribution in India: Throughout tropical to subtropical regions of India.
Remarks: Common after rainy season in dead and fallen decaying tree trunks. Cylindrical small, ascocarps ends with short stalk which remains attached to substrate. Rough to grooved and dull black surface are characteristic features.

Xylaria symploci A. Pande, Waingankar, Punekar & Ranadive [as 'symplocosii'], Indian J. For. **28**(3): 267 (2005)
Description: Pande et al. (2005)
Distribution in India: Throughout tropical to subtropical regions of India.
Remarks: Rare, Ascocarps usually grows in dead and decaying woods which are almost

ıixed with soil. Comparatively large cylindrical scocarps which ends with a short to long talks and upper surface of fruiting bodies ɜmains yellowish green due to conidial dust re its field characters to identify.

esults and Discussion

During present work more than 200 ıycofloral specimens were collected, followed y comparative morphological studies of erbarium specimens, its comparison with resent specimens, coupled with critical tudies of relevant literature (Bakshi et. al. 012) above specimens are falling under the 4 taxa. Species enumeration shows that rametes are the genus with four numbers of pecies followed by Phellinus three, ;cytinostroma and Coriolopsis two species. loreover in adjoining Pune district (Vaidya et l. 2011) mycofloral diversity indicated that ıere are possibility to record more numbers of species under this genus Species like Phellinus badius is very common and abundant in Ashti, Ambejogai, Neknoor and Parali infecting seriously standing Acacia arabica. In Deolali forest (Ashti) 80% area covered by Leucaena latisiliqua (L.) Guill are highly susceptible to Phellinus badius. Second dominant representatives Schizophyllum commune was found abundant during the survey and found infecting mostly dead wood of Tamarindus, Acacia, Mangifera and very rarely on living plants. Flavadon flavus was also common and abundant in Ashti Tahasil on varieties of host like Annona, Azadirachta, Mangifera, Acacia arabica and Leucaena latisiliqua (L.) Guill. Moringa etc. Ganoderma lucidum, was also observed as dominating representative of this area. Species like Amylosporus campbelli, Lopharia cinerascens, Pyrofomes albo-marginatus and Phellinus gilvus, Phellinus allardii, Oxyporus vellereus, Dichomitus leucoplacus are rarely found due to unfavorable condition for the development.

Table 1 : Wood rotting fungi from Beed district

Sr. No.	Taxa	Host	Locality	Specimen No.
1	*Amylosporus campbelli* (Berk.) Ryvarden	*Prosopis julifera* (Sw.) DC.	Kada	MVP-548
2	*Cellulariella acuta* (Berk.) Zmitr. & V. Malysheva.	*Azadirachta indica* Juss.	Khilad (Ashti)	MVP-551
		Angiospermic wood	Beed	MVP- 619
3	*Coriolopsis brunneo-leuca* (Berk.) Ryv.	*Diospyros melaxylon* Roxb.	Mahadeodara	MVP-524
		Azadirachta indica Juss.	Parali Vaijnath	MVP-522
4	*Coriolopsis telfarii* (Klotzsch.) Ryv.	*Leucaena latisiliqua* (L.) Guill	Loni	MVP-568
5	*Ceriporia xylostromatoides* (Berk.) Ryvarden	*Santalum album* Linn.,	Mahadeodara	MVP- 523
6	*Daedaleopsis confrogosa* (Bolt. : Fr.) Schroet.	*Moringa pterigosperma* Gaert.	Shirapur	MVP-557
7	*Dichomitus leucoplacus* (Berk.) Ryv.	*Acacia leucophloea* (Roxb.) Willd	Pimpla	MVP-569
8	*Duportella tristicula* (Berk. & Broome) Reinking	*Santalum album* Linn.	Mahadeodara	MVP- 522
9	*Earliella scabrosa* (Pers.) Gilbn. & Ryvarden	*Ficus religiosa*	Beed	MVP- 613
10	*Epithele interrupta* Bres.	*Dalbergia sissoo* Roxb.	Kada	MVP-530
11	*Favolus tenuiculus* P. Beauv.	*Zizyphus mauritiana* Lamk.	Mahadeodara	MVP-526
		Glericidia sepium (Jacq.) Kunth ex Steud.	Ambejogai	MVP- 627
		Ficus elastica Roxb.	Parali Vaijnath	MVP- 644
12	*Flavodon flavus* (Kl.) Ryvarden	*Annona reticulate* Linn.	Devineemgaon	MVP-533
		Azadirachta indica A. Juss.	Limbodi	MVP-547
		Melia azedarach L.	Devineemgaon	MVP-541
		Mangifera indica Linn.	Shirapur,	MVP-555
		Leucaena latisiliqua (L.) Guill	Limbodi,	MVP-549
		Leucaena latisiliqua (L.) Guill	Deolali forest	MVP-576
		Moringa pterigosperma	Shirapur	MVP-556
		Acacia farnesiana (L.) Willd.	Parali Vaijnath	MVP-635
	Fuscoporia senex (Nees & Mont.) Ghob.-Nejh.			

13	*Ganoderma lucidum* (Curt. & Fr.) Karst.	*Acacia arabica* Willd.,	Limbodi,	MVP-544
			Kada,	MVP-560
			Devineemgaon	MVP- 539
		Tamarindus indica Linn.	Devineemgaon	MVP- 640
		Glericidia sepium (Jacq.) Kunth ex Steud.	Ambejogai	MVP-629, 630
14	*Grammothele fuligo* (Berk. & Broome) Ryvarden	*Phoenix sylvestris* (L.) Roxb.	Ashti	MVP-571
			Patoda	MVP-638
			Belgaon	MVP-508
15	*Hexagonia tenuis* (Hook.) Fr.	Angiospermic wood	Mahadeodara	MVP-529
		Mangifera indica Linn.	Devineemgaon	MVP - 536
			Beed	MVP- 617
		Glericidia sepium (Jacq.)Kunth ex Steud.	Khilad	MVP-567
16	*Lopharia cinerascens* (Schw.) Cunn.	*Bougainvillea spectabilis* Willd.	Kada (Ashti)	MVP-553
17	*Loweporus tephroporus* (Mont.) Ryv.	*Melia azedarach* Linn.	Devineemgaon	MVP-540
			Shirapur	MVP-558
18	*Oxyporus vellereus* (Berk. & Broome) Roy & De	*Santalum album* Linn.	Mahadeodara	MVP-520
19	*Peniophora nuda* (Fr.) Bres.	*Zizyphus mauritiana* Lamk.	Devineemgaon	MVP-535
20	*Phellinus allardii* (Bres.) Ryv.	*Psidium guayava* Linn	Parali (V.)	MVP-634
21	*Phellinus badius* (Berk. & Cke.) Cunn.	*Acacia arabica* Willd.	Kada	MVP-531,579
			Pimpla	MVP-570
			Loni	MVP-571
			Deolali forest	MVP-578
			Ambejogai ,	MVP -628
			Neknoor	MVP - 633
			Beed.	MVP-609
		Leucaena latisiliqua (L.) Guill.	Deolali forest	MVP-575
		Causurina equisetifolia.J. R. & G. Forst.	Parali Vaijnath	MVP-636
		Glericidia sepium (Jacq.)Kunth ex Steud.	Ambejogai	MVP-626
		Albizia lebbeck (L.) Wolld.	Parali Vaijnath	MVP- 642
		Acacia farnesiana (L.) Willd.	Neknoor	MVP-632
			Ambejogai	MVP-637
22	*Phellinus gilvus* (Schw.) Fr.	*Acacia arabica* Willd	Limbodi	MVP-513
23	*Phlebia ludoviciana* (Burt) Nakasone & Burds.	*Bougainvillea spectabilis* Willd.	Kada	MVP- 554
24	*Porogramme ravenalae* (Berk. & Br.) Pat.	*Azadirachta indica* Juss.,	Limbodi and	MVP-510
		Glericidia sepium (Jacq.) Kunth ex Steud.	Mahadeodara	MVP- 565

25	*Pyrofomes albo-marginatus* (Lev.) Ryvarden	*Azadirachta indica* Juss.	Devineemgaon	MVP-546
26	*Schizophyllum commune* Fr. ex Fr.	*Tamarindus indica* Linn	Sangavi,	MVP-517
			Neknoor	MVP- 631
		Acacia arabica Willd	Dongargan,	MVP-580
			Beed.	MVP-612
		Mangifera indica Linn.	Ambejogai,	MVP- 625
			Beed	MVP- 615,
			Dadegaon	MVP - 623,
		Tamarindus indica Linn.	Beed	MVP-581
				MVP- 624
27	*Scopuloides hydnoides* (Cooke & Mass.) Hjortstam & Ryvarden	*Santalum album* L.	Limbodi	MVP-545
28	*Scytinostroma duriusculam* (Berk. & Broome) Donk	*Ficus bengalensis* Linn.	Devineemgaon	MVP-532
		Ficus religiosa L.	Beed	MVP- 614,616
29	*Scytinostroma rhizomorpharum*	*Unknown climber*	Patan Sangavi	MVP-514
30	*Porostereum spadiceum* (Pers.) Hjortstam & Ryvarden	*Tamarindus indica* Linn.	Khilad	MVP- 511
31	*Trametes cingulata* Berk.	*Azadirachta indica* Juss.	Limbodi	MVP-543
		Samanea saman (Jacq) Merr.	Devineemgaon	MVP-512
		Leucaena latisiliqua (L.) Guill.	Deolali forest	MVP-577
		Mangifera indica Linn.	Beed	MVP- 621,622
		Acacia arabica Willd	Georai	MVP- 637
32	*Trametes leonina* (Kl.) Pat.	*Mangifera indica* Linn.	Devineemgaon	MVP-550
33	*Trametes pubescence* (Schw : Fr.) Pilat.	*Melia azedarach* Linn.	Beed	MVP- 645
			Shirapur	MVP-559
34	*Trametes variegate* (Berk.) Zmitr, Wasser & Ezhov.	*Mangifera indica* Linn.	Beed	MVP- 618

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References

Ahmad, S. (1972). *Basidiomyc. W. Pakist.* 6: 57

Bakshi, B. K. (1971). " *Indian Polyporaceae on Trees and Timber* ". I.C.A.R., New Delhi, India. pp. .246

Bilgrami K.S., Jamaluddin and M. A. Rizawi (1979). " *Fungi of INDIA*-I : *List and References* ". Today's and Tomorrow's Printers and Publisher, New Delhi, pp. 467.

Binder, M., Hibbett, D.S., Larsson, K.H., Larsson, E., Langer, E. and Langer, G.

(2005) *Syst. Biodiversity* .3:113
oidin, J. (1960). *Bull. Jard. Bot. Belg.* **30**: 283
oidin., J. and Lanquetin, P. (1983). *Mycotaxon* **16**:461.
oquiren, D,T. (1971). *Mycologia* **63**:937.
urt, E.A. (1925). *"The Thelephoraceae of North America".* XIV. *Peniophora. Ann. Mo. bot. Gdn.* **12**(3):213
arlson, A., Justo, A. and Hibbett, D.S. (2014). *Mycologia* **106**(4):
hen, J. J. and Shen, L. L. *(2014). Cryptog. Mycol. 35 (3): 271*
ooke, W.B. (1961). *Mycologia* **53** (6): 575.
urrey, F. (1874). *Trans Linn Soc Lond, Ser. II, Bot. I,* pp 119131.
ai, Y.C. (2002).. *Fung. Sci.* 17(1, 2)**: 31.**
avid, A. and Rajchenberg, M. (1985). *Mycotaxon* **22**: 285.
avid., A. and Rajchenberg, M., (1987). *Canadian Journal of Botany* **65:** 202
e, A. B. (1985). *Current Science* **54(15):** 755.
e, A. B. (1988) *Acta Bot. Croat.* **47:** 103.
e, A. B. (1998).. *J. Mycopathol. Res.* **36**(1): 41
riksson, J., Hjortstam, K. and Ryvarden, L. (1978). *Peniophora* Cooke. In "The Corticiaceae of North Europe " Eriksson et al., Ed. Vol. 5: *Mycoaciella Phanerochaete*: pp 916-986. Oslo:
ungiflora. Hattori, T. (2008) *Mycoscience* **49: 56**
jortstam, K. and Ryvarden, L. (1990). *Synopsis Fungorum* **4:** 1.
jortstam, K. and Ryvarden, L. (1980). *Mycotaxon* **10**:269.
jortstam, K. and Ryvarden, L.(2005). *Syn. Fung.* **20**:23
ang, Y., Lee, S.W., Jang, S.J., Lim, Y.W., Lee, J.S. and Kim, J.J. (2012). *Mycobiology* **40(3):** 195
hansen, I. and Ryvarden, L. (1979). *Trans. Br. Mycol. Soc.* **72(2):** 189
arun, N.C. and Sridhar, K.R. (2015). *Plant Pathology & Quarantine* **5(2):** 83
o, K.S. amd Jung, H.S. (1999). *Antonie van Leeuwenhoek* **75:** 191
oukol, O., Kotlaba, F. and Pouzar, Z. (2014). *Czech Mycol.* **66(2):** 107
Krishna, G., Samatha, B., Nidadavolu, S. V., Prasad, M. R., and Charaya, M. A. S. (2015). *Journal of Mycology.* **10** : 1155
Leelavathy, K. M. and Ganesh, P. N. (2000). *"Polypores of Kerala"*, Daya Publishing House, Delhi, India..
Lowy B. (1952). *Mycologia* **44** (5):656
Martin, K.J. and Gilbertson, R.L. (1977). *Mycotaxon* **6**(1):43
Nakasone, K.K., Burdsall, H.H. and Noll, L.A. (1982). *Mycotaxon.* **14**(1) : 3.
Nakasone, K. K. (2013). *Sydowia* **65** (1): 59.
Natarajan, K. and Kolandavelu, K. (1998). *"Resupinate Aphyllophorales of Tamil Nadu, India."* CAS in Botany, University of Madras, Chennai. pp 133.
Pande A, Waingankar V, Punekar S, Ranadive, K. (2005) *Indian Journal of Forestry* **28**: 267
Patil A, Patil M S and Dangat B T. (2012). *Mycosphere* **3**: 353.
Paolo, G. and Giovanni, N. (2007). *Arboriculture & Urban Forestry* **33**(6):410.
Parashar, I.B. (2015) *"Wood-rotting non-gilled Agaricomycetes of Himalayas"* Fungal Diversity Research Series, Springer Netherlands. pp. 653
Pegler, D.N. (1977). *"A Preliminary Agaric flora of east Africa".* Kew Bulletin additional series VI, HMSO, London.
Punugu, A., Dunn, M.T. and Welden, A.L.(1980). *Mycotaxon* **10**(2):428
Bhosle, S., Ranadive, K., Bapat, G., Garad, S., Deshpande, G. and Vaidya, J. (2010). *Mycosphere* **1**(3): 249.
Ranadive, K. R. *et al* (2011). *Mycosphere* **2** (2): 91
Rathod, M. M. (2011). *Recent Research in Science and Technology* **3** (5): 50.
Rattan, S. S. (1977). *"The Resupinate Aphyllophorales of the North Western Himalayas"* Strauss and Cramer Gmb H, D 6945 Hirschberg II.
Roy, A. and De, A. B. (1996). *"Polyporaceae of India".* International Book Distributors, Rajpur Road, Dehradun. pp 309.
Ryvarden L. (1979). *Trans. Br. Mycol. Soc.* **73(1): 9.**
Ryverden, L. and Johansen, I. (1980). *"A Preliminary Polypore of East Africa"* Fungiflora, Oslo Norway. pp. 9497,
Sharma, J. R. (1995). *"Hymenochaetaceae of India".* BSI, Kolkata, pp. 219
Sharma, J. R. (2000). *"Genera of Polyporaceae".* BSI, Kolkata, pp. 219
Sharma, J. R. (2012). *"Aphyllophorales of Himalayas".* BSI, Kolkata, pp. 590
Stadler, M., Læssøe, T., Fournier, J., Decock, C., Schmieschek, B, Tcihy H.V. and Peršoh, D. (2014). *Studies in Mycology.* **77**: 1
Wang, H.C., Wu, S.H. and Dai, *Y.C. (2010) Mycologia* **102(5):** 1153.
Welden, A.L. (1975). *Lopharia. Mycologia* **67**: 530.
Zmitrovich, I.V., *Ezhov,* O.N. and *Wasser, S.P. (*2012). *International Journal of Medicinal Mushrooms* **14**(3): 307
Zmitrovich, I. V. and Malysheva, V. F. (2013). Towards a Phylogeny of *Trametes* alliance (*Basidiomycota, Polyporales*). Pp 358-380.

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BARRIERS IN SHARING LIBRARY RESOURCES IN INDIA: A STUDY

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Abstract:-

Purpose – College and University Libraries in India are a privileged type of libraries with comparatively sound collections. They spend a large portion of their funds on developing in-house collections. In spite of the prevailing ICT, there is hardly any practice of sharing collections in a formal manner. The article aims to explore the challenges in sharing library resource in libraries.

Design/methodology/approach – Using a survey method, the survey followed a qualitative design based on an interview technique of data collection. Forty librarians from the state of Maharashtra India were interviewed. Structured interview were conducted at the 40 librarians' workplaces/ on telephone during 2014-2015.

Findings – The study is trying to situate India's position in Networking and resource sharing. The data analysis of the present study revealed that various technical, procedural, psychological, behavioral, legal, barriers in achieving planned collection sharing programs. It suggests analyzing the possibilities, opportunities, and challenges of networking and resource sharing in libraries in the emerging paradigm. The study recommends more focused and integrated research approach from Indian researchers.

Research limitations/implications – Present study is limited to 40 libraries those are responded positively.

Originality/value – This is the first study focused on barriers in resource sharing and networking in libraries in Maharashtra (India).

Keywords: Resource Sharing; Library Cooperation; Collection Sharing. Networking in libraries, Collection Development, Need of the Users, Resource Sharing Model.

Introduction:-

Library cooperation, resource sharing and networking are used interchangeably as synonymous terms for collaborative efforts of information exchange among libraries[1].

Resource sharing is not a new concept in the field of libraries. The concept that goes by the term 'library co-operation' has been in use all along among those who had been working in libraries or had anything to do with the development of libraries. The term, however has been replaced by a new coinage —'Resource Sharing'— which sounds more attractive and makes better sense in this age of inflation and budgetary reduction. Thus resource sharing in libraries has become a necessity, and has gained worldwide acceptance. Networking is information/resource sharing through computers and telecommunication links which transmit information or data from one library to another[2].

"Networking is more structured type of cooperation in which definite regions or areas or definite organizations are connected by electronic or other means to promote inter-library loaning of materials, in-service training and other sharing of resources[3]."

Review of Literature:-

For the present study research oriented practical papers referred as supporting documents i.e Agricultural College Library Budget: A Statistical Overview[4]. ICT Infrastructure Facility in Agricultural College Libraries in Maharashtra: A Study[5]. ICT Skills among Agricultural College Librarians: A Comparative Study[6]. Status of Library Automation in Agricultural College Libraries[7]. Resource Sharing and Networking in Agricultural College Libraries Under Jurisdiction of Mahatma Phule Krishi Vidyapeeth: A Study[8]. Status of Services in Agricultural Libraries: Special Reference to Maharashtra State[9]. Purchasing Policy of Print Resources in University Libraries of Maharashtra[10]. Use of the Online Public Access Catalogue in Agricultural University[11]. Barriers in Collection Sharing among Libraries of Pakistan: University Library Managers' Viewpoint[12]. All referred papers documents acknowledged in references.

Objectives of the Study

1. Discover the prevailing status of Resource sharing in the Agricultural College libraries of Maharashtra (India),

2. Find the reasons libraries are not participating in Resource Sharing plans but continuing to work in isolation, and finally
3. Suggest possible ways of Resource sharing.

Research Methodology

This study is based on a survey. The survey followed a qualitative design based on an interview technique of data collection.

Data Analysis and Interpretation

Table No. 1 Opinion on Resource Sharing & Networking Programme

Sr. No	Description	Yes	No
1	Resource sharing models are adequate for Libraries	30 (75)	10(25)
2	Resource sharing and Network activity in increasing becoming important into next Generation Libraries	38 (95)	2(05)
3	Would you like to share you Resources under Networking Programme	39(97.5)	1(2.5)

The table 1 shows the Opinion on Resource Sharing & Networking programme. It is reveals that out of the total 40 libraries 30(75%) respondents says Resource sharing models are adequate for Libraries and only 10 (25%) says its not adequate for libraries, however 38 (95%) librarians agree on the opinion of Resource sharing and Network activity in increasing becoming important into next Generation Libraries and only 2(05%) respondents are not agree, while 39 (97.5%) respondents like to share Resources under Networking Programme and 1 (2.5%) respondents disagree with this opinion not agree with the opinion of Resource sharing models are adequate for Libraries. It is also observed that the out of the total 34self financed colleges 25 (73.53%) libraries agree with Resource sharing models are adequate for Libraries and 9 (26.47%) libraries not agree, However 32 (94.12%) libraries said Resource sharing

Table No. 1.1Opinion on Resource Sharing & Networking Programme VS Category of Colleges

Sr. No	Opinions	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Yes	No	Yes	No		
1	Resource sharing models are adequate for Libraries	5 (83.33)	1(16.67)	25(73.53)	9(26.47)	0.611	0.435
2	Resource sharing and Network activity in increasing becoming important into next Generation Libraries	6(100)	0(0)	32(94.12)	8(5.88)		
3	Would you like to share you Resources under Networking Programme	6(100)	0(0)	33(97.6)	1(2.94)		

Note:-Chi-Sq = 0.611, DF = 1, P-Value = 0.435

The table 1.1 shows the Opinion on resource sharing & Networking programme VS Categories of the Colleges. It is reveals that All 6 (100%) constituents college libraries said Resource Sharing and Network activity in increasing becoming important into next Generation Libraries and they would like to share Resources under Networking Programme. It is also shows that 5 (83.33%) libraries say Resource sharing models are adequate for Libraries, while only 1 (16.67%) respondents and Network activity in increasing becoming important into next Generation Libraries and 8(5.58%) said it's not helpful to the next generation libraries. The chi-square test is also administered to test the hypothesis that "There is a significant difference in opinion of resource sharing activities among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.435 is greater than level of significance. Hence the hypothesis is Invalid.

Table No. 2 Willingness to Share Print Resources

Sr. No	Print Resources	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Books	32(80)	6(15)	1(2.5)	0(0)	1(2.5)
2	Reference Sources	22(55)	17(42.5)	0(0)	1(2.5)	0(0)
3	Current Periodicals	22(55)	11(27.5)	3(7.5)	3(7.5)	1(2.5)
4	Back Volumes	20(50)	14(35)	5(12.5)	1(2.5)	0(0)
5	Thesis/Dissertations	14(35)	14(35)	4(10)	5(12.5)	3(7.5)
6	Reprints/Preprints	10(25)	11(27.5)	8(20)	7(17.5)	4(10)
7	Patents	7(17.5)	6(15)	7(17.5)	11(27.5)	9(22.5)
8	Standards	8(20)	7(17.5)	7(17.5)	11(27.5)	7(17.5)

Note:- Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree Ratio = 5.4:3.44:1.4:1.56:1

- Strongly Agree ratio = 135/25 5.4
- Agree ratio = 86/25 3.44
- Neutral ratio = 35/25 1.4
- Disagree ratio = 39/25 1.56
- Strongly Disagree ratio = 25/25 1

The table 2 shows the Wiliness to share print resources. "Strongly Disagree' total 25 and 'Strongly Agree' total 135 have been divided by number of respondents (N: 25) and Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree value has been calculated. The ratio between Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree works out to 5.4:3.44:1.4:1.56:1 the strongly disagree ratio (1) is negligible. Therefore it seems that the most of librarians prefer for sharing of resources under networking programme of libraries.

Table No. 2.1Willingness to Share Print Resources Vs Category of Colleges

Sr. No	Print Resources	Constituents Colleges (n=6)					Self-Financed Colleges (n=34)					Chi-Sq.	P-Value
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
1	Books	6 (100)	0(0)	0(0)	0(0)	0(0)	26(74.47)	6(17.65)	1(2.94)	0(0)	1(2.94)		
2	Reference Sources	5(83.33)	1(16.67)	0(0)	0(0)	0(0)	17(50.00)	16(47.06)	0(0)	1(2.94)	0(0)		
3	Current Periodicals	2(33.33)	1(16.67)	0(0)	2(33.33)	1(16.67)	20(58.82)	10(29.39)	3(8.82)	1(2.94)	0(0)		
4	Back Volumes	4(66.67)	2(33.33)	0(0)	0(0)	0(0)	16(47.06)	12(35.29)	5(14.71)	1(2.94)	0(0)	5.092	0.278
5	Thesis/Dissertations	2(33.33)	2(33.33)	0(0)	1(16.67)	1(16.67)	12(35.29)	12(35.29)	4(11.76)	1(2.94)	2(5.88)		
6	Reprints/Preprints	2(33.33)	3(50.00)	0(0)	0(0)	1(16.67)	8(23.53)	8(23.53)	8(23.53)	7(20.29)	3(8.82)		
7	Patents	1(16.67)	1(16.67)	1(16.67)	1(16.67)	2(33.33)	6(17.65)	5(14.71)	6(17.65)	10(29.39)	7(20.29)		
8	Standards	2(33.33)	1(16.67)	1(16.67)	1(16.67)	1(16.67)	6(17.65)	6(17.65)	6(17.65)	10(29.39)	6(17.65)		

Note:-Chi-Sq = 5.092, DF = 4, P-Value = 0.278

The chi-square test is also administered to test the hypothesis that "There is a significant difference in willingness to share print resources among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.278 is greater than level of significance. Hence the hypothesis is Invalid.

Table No. 3 Willingness to Share E-Resources

Sr. No	E-Resources	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	E-Books	22(55.00)	9(22.50)	5(12.50)	3(7.50)	1(2.50)
2	E-Journals	20(50.00)	10(25.00)	7(17.50)	2(5.00)	1(2.50)
3	E-Theses/Dissertations	19(47.50)	6(15.00)	12(30.00)	1(2.50)	2(5.00)
4	CD's/DVD's ROM	19(47.50)	11(27.50)	6(15.00)	4(10.00)	0(0.00)
5	E-Full Text Databases	17(42.50)	5(12.50)	13(32.50)	5(12.50)	0(0.00)
6	E-Bibliographical Databases	16(40.00)	6(15.00)	13(32.50)	3(7.50)	2(5.00)
7	E-Learning Services	14(35.00)	7(17.50)	13(32.50)	3(7.50)	3(7.50)
8	Institutional Repositories	12(30.00)	8(12.00)	16(40.00)	3(7.50)	1(2.50)
9	E-Project Reports	17(42.50)	7(17.50)	8(12.00)	4(10.00)	4(10.00)

Note:- Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree Ratio = 11.14:4.93:6.64:2: 1

- **Strongly Agree ratio =** 156/14 11.14
- **Agree ratio =** 69/14 4.93
- **Neutral ratio =** 93/14 6.64
- **Disagree ratio =** 28/14 2.00
- **Strongly Disagree ratio =** 14/14 1.00

In the table No. 3 calculate the ratio between the 'Strongly Disagree' total 14 and 'Strongly Agree' total 156 have been divided by number of respondents (N: 14) and Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree value has been calculated. The ratio between Strongly Agree: Agree: Neutral: Disagree: Strongly Disagree works out to 11.14:4.93:6.64:2: 1 the strongly disagree ratio (1) is negligible. Therefore it seems that the most of librarians prefer for sharing of e-resources in networking of libraries.

Table No. 3.1Willingness to Share E-Resources Vs Category of Colleges

Note:-SA= Strongly Agree; A= Agree; N= Neutral; D= Disagree; SD= Strongly Disagree.

Sr. No	E-Resources	Constituents Colleges (n=6)					Self-Financed Colleges (n=34)					Chi-Sq.	P-Value
		SA	A	N	D	SD	SA	A	N	D	SD		
1	E-Books	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	20(58.82)	7(20.59)	4(11.76)	3(8.82)	0(0)		
2	E-Journals	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	18(52.94)	8(23.53)	6(17.65)	2(5.88)	0(0)		
3	E-Theses/Dissertations	2(33.33)	2(33.33)	1(16.67)	0(0)	1(16.67)	17(50.00)	4(11.76)	11(32.35)	1(2.94)	1(2.94)		
4	CD's/DVD's ROM	3(50.00)	2(33.33)	0(0)	1(16.67)	0(0)	16(47.06)	9(26.47)	6(17.65)	3(8.82)	0(0)		
5	E-Full Text Databases	4(66.67)	1(16.67)	1(16.67)	0(0)	0(0)	13(38.24)	4(11.76)	12(35.29)	5(14.71)	0(0)	62.681	0.000
6	E-Biblio. Databases	2(33.33)	1(16.67)	1(16.67)	0(0)	2(33.33)	14(41.18)	5(14.71)	12(35.29)	3(8.82)	0(0)		
7	E-Learning Services	2(33.33)	0(0)	1(16.67)	1(16.67)	2(33.33)	12(35.29)	7(20.59)	12(35.29)	2(5.88)	1(2.94)		
8	IR	3(50.00)	2(33.33)	0(0)	0(0)	1(16.67)	9(26.47)	6(17.65)	16(47.06)	3(8.82)	0(0)		
9	E-Project Reports	1(16.67)	1(16.67)	0(0)	0(0)	4(66.67)	16(47.06)	6(17.65)	8(23.53)	4(11.76)	0(0)		

Note 1:-Chi-Sq = 62.681, DF = 4, P-Value = 0.000

The chi-square test is also administered to test the hypothesis that "There is a significant difference in willingness to share e-resources among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.000 is less than level of significance. Hence the hypothesis is valid.

Table No. 4 Methods for Resource Sharing Vs Category of colleges

Sr. No	Methods	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Yes	No	Yes	No		
1	Face to Face	1(16.67)	5(83.33)	6(17.65)	28(82.35)	0.672	0.412
2	Postal/ Currier	3(50.00)	3(50.00)	22(64.71)	12(35.29)		
3	Web Bases	6(100)	0(0)	18(52.94)	16(47.06)		

Note:-Chi-Sq = 0.672, DF = 1, P-Value = 0.412

The table 4 shows the Methods for Resource Sharing VS Categories of the Colleges. It is reveals that out of the total 6 libraries only 1(16.67%) library preferred Face to Face method and 5(83.33%) libraries have not preferred this method, 3 (50%) libraries preferred postal/ currier method and 6 (100%) libraries preferred web based method for the resource sharing. The chi-square test is also administered to test the hypothesis that "**There is a significant difference in resource sharing methods among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.004 is less than level of significance. Hence hypothesis is Invalid**

Table No. 5 Barriers of Resource Sharing

Sr. No	Barriers of Resource Sharing	Yes	No
1	Competitiveness of institutions convert move for centralization	21(52.5)	19(47.5)
2	Urgency of users requirement	31(77.5)	9 (22.5)
3	Local self- sufficiency goals and ownership paradigm	26 (65)	14 (35)
4	Autonomy of actions desired by librarians	20(50)	20 (50)
5	Size and status consciousness of established libraries	25(62.5)	15(37.5)
6	Psychological and egoistic barriers from users, librarians & staff	18(45)	22(55)
7	Discouragement from past experience	17(42.5)	23(57.5)
8	Traditional/ Institutional barriers	20(50)	20(50)
9	Physical and geographical barriers	26(65)	14(35)
10	Discouragement from past experience	24(60)	16(40)

The table 5 shows the Barriers of Resource Sharing. It is reveals that out of the total 40 libraries only 21(52.5%) respondents face the barrier competitiveness of institutions convert move for centralization, 31(77.5%) libraries face Urgency of user's requirement, 17 (42.5%) libraries have Discouragement from past experience and 23 (57.5%) libraries have not, While 24 (60%) libraries face the barriers of discouragement from past experience.

Table No. 5.1 Barriers of Resource Sharing VS Category of Colleges

Sr. No	Barriers of Resource Sharing	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi- Sq.	P-Value
		Yes	No	Yes	No		
1	Competitiveness of institutions convert move for centralization	4(66.67)	2(33.33)	17(50.00)	17(50.00)	2.163	0.141
2	Urgency of users requirement	4(66.67)	2(33.33)	27(79.41)	7(20.59)		
3	Local self- sufficiency goals and ownership paradigm	3(50.00)	3(50.00)	23(67.65)	11(32.35)		
4	Autonomy of actions desired by librarians	4(66.67)	2(33.33)	16(47.06)	18(52.94)		
5	Size and status consciousness of established libraries	4(66.67)	2(33.33)	21(61.76)	13(38.24)		
6	Psychological and egoistic barriers from users, librarians & staff	1(16.67)	5(83.33)	17(50.00)	17(50.00)		
7	Discouragement from past experience	1(16.67)	5(83.33)	16(47.06)	18(52.94)		
8	Traditional/ Institutional barriers	1(16.67)	5(83.33)	19(55.88)	15(44.12)		
9	Physical and geographical barriers	2(33.33)	4(66.67)	24(70.59)	10(29.41)		
10	Legal, Political and administrative barriers	5(83.33)	1(16.67)	19(55.88)	15(44.12)		

Note:-Chi-Sq = 2.163, DF = 1, P-Value = 0.141

The table 5.1 shows the Barriers of Resource Sharing Vs Category of Colleges. It is reveals that out of the total 6 constituents college libraries only 4 (66.67%) libraries have faced the barrier like Competitiveness of institutions convert move for centralization, Urgency of user's requirement, Autonomy of actions desired by librarians and Size and status consciousness of established libraries. The chi-square test is also administered to test the hypothesis that "There is a significant difference in barriers towards resource sharing among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.141 is greater than level of significance. Hence hypothesis is Invalid

Table No. 6 Barriers of Networking

Sr. No	Barriers of Networking	Yes	No
1	Lack of ICT Infrastructure	28(70)	12(30)
2	Lack of Budget	28(70)	12(30)
3	Lack of Trained staff	30(75)	10(25)
4	Lack of Management support	20(50)	20(50)
5	Lack of ICT applications training	29(72.5)	11(27.5)
6	Lack of Awareness of the networking programme	29(72.5)	11(27.5)
7	Lack of co-operation & Co-ordination	17(42.5)	23(57.5)
8	Lack of Legislative measures	28(70)	12(30)

In the table 6 it is found that the Barriers towards Networking. Out of the total 40 libraries 28(70%) libraries faced the barriers like Lack of ICT Infrastructure, and lack of budget, 12 (30%) libraries have not faced this problem, and 30(75%) libraries face the Lack of Trained staff, 17 (42.5%) libraries have Lack of co-operation & Co-ordination, While 28 (70%) libraries have Lack of Legislative measures towards networking in the libraries.

Table No. 6.1 Barriers of Networking Vs Category of colleges

Sr. No	Barriers of Networking	Constituents Colleges (n=6)		Self-Financed Colleges (n=34)		Chi-Sq.	P-Value
		Yes	No	Yes	No		
1	Lack of ICT Infrastructure	1(16.67)	5(83.33)	27(79.41)	7(20.59)	89.574	0.000
2	Lack of Budget	0(0)	6(100)	28(82.35)	6(17.65)		
3	Lack of Trained staff	0(0)	6(100)	30(88.24)	4(11.76)		
4	Lack of Management support	0(0)	6(100)	20(58.82)	14(41.18)		
5	Lack of ICT applications training	0(0)	6(100)	29(85.29)	5(14.71)		
6	Lack of Awareness of the networking programme	0(0)	6(100)	29(85.29)	5(14.71)		
7	Lack of co-operation & Co-ordination	0(0)	6(100)	17(50.00)	17(50.00)		
8	Lack of Legislative measures	2(33.33)	4(66.67)	28(82.35)	6(17.65)		

Note:-Chi-Sq = 89.574, DF = 1, P-Value = 0.000

The table 6.1 shows the Barriers of Networking VS Category of Colleges. It is reveals that out of the total 6 constituents college libraries only 2 (33.337%) libraries faced the barriers like lack of legislative measures and followed by 1 (16.67%) libraries have faced Lack of ICT Infrastructure otherwise all the libraries don't faced the barriers of the networking like lack of budget, lack of trained staff, lack of training, lack of management support and etc.. In this table It is also shows that out of the 34 self financed libraries 30 (88.24%) libraries faced the Lack of

trained staff, followed by 29 (85.29%) faced Lack of ICT applications training and lack of awareness of the networking technologies, it is also seen that 28 (82.35%) respondents faced Lack of budgets and lack of legislative measures barriers also 27 (79.41%) libraries have lack of ICT Infrastructure problems for the implementation of the Networking. The chi-square test is also administered to test the hypothesis that "There is a significant difference in barriers towards networking among the libraries of 'constituents ', and 'self-financing' institutions. Level of significance (α) = 0.05, P-Value = 0.000 is less than level of significance. Hence hypothesis is valid.

Conclusion:-

This study demonstrates that there are strong technical, procedural, and psychological barriers in developing formal Resource Sharing and networking in agricultural college libraries in Maharashtra (India). Despite pleading the concept in literature and discussions, librarians find it difficult to implement it in practical terms. With the emerging digital paradigm, however, facilities exist to bring positive results in this regard. There remains a dire need to motive, train, and devise a protocol for Resource Sharing at the local and national levels. With librarians' initiative, surely the situation can change.

References

1. Mannan, S.M. & Bose, M.L. Resource Sharing And Information Networking Of Libraries In Bangladesh: A Study On User Satisfaction. *Malaysian Journal of Library & Information Science*,1998, 3 (2),67-86.
2. Kaula, P.N. Towards resource sharing in libraries. Planning in library resource sharing. edited by A.S. Chandel & Veena Saraf. Lucknow : 1986, Print House: 1-15.
3. Zhang, Qiaoqiao. Agricultural libraries and information centers in China: cooperation, resource sharing and networking. (Ph.D.dissertation). 1990, London: The City University.
4. Athavale Subhash, Kalbande, D.T. & Hemke Digambar. Agricultural College Library Budget: A Statistical Overview. *"Knowledge Librarian" An International Peer Reviewed Bilingual E-Journal of Library and Information Science.2018,* 5 (2),177-192.
5. Kalbande, D. T & Chavan, S. P. ICT Infrastructure Facility in Agricultural College Libraries in Maharashtra: A Study. *International Journal of Digital Library Services.*2017, 7 (4), 45-55.
6. Kalbande, D. T & Chavan,S.P. ICT Skills among Agricultural College Librarians: A Comparative Study. *International Research: Journal of Library & Information Science.* 2017, 6 (4), 674-682.
7. Kalbande, D. T & Chavan, S. P. Status of Library Automation in Agricultural College Libraries. *Knowledge Librarian.* Special Issue, 2018, 364-371.
8. Kalbande, D. T. Resource Sharing and Networking in Agricultural College Libraries Under Jurisdiction of Mahatma Phule Krishi Vidyapeeth: A Study. *International Research: Journal of Library & Information Science,* 2018, 8 (1), 100-113.
9. Kalbande, D. T. Status of Services in Agricultural Libraries: Special Reference to Maharashtra State. *International Research: Journal of Library & Information Science.* 2018, 8 (3), 440-451.

10. Salve R., Kalbande, D.T. & Chavan,S.P. Purchasing Policy of Print Resources in University Libraries of Maharashtra. *Research Direction.* 2018, 6 (4), 57-66.
11. Salve R., Kalbande, D.T. & Chavan,S.P. Use of the Online Public Access Catalogue in Agricultural University. *"Knowledge Librarian" An International Peer Reviewed Bilingual E-Journal of Library and Information Science.* 5 (2), 275-282.
12. Kanwal Ameen. Barriers in Collection Sharing among Libraries of Pakistan: University Library Managers' Viewpoint. *LIBRES Library and Information Science Research Electronic Journal*. 2008, 18 (1), 1-11.

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Scientometric Analysis of Quarterly E-journals of Health Science

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Abstract:

The main objective of the study is to find out most prolific authors and journals in the health medicine research output during 2001 to 2013. A total of 20724 research papers were examined by growth of contribution by year and volume, authorship pattern. Highest number of contribution i.e. 2335 (11.27%) were published in the year 2011. Issue Number 4 published articles in the maximum 1907 (09.20%) articles, Multi-authored highest articles, Findings of the analysis revealed that the majority of the publications are contributed by multiple author, Highest number of papers was published by more than three authors and it accounts for 9472 with 45.71%; the most language used for communication was English, Journal of Internal Medicine had contributed maximum number of citations.

Keywords:

Scientometric, Scientometric Study, Bibliometric, E-Journal, Authorship Pattern, Citation Analysis.

1. Introduction:

Scientometrics is the quantitative study of the disciplines of science based on published literature and communication. This could include identifying emerging areas of scientific research, examining the development of research over time, or geographic and organizational distributions of research (Glossary of Thompso, 2008). The basic purpose of the present chapter is to analyze the collected data of 10 online quarterly journals in the subject of Health Science. International E-Journals in the subject of medicine are distributed in different volumes and issues which are to be considered for the present study. Time from spam is of 13 years from the year 2001 to 2013. The present study is based on 8871 articles in E-journals of Health Science. For present study data has been collected from 10 Medicine E-Journals during Jan. 2001- Dec. 2013 which are indexed in Health Science consortium Nashik. The data has been analyzed by using various parameters which is presented in tabular and graphical from these table and graphs are presented as per the sequence of objective of the present study.

1. Definitional Analysis:-

1.1.Bibliometrics:

According to **Sengupta**:

"Organization, classification and quantitative evaluation of publication patterns of all macro and micro communication along with their authorships by mathematical and statistical calculus"

1.2.Scientometrics:

A complex of quantitative mathematical and statistical methods used to investigate such aspects as research staff, and to define evolutionary & prospectus of science (Bonitz, 1999). Scientometrics is a very recent term .It is often used synonymously with the term bibliometrics.

1.3.Scientometric analysis:

The main currency for an academician is his reputation just as that for the politician is the politician is the power the commands and that for the business person is the wealth he has accumulated (Becher, 1989).

1.4. E-Journal:

According to, a journal, academic in nature which is published using the World Wide Web, such a journal usually uses internet technology refereeing of papers. Many e- journals pride themselves on rapid refereeing and consequent repaid publication. (Gupta, 1998).

2. Review of literature:-

The number of authors contributing to scholarly publications in terms of authorship pattern is an instructing part of any bibliometric study. A count of number of authors contributing to articles offers some indication to degree of collaboration between authors. Cronin (2001) comment, authorship as" undisputed coin of the real in academic "and" absolutely central to the academic reward system". Vimala and Pulla Reddy, V (1996) traced "authorship pattern and collaborative research in zoology with a sample of 19,323 journal citations figured in the theses on zoology accepted for the award of the doctoral degree by Sri Venkateswara University, Tirupati, India" (p. 1). Zafrunnisha and Pulla Reddy (2009) studied the authorship pattern and collaborative research in the field of psychology. Amsaveni and Vasanthi (2013) revealed "the trend in authorship pattern and collaborative research in network security with a sample of 8051 articles downloaded from the database of web of knowledge during 2002 to 2011 (one decade) with 5343 LCS and 44721 TGCS measure" (p. 52). Karisiddappa, Maheswarappa, and Shirol (1990) studied the authorship pattern and collaborative research in psychology, based on the data collected from *Psychological Abstracts* for the year 1988. Pradhan, Panda, and Chandrakar (2011) studied "the trends in authorship pattern and author's collaborative research in Indian chemistry literature with a sample of 53,977 articles downloaded from SCI-Expanded database in Web of Science during the period 2000-2009" . Mahapatra (1980); carried out study in Further, if the number of articles in a subject doubles during a given period then the difference between the logarithms of numbers at the beginning and at the end of this period must be the logarithm of the number 2. Mahapatra (1985); assessed the Relative Growth Rates (RGR) is a measure to study the increase in number of articles / pages per unit of articles/ pages per unit of time. Teague et al., (1981). Suradkar P.A. and Dr. Dalve Daya (2016) carried out the study presents the trends in authorship pattern and authors collaborative research in Academic Emergency Medicine Journal with a sample of 3586 articles during the period 2001-2013.

Data Analysis:

In the present study of 5 E-Journals in during Jan. 2001- Dec. 2013 which are indexed in Health Science consortium Nashik. The analysis was done as per the parameters laid down in objectives of the study.

The present study is based on 13364 articles on 5 E-Journals.

3. Objectives of the studies:-

The main Objectives of the present study is

- Year Wise Distribution of Publications
- Issue Wise Distribution of Publications.
- Authorship Pattern of Journals.
- Language Wise Distribution.
- Distribution of Citations.
- Geographical Distribution of Publication.

3.1. Year-Wise Distribution of Publications:

The year wise distribution of contribution of various authors in 10 online monthly journals in the subject of Health Science International E-Journals in medicine journals distributed in different volumes and issues which is considered for the present study time from spam is of 13 years from the year 2001 to 2013 has been taken in to consideration.

Table No. 3.1:Year-Wise Distribution of Publications

Sr. No.	Journal Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	Percentage %
1	AEM	222	254	250	269	273	285	270	295	347	341	288	263	229	**3586**	**17.30**
2	JME	274	285	311	296	209	247	260	276	278	267	248	271	257	**3479**	**16.79**
3	NM	122	156	137	158	172	177	162	181	186	172	173	148	194	**2138**	**10.32**
4	JUM	173	168	142	173	183	152	146	179	181	120	127	196	176	**2116**	**10.21**
5	IMJ	114	136	159	157	112	167	192	187	182	169	152	160	158	**2045**	**9.87**
6	BMJEMJ	95	89	100	104	140	200	166	175	136	165	171	168	193	**1902**	**9.18**
7	JIM	146	154	137	161	145	153	125	134	121	118	151	136	111	**1792**	**8.65**
8	BMCCAM	12	13	8	19	22	41	44	66	53	82	138	764	375	**1637**	**7.90**
9	EMM	49	65	77	76	76	86	90	80	101	86	78	82	86	**1032**	**4.98**
10	EBC AM	49	52	59	40	56	57	57	62	62	57	110	147	189	**997**	**4.81**
	Total	**1256**	**1372**	**1380**	**1453**	**1388**	**1565**	**1512**	**1635**	**1647**	**1577**	**1636**	**2335**	**1968**	**20724**	**100.00**
	Per.(%)	**6.06**	**6.62**	**6.66**	**7.01**	**6.70**	**7.55**	**7.30**	**7.89**	**7.95**	**7.61**	**7.89**	**11.27**	**9.50**	**100**	

Figure No 3.1. Year-Wise Distribution of Publications

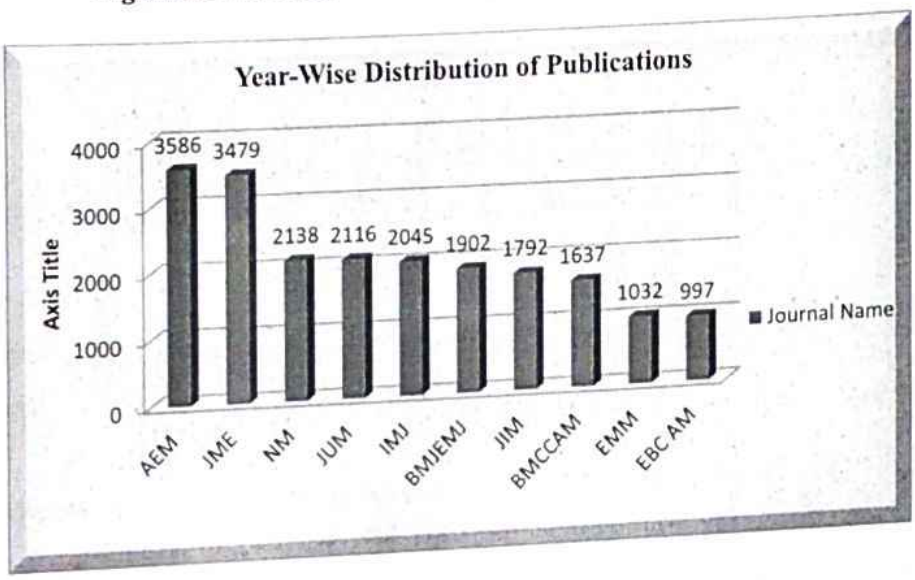


Table no.3.1 and Figure No. 3.1 shows that the average number of article publications is 20724 articles per year. In the study, the contribution of earlier 13 years (2001-2013) out of 20724 articles 2335 (11.27%) articles were published in 2012 and 1256 (06.06%) articles were in 2001, which are highest and lowest in ten years respectively. A notable attribute of the study is that the year 2012 shows the maximum number of contributions.

Among the different journals Academic Emergency Medicine is contributed Maximum number of articles 3586 (17.30%) and Evidence-based Complementary and Alternative Medicine is contributed minimum number of articles 997 (4.81%).

3.2.Issue wise distribution of Publications:

The issue wise distribution of contribution in the 10 Online monthly journals in the subject of medicine international e-journal written by the various researchers were distributed in 12 volumes per year and 12 issue per volume, which were considered for the study from the year 2000 to 2013. The spans of 13 years were taken consideration which is shows in the table.

Table No.3.2. Issue wise distribution of Publications

Issues / Journals	AEM	JME	NM	JUM	IMJ	BMJEMJ	JIM	BMCCAM	EMM	EBCAM	Total	Percentage %
Issue 1	299	315	149	187	127	197	155	176	136	64	**1763**	**8.51**
Issue2	282	304	181	182	150	193	163	183	131	67	**1765**	**8.52**
Issue 3	302	293	189	156	172	181	146	173	141	74	**1813**	**8.75**
Issue 4	331	330	202	187	167	190	170	172	143	55	**1907**	**9.20**
Issue 5	275	228	173	196	125	195	154	157	132	71	**1664**	**8.03**
Issue 6	278	266	165	165	181	181	162	196	139	72	**1773**	**8.56**
Issue 7	296	279	157	160	205	121	134	167	33	72	**1582**	**7.63**
Issue 8	272	295	168	193	201	135	143	179	35	87	**1667**	**8.04**
Issue 9	265	297	171	205	195	126	130	201	34	76	**1658**	**8.00**
Issue 10	295	289	189	134	183	132	127	159	33	72	**1596**	**7.70**
Issue 11	358	267	180	141	165	133	160	196	39	125	**1685**	**8.13**
Issue 12	333	316	214	210	174	118	148	183	36	162	**1851**	**8.93**
Total	**3586**	**3479**	**2138**	**2116**	**2045**	**1902**	**1792**	**2142**	**1032**	**997**	**20724**	**100.00**

Figure No. 3.2 Issue wise distribution of Publications

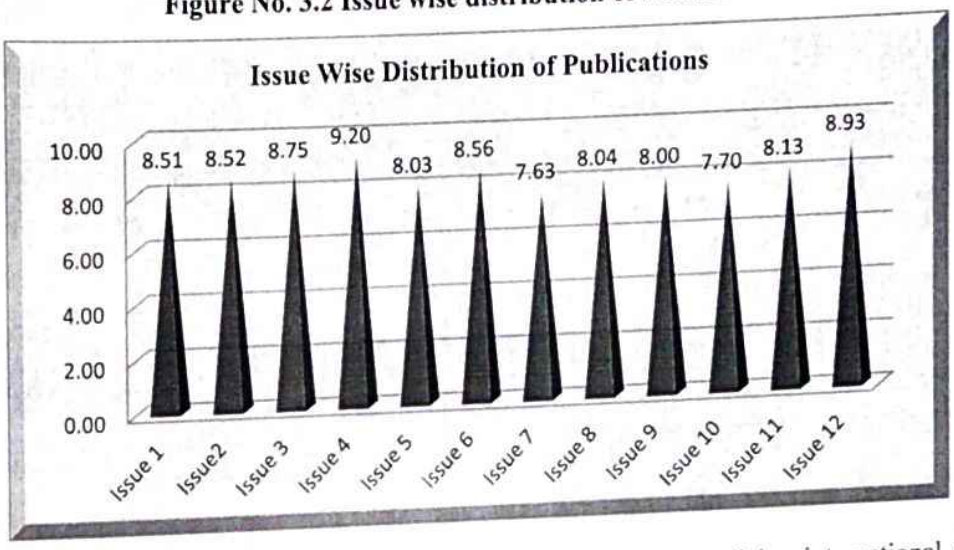


Table No. 3.2. & Figure No. 3.2 shows that the subject of Medicine international e-journal of "Issue Number 4" published articles in the maximum 1907 (09.20%) articles and least number of articles 1582 (7.63%) in the "Issue number 7".

3.3. Authorship Pattern of Journal.

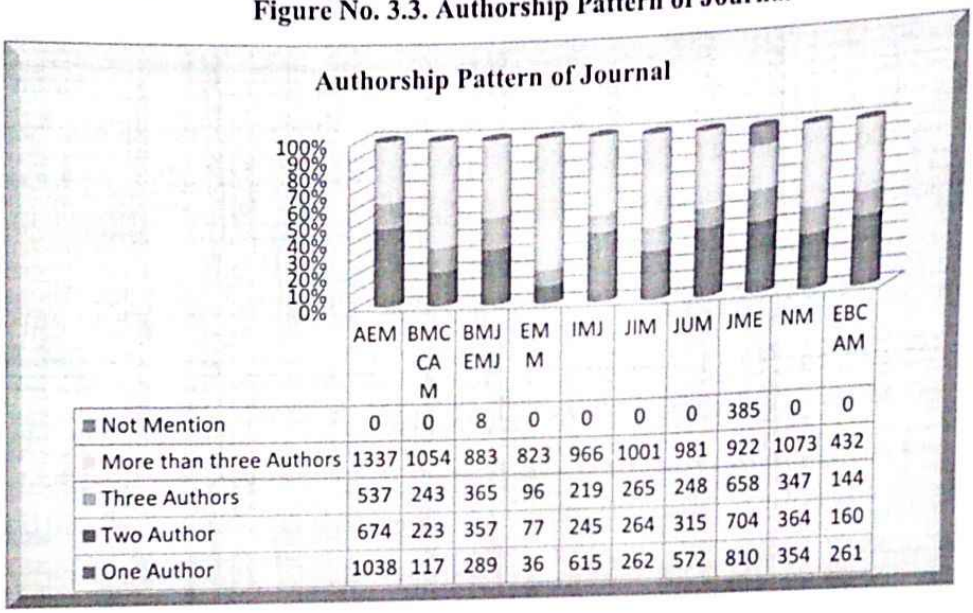
For studying the authorship pattern, the publications are arranged as single, double, triple, multi-authored and other categories. Publications under each category are counted and their percentage is calculated for showing the trends of research as solo or team research in a particular field.

Table No.3.3: Authorship Pattern of Journal

Sr. No.	Name of Journals	One Author	Two Author	Three Authors	More than three Authors	Not Mention	Total
1	AEM	1038	674	537	1337	0	3586
2	BMCCAM	117	223	243	1054	0	1637
3	BMJEMJ	289	357	365	883	8	1902
4	EMM	36	77	96	823	0	1032

5	IMJ	615	245	219	966	0	2045
6	JIM	262	264	265	1001	0	1792
7	JUM	572	315	248	981	0	2116
8	JME	810	704	658	922	385	3479
9	NM	354	364	347	1073	0	2138
10	EBC AM	261	160	144	432	0	997
	Total	**4354**	**3383**	**3122**	**9472**	**393**	**20724**
	Percentage %	**21.01**	**16.32**	**15.06**	**45.71**	**1.90**	**100.00**

Figure No. 3.3. Authorship Pattern of Journal



It is observed from the Table 3.3 about 78.99% of papers were contributed by multi authors. Out of 20724 papers, the highest number of papers was published by more than three authors and it accounts for 9472 with 45.71% followed by single authored articles account for 4354 with 21.01%. 3383 with 16.32% of articles were published by double authors. 3122 with 15.06 % of articles were published by three authors. 393 with 1.90% of articles were published by unknown authors.

But the trend of the author pattern in the journal shows that the team size was more than three authors.

3.4. Language Wise Distribution.

Language is media for communication author articles different types of document for writing. The total number of 20724 articles in 10 journals is distributed among seven different languages as shown in Table No.3.4. & figure no.3.4.

Table No.3.4: Language Wise Distribution

Sr. No.	Journals	English	Italian	Portuguese	German	Spanish	French	Turkish	Total
1	**AEM**	3586	0	0	0	0	0	0	**3586**
2	**JME**	3187	0	215	0	20	57	0	**3479**
3	**NM**	2061	0	46	0	0	31	0	**2138**
4	**JUM**	1830	69	102	16	47	52	0	**2116**
5	**IMJ**	1728	62	48	61	56	68	22	**2045**
6	**BMJEMJ**	1328	62	137	88	94	74	119	**1902**
7	**JIM**	1679	27	54	0	13	19	0	**1792**
8	**BMCCAM**	1284	37	103	35	85	93	0	**1637**
9	**EMM**	971	11	31	8	5	6	0	**1032**
10	**EBC AM**	807	21	53	46	24	36	10	**997**
	Total	**18461**	**289**	**789**	**254**	**344**	**436**	**151**	**20724**
	Percentage	**89.08**	**1.39**	**3.81**	**1.23**	**1.66**	**2.10**	**0.73**	**100.00**

Figure No. 3.4. Language Wise Distribution

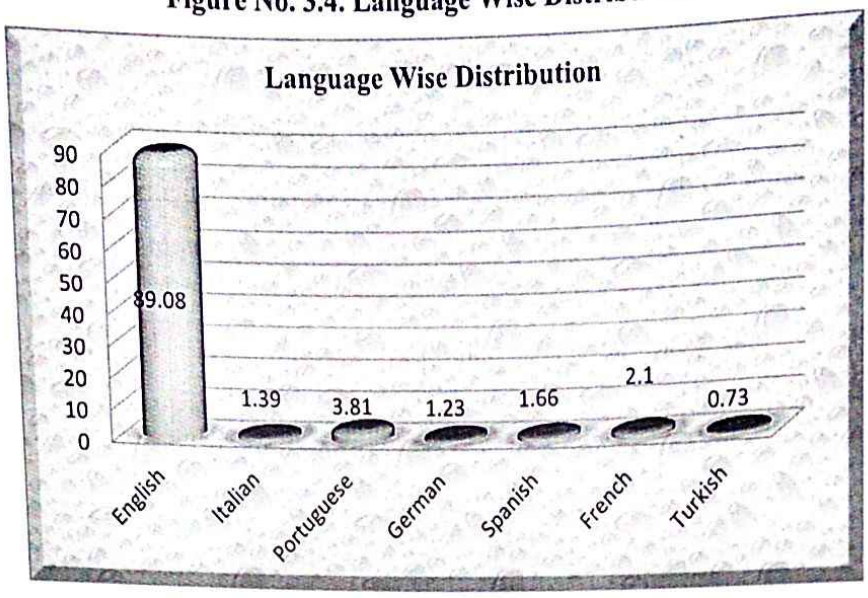


Table No.3.4 & figure no.3.4. Shows that Language wise distribution of contributions. The importance of language related to a specific field of ostentation change from time to time. English (89.08%) is most important language found during the study undertaken. The other languages Italian, Portuguese, German, Spanish, French, and Turkish etc. are found (10.02%). Attempts were made to analyses journals covering the articles on the subject under the study according to their language of publication as shown in table Since English speaking countries and maximum journals covering the articles on the subject under the study are published in English language. It means that English language dominates the others language for article publication in the journals.

3.5. Distribution of Citations.

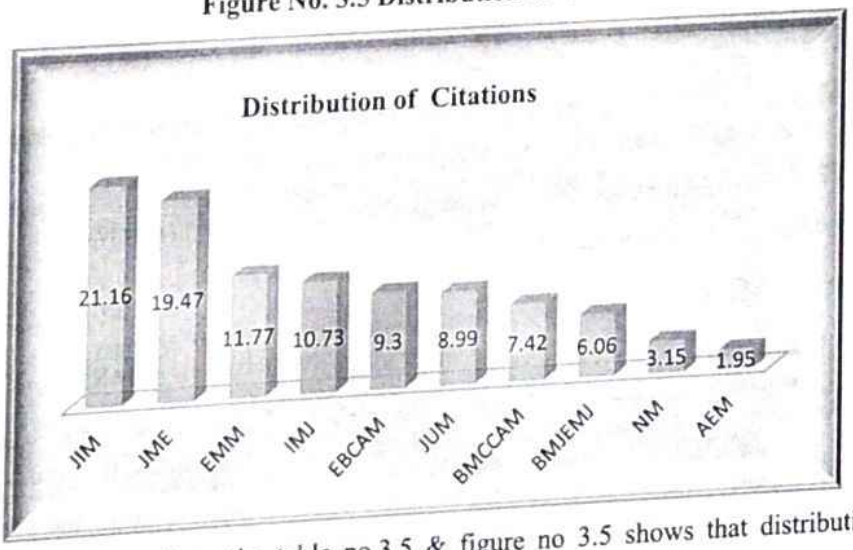
To find out the growth of citations during different years, it is better to scan individual primary journal. The number of citations provided in different journals during a particular year is to be collected.

Table No: 3.5.Distribution of Citations

Journals	Citations	Percentage (%)	Cumulative Percentage %

JIM	58043	21.16	21.16
JME	53419	19.47	40.63
EMM	32276	11.77	52.40
IMJ	29430	10.73	63.13
EBCAM	25510	9.30	72.43
JUM	24655	8.99	81.42
BMCCAM	20363	7.42	88.84
BMJEMJ	16614	6.06	94.90
NM	8649	3.15	98.05
AEM	5337	1.95	100.00
Total	**274296**	**100.00**	

Figure No. 3.5 Distribution of Citations



It is evident from the table no.3.5 & figure no 3.5 shows that distribution of contribution citation, among the different journals Journal of Internal Medicine had contributed maximum number of citations 58043 (21.16%) followed by Journal of Medical Education

43419 (19.47%) citations and Experimental and Molecular Medicine 32276 (11.77%) in that order. Academic Emergency Medicine had contributed minimum number of citation 5337 (1.95%). It can be noticed that more than 60% of the total citations are contributed by the first four journals.

Conclusion:

- Academic Emergency Medicine is contributed Maximum number of articles 3586 (17.30%), 2335 (11.27%) highest articles were published in 2012 and 1256 (06.06%) lowest articles were in 2001.
- "Issue Number 4" published articles in the maximum 1907 (09.20%) articles and least number of articles 1582 (7.63%) in the "Issue number 7".
- Highest number of papers was published by more than three authors and it accounts for 9472 with 45.71%.
- English (89.08%) is most important language found during the study undertaken.
- Journal of Internal Medicine had contributed maximum number of citations 58043 (21.16%).

Reference:

Amsaveni, N., &Vasanthi, R. (2013). Authorship pattern and collaborative research in the field of network security. Indian Journal of Applied Research, 3(1), 52-54.

Becher , S. (1989). Motivations for citation- A comparison of self citation and citation to others Scientometrics 21 (2) pp -245-254.

Bonitz , S. (1999). Motivations for citation- A comparison of self citation and citation to others Scientometrics 21 (2) pp -245-254.

Cronin, Blaise. Shaw, Debora And Barre, Kathryn La. (2001). A cast of thousands: coauthorship and subauthorship collaboration in the 20th century as manifested in the scholarly journal literature of psychology and philosophy, jasist, 54 (9):855–871.

Gupta, B. M. (1998). India's collaboration with people's republic of china in science and technology: a scientometric analysis of coauthored papers during 1994-1999. Scientometrics, 57 (1), 59-74.

Karisiddappa, Maheswarappa, and Shirol (1990), Authorship Pattern and Collaborative Research in Psychology, IASLIC Bulletin 35(2) 1990, 73-78.

Mahapatra,M. (1985). On the validity of the theory of exponential growth of scientific literature. In 15th IASLIC conference proceedings: Banglor, *IASLIC*, P 61-70.

Mahapatra, G. (1980). Scholarly use of web resources in LIS research: a citation analysis. *Library Review*, 55(9), 598-607.

Pradhan, Panda, and Chandrakar (2011), Authorship Pattern and Degree of Collaboration in Indian Chemistry Literature, 8th International CALIBER-2011, Goa University, Goa, March 02-04, 2011, 691-699.

Sengupta, I. N. (1990). Bibliometeris and identification of care periodicals. *Herald of Library Science*. 29(3-4), 226-245.

Suradkar P.A. and Dr. Daya Dalve (2016). Authorship Pattern and Degree of Collaboration in Academic Emergency Medicine. *International Research: Journal of Library & Information Science*, Vol.6 No.1, 112-121.

Thompso, M. (2008). Introducation to webometrics: Quantitative web research for the social sciences. New Yark: Morgan and Claypool.

Vimala, V., & Reddy, V. P. (1996). Authorship pattern and collaborative research in the field of zoology. *Malaysian Journal of Library & Information Science, Vol.1, no. 2: 43-50.*

Zafrunnisha and Pulla Reddy (2009), Authorship pattern and degree of collaboration in psychology, Annals of Library and Information Studies · January 2009.

Appendix-I

List of Journals and Full form of Abbrivations

AEM	Academic Emergency Medicine
BMCC&AM	BMC Complementary and Alternative Medicine
BMJEMJ	BMJ Emergency Medicine Journal
EBC&AM	Evidence-based Complementary and Alternative Medicine
E&MM	Experimental and Molecular Medicine
IMJ	Internal Medicine Journal
JIM	Journal of Internal Medicine
JUM	Journal of Ultrasound in Medicine
ME	Medical Education
NM	Nature Medicine

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Summer 5-1-2019

Institutional Repository in Open DOAR: Status Quo India

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Abstract

Purpose
Up to the 2005 theses, dissertations, research papers and rare collection in most of the Indian libraries, are kept in closed access and it is very difficult to the researchers to access them as a reference source for the further study as well as to avoid duplication, to avoid plagiarism to maintain research ethics in the research, but after that in India UGC and Many higher/research education institutions taking lead to develop Institutional repositories (IR) for Collect, Manage, Disseminate, and Preserve scholarly work created by the Teachers and researchers.

Design/methodology/approach
Total 84 Institutional Repositories (IR) was selected and browsed for the present paper. The data related to the institutional repositories have been collected from Opendoar and ROAR website. The data is analyzed based on selected parameters, like Type of IR, Status of Institutional Repository, software used for repositories, total no of items, subject covered, languages and issues and barriers in self archiving approach of researchers in India.

Findings
This research paper presents Indian scenario in developing the Institutional Repositories. Total 84 Institutional Repositories in India have been analyzed based on selected study criteria like Type of IR, Present Status of Institutional Repository, software used for repositories, total no of items available in IR, subject wise analysis, language wise analysis.

Originality/value
One of the first study to report IRs in Open DOAR and present Status.

Key words: *National Policy Framework, , Electronic Theses and Dissertations (ETD), India Institutional Repository, Open Access, OpenDOAR.*

Introduction:-

Higher education institutions all over the world are experiencing the necessity of managing their education, research and resources in a more effective way. Open access Institutional Repositories(IR) are the best way through which the institutional outputs will open up to the world, IR helps in maximizing the visibility and impact of these outputs as a result enabling and encouraging interdisciplinary approaches to research. Due to various benefits of institutional repositories, various institutions are developing their own repositories. Up to the 2005 theses collection in most of the Indian libraries,

are kept in closed access and it is very difficult to the researchers to access them as a reference source for the further study as well as to avoid duplication in the research. (Sengupta, 2012).

Indian national agencies like University Grants Commission (UGC), Indian Council of Agricultural Research (ICAR), are initiating several steps to promote the ETD culture by providing, policy guidelines, required infrastructure and imparting training to people involved. Organizations like INFLIBNET and others have already created sizeable online database containing metadata and are accessible to everyone. Major projects like Vidyanidhi have demonstrated the need and feasibility of creating ETD databases at the national level. Some of the leading universities and institutions have already taken a plunge and started creating ETD collection. Quite a few subject discipline based self archives have sprung up during the last few years who also cover ETDs. The ETD momentum is fast catching up and one can now see increasing visibility for the Indian academic research. (Kumbar T.S., 2009).

Review of Literature:-

For the present study research oriented practical papers and University Grants Commissions official circulars/notifications and regulations referred as supporting documents for the present study. Like Sengupta, (2012. Kalbande, (2012). Kumbar T.S.,(2009),Bandra,(2002), Hirwade,(2011), Lihitkar, Shalini (2009), UGC Regulations (2005), UGC Regulations (2009),UGC Regulations (2016),UGC Regulation (2018). All referred papers documents acknowledged in references.

Research Methodology

Total 84 Institutional Repositories (IR) was selected and browsed for the present paper. The data related to the institutional repositories have been collected from Opendoar and ROAR website. The data is analyzed based on selected parameters, like Type of IR, Status of Institutional Repository, software used for repositories, total no of items, subject covered, languages and issues and barriers in self archiving approach of researchers in India.

Objectives of the study

- To find out type of Institutional Repositories,
- To find the present Status of Institutional Repository,
- To find software used for repositories,
- To find out total no of items available in IR,
- To identify subject covered.
- To identify the languages used in IRs.

Scope of the Present Study:

The data for the present study was collected exclusively from the "Directory of Open Access Repositories", popularly known as OpenDOAR (http://v2.sherpa.ac.uk/opendoar/) developed by Indian institutions. 85 Indian Open Access Repositories identified in OpenDOAR during the period March 01-24, 2019. Out of 85 total 84 were found fully functioned and 01 IR withdrawn from OpenDOAR Directory. Therefore 84 IRs studied in this paper.

Data Analysis and Interpretation:-

Table No 1 Year wise growth of IRs in India

Sr.No	Year	No of OARs	Percentage
1	2000-2004	0	0.00
2	2005-2010	34	40.48
3	2011-2015	38	45.24
4	2016-2019	12	14.29
	Total	**84**	**100.00**

Table 1 illustrates the growth of Indian open access repositories since 2000. Before 2005 there is no any IR available in India. As per the data analysis and results maximum IRs developed in 2011-2015 i.e 38 (45.24%), followed by 2005-2010 i.e 34 (40.48%) and in 2016-2019 only 12 (14.29%) institutional repository developed by Indian institutions.

Table No 2 Types of Open Access Repositories in India

Sr. No	Type of OARs	To No	Percentage
1	Institutional	72	85.71
2	Disciplinary	8	9.52
3	Aggregating	3	3.57
4	Governmental	1	1.19
	Total	**84**	**100.00**

Table no 2 highlighted the types of OARs in India and out of total of 84 open access repositories, 72 (85.71%) are institutional , 08 (9.52%) are disciplinary. 03 open access repositories are aggregating and 01 hosted by governmental institution.

Table No 3 Open Access Repositories in India by Software Type

Sr.No	Name of Software	Total No of OARs	Percentage
1	Dspace	49	58.33
2	eprints	27	32.14
3	HTML	2	2.38
4	Architexturez	1	1.19
5	CALIBRE	1	1.19
6	Drupal	1	1.19
7	Greenstone	1	1.19
8	Metastudio	1	1.19
9	Nitya	1	1.19
	Total	**84**	**100.00**

Table no 3 indicates the nine open source / commercial and in-house software's are used by the host organizations or institutions to create Open Access repositories. 49 (58.33%) open access repositories in India use DSpace, followed by 27 (32.14%) used eprints, 2 institutions used HTML, other institutions used Architexturez, CALIBRE, Drupal, Greenstone, Metastudio and Nitya software respectively.

Table No 4 Language wise Analysis of Open Access Repositories in India

Sr.No	Language	No of OARs	Percentage
1	English	84	100.00
2	Hindi	10	11.90
3	Gujarati	3	3.57
4	Arabic	2	2.38
5	Kannada	2	2.38
6	Malayalam	2	2.38
7	Marathi	2	2.38
8	Bengali	1	1.19
9	Farsi	1	1.19
10	Other	2	2.38

English, being an international language, is the most preferred one for the open access repositories in India. However, use of other national languages and, in some cases, even regional languages helps in making an open access repository more popular among the research community of a particular region or country, ensuring maximum utilization of the repository holdings. There are many repositories that use more than one language as an interface. Table 4 shows the detailed representation of languages used in the open access repositories in India. 100% IR used English language, followed by Hindi with 11.90%, Gujrati, Marathi, Bengali, Farsi language also used for developing collection in IRs.

Table No 5 State Wise analysis of OARs

Sr.No	State	No of OARs	Percentage
1	Maharashtra	16	19.05
2	Delhi	15	17.86
3	Karnataka	11	13.10
4	Gujarat	7	8.33
5	Kerala	6	7.14
6	Telangana	5	5.95
7	Uttar pradesh	4	4.76
8	Odisha	3	3.57
9	Tamil Nadu	3	3.57
10	Uttarakhand	3	3.57
11	West Bengal	3	3.57
12	Goa	2	2.38
13	Punjab	2	2.38
14	Chandigarh	1	1.19
15	Haryana	1	1.19
16	Jammu and Kashmir	1	1.19
17	Jharkhand	1	1.19
	Total	**84**	**100.00**

Table No.5 highlights the state wise development of OARs and it is reveals that Maharashtra on rank first with 16 (19.05%) in developing IRs, followed by Delhi State with 15 (17.86%) on rank two, Karnatka state on third rank with 13.10% and Chandigarh, Haryana, Jammu and Kashmir and Jharkhand sates having only one OARs respectively.

Table No 6 Open Access Repositories in India by Subject wise

Sr. No	Name of Subject	No of OARs	Percentage
1	Multidisciplinary	42	50.00
2	Technology	12	14.29
3	Health and Medicine	9	10.71
4	Chemistry and Chemical Technology	9	10.71
5	Computers and IT	8	9.52
6	Physics and Astronomy	8	9.52
7	Mechanical Engineering	7	8.33
8	Science General	7	8.33
9	Biology and Biochemistry	7	8.33
10	Electrical and Electronic Engineering	6	7.14
11	Library and Information Science	6	7.14
12	Agriculture	5	5.95
13	Ecology	5	5.95
14	Mathematics and Statistics	5	5.95
15	Social Sciences	5	5.95
16	Earth Sciences	4	4.76
17	Civil Engineering	3	3.57
18	Management	3	3.57
19	Economics	2	2.38
20	Politics	2	2.38
21	Psychology	2	2.38
22	Architecture	1	1.19
23	Arts and Humanities	1	1.19
24	Geography	1	1.19
25	History	1	1.19
26	Language	1	1.19
27	Education	1	1.19

Table No. 6 shows the analysis of subjects listed in Institutional Repositories (IRs) in India. 42 (50 %) IRs covers the other interdisciplinary subject's education, computer, IT, Health and Medicine, Business and Economics, science, social-science and Management. 12 (14.29%) institutions posted their institutional repositories on Technology. 9 (10.71%) IRs posted Health and Medicine and Chemistry and Chemical Technology subjects in repositories.

Table No 7 Total No of Records available in Indian OARs

Sr.No	Name of Open Access Repository	Total No of Record
1	ShodhGanga: A reservoir of Indian theses	220039
2	KrishiKosh	130760
3	Indian Academy of Sciences: Publications of Fellows	106351
4	Open Access Repository of IISc Research Publications	47780
5	Archives of Indian Labour	42845
6	NOPR	40470
7	Digital repository of West Bengal Public Library Network	33905
8	eGyankosh	31971
9	DSpace@GIPE	25449
10	Osmania University Digital Library [OUDL]	24507
11	Dspace at IIT Bombay	20783
12	Institutional repository@VSL	18554
13	Social Science Cyber Library	14782
14	KRISHI Publications and Data Repository	14301
15	National Repository of Open Educational Educational Resources	13780
16	Eprints@CMFRI	12536
17	University of Mysore - Digital Repository of Research, Innovation and Scholarship (ePrints@UoM)	12372
18	AMU Repository (Knowledge Repository)	10930
19	DigitalLibrary@CUSAT	10058
20	ICRISAT Open Access Repository	9702
21	IACS Institutional Repository	7941
22	DRS at National Institute Of Oceanography	7665
23	Indian Institute of Astrophysics Repository	7071
24	ethesis@nitr	6879
25	EPrints@IITD	6776
26	Eprint@NML	6555
27	National Aerospace Laboratories Institutional Repository	6094
28	ePrints@Bangalore University	6043
29	RRI Digital Repository	5941
30	DSpace at Vidyanidhi	5482
31	DSpace@TU	5135
32	Dyuthi	4325
33	Research Archive of Indian Institute of Technology Hyderabad	4142
34	Electronic Theses and Dissertations at Indian Institute of Science	4102
35	DSpace at IUCAA	3912
36	RAIITH	3822
37	E Knowledge Center	3455
38	Vidya Prasarak Mandal - Thane	3144
39	ePrints@MoES:Open Access Digital Repository	3118
40	OpenMED@NIC	2904

41	Dspace@NITR	2850
42	IR@CECRI	2582
43	Mahatma Gandhi University Theses Online	2550
44	IR@NPL	2425
45	DIR@IMTECH	1800
46	DSpace@INFLIBNET	1777
47	INFLIBNET's Institutional Repository	1777
48	Dspace @ Vidyasagar University	1427
49	DSpace at Indian Institute of Geomagnetism	1140
50	Digital Knowledge Repository of Central Drug Research Institute	1140
51	Knowledge Repository Open Network	1128
52	Bhagirathi	1102
53	Etheses - A Saurashtra University Library Service	1064
54	NIRT Institutional Repository	962
55	Institutional Repository of the Anjuman-I-Islam's Kalsekar Technical Campus	940
56	Institutional Repository of Intectual Contributions of Delhi Technological University	841
57	DSpace at M S University	834
58	DSpace at Indian Institute of Management Kozhikode	810
59	ARIES, Digital Repository	807
60	Learning Resource Centre: Digital Repository of Chitkara University	780
61	Open Access to Odia Books	779
62	Management Development Institute - Open Access Repository	649
63	Institutional Repository@CSIO	600
64	National Science Digital Library	579
65	Librarians' Digital Library	510
66	ePrints@ATREE	492
67	E-Repository@IIHR	486
68	Indian Institute of Petroleum Institutional Repository	481
69	DSpace@IMSC	365
70	Digital Repository of Smt. Akkatai Ramgonda Patil Kanya Mahavidyalaya, Ichalkaranji	355
71	Kautilya Digital Repository at IGIDR	334
72	WeSchool Digital Repository	241
73	Eprints@IARI	230
74	Architexturez South Asia	200
75	DeepBlue Knowledge Repository@PDPU	182
76	Indian Institute of Management Kozhikode Scholarship Repository	151
77	DSpace @ GGSIPU	135
78	Eprints @MDRF	100
79	OneWorld South Asia Open Archive Initiative	91
80	Eprints@SBT MKU	89

81	Bhogawati Mahavidyalaya Institutional Repository	62
82	dspace @ sdmcet	60
83	IR@Goa University	Not Mentioned
84	Indian Institute of Management Kozhikode Digital Library	Not Mentioned
	Total	**982288**

Item included in IR has been shown in Table No. 7. Maximum numbers of items are posted by ShodhGanga: A reservoir of Indian theses (220039), followed by KrishiKosh (130760), Indian Academy of Sciences: Publications of Fellows on third rank with (106351) documents posted in IR. Total **982288** documents available in 84 Indian institutional repositories. Out of 84 IRs, 2 institutional Repositories were not provided the total number of items included in Institutional Repositories.

Table No 8 ETD initiatives in India

Sr. No	Name of Open Access Repository	No of ETDs Available
1	ShodhGanga: A reservoir of Indian theses	220039
2	KrishiKosh	25800
3	Osmania University Digital Library [OUDL]	10575
4	AMU Repository (Knowledge Repository)	10252
5	ethesis@nitr	6879
6	DSpace at Vidyanidhi	5482
7	DSpace@TU	5068
8	EPrints@IITD	4887
9	Electronic Theses and Dissertations at Indian Institute of Science	4102
10	Dyuthi	2682
11	Mahatma Gandhi University Theses Online	2550
12	RAIITH	1183
13	Research Archive of Indian Institute of Technology Hyderabad	1183
14	Etheses - A Saurashtra University Library Service	1063
15	DSpace at M S University	755
16	Knowledge Repository Open Network	684
17	Eprints@CMFRI	540
18	Institutional repository@VSL	365
19	DSpace@GIPE	343
20	RRI Digital Repository	241
21	Digital Knowledge Repository of Central Drug Research Institute	145
22	Dspace @ Vidyasagar University	128
23	E-Repository@IIHR	95
24	Eprints@IARI	47
25	Eprint@NML	46

26	IR@CECRI	46
27	Kautilya Digital Repository at IGIDR	41
28	Bhogawati Mahavidyalaya Institutional Repository	17
29	DSpace at Indian Institute of Management Kozhikode	17
30	Indian Institute of Management Kozhikode Scholarship Repository	17
31	ARIES Digital Repository	12
32	DSpace@IMSC	05
33	Learning Resource Centre Digital Repository of Chitkara University	05
34	Librarians' Digital Library	05
35	Digital Repository of Smt. Akkatai Ramgonda Patil Kanya Mahavidyalaya, Ichalkaranji	03
36	IACS Institutional Repository	03
37	Eprints @MIDH	02
38	DigitalLibrary@CUSAT	01
39	***46 IRs have 00 ETDs***	***00***
	Total	**3@5,308**

Table No. 8. Shows the ETD initiatives taken by various institutions in India and total e-thesis available in ETDs. Maximum numbers of ETDs are available in ShodhGanga: A reservoir of Indian theses (220039), followed by KrishiKosh (254600), Osmania University Digital Library [OUDL] on third rank with (10575), AMU Repository (Knowledge Repository) on fourth rank with (10252) e-theses posted in IR. Total **3@5,308** e-theses available in Indian ETDs. Out of 84 IRs, 46 institutional Repositories were not uploaded any e-theses in Institutional Repositories up to 29th March 2019.

Conclusion

Institutional Repository is a new technique for e-collection development, managing documents in digital form. By using this repository the institution can offer service like dissemination of information, access to preserve and use information and as well as content submission and organization of information. Libraries and LIS professional should have to take part in Institutional Repositories on developing successful and valuable repositories for their institution in India.

References

- Adetunji J.A., Appuh HD, Akinlade OO, Ibribena EI. (2017). The Nigerian institutional repositories: Opportunities and barriers. *Acad. J. Educ. Res.* 5(10): 298-305. Retrieved from https://academicpublishing.org/journals/ajer.pdf/2017/Oct/Adetunji%20et%20al.pdf
- Directory of Open Access Repositories. Retrieved from http://v2.sherpa.ac.uk/opendoar/
- Hirwade,M.A.(2011). *Digitization of Theses and Dissertations: Status Quo India.* In Proceedings of the 14th International Symposium on Electronic Theses and Dissertations, Cape Town, South Africa, 13-17 September 2011. Retrieved from http://dl.ze.net.ac.za/conference/ysd2011/papers/ysd2011_hirwade.pdf

- Kalbande,D.T. (2012). Institutional Repositories in India: An overview. *Online International Interdisciplinary Research Journal.2(4):*194-203. Retrieved from http://www.oiirj.org/oiirj/july-aug2012/25.pdf
- Kumbar, Tukaram S. 2009. Electronic Theses and Dissertations (ETD) Initiatives in India: Identification of SomeIndicators of Success. Retrieved from https://www.researchgate.net/publication/228849354_Electronic_Theses_and_Dissertations_ETD_Initiatives_in_India_Identification_of_Some_Indicators_of_Success
- Lihitkar, Shalini and Lihitkar, Ramdas. (2009). *Study of major institutional repositories in India.*, 2009 . In 12th International Conference on Electronic Theses and Dissertations, Pittsburgh , USA, 10-13 June 2009. Retrieved from http://eprints.rclis.org/14234/1/ETD_2009_IRshaliniIndia.pdf
- Sengupta,S.(2012). *Open Access Repositories: The Asian Scenario With Special Reference To Library & Information Science.* In conference on RLIDE, 104-111 p, Retrieved from http://eprints.rclis.org/18189/1/Open%20Access%20RepositoriesThe%20Asian%20Scenario%20With%20Special%20Refernce%20to%20Library%20%26%20Information%20Science.pdf
- University Grants Commission. (2007). UGC (Submission of Metadata and Full-text of Doctoral Theses in Electronic Format. Regulations, 2005. Retrieved from http://www.ugc.ac.in/new_initiatives/etd_hb.pdf
- University Grants Commission. (2018). Letter Reg.: UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. Retrieved from https://www.ugc.ac.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf

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3-27-2019

Digital Footprint for the Personal Branding of Librarians in the Digital Society

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Digital footprint for the personal branding of librarians in the digital society

Abstract

Purpose:-*The use of academic profiling sites is becoming more common, and emerging technologies boost researchers' visibility and exchange of ideas. In this paper highlighted profiling sites. These sites are Research Gate, Academia.edu, Google Scholar Citations, Researcher ID and ORCID, Scopus ID, Blogs, Personal Websites etc.*

Design/methodology/approach:- The paper adopts the methodology of simple literature review and personal practical experience. The paper reveals a practical case of digital footprint management.

Findings:- Due to the need for librarians to embrace the unleashed steps in creating a digital footprint of themselves in the present dynamic information environment and emerging knowledge society, the various online avenues are revealed, which can lead the way for librarians in the journey of making a mark in the digital society. The concept of digital structural change is also raised, in connection with building a digital society. Some major points are raised in the paper which would immensely aid the contemporary librarian in building a lasting positive image, and reaching the apex in the library profession. Such major points as: personal branding of librarians, and managing your digital footprints.

Originality/value:- One of the first studies to report various digital footprint platform in the library science subject area.

Keywords:- Academic Footprint, Social Media, Open Access, Researcher ID, Google Scholar Citation, Digital Footprint, Personal Branding.

1. Introduction

Information and communications technologies are rapidly changing how academic achievements and reputation can be assessed. The internet is becoming an all-purpose source for scholarship. "Web mentions" and URL citations are an analog to journal citations for scholarly work appearing or referenced on web sites or blogs. Like article citations, web citations can represent the noteworthiness of a scholar's contributions. And like frequent academic journal citations, a wide range of web mentions adds to an academic's reputation and prestige.

The advantage of assessing a wider range of academic output conveys the breadth and reach takes a more holistic view of an academic's body of work, or figuratively, an overall "academic footprint". An assessment of the academic footprint and/or visibility approaches that of the actual tenure review process because it can include nearly all of the activities undertaken by a faculty member, including but not limited to: dissertation, book reviews, conference proceedings, conference presentations, research reports, funded grants, and teaching activities.

2. Academic Footprint

Developing skills to determine an individual's scholarly impact is becoming essential to advancing an academic career (Hirsch, 2007).
This *Calculate Your Academic Footprint* guide:

- Overviews a process for creating a master publication list and master citation list
- Explains how these master lists are possible through data available in citation-tracking databases, and through the support of a bibliographic management tool.
- Provides a process for keeping your citation counts current and relatively self-sustaining over time
- Describes how you can calculate a more robust and accurate h-index

2.1 The Process

The process offered by this guide enables authors to proactively produce an accurate publication list and to capture accurate citation counts for these publications. Following flow chart captures the major steps of the process:

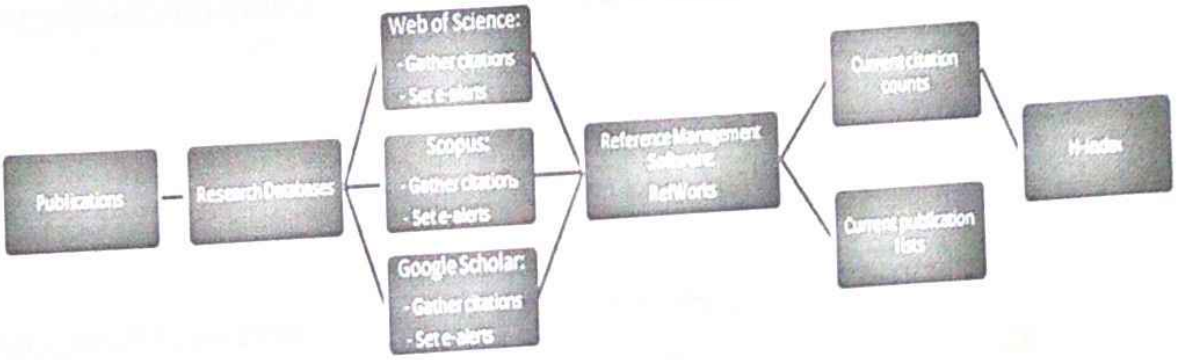

Fig.No.1 Authors Productivity Procedure

2.3 Author Profile

It is important for works to be correctly attributed to their author. Unfortunately, name ambiguity can sometimes make this challenging!

Name variants are a key example of name ambiguity and include:

- More than one author having the same name
- Similar spelling of name
- Incorrect name order
- Use or misuse of middle initial
- Different version of name used throughout career (name change, maiden name, married name, etc)

Researcher identification systems offer stable author identifiers, and provide one way that author name ambiguity can be proactively decreased. Common researcher identification systems include: ORCID, Scopus Author Identifier, Researcher ID, and Google Scholar Citation Profiles.

3 Researcher Identification Systems

A variety of free options allow you to create and maintain a stable researcher profile:

3.1 ORCiD:

ORCiD enables you to obtain a unique 16 digit identification number that can be used to tie you to your work. ORCiD enables communication across multiple platforms, including Scopus and Web of Science's Researcher ID.

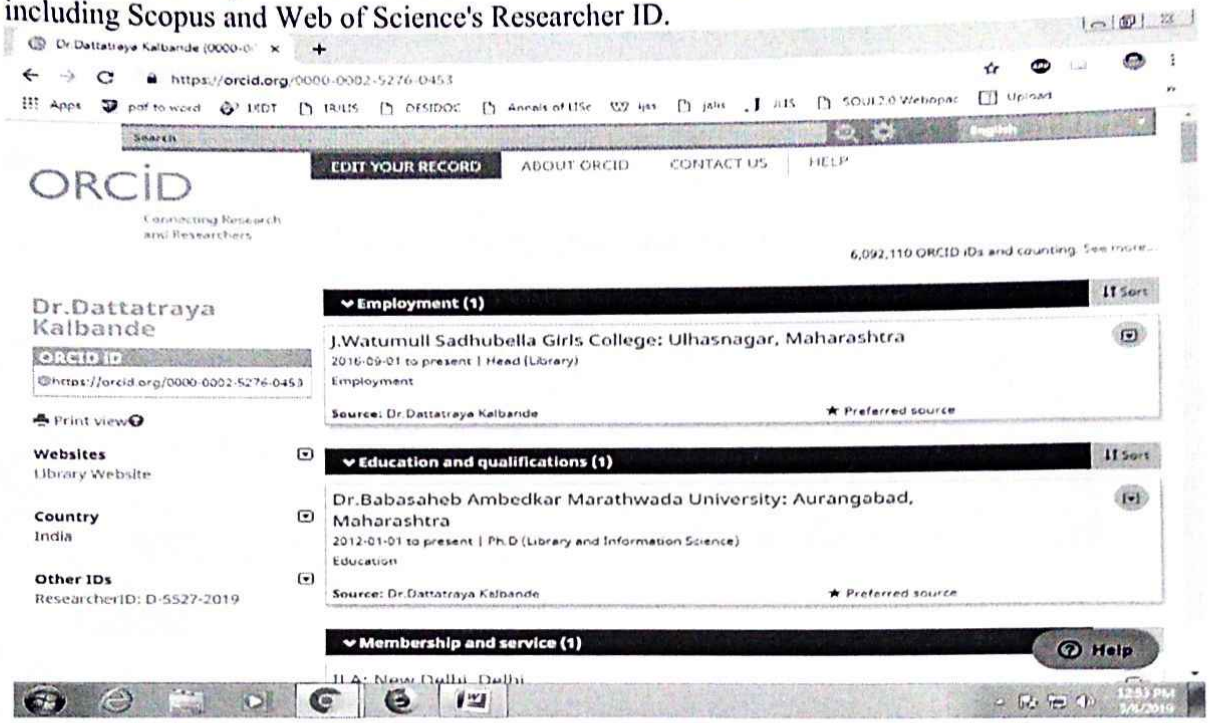

Fig. No:2 ORCiD Profile

3.2 Google Scholar Citations:-

Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites. Google Scholar helps you find relevant work across the world of scholarly research.

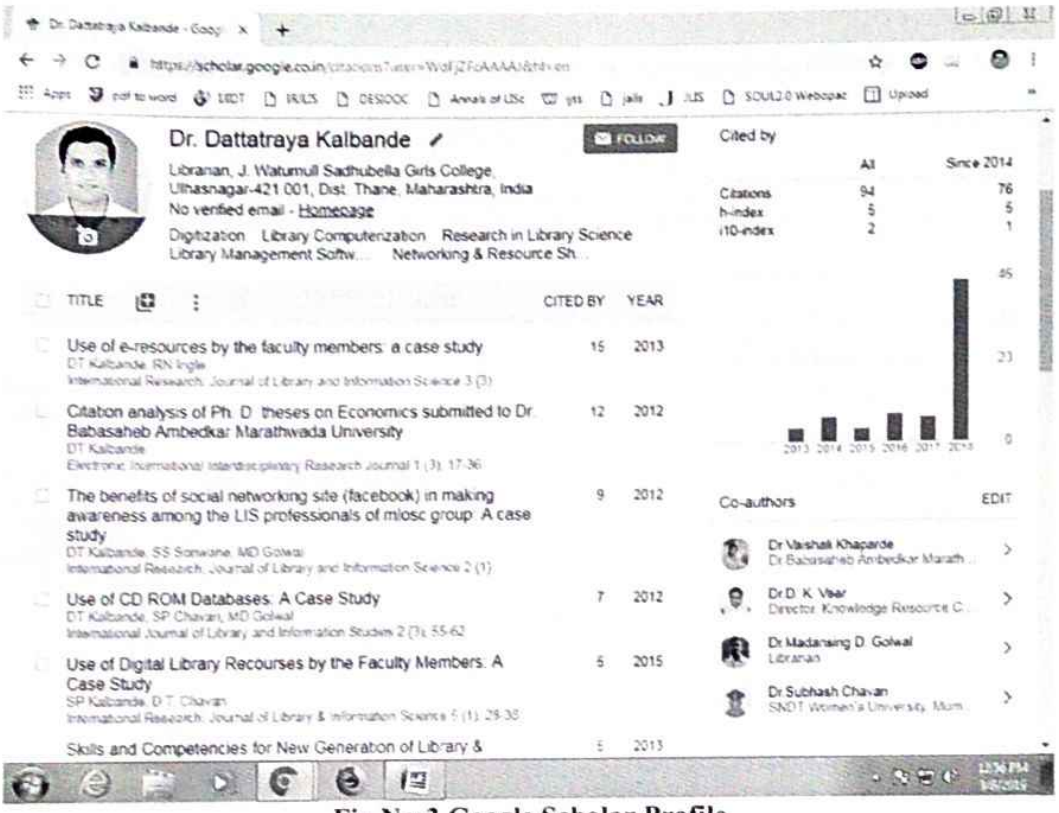

Fig.No:3 Google Scholar Profile

3.3 Scopus Author Identifier:

Scopus ID creates an Author Profile with an associated Author Identifier, and associates you with the publications that you have authored. Allows you to request changes when you notice inaccuracies in your Author Profile. Scopus also provides the Scopus2Orcid option as a way to link your Author Identifier information with your ORCiD identification number.

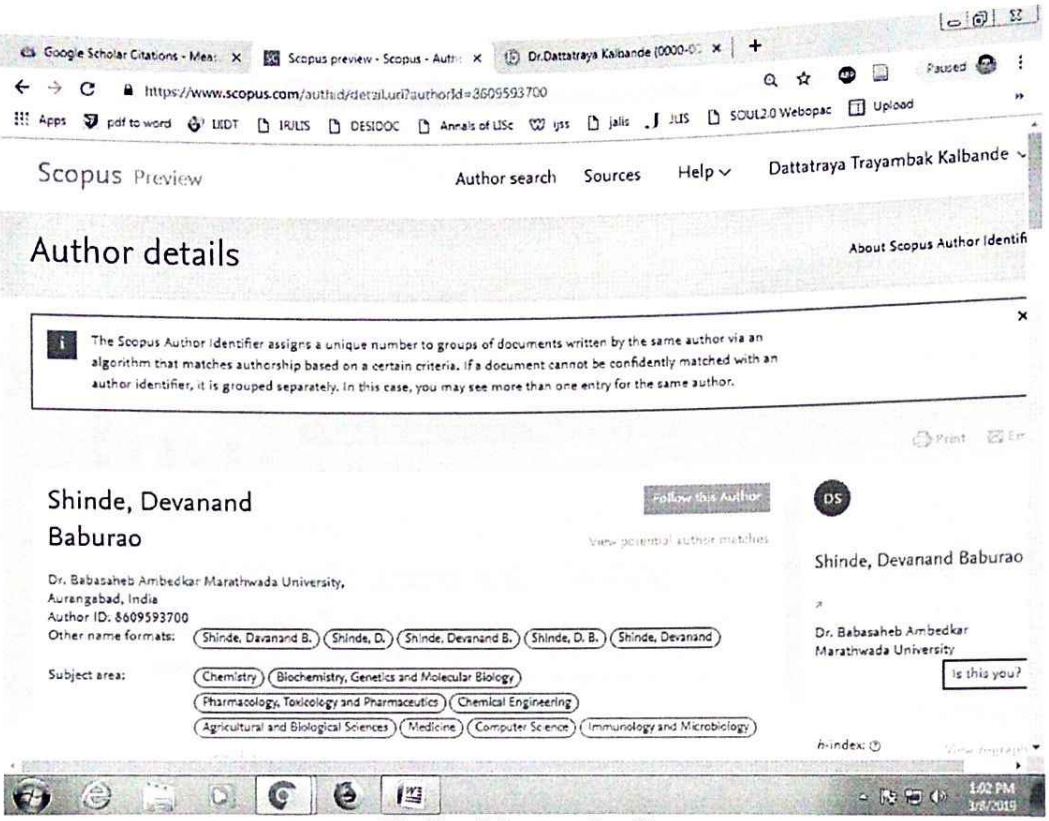

Fig.No. 4 Scopus Profile

3.4 Researcher ID:-

ResearcherID provides a solution to the author ambiguity problem within the scholarly research community. Each member is assigned a unique identifier to enable researchers to manage their publication lists, track their times cited counts and h-index, identify potential collaborators and avoid author misidentification. In addition, your ResearcherID information integrates with the *Web of Science* and is ORCID compliant, allowing you to claim and showcase your publications from a single one account. Search the registry to find collaborators, review publication lists and explore how research is used around the world.

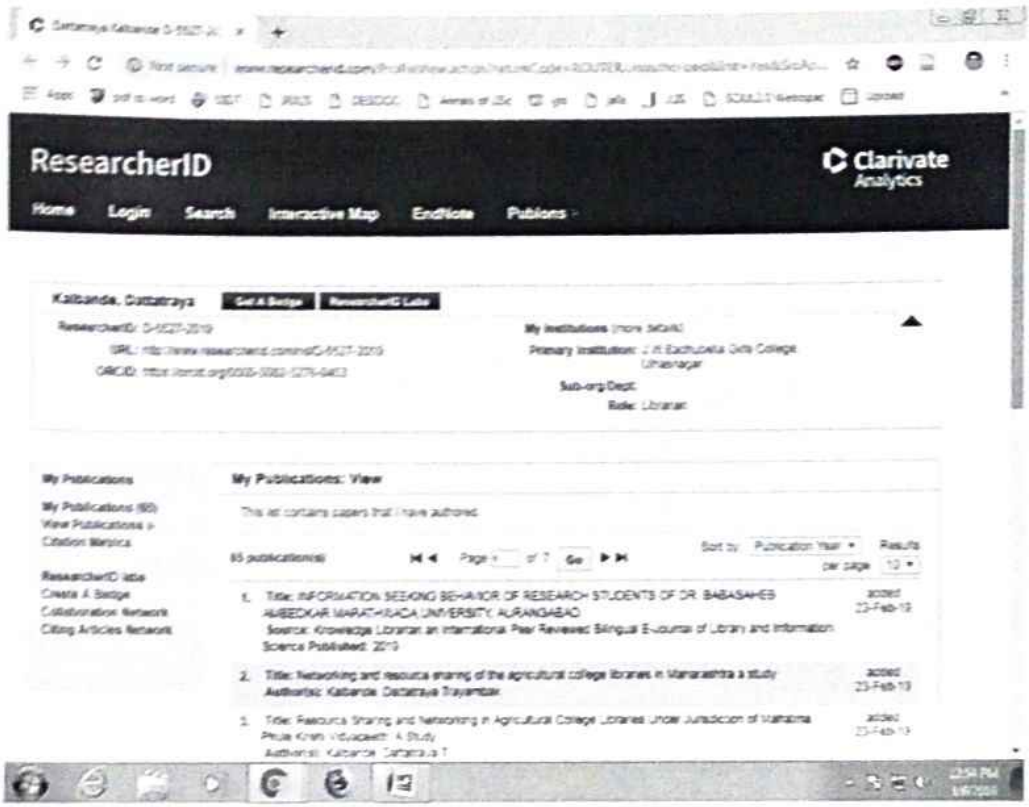

Fig.No.5 ResearcherID Profile

3.5 Academia.edu

Academia.edu is a platform for academics to share research papers. The company's mission is to accelerate the world's research. Academics use Academia.edu to share their research, monitor deep analytics around the impact of their research, and track the research of academics they follow. Over 75 million academics have signed up to Academia.edu, adding 22 million papers. Academia.edu attracts over 54 million unique visitors a month.

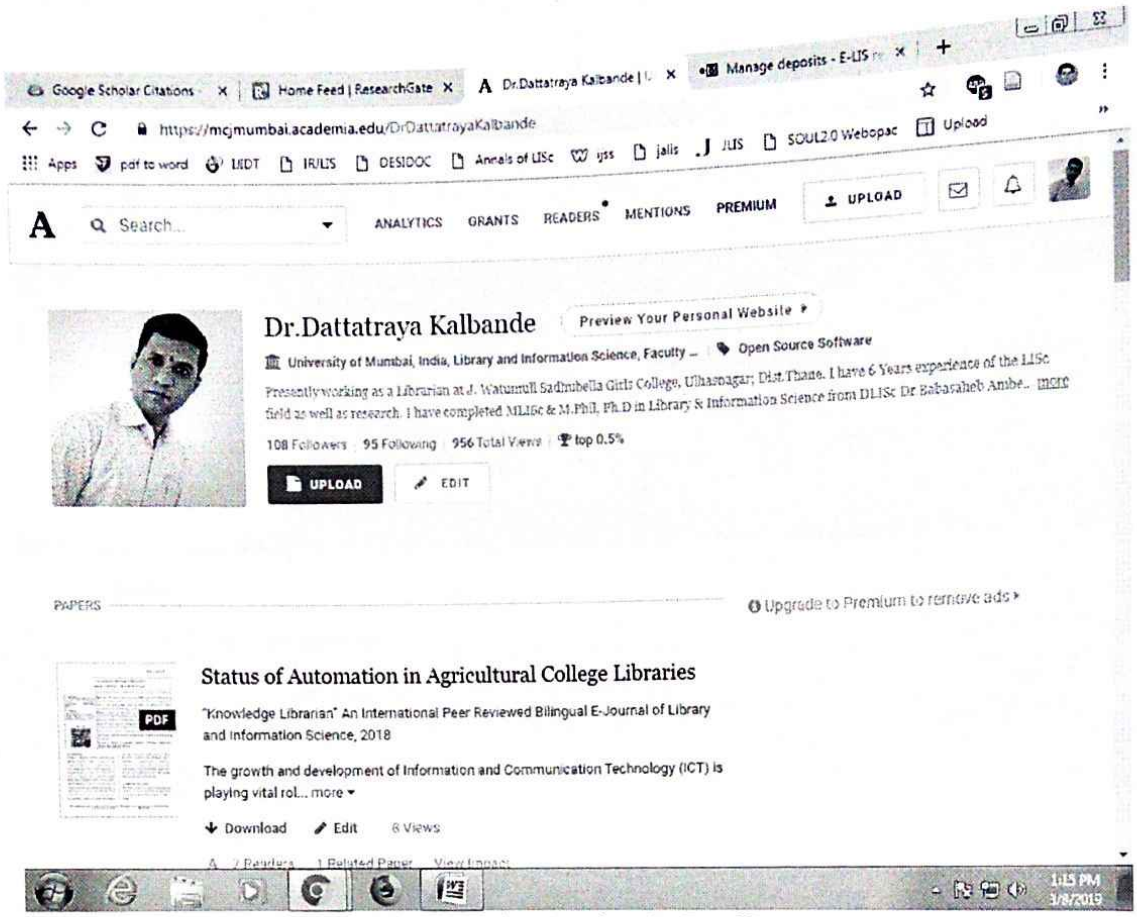

Fig.No:6 Academia.edu Profile

3.6 Research Gate

Research Gate is the professional network for scientists and researchers. Over 15 million members from all over the world use it to share, discover, and discuss research.

Here's how it works

1. Share your publications, access millions more, and publish your data.
2. Connect and collaborate with colleagues, peers, co-authors, and specialists.
3. Get stats and find out who's been reading and citing your work.
4. Ask questions, get answers, and solve research problems.
5. Find the right job using our research-focused job board.
6. Share updates about your current project, and keep up with the latest research.

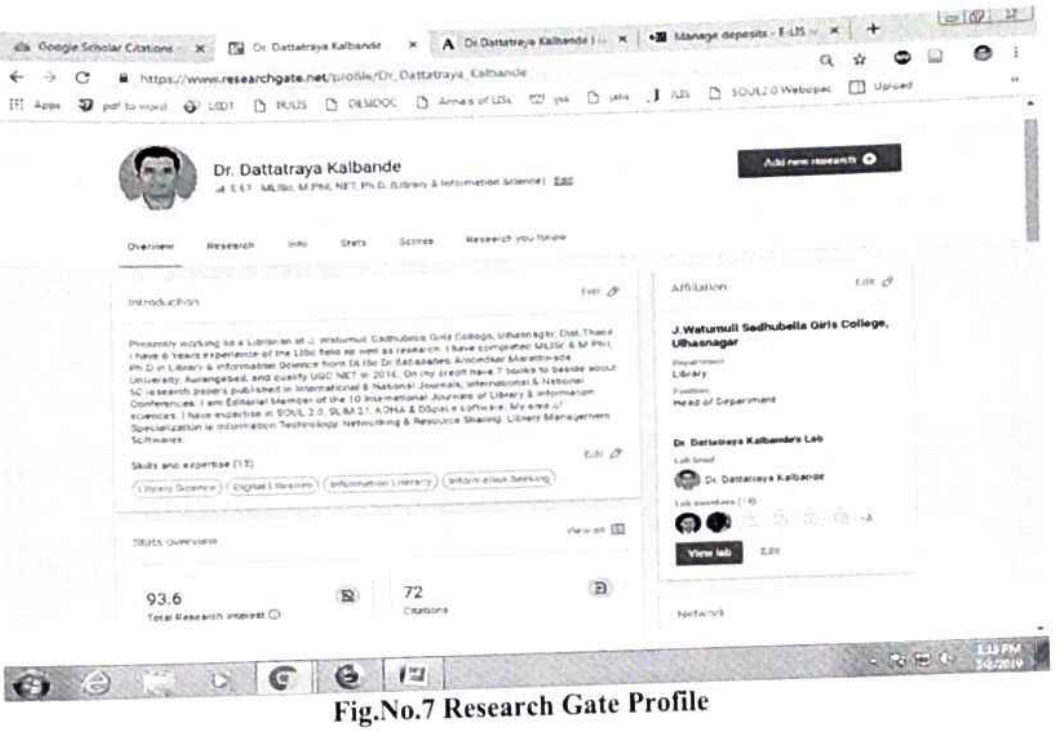

Fig.No.7 Research Gate Profile

3.7 Personal Website/ Google Sites

Google Sites is a structured wiki- and Web page-creation tool offered by Google. The goal of Google Sites is for anyone to be able to create simple websites that support collaboration between different editors.

Fig.No.8 Personal Website

3.8 Blogs:-

A blog (shortening of "weblog") is an online journal or informational website displaying information in the reverse chronological order, with latest posts appearing first. It is a platform where a writer or even a group of writers share their views on an individual subject.

Blog structure

The appearance of blogs changed over time, and nowadays blogs include different items. But, most blogs include some standard features and structure. Here are common features that a typical blog will include:

- Header with the menu or navigation bar
- Main content area with highlighted or latest blog posts
- Sidebar with social profiles, favorite content, or call-to-action
- Footer with relevant links like a disclaimer, privacy policy, contact page, etc.

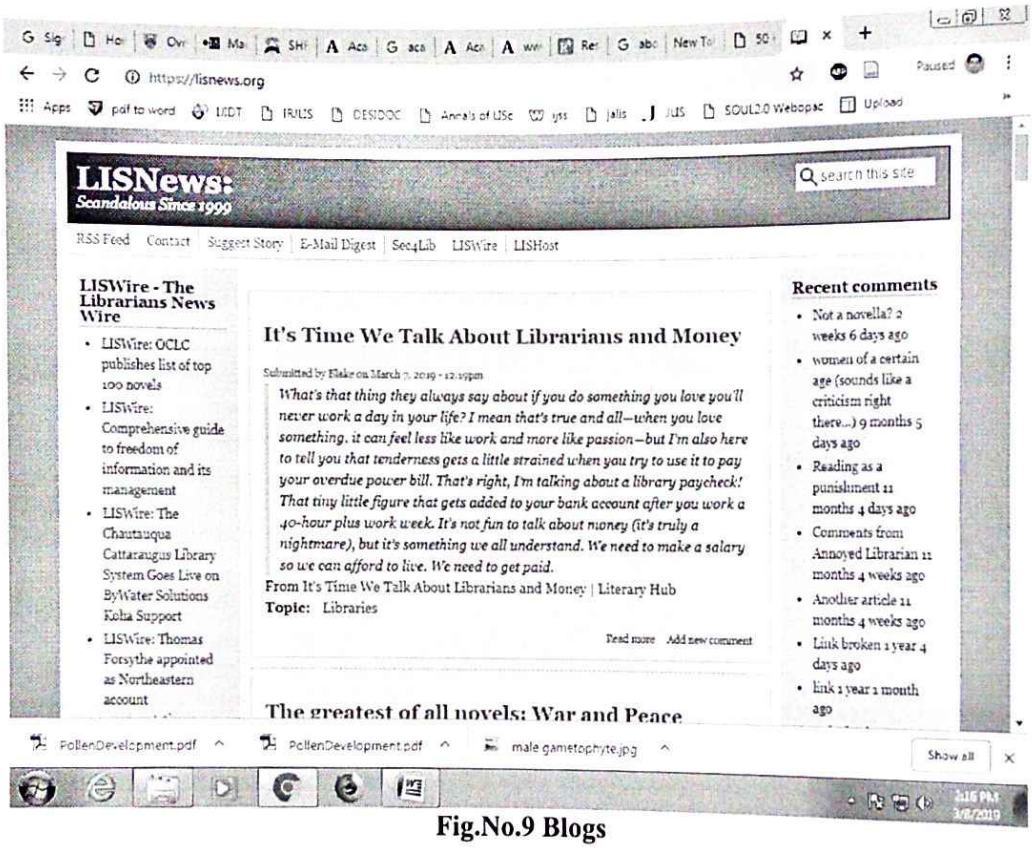

Fig.No.9 Blogs

3.9 e-LIS

Established in 2003, e-LIS is an international digital repository for Library and Information Science (LIS), including Communication. It has grown thanks to a team of volunteer editors that support 22 languages. The development of an international network has been stimulated by the extension of the Open Access concept to works and facilitated by the dissemination of material within the LIS community. These are some of the reasons for the success of e-LIS.

In a few years, e-LIS has been established as the largest international open repository in the field of library and information science.

Searching or browsing e-LIS is a kind of multilingual, multicultural experience, an example of what could be accomplished through open access archives to bring the people of the world together. Because librarians are so involved in open access advocacy, e-LIS is a key to encourage open access for all repositories, by giving librarians the experience

they need to speak with confidence when talking with researchers and open access archives, and the experience to provide the best possible assistance to self-archiving faculty.

Fig.No. 10 E-LiS Profile

4. Conclusion

Engagement in public, beyond the scholarly context is increasingly advocated by research funders, governments and higher educational institutions, and there is growing pressure on scholars to document societal impact. We find that academic network sites have indeed become a part of the researchers' professional life.

References

1. Alakangas, S. & Warburton, J. Research impact: h-index. *The University of Melbourne.* Retrieved from http://unimelb.libguides.com/c.php?g=402744&p=2740739
2. Hirsch, J. E. (2007). Does the h index have predictive power? *Proceedings of the National Academy of Sciences of the United States of America, 104*(49), 19193-19198. doi:10.1073/pnas.0707962104
3. http://eprints.rclis.org/
4. https://blogging.com/blog/
5. https://orcid.org
6. https://scholar.google.com/citations
7. https://www.academia.edu/
8. https://www.researcherid.com
9. https://www.researchgate.net/
10. Kalbande, D.T. and Sonwane, S.S. Citation Analysis Of Ph.D. Theses On Economics Submitted To Dr. Babasaheb Ambedkar Marathwada

University. *Electronic International Interdisipinary Research Journal*, 2012, vol. 1, n. 3, pp. 17-36.

11. Kalbande,D.T., Sonwane,S.S. and Golwal, M.D. (2012) "The Benefits of Social Networking Site (Facebook) in making awareness among the LIS professionals of MLOSC Group: A Case Study. *International Research Journal of Library and Information Science*. Vol.2 No.65-75 p.
12. Sawai, A.B. and Chavan, S.P. and Kalbande, D.T. . *Research Productivity of LIS Professional in Dr. Babasaheb Ambedkar Marathwada University Aurangabad.*, 2018 In: Re-Invisaging Knowledge Resource Centers: Roles and responsibility. Ess Ess Publication, pp. 91-104.

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Green Accounting: Need and Importance in India

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ABSTRACT
This research paper neighbours meaning of green accounting needs and importance of green accounting. The paper gives importance the implementation of green accounting. Green accounting is how much is essential for developing country just like India. Now green accounting importance is increasing day by day so that Government of India also planning to adopt green accounting system mandatory. This paper is also show the how the India take initiative relating to Green accounting. In this paper we make a comparison between traditional accounting and green accounting.

Keywords: Green Accounting, Traditional Accounting, Environment Protection.

INTRODUCTION

Green accounting concept was introduced by an economist professor Peter wood in the year 1980. Green account is also call environmental accounting .It plays important role in corporate social responsibility. Incorporate world's environmental resource and assets are taken into company's Account. Green Accounting measures it economic and environmental impact on the business. It is new type of recording accounting system for sustainable development which account environmental and its well being. In this accounting we considered environment cost for calculation of income of an enterprise there is no need for calculating revised method of accounting which includes environmental costs.

Environmental accounting is an important things for understanding that the role played by business enterprise in the economy towards the environment safety and Welfare welfare. And green accounting system is composed of environmental differentiate conventional accounting and ecological accounting. A green accounting a new system of Sustainable accounting has emerged. It permits the competition of income for a Nation's by taking into account the economic damage and depletion in the natural resources base of an economy. A green accounting has a short beginning in the late 1969 it directly linked environmental sustainability. Its man force is to place value on environmental resource that do not have market price an Incorporates there resources in the national account into economic growth.

Green accounting items to place value of environment resource that do not have market price both the Index of Sustainable Economic Welfare(ISEW) and Eco Domestic Production (EDP) are example of indicator of Sustainable economy well being. GDP is GDP is relative young measure of economic growth. When the GDP was developed between the 1930 and 1960 Governmental resource that did not have Marketplace way still considered as an free gift of nature.

TYPES OF GREEN ACCOUNTING

1) Global Environment Accounting
2) National Green Accounting
3) Corporate Green Accounting

a) Environment Management Accounting
b) Environment Financial Accounting

1. Environmental Management Accounting

In this accounting two types of information are included such as

a) Physical informations here the company focus on Physical use of scarer resources and how much they wasting.
b) Monitor information daddy knows environment related cost earning and savings.

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2. Environment Financial Accounting
Environmental accounting is applicable for accounting of transaction which have an impact on financial performance of the company.

3. Environmental National accounting
It is national accounting done for environment Research and green cost.

ENVIRONMENT PROTECTION LAWS
1) Directly Concerned with Environment

2) Indirectly Concern with Environment

DIRECTLY RELATED TO ENVIRONMENT PROTECTION
a) Water (prevention and control of pollution Act) 1974 and 1977.

b) Forest conservation Act, 1981

c) The environmental protection Act ,1986

INDIRECTLY RELATED TO ENVIRONMENT PROTECTION
a) Factories Act, 1948.

b) Hazardous wastage (management and handling) Act, 1989.

c) Motor vehicle Act , 1991

d) Indian fisheries Act 1987

e) The National Environmental Tribunal Act 1995

OBJECTIVE OF THE STUDY
1) To know the objective of Green accounting

2) To know the need and importance of green accounting

3) Types of green accounting.

4) Green accounting practices in India.

RESEARCH METHODOLOGY
This Paper is purely based on secondary data which is collected from websites ,reference books ,periodicals, textbook, journals, newspapers, official website . We critically analyse the various official articles and government reports and literature review.

OBJECTIVE OF GREEN ACCOUNTING
1. Assessment of environmental cost and benefits:
SEEA expands and compliments S N A with regard to costing.

a) The use of depletion of natural resources in the production and final demand.

b) the changes in environment resulting from pollution and other impact of production consumption and natural events in one hand environmental protection and another hand production is going on.

2. Link of physical resource accounts with monetary environmental account:
Physical resource accounts cover total stock or Reserves of natural resource and changes in it, even those resources which are not given used. Does natural resource accounts provide the physical counterpart of the monetary stock and flow accounts of SEEA.

3. Segregate all environmental related floor and stock of traditional accounts:
Segregate all stock and flow of assets related to environmental permits. The estimation of total expenditure for the protection of environment.

4. Accounting for the maintenance of tangible wealth:
The SEEA extend the concept of capital cover not only human made but also natural capital. Capital formation is continuously change into a broader concept of capital accumulation along.

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NEEDS OF GREEN ACCOUNTING

1) Some developing countries like India it have to call that is Saving environment and economic development.
2) As the country e economic condition is not very strong then country can use Green accounting system and improve its economic growth.
3) Due to environmental damage in India we lose rupees 34000 crore from World Bank.

GREEN ACCOUNTING PRACTICES IN INDIA

1. The Government of India first and of that importance of accounting in the year 1991.
2) Ministry of environment and Forest as proposed that every company shall in the report of its board of directors discuss briefly that the particular steps taken or proposed to be taken towards adoption of clean environment in related to pollution, minimum wastage ,recycling of wastage investment on environmental protection.
3) It is mandatory that in the country to get environmental clearance for all new project that concern both Union Ministry of Environment and Forest as well as State Government of India.
4) The union Ministry of Environment and Forest has issued various types of instruction environmental statement.

IMPORTANCE OF GREEN ACCOUNTING FOR BUSINESS:

1. Poor environmental behaviour can be give adverse effect on organisational image. Sometime which may leads to loss customer Goodwill same for example metro railway station established in Aarey Colony then it lost the confidence of the peoples on govt.regarding environment cautiousness.
2. Many government may impose heavy fines on company which harms the environment.
3. By improving environmental behaviour can reduced cost.
4. The business sector and citizens has moral duty that they should play their part in helping the environment.
5. Increasing government regulations on environmental issues such as pollution has increased the cost of compliance of the business.

COMPARISON OF FINANCIAL AND GREEN ACCOUNTING

1. Prospective

Corporate economy (financial/ monetary)aspects.

Link between the economy and the environment

2. Task

Show the general economic situation cost management

Shows environmental performance show environment liabilities and environment cost.

3. Elements

Financial accounting Management AccountingEnvironment financial accounting ,internal ecological accounting, environmental management accounting.

4. Tools

Financial and accounting statements

Environment reports

5. Regulation

Legal regulations (in financial accounting) and management accounting is voluntary.

Legal regulation require reporting to some elements of environment performance.

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6. Obligation
Compulsory

Some elements are required.

CONCLUSION

Environment accounting is in primary stage in India and whatever shows in the accounts is in this regard is more or less compliance to fulfill the rules and regulations. Practically unless common peoples in India are not made aware towards environmental safety the development of green accounting will be slow. Now at present days corporate sector prepare for environment policy to take step for pollution control Air Pollution Control global warming etc. The sustainable development of any country can be possible when we follow good environment policy and follow of such policy by adapting proper accounting procedure.

REFERENCE

1. www. your articles library.com
2. www.jagranjosh.com
3. www.iosrjournals.org
4. www. sciencedirect.com
5. https://www.researchgate.net
6. www.newhorizonindia.com
7. www. indianresearchjournal.com
8. https://www.thehindubusinessline.com
9. https://www.nap.edu.
10. https://www.academia

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