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CONTENTS OF ENGLISH PART - I

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CONTENTS OF MARATHI PART - I

भारत स्वतंत्र झाला तेंव्हा द्वितीय महायुध्द नुकतेच संपले होते. युध्दोत्तार काळात अमेरिका व सोव्हिएत युनियन (U.S.S.R.) या दोन महासत्ता उरल्या होत्या. त्या नंतर जगाचा इतिहास व भूगोल बदलणा-या अनंत घडामोडी झाल्या. स्वातंत्र्यानंतर बरीच वर्षे केंद्रात कॉग्रेस पक्षाकडे सत्ता होती आणि पं. नेहरू त्यांचे निधन होईपर्यत म्हणजे सतरा वर्षे पंतप्रधान होते. यामुळे भारताच्या परराष्ट्र धोरणावर कॉग्रेसच्या राजनीतीचा प्रभाव सर्वात अधिक राहिला. त्यातही पं. नेहरूंनी परराष्ट्र राजकारणाचे जे मुख्य सूत्र स्वीकारले होते त्यात परिस्थितीनुसार काही मुरड घातली गेली तरी मुळास धक्का लागला नाही. शीतयुध्दाचे वातावरण असताना जगाची विभागणी दोन गटात झाली होती व कोणत्याही एका गटात सामील न होता अलिप्ततेचे धोरण नेहरूंनी स्विकारले. कॉग्रेस पक्षात अशा अलिप्ततेच्या धोरणात स्विकार पूर्वीपासूनच झालेला होता.

कोणत्याही एका गटात सामील झाल्यास दूस-या गटाचा विरोध ओढवून घेऊन शीतयुध्दाची झळ आपल्याला लागेल आणि ती परवडणारी नाही असा विचार या देशांच्या राज्यकर्त्यांनी केला होता. भारतातही जनता पक्षाचे राजध्य काही काळ आले आणि नंतर तर भा.ज.प. च्या नेतृत्वाखालील राज्य आल तेव्हाही अलिप्ततेच्या धोरणाचे मख्य सूत्र सोडले नव्हते. जनता पक्षाचे राज्य असताना श्री अटल बिहार वाजपेयी परराष्ट्रमंत्री होते. त्यांनी एका भाषणात सांगितले की, अलिप्ततेचे धोरण हे एका पक्षाचे वा व्यक्तीचे नाही, तर देशाचे आहे. या धोरणामुळे भारतास स्वाभिमानाने राहता आले.

'नाम' ही जगातील नवमुक्त, विकसनशील आणि शांततावादी देशांची एक बलाढय संघटना व्हावी आणि तिची शक्ती महासत्तांच्या प्रभुत्ववादाला. यध्दखोरीला आणि वंशवादालाही वेसन घानण्याठी वापरल जावी, अशी अपेक्षा होती. वस्तुतः भारताच्या परराष्ट्र नितीचा कणा म्हणजे 'नाम'सर्वप्रथम एक गोष्ट क्षात घ्यायला हवी ती ही, की कॉग्रेस व कम्यूनिष्ट पक्ष वगळता कोणत्याही नव्या, जुन्या, प्रादेशिक वा राष्ट्रीय पक्षाला भारताच्या परराष्ट्र धोरणाविषयी काहीही बोलावेसे वाटत नाही, भूमिका असावी असे वाटत नाही वा आपल्या देशाचे व जीवनाचे भवितव्य त्या परराष्ट्रनितीशी निघडीत आहे, हे लक्षातही येत नाही. भाजप आणि पूर्वी जनसंघ यांचे धोरण नेहरू विरोधाच्या पायावर उभे असे स्वतःचा स्वतंत्र समांतर असा जागतिक दृष्टीकोन घेऊन भाजपने त्यांची परराष्ट्रनिती कधीही ठरविली नाही. हिंदूत्ववाद्यांचा एकूणच जगाकड ेव जीवनाकडे बघण्याचा दृष्टीकोन संकुचित व दुराभिमानी असल्यामुळे त्यांना पाकिस्तान नीती, चीन निती म्हणजेच परारष्ट्र धोरण असे वाटत होते. अवध्या जगाचा विचार करून, प्रस्थापित जागतिक व्यवस्थेतील उणिवा दूर करून, भारतासह सर्व विकसनशील देशांची प्रगती आणि आंतरराष्ट्रीय क्षेत्रात सामंजास्याचे वातावरण कसे निर्माण होईल, युध्द, विशेषतः अणुयुध्द कसे टाळता येईल आणि सर्व देशांमधील गरीबी, मागासलेपणा कसे दूर करता येईल, हा नेहरूंच्या परराष्ट्रनितीतील मुख्य विचार होता, त्या दृष्टिकोनातून भारताचे परराष्ट्र धोरण ठरले होते.

अलिप्ततेचे धोरण स्वीकारले होते तरी कोणताही देश सर्वथाने अलिप्त राहू शकत नाही. त्याला परिस्थितीनुसार या धोरणास मुरड घालून काही देशांची थोडी अधिक जवळकी साधने भाग पडते हे नेहरूंना माहित होते आणि त्यांनी तशी ती साधलेही. देशाला सर्व काही असे मित्र नसतात तर काय कायम टिकणारे हित असते. अलिप्तवादाचा अंगीकार करताना परराष्ट्र धोरणाचा हा ही आधार असल्याचे नेहरूंनी स्पष्ट केले होते.

परराष्ट्र धोरण हे सत्ताधारी निश्चित करीत असला तरी ते ठरविण्यात व अंमलात आणण्यात संबंधित मंत्र्याचें विचार त्याचा स्वभाव इ. घटक ही कमी महत्वाचे नसतात. भारतात सुदैवाने एका व्यक्तीचे म्हणजे नेहरूंची व नंतर इंदिरा गाधी याचे नेतृत्व प्रत्येक सोळा सतरा वर्षे होते त्यामुळे परराष्ट्र धोरणात साधारणता एकसुत्रता राहीली.

ओळखलेली होती. त्यासाठी **सोव्हिएत रशियाची प्रत्येक छोटी गोष्ट आम्ही मोठी करून दाखविली. आणि अमेरिकेच्या मोठया गोष्टीही छोटया करून दाखविल्या.** पण अमेरिकेची तरी भूमिका काय आहे भारताचे जलद औदयोगिकरण व्हावे आणि जगातील ही सर्वात मोठी लोकशाही बलवान व्हावी असे अमेरिकेलाही वाटत नाही.

अमेरिकेचा प्रश्न झाला म्हणजे आपण आर्थिक मदत विसरतो पाकिस्तान व काश्मीर इतक्यावरच बोलतो. रशियाचा प्रश्न आला म्हणजे सोव्हिएत रशियाच्या काश्मीर भूमिकेचा आपण उदोउदो करतो. चीन प्रकरणी अमेरिकेची शस्त्र भारताला मिळाली पण सोव्हिएत रशियाकडून चीनचा जाहिर निषेध आपण मिळवू शकलो नाही. **अमेरिकेच्या गटात गेल्यास स्वतःच्या सामर्थ्याची मूलभूत पायाभरणी होत नसते हे पहिले सत्य आणि ही मूलभूत पायाभरणी करण्यासाठी लागणारी मदत देण्याचे सामर्थ अमेरिकेखेरीज इतर कुणातच नाही. म्हणून अमेरिकेचे शत्रू होऊन भागत नसते हे दुसरे सत्य हयाची बेरीज नेहरूंच्या अलिप्तवादात आहे.** दोन्ही महासत्ता पासून अलिप्तराहून साकार होणा-या समृध्द उदयोगप्रधान आणि लष्करी दृष्टया बलवान अशा भारताची उभारणी करण्याचा नेहरूचा प्रश्न होता ही त्याची राष्ट्रीय भूमिका कठोर वास्तवादातून जन्मलेली होती मी बळकट व्हावे ही कुणाचीच इच्छा नाही तरीही मी बळकट होणे ही माझी गरज आहे.

चीनला चुचकारण्यात, जगात शांतता ठेवण्यात रशिया अमेरिकेची मैत्री जुळवण्यात शांततेचे स्थूती पाट देण्यात या थोर महात्माला फार मोठा रस होता. हा ठसा खरा नव्हे नेहरूंना खरा रस भारताचे आधुनिकीकरण करण्यात होता. बलवान भारत निर्माण करण्यात होता त्यासाठी उसंत हवी होती म्हणून शांतता वादाचा एक लांब रूंद लतामंडप त्यांनी उभारूण ठेवला होता या दृष्टीने भारताच्या परराष्ट्रीय धोरणाचे काळजीपूर्वक आकलण करावे लागते.

सर्व दूसरी पंचवार्षिक योजना अवजड उदयोगधंद्याना वाहलेली आहे. १९५३-५४ पासून आपण सतत शस्त्रास्त्रनिर्मीतीचे कारखाने वाढवित होतो. ब्रिटनच्या आणि अमेरिकेच्या विरोधाला न जुमानता अणूभट्टया नेहरूंनी उभारल्या म्हणून आजचे नेते भारताने अणुबॉब तयार करावा किंवा करू नये यावर वाद करू शकत आहेत. आम्ही ठरावीक काळात पूरेसी तयारी करू शकलो नसू पण संकटाविषयी जागृत नव्हतो असा याचा अर्थ नव्हे.

सोव्हिएत रशियापासून चीन फोडणे व हे घडविण्यास अमेरिकेचे सहाय्य मिळविणे आणि मिळालेली उसंत उदयोगिकरणासाठी वापरणे ही नेहरूची भूमिका होती. दुसरा पर्याय अमेरिकेच्या गोटात जाऊन बसण्याचा म्हणजे भारताच्या मूलभूत औदयोगिकरणाची पायाभरणी स्थगित करण्याचा होता. तेव्हा अमेरिकेचा गृह भारताने औदयोगिकरणावरचा भर सोडावा व शेती विकासावर भर दयावा हाच होता तरीसुध्दा चीनचे आक्रमण झाले मग चीन परत का गेला. अमेरिकन मदत भारताला इतक्या त्वरेने उपलब्ध होईल असे चीनले वाटत नव्हते हे पाहिले कारण चीन आसामात उतरल्यास मुख्य भूमिवर हल्ला करण्यात येईल असे स्पष्ट इशारा अमेरिकेने दिला होता हे दूसरे कारण रशियाने चीनला मागे ओढले असे काहीजण निष्कर्ष काढतात परंतू हा निष्कर्ष चूकीचा आहे. रशियन शस्त्रे घेवूनच चीन भारतावर चाल करूण आला. निदान १९५९ नंतर सोव्हिएत रशियाने चीनला स्पष्ट ताकीत दिली असती तर चीन आक्रमण करूच शकला नसता.

मुस्लिम जग एकत्र होऊ देण्यास आम्ही कधीच तयार नाही सोव्हिएत रशियाच्या वर्चस्वातून मुक्त झालेले किंवा होणारे आमचे मित्रच आहेत. दक्षिण अमेरिका खंडात अमेरिका जे करते त्या विषयी आम्ही गप्प आहोत रशियावर चीन याचं संबंध तानतनावाचे राहावेत असे आम्हाला वाटते अमेरिकेशी आपले संबंध तुटू नयेत याची आम्ही काळजी घेतो अमेरिकन लोक उघडपणे नेहरूना संधिसाधू म्हणत भारताला विस्तारवादी मानीत, कारण गोवा - पॉडेचेरीसाठी पाकिस्तान अडखले नव्हते भारत आडला होता रशियन लोक उघड

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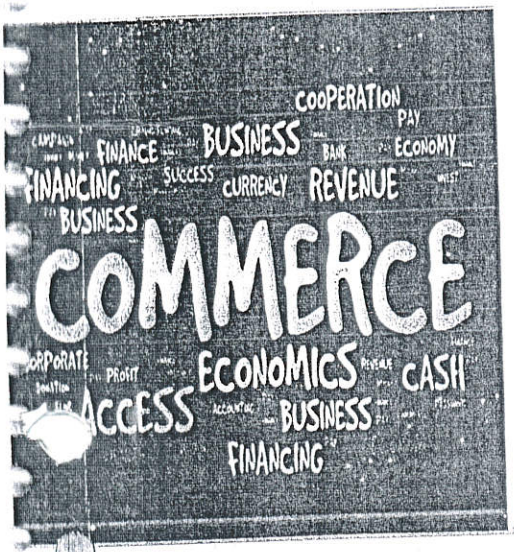

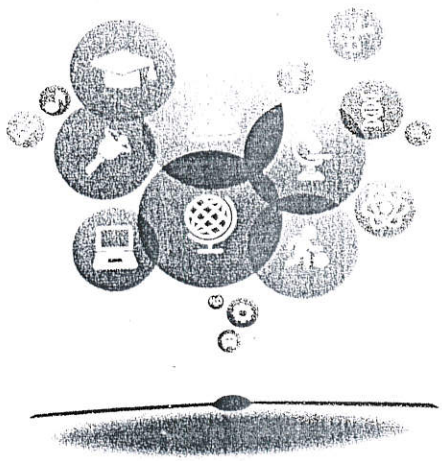

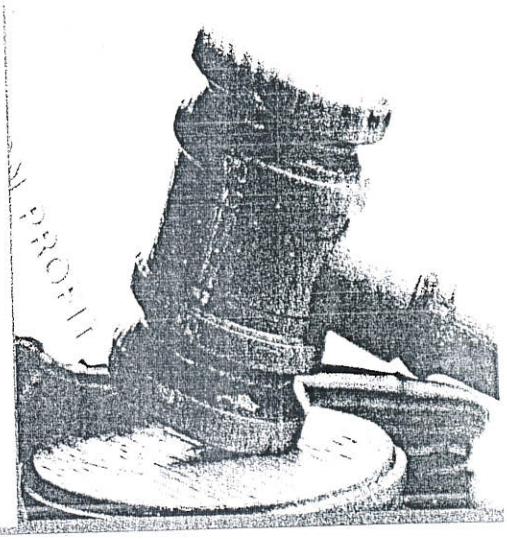

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Pronunciation study of under graduate students

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ABSTRACT

The present paper highlights study of undergraduate students with their pronunciation variations from intelligible English. In the present research the under graduate students were selected for the study about their English pronunciation. Students at under graduate level are not serious about intelligible English; their role is to speak English as per their practice of English speaking and listening to other speakers. The researcher found that students are influenced with their English listening especially their English teachers' media T.V. and radio. Even it is found that there is much more pull of first language Marathi in their pronunciations. The present research tries to focus the pronunciation situation of under graduate students. English department students are aware about the English pronunciation but rests of the students are not aware about their pronunciations. It is observed that English is spoken with mother tongue influence and some other languages influence. Even English is much more hybrid at different social media aspects in written perspectives, same is the case with pronunciations as well. The researcher it is observed that undergraduate students are very much away from the intelligible English or Received pronunciations in pronunciations. as standard of English language pronunciations.

1. INTRODUCTION:

The present research is about the pronunciation study of undergraduate students. There are four skills in English language and students learn speaking English with their listening of English. It is interested to understand the pronunciation variations of undergraduate students. It is one of the neglected areas in the English language that is pronunciation. One standard of English language pronunciations is not maintained by the second language learners. There are much more variations all over the world regarding English language pronunciations therefore it is maintained with one standard of pronunciations that is called (RP) Received Pronunciations. Most of the people all over the world try to understand the RP pronunciations and speak English as per the standard of RP pronunciations. It is essential to get intelligibility in English Pronunciations. However it is not possible to get this intelligibility of pronunciation without hard practice and understanding of sounds and its articulations. Being a teacher of English, it was observed that second language learners of English are facing difficulties in articulating sounds as per the Standard English pronunciations. There are many variations in their pronunciations and mother tongue pull is found there. The present research is focused on pronunciation variations of the under graduate students and deviations from the R.P. standard pronunciations. The study sought to determine basic knowledge of subjects regarding pronunciations of English Language. *English spoken by educated people in India does not differ radically from native English in grammar and vocabulary but in pronunciation. It is different from both British and American English Even within India there are a large number of regional varieties, each different from the other in certain ways (R.K.Bansal,, J, B.Harison, 1983).* Therefore it is need to understand the standard way of pronunciation and learn to speak like native speakers. Pronunciation tends to be a practical activity; unfortunately we are so imprisoned in the phonology of our own language. It is very important to be aware of the fact that people face a number of problems in articulation of English sounds as per the standard English Pronunciations.

2 METHODOLOGY:

In the present research the researcher has used observation and careful listening of his undergraduate students in the various classes, in order to collect data regarding variations of pronunciation

Even researcher has taken help of some of the secondary sources like books, research papers and journals for collecting data.

3 LIMITATION OF THE STUDY:

Following are some of the limitations of the present study

1. The findings of the present research are purely based on the observation and careful listening of undergraduate student in the college.
2. Findings of the researcher are purely based on the auditory impression of the researcher.
3. The languages Marathi and English spoken in under graduate colleges do not represent entire Maharashtra.

4 SIGNIFICANCE OF THE STUDY

The native speakers speak English with variations and all over the world, it is found that there are many variations of English spoken but there is need to maintain one standard of English spoken form. The English language is a system of communication through oral and written forms, and this language is window of the world, this language need to maintain with its standard way of pronunciations. Everywhere opportunities are available regarding English language experts. Therefore it is found all over the world that people want to achieve different skills of English language with its standard. The spoken form is being presented by visual symbols in written form. Sometimes the correspondence between the written form and oral form is not consistently maintained in the case of English language. Therefore it is crucial for Indian students to make a methodological study of the English sound system i. e. the phonetics of English in order to avoid fossilized habits due to the use of mother tongues if any while he she performs to acquire oral or written forms. English as spoken by educated people in India does not differ radically from native English in grammar and vocabulary, but in pronunciation it is different from both British and American English

Language learning involves the reproduction by the learner of the sounds and patterns used by other human beings around him. In the learning of a second language, however the habits already acquired to fossilize in connection with one's first language become obstacles. Each language has a different system, and in foreign language learning one tends to expose on the basis of the system of one's own language. One has therefore, to realize and impact to acquire second language in its original beauty of mother tongue.

5 SOME FINDINGS REGARDING PRONUNCAITIONS OF UNDERGRADUATE STUDENTS:

The researcher has observed English spoken and pronunciation style of undergraduate students. English is not found fluent and it is inclined towards mother tongue. There are some of the findings of pronunciations of under graduate students as follows.

5.1 It is found that there is mother tongue impact on second language learning especially by Marathi learners or even we can call it as mother tongue pull also.

5.2 Some of the observations and careful listening shows that it is difficult for the Marathi speakers to follow the Fricatives sounds

5.3 It is found that fricatives sound /f/ and /v/ are made bilabial by under graduate students because most of the time it is found that these two sounds are compare with the Marathi sounds and they are aspirated and imitated like Marathi sounds but actually they are labio dental.

5.4 The under graduate students are not able to produce intelligibly fricative sounds /θ/ /ð/ are also deviated and they are aspirated by Marathi speakers.

5.5 Some of the speakers replace the sounds /s/ and /□/ for each other.

5.6 Most of the undergraduate students use /s/ instead of the sound /□/ and the sound /□/ is less found in their pronunciations.

5.7 Some of the under graduate students are not able to differentiate between the sounds /z/ and /□/ are also deviated

5.8 It is found that there is no fluency in the English Speaking of undergraduate students.

5.9 Students are less aware about their pronunciations, English speaking as per their habits and listening of English language to others.

5.10 There are many variations of English pronunciations of under graduate students.

6 CONCLUSION:

The present research is actual observation of under graduate speakers of English language. There is need to maintain one standard of English language pronunciation all over the world for understanding the language but present research shows that there are many difficulties for the second language learners to learn standard way of speaking English language. There are deviations by the second language learners, some of the deviations were because of mother tongue pull and some were due to imperfections in pronunciations and negligence regarding standard pronunciations. The keen attention at speech and scientific knowledge of English language sound system will enhance the second language learners to speak intelligibly. .

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Wealth of Ayurveda From Sangli, District, Maharashtra

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Abstract

Sangli district is one of southern district of Maharashtra State. It is situated between the latitudes of 16^0 43' and 17^0 38' N and the longitudes of 73^0 41'and 75^0 41' E. The district is bordered by Satara district on the north – western side. On the north – eastern side it is bordered by Solapur district . On the southern side it is bordered by Belgaum and Bijapur district of Karnataka State . It meets Kolhapur district in south – western side and Ratnagiri district lies on the west of Sangli district. Total area of district is 8501.05 sq. km. and lying mainly in the basin of river Krishna and tributaries Warana , Yerala ,Agrni and Man. District has ten talukas , of which Shirala taluka and to some extent Atpadi taluka are hilly , while the greater part of district lies in plains . The average rain fall of the district is 692.40 mm per annum . Petlond region of the Shirala taluka and its adjoining is a part of Chandoli Wild Life Sanctuary recently declared as Chandoli National Park and Sahyadri Tiger Project. Another Wild Life Sanctuary in the Sangli district is Sagreshwar Wild Life Sanctuary . Westward part of the district is situated in the Western Ghats ranges shows tropical evergreen, tropical semi-evergreen and tropical moist deciduous type of vegetation , while eastern part and major region of district shows tropical dry deciduous and open thorny scrub vegetation . Various types of vegetation of district harbors variety of medicinal plants . Survey of plant wealth of Sangli district resulted in enumeration of over 300 plant species of some therapeutic value . List of the medicinal plants with their botanical and vernacular names , part of plant used , medicinal values along with their status of occurrence are discussed in the present paper .

Keyword:- *Ethno-botany, Plant parts uses, tradition .*

Introduction : -

Plants have been used in all the traditional Indian medicine from time immemorial, particularly in folk medicine and house hold remedies. The world health organization estimated that more than 80% of the world population relies on traditional medicine practices for primary health care needs. Over 75% of the world population is depending upon local health practioners and tradition medicines for their primary needs (Kattaamani et al. , 2000) India represented by rich traditional practices The present research paper focused on traditional uses of medicinal plant parts and natural diversity . India has rich traditional knowledge of medicine include Ayurveda, Siddha, and Unani use over 7500 plant species have reported. Herbal Medicine are assumed to be a great importance in the primary health care of individual (Sheldon et al., 1997). In India During lat two decades ethnobotanical studies with good scientific base have been appeared.

Enumeration of Medicinal Plants of Sangli District.

Sr. No.	Name of the Plant	Vernacular Name	Part used	Status	Specimen No.
	DILLENIACEAE				
1.	*Dillenia indica* L.	Mota Karamal	Seeds	Cultivated	VBA 85
	MENISPERMACEAE				
2.	*Tinospora cordifolia* (Wlld) Miers	Gul Vel	Stem	Cultivated	VBA 814
	NYMPHAEACEAE				
3.	*Nymphaea nouchali* Burm .f.	Kamal	Rhizome	Cultivated	VBA 122
4.	*Nelumbo nucifera* Gaertn	Kamal	Rhizome	Cultivated	
	PAPAVERACEAE				
5.	*Argemone mexicana* L.	Pivala Dhotara	Seeds	Common	VBA 1069
	CAPPARACEAE				
6.	*Crateva adansonii* DC.	Waiwarana	Lvs	Wild	VBA 622

42.	*Rhus sinuatea* Thunb.				
43.	*Semecarpus anacardium* L.f.	Bibba	Frts	Wild	VBA 498
	FABACEAE				
44.	*Abrus precatirious* L.	Gunj	Lvs, Seeds	Wild	VBA 683
45.	*Butea monosperma* Kuntz.	Palas	Seeds	Cultivated	VBA 475
46.	*Clitoria ternatea* L. var. *pilosa* Wall.	Pandhara Gokarna	Lvs, Roots.	Cultivated	VBA 114
47.	*Cullen corylifolia* (L.) Medik	Bavachi	Seeds	Wild	VBA 1049
48.	*Indigofera tinctoria* L.	Nil	Leaves	Wild	VBA 1457
49.	*Mucuna monosperma* DC.	Khaj kuhiri	Roots, Seeds.	Wild	VBA 865
50.	*Pongamia pinnata* (L.) Pierre.	Karanji	Seeds	Cultivated	VBA 933
51.	*Sesbania grandiflora* (L.) Poir	Hadga	Lvs, Roots, Flowers	Cultivated	VBA 64
52.	*Tephrosia purpurea* (L.) Pers.	Sharpunkha		Wild	VBA 663
53.	*Trigonella foenum- graecum* L.	Methi	Lvs	Cultivated	VBA 414
54.	*Caesalpinia bonduc* (L.) Roxb.	Sagaragota	Lvs	Common	VBA416
55.	*Cassia fistula* L.	Bahava	Seeds	Cultivated	VBA947
56.	*Cassia obtusifolia* L.	Tarwad	Seeds	Common	VBA668
57.	*Cassia tora* L.	Takala	Seeds	Common	VBA1057
58.	*Moullava spicata* (Dalz) Nicols.	Wakeri	Roots	Wild	VBA823
59.	*Saraca asoca* (Roxb.) Willd.	Sithecha Ashok	Bark, Seeds	Cultivated	VBA4
60.	*Tamarindus indica* L.	Chinch	Lvs., Seeds	Cultivated	VBA497
61.	*Acacia concinna* (Willd) DC.	Shikekai	Frts	Wild	VBA634
62.	*Entada rheedei* Spreng.	Garambi	Seeds	Wild	VBA1094
63.	*Xylia xylocarpa* (Roxb.) Taib.	Jambha	Seeds	Wild.	VBA1095
	CRASSULACEAE				
64.	*Kalanchoe pinnata*(Lam) Pers.	Panphuti	Leaves	Wild	VBA
	COMBRETACEAE				
65.	*Anogeissus latifolia* (Roxb. ex DC.) Wall	Dhavda		Wild	VBA539
66.	*Terminalia alata* Heyne ex Roth	Ain	Bark	Wild	VBA482
67.	*Terminalia bellirica* (Gaertn.) Roxb.	Behada	Frts	Wild	VBA471
68.	*Terminalia chebula* Retz.	Hirda	Frts	Wild	VBA1098
69.	*Terminalia cuneata* Roth	Arjuna	Bark	Wild	VBA618
70.	*Terminalia paniculata* Roth.	Kinjal	Bark Seeds	Wild	VBA644
	MYRTACEAE				
71.	*Eucalyptus globules* Labill	Nilgiri	Lvs	Cultivated	VBA469
72.	*Syzygium cumini* (L.) Skeels.	Jambhul	Frts.	Cultivated	VBA752
	LECYTHIDACEAE				
73.	*Careya arborea* Roxb.	Kumbha	Ftrs	Wild	VBA750
	LYTHRACEAE				
74.	*Woodfordia fruticosa* (L.) Kurz.	Dhayati	Lvs., Fls	Wild	VBA724
	ONAGRACEAE				
75.	*Ludwigia octovalvis* (Jacq.) Raven subsp. *sesiliflora* (Micheli) Raven.	Pan- Lavang.	Seeds, Lvs	Common	VBA731
	PASSIFLORACEAE				
76.	*Passiflora foetida* L.	Veli- Ghani	Lvs	Wild	VBA449
	CARICACEAE				
77.	*Carica papaya* L.	Papai	Frts	Cultivated	VBA176
	CUCURBITACEAE				
78.	*Cucurbita maxima* Duch. Ex Lam.	Bhopala	Frts., Seeds	Cultivated	VBA602
79.	*Lagenaria siceraria* (Molina) Standl.	Dudhi Bhopala	Frts.	Cultivated.	VBA446
80.	*Momordica dioica* Roxb. ex Willd	Kartoli	Tubers	Wild.	VBA420
81.	*Trichosanthes tricuspidata* Lour.	Kaundal	Seeds	Wild	VBA783

122.	*Withania somnifera* (L.) Dunal.	Ashwagandha	Seeds	Rare	**VBA966**
	SCROPHULARIACEAE				
123.	*Bacopa monnieri* (L.) Penn.	Brahmi	All Part	Common	**VBA688**
	BIGNONIACEAE				
124.	*Dolichandrone falcate* (Wall.ex DC) Seem.	Medshingi	Lvs.	Wild	**VBA825**
125.	*Heterophragma quadriloculare* (Roxb.) K. Schum.	Varas		Wild	**VBA744**
126	*Sterospermum chelenoides* (L.f.) Dc	Paral	Root, Fl. Bark	Rare	**VBA100**
	ACANTHACEAE				
127.	*Andrographis paniculata* (Burm.f.) Wall ex Nees	Kadechirayat	Leaves		**VBA566**
128.	*Crossandra infundibuliformis* (L.) Nees	Aboli	Seeds	Cultivated	**VBA207**
129.	*Hygrophila schulli* (Buch.- Ham.) M.R. & S.M.Almeida.	Talimkhana	Seeds	Common	**VBA171**
130.	*Justicia adhatoda* L.	Adulsa	Leaves	Cultivated	**VBA1052**
131.	*Lepidagathis cristata* Willd.			Wild.	**VBA504**
132.	*Peristrophe paniculata* (Forssk.) Brummit.		Leavea	Common	**VBA604**
	VERBENACEAE				
133.	*Clerodendrum serratum* (L.) Moon.	Bharangi	Root, Leaves	Wild	**VBA789**
134.	*Gmelina arbrea* Roxb..	Shivan	Root, Leavea, Fl.	Wild	**VBA701**
135.	*Vitex negunda* L. var. *negundo* Cl.	Nirgudi	Leaves	Common	**VBA788**
	LAMIACEAE				
136.	*Leonotis nepetifolia* (L.) R.Br.	Dipmal	Seeds	Wild	**VBA1056**
137.	*Leucas stelligera* Wall	Shankroba	Root Lvs	Wild.	**VBA593**
	NYCTAGINACEAE				
138.	*Boerhavia repens* L. var. *diffusa* (L.) Hook.	Punarnava	All parts	Common	**VBA518**
	AMARANTHACEAE				
139.	*Achyranthes aspera* L.	Aghada	Leaves	Common.	**VBA965**
140	*Celosia argentea* L. var. *argentea*	Kurdu	Leaves	Common	**VBA974**
	ARISTLOCHIACEAE				
141	*Aristolochia bracteolata* Lam.	Kidmar	Leavea	Rare	**VBA172**
	PIPERACEAE				
142.	*Piper betle* L.	Paan	Leaves	Cultivated	**VBA169**
	THYMELAEACEAE				
143.	*Gnidia glauca* (Fresen.) Gilg.	Datpadi	Root Stem	Wild	**VBA833**
	ELAEAGNACEAE				
144.	*Elaeagnus conferta* Roxb.	Ambgul	Fruits	Wild	**VBA834**
	LORANTHACEAE				
145.	*Dendrophthoe falcata* (L.f.) var. *Falcata*	Bandgul	Lvs	Wild	**VBA240**
	SANTALACEAE				
146.	*Viscum articulatum* Burm.f.	Bandgul	Lvs	Wild	**VBA616**
147.	*Santalum album* L.	Chandan	Stem	Wild	**VBA617**
	EUPHORBIACEAE				
148.	*Bridelia retusa* (L.) Spreng.	Katak	Stem Bark, Seeds	Wild	**VBA528**
149.	*Emblica officinalis* Gaertn .	Awala	Fruits	Wild.	**VBA460**
150.	*Jatropa curcas* L.	Mogali Erand.	Fruits	Common.	**VBA672**
151.	*Macaranga peltata* (Roxb.) Muell- Arg.	Chandiva	Latex.	Wild.	**VBA 1127**
152.	*Mallotus philippensis* (Lam.) Muell- Arg.	Shendri	Fruits	Wild.	**VBA 738**
153.	*Phyllanthus reticulatus* Poir.	Datwan	Fruits	Common	**VBA562**

Statistical Analysis:

(A) The Percentage study and goodness of fit of the distribution of the plants.

Ho : The parts used in Medicinal Plants of Sangli District are uniformly distributed.

Against

H1 : The parts used in Medicinal Plants of Sangli District are not uniformly distributed.

Parts	No. of Plants (Oi)	Percentage	Ei
Root	25	11.1111111	22.5
Stem	11	4.88888889	22.5
Leaves	68	30.2222222	22.5
Flower	9	4	22.5
Fruit	35	15.5555556	22.5
Seeds	42	18.6666667	22.5
Rhizomes	3	1.33333333	22.5
Bark	14	6.22222222	22.5
All plants	3	1.33333333	22.5
Other	15	6.66666667	22.5
Total	225	100	225

Oi	Ei	Chi.
68	22.5	92.01111
42	22.5	16.9
35	22.5	6.944444
25	22.5	0.277778
15	22.5	2.5
14	22.5	3.211111
11	22.5	5.877778
9	22.5	8.1
6	45	33.8
Total		169.6222

Chi.= ((Oi-Ei)^2)/Ei Chi.(Cal) = 169.62

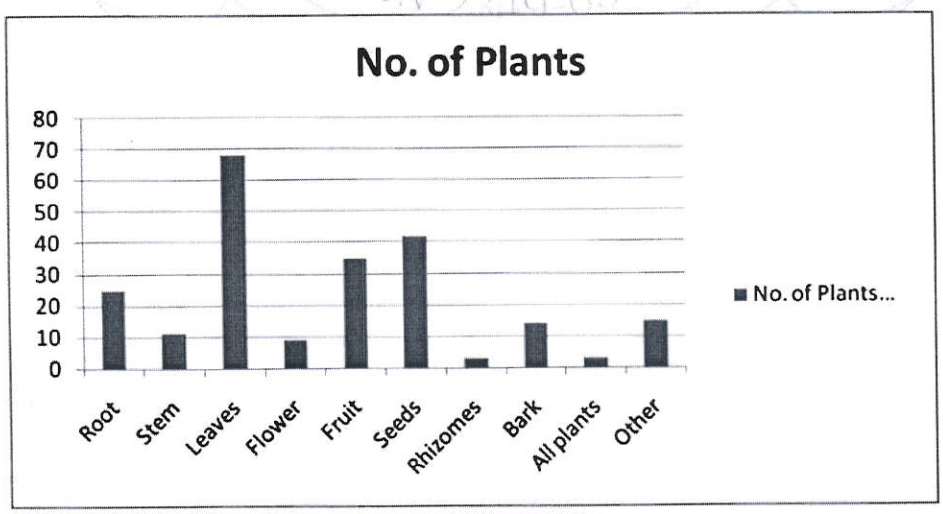
The Tabled Value of Chi. At 5% level of significance (l.s.) and at (9-1=8) d.f. is 15.51.

Since (Chi.) calculated > Chi. Table at 5% l.s. we reject Ho.

And conclude that the medicinal Plants used are not uniformly distributed.

Conclusion :

1) There is Max. use of Leaves for a Medicinal purpose.
2) There is Min. use of Rhizomes for a Medicinal purpose.
3) The percentage use of Leaves are 30.22 %. i.e.Max. use of plants.



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CONTENTS OF MARATHI PART - I

ठराव विधीमंडळाने संमत केला. त्यानंतर २ एप्रिल १९७० रोजी महाराष्ट्र शासनाने श्री. ल. ना. बोगिरवार यांच्या अध्यक्षतेखाली अकरा सदस्यांची एक समिती स्थापन केली. बोंगिरवार समितीने १५ सप्टेंबर १९७१ रोजी आपला अहवाल महाराष्ट्र शासनाला सादर केला. याचा अर्थ असाकी, दहा वर्षांच्या अवधीत जे दोष अडचणी निर्माण झाल्या होत्या, त्या दुर करण्याचा प्रयत्न महाराष्ट्र सरकारने बोंगिरवार समिती स्थापन करूण दुर करण्याचा प्रयत्न दिसतो.

प्राचार्य पी. बी. पाटील समिती

महाराष्ट्रात पंचायती राज संस्थाचा कारभार सुरू झाल्यानंतर त्याच्या कारभाराच्या मूल्यमापनासाठी अनेक समिती, अभ्यासगट स्थापन करण्यात आलेले दिसतात. त्यामध्ये श्री. बाबुराव काळे समिती (१९ ऑक्टोबर, १९८०) त्या आगोदर तथकालिन नगरविकास मंत्री श्री. भाऊसाहेब मुळक यांनी स्थापन केलेली समिती अशा प्रमुख समितीचा उल्लेख करावा लागेल.

१८ जून १९८४ रोजी महाराष्ट्र शासनाने प्राचार्य पी.बी. पाटील यांच्या अध्यक्षतेखाली पंचायतराज्य संस्थाची सखोल अभ्यासपूर्ण तपासणी करून महाराष्ट्र शासनला जून १९८६ मध्ये आपला अहवाल सादर केला.

महाराष्ट्रातील पंचायतराज्य संस्थाच्या कारभाराचा, त्याच्यातील स्थित्यांतराचा अभ्यास करताना वेद काळापासून ते ७३ व्या घटना दुरूस्तीपर्यंतच्या विविध महत्वपूर्ण टप्याचे योगदान लक्षात घेतल्याशिवाय या संस्थाचा अभ्यास पूर्णत्वास जाणे शक्य नाही.

पंचायतराज संस्थाकडून जनतेच्या अपेक्षा

अतिशय उत्साही आणि उमेदीच्या वातावरणात पंचायतराज संस्थाच्या कारभाराला महाराष्ट्रात प्रारंभ झाला. स्वराज्याचे सुराज्य करण्याची एकनामी संधी या व्यवस्थेच्या रूपाने चालून आली. या शोध निबंधाच्या प्रारंभिच्या म्हटल्याप्रमाणे या संस्थाच्या स्थापनेमागील जी गृहीतके होती ती पूर्ण करण्याची संधी चालून आली. सुरूवातीच्या काळात भारवलेल्या वातावरणात अनेक ठिकाणी या संस्थानी विकासाच्या प्रक्रिया गतिमान करण्यात आणि ग्रामीण जनतेमध्ये विश्वास निर्माण करण्यात निश्चित यश मिळवलेले दिसते. एप्रिल २००१ मध्ये बिहार राज्यामध्ये २७ वर्षानंतर पंचायतराज्य संस्थाच्या निवडणुका पार पडल्या. या निवडणुकामध्ये निर्माण झालेल्या हिंसाचार व दहशत यानी कळस घातला होता. २. या पार्श्वभूमिवर (महाराष्ट्रातील पंचायती राज संस्थांच्या कारभाराचे वेगळेपण लक्षात आल्यावाचून रहात नाही. कै. यशवंतरावजी चव्हण यांच्या जिव्हाळयाच्या विषयांपैकी पंचायतीराज हा एक विशय होता. महाराष्ट्रात लोकशाही समाजवादाच्या स्थापनेसाठी त्यांनी पाच मूलभूत उपक्रम हाती घेतले होते. ते म्हणजे अ) सहकारी चळवळ ब) शिक्षणाच्या सर्वत्रिकरणाची चळवळ ड) सत्तेच्या विकेंद्रीकरणासाठी पंचायत राज्य चळवळ आणि इ) रोजगार हमीची चळवळ सत्ता विकेंद्रीत करण्याच्या हेतून प्रारंभ करण्यात आले तो पंचायत राज्य व्यवस्था त्या काळी सर्व देशात अत्यंत पूर्वगामी. व्यवहारी आणि परिणामकारक योजना ठरली.

परंतू १९८० नंतर मात्र पंचायतराज व्यवस्थेच्या क्षेत्रात अनेक अनिष्ठ प्रवृत्ती वाढीस लागल्या भ्रष्टाचार राजकीय हस्तक्षेप राजकीय पक्षाची बेजबाबदार व वर्तन नोकरशाहीचे वर्चस्व दिरगांई असे अनेक दोष ठळकपणे जाणवू लागले. पाचार्य पी. बी. पाटील समितीच्या अहवालावर १२—१३ नोव्हेंबर १९८८ रोजी मुंबई येथे पार पडलेल्या परिसंवादाच्या प्रस्तावने मध्ये प्राचार्य पी.बी.पाटील यांनी व्यक्त केलेले विचार उद्‌बोधक वाटतात. ते म्हणतात अत्यंत दूरदुष्टीने मुलभूत परिवर्तनासाठी उचललेल्या पावलाचा जर तितक्याच जागृकतेने निश्चयाने आणि सातत्याने त्यानंतर पाठ पुरावा झाला नाही तर ती उलटी पडू लागतात. क्रांती ऐवजी प्रतिक्रांती, परिर्वनाऐवजी स्थिती वाद जोपसणारी ठरतात. ४) तसा काहिस अनुभव वरील सर्व उपक्रमाच्या बाबतीत आला आहे. भारताचे माझी राष्ट्रपती व थोर शिक्षणतज्ञ डॉ. सर्वपल्ली राधाकृष्ण यांनी मार्च १९६६ मध्ये धुळे नगरपरिषदेला दिलेल्या भेटी प्रसंगी केलेल्या भाषणात म्हणतात स्थानिक स्वराज्य संस्थाचे उद्‌देश अननतेचे जास्तीत जास्त जनहित साधने हेच असले पाहिजे. जनतेचे कल्याण लोकशाही

व्यवस्थेत सहज शक्य असल्यामुळे लोकशाहीला पाठबळ देणा-या या संस्था आवश्यकच लागतील. ५) अनेक राष्ट्रीय नेत्यानी, अभ्यासकानी आणि सर्वात महत्त्वाचे जनतेनेने मनाशी बाळगलेल्या अपेक्षा या संस्थानी पु-या काय हाच खरा महत्वाचा खरा प्रश्न ठरला आहे. ठरत आहे धुळे जिल्हापरिषदेचे महाराष्ट्रभरत गाजलेले व गाजत असलेले धर्म भास्कर वाघ प्रकरण पंचायतीराज्य संस्थाच्या सुदृडतेचा पूरावा निश्चित मानता येणार नाही. थोडक्यात सामान्य जनतेच्या ज्या अपेक्षा या व्यवस्थेकडून होत्या त्या पूर्ण मात्र झाल्या नाहीत.

विकेंद्रीकरणाला नव्याने चालना : ७३ वी घटनादुरूस्ती

१९६२ पासून ते ७३ वी घटना दुरूस्तीची अंमलबजावणी सुरू होईपर्यतच्या कालावधीत जबाबदा-या अधिक आणि अधिकार व आर्थिक पाठबळाचा अभाव अशी विचित्र परिस्थिती पंचायतीराज्य संस्थाच्याबाबतीत असल्याचे पहावयास मिळते. आर्थिक व राजकीय सत्तेच्या केद्रीकरणामुळे हे दोष निर्माण होत असल्याचे लक्षात येवू लागलानंतर १९८७—८८ साली देशातील पंचायतीराज व्यवस्थेला तत्कालीन पंतप्रधान राजीव गांधी यांनी नवीन वळण देण्याचा प्रयत्न केला. या संस्थाना घटनात्मक दर्जा देणे. स्त्रियांना ३० टक्के आरक्षण देणे अशा काही चांगल्या तरतुदी असलेले घटनादुरूस्ती विधेयक त्यांच्या सरकारने तयार केले होते. परंतू ते मंजूर होऊ शकले नाही.

परंतु स्थानिक लोकसमुदायाचा राजकीय व विकास प्रक्रियेतील सहभाग वाढला पाहिजे आणि त्यासाठी राजकीय सत्ता मिळाली पाहिजे या जन भावनेचा रेटा सतत वाढतच गेला. पत्रकार, राजकीय लेखक, स्वयंसेवी संघटना आणि इतर अनेकांनी सत्तेच्या विकेंद्रीकरणाची मागणी सतत लावून धरल्यामुळे भारतीय संसदेने २२ डिसेंबर १९९२ रोजी ७३ वी घटना दुरूस्ती विधेयक मंजूर करून ग्रामीण भागातील स्थानिक स्वराज्य संस्थाच्या बाबतीत काही महत्वपूर्ण तरतूदी केल्या. ७३ व्या घटनादुरूस्तीनुसार भारतीय राजघटनेत ना ९ वा भाग समाविष्ठ करण्यात आला असून २४२ ते २४३ ओ एकूण १५ कलमे पर्यतचे कलमे घटनेत अंतर्भूत करण्याबरोबर घटनेत ११ व्या परिष्टिचाही समावेश करण्यात आला आहे. ७३ व्या घटना दुरूस्तीची अंमलबजावणी २५ एप्रिल पासून सुरू झाली.

७३ व्या घटनादुरूस्तीचे ज्या महत्वपूर्ण तरतूदी चे १९९३ साली अमलात आणल्या त्याच तरतुदी करण्यात याव्यात अशी मागणी १९८४ साली महाराष्ट्र शासनाला सादर केलेल्या अहवालात प्राचार्य पी.बी.पाटील समितीने केली आहे. उदा. स्त्रियांना २५ टक्के ते ३० टक्के आरक्षण देण्यात यावे. राजयविता आयोगाची स्थापना करण्यात यावी. राज्य निवडणूक आयोगाची स्थापना करण्यात यावी आणि सर्वात महत्त्वाचे भारतीय राज्यघटनेने केद्रसरकार व राज्यसरकार यांच्यात कामाची वाटणी करून तशा याद्या घटनेत समाविष्ठ केल्या आहेत. या कामातील जिल्हापातळीखालील स्थानिक स्वरूपाची कामे निवडणूक व निश्चित करून ती सर्व स्थानिक स्वराज्य संस्थांच्या कामाची यादी असे स्पष्टपणे नोंदवून ती घटनेत समाविष्ठ केली पाहिजे भारतीय राजयकारभार द्विस्तरीय संघराज्याऐवजी त्रिस्तरीय (म्हणजे केंद्र-राज्य व स्थानिक स्वराज्य संस्था) संघराज्यातून चालेल अशी घटना दुरूस्ती झाली. पाहिजे ६) प्राचार्य पी.बी. पाटील समितीने केलेल्या महत्त्वपूर्ण शिफारसी १९९३ नंतर अमलात आलेल्या ७३ व्या घटनादुरूस्तीने अमलात आणलेल्या दिसतात. उदा. महाराष्ट्रात मे १९९४ मध्ये राज्यपालांनी श्री देवराय चौधरी यांची राज्याचे पहिले निवडणूक आयुक्त म्हणून नेमणूक केली पहिल्या महाराष्ट्र राज्य विता आयोगाचे अध्यक्ष म्हणून माजी महसूलमंत्री व माजी खासदार श्री शांताराम घोलप यांची मा. राज्यपालांनी नेमणूक केली. ७३ वी घटना दुरूस्ती लागू होण्यापूर्वीच महाराष्ट्र राज्याने ३० टक्के जागासाठी महिलांना आरक्षण देऊन आपले पुरोगामित्व देशाला दाखवून दिले आहे.

मतदारांना निष्क्रीय व असमाधानकारका कार्य करणा-या लोकप्रतिनिधीला परत बोलावण्याचा अधिकार (Right to Recall) बहाल केला आहे. शहाडोल जिल्हायातील अनुपपूर नगरपंचायतीच्या अध्यक्षा पल्लविला पटेल यांच्याविरूध्द मतदारांनी अविश्वास व्यक्त करून त्यांना पदमुक्त होण्यास भाग पाडले. ९) ही घटना बोलकी आहे. अशा उपाययोजना करण्यासाठी राजकीय पक्षांनी राजकीय ईच्छाशक्ती दाखविण्याचे धाडसमात्र दाखविणे जरूरीचे आहे. परंतु या संस्थाची कोंडी फोडण्याचा प्रयत्न या ७३ व्या घटनादुरूस्ती निश्चित केला आहे. असे मला वाटते.

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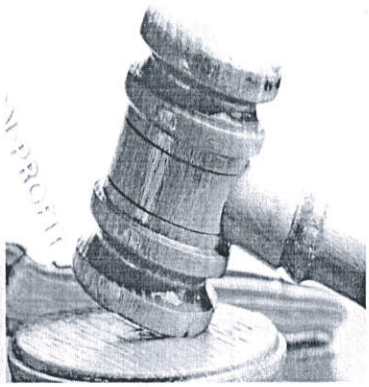

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User Study Of Ayrvedic Medical College Libraries In Western Maharashtra

Mr. Chavan Raghunath Ramchandra,*

Abstract

The present research paper is confined to study the users of Ayurvedic Medical College libraries in Western Maharashtra viz Doctors, Teachers, and medical students as the users of the library. The efforts are made to study their users from the view point of their satisfaction about their requirements from the library.

Key words: User, User Study, Medical Libraries, Western Maharashtra.

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Introduction

In the library there are important factors responsible for working of the library i.e. user, library collection and librarian. Librarian is the mediator and playing a important role and bringing users and it's reading material together. Librarians develop the collection as per the desired goal of organization / institution, whereas user requirement (needs) to be given proper attention while fulfilling the goal of the institution.

General, in the context of the library the term 'Reader' is called as "Who reads the book is reader", whereas the users defined as "Who makes the use of large verify of documents of the library." In this context the term 'Users' is fully employed to represent the seekers of information. Users are continuously imparting the information as per requirement.

Therefore, it needed to understand he users of the library systematically. For the purpose of the study the term users and reader taken in the context of use of library and the meaning of both are the same.

Concept of User

The term 'User' in the context of information chain may be at the end. The generator of information, who comes in the beginning of the chain, may also be an 'End User' of information. In the context of database, he is the 'Searcher', a user may be a 'Researcher' he may be a middle man or liaison officer in the dissemination of information. Thus, the term 'User' is complex, varied and unclear.

The user is also called as patron, client members of the library, customers and the readers. All these terms are called synonymous terms for the users. The user is one of these who makes use of information.

The information is used by the user for specific purpose and one has to see the effects happened to the often use of information. If the excepted effects are then the users are happy, satisfactory with the information provided to them.

Definition of User

The definition of information user is as under given by the information security Glossary.

"An Information User is the person responsible for viewing / amending / updating the content of the information assets. This can be any user of the information in the inventory created by the Information Owner."[2] The two other definitions of information User is given as further.

Rapid synthesis of ambient pressure dried tetraethoxysilane based silica aerogels

V. V. Ganbavle, A. S. Kalekar, N. S. Harale, S. S. Patil & S. L. Dhere

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BRIEF COMMUNICATION: SOL-GEL, HYBRIDS AND SOLUTION CHEMISTRIES

Rapid synthesis of ambient pressure dried tetraethoxysilane based silica aerogels

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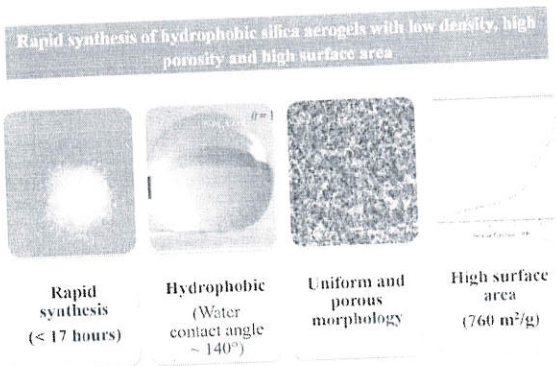
Abstract

Silica aerogel can be produced by using ambient pressure drying (APD) or supercritical drying depending on the required properties and kind of application. Processing time for ambient pressure dried silica aerogels are longer due to the time consuming steps such as hydrolysis and solvent exchange. Considerable decrease in time has been reported by a few research groups by employing shaking during the solvent exchange. We are reporting further reduction in processing time of tetraethoxysilane (TEOS)-based silica aerogel by carrying out the hydrolysis process at elevated temperature. The aerogel obtained in least processing time showed low density (0.066 kg/m^3), low thermal conductivity (0.043 W/mK), high specific surface area, and porosity. This shows that elevated temperature hydrolysis does not hamper the desired properties of the product.

Graphical Abstract



Keywords Least processing time · Silica aerogel · Hydrophobic · Mesoporous

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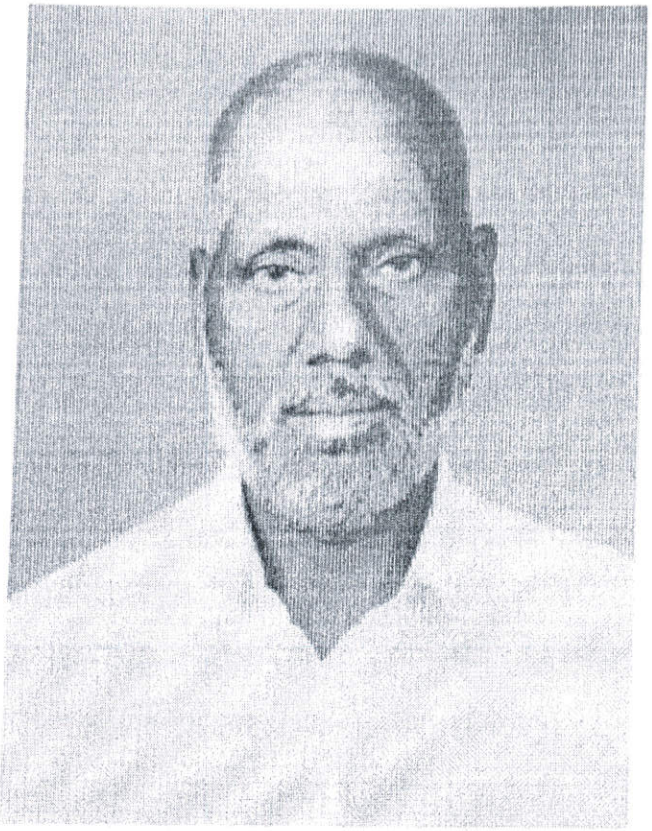
लोकसंस्कृतीची
आविष्कार रूपे

गौतमीपुत्र कांबळे (Goutamiputra Kambale)

21/06/2021 - प्रशांत गायकवाड - मराठी साहित्य

कांबळे, गौतमीपुत्र : (२ जुन १९४९). मराठी साहित्यातील सुप्रसिद्ध कथाकार आणि फुले-आंबेडकरी चळवळीतील ज्येष्ठ कार्यकर्ते. गौतमीपुत्र कांबळे हे स्वत:ची एक निश्चित वैचारिक आणि वाङ्मयीन भुमिका घेऊन जगणारे आणि लिहिणारे लेखक आहेत. त्यांचा जन्म हारोली जि. सांगली येथे झाला. त्यांचे दहावीपर्यंतचे शिक्षण देशिंग हारोली जि. सांगली येथे झाले. पदवी पर्यंतचे शिक्षण मिरज येथे तर पदव्युत्तर शिक्षण सांगली येथे झाले. त्यांनी मराठी आणि तत्त्वज्ञान या विषयात पदव्युत्तर शिक्षण पूर्ण केले आहे. ते फुले-आंबेडकरी चळवळीतील ज्येष्ठ कार्यकर्ते असून त्यांनी सामाजिक व शैक्षणिक चळवळीसाठी सारे जीवन समर्पित केले आहे. फुले-आंबेडकरी विचारधारा, बौध्द संस्कृतीतील मूल्ये, शिक्षण, साहित्य, समीक्षा, तत्त्वज्ञान हे त्यांच्या व्यासंग आणि लेखनाचे, चिंतनाचे विषय आहेत. त्यांनी असंख्य चर्चासत्र, परिषदा, परिसंवाद, मेळावे, साहित्यसंमेलन या

चर्चासत्र, परिषदा, परिसंवाद, मेळावे, साहित्यसंमेलन या माध्यमातून प्रबोधनाचे कार्य केले आहे.



पुत्र
यांचा
परिव्राजक
(२००४) हा
पाच कथांचा
पहिलाच
कथासंग्रह
प्रकाशित
झाला आणि
संपूर्ण मराठी
साहित्यक्षेत्रा
चे लक्ष वेधले
गेले. एकच
कथासंग्रह असला तरी त्यांनी साहित्याच्या क्षेत्रात अत्यंत दर्जेदार,कसदार दमदार पाऊल टाकले आहे. आधुनिक मराठी कथेच्या इतरांनी चोखाळलेल्या पायवाटा जिथे संपतात, त्याच्या पुढच्या टप्प्यावरून गौतमीपुत्र कांबळे यांच्या कथांची आगळी वेगळी पायवाट सुरू होते असे प्रस्तावक विधान त्यांच्या कथांसंदर्भात समीक्षक आणि लेखक राजा ढाले यांनी केले आहे. या कथासंग्रहातील कथा, परिव्राजक, शिल्पासन, विरुपनगरी, शोध सहाव्या इंद्रियाचा या पाचही कथांमध्ये जाणीवपूर्वक जपलेले वेगळेपण जाणवते. 'कथा' या कथेत टोकाचा अस्वस्थपणा हा कलावंताच्या दृष्टिकोणातून अत्यंत महत्त्वाचा असतो. कारण या अस्वस्थपणातच नवनिर्मितीची बिजे रुजलेली असतात, हे सांगणारे विधान मांडून साहित्य निर्मिती प्रक्रियेवरही

सांभाळत आहेत. कांबळे यांना विविध साहित्य संमेलन, परिषदांचे अध्यक्षस्थान भुषविले आहे. फुले आंबेडकरी साहित्य संमेलन, कल्याण २००२, दक्षिण महाराष्ट्र साहित्य कोल्हापूर, आयोजीत साहित्य संमेलन, कुरुंदवाड(सांगली) २०११, अल्पसंख्यांक परिषद, सांगली २००८ इ. ठिकाणी त्यांनी अध्यक्षस्थान भूषविले आहे. *परिव्राजक* या कथासंग्रहास अनेक प्रतिष्ठेचे पुरस्कार मिळाले आहेत .महाराष्ट्र शासन उत्कृष्ट साहित्य पुरस्कार, यशवंतराव चव्हाण मुक्त विद्यापीठ, नाशिक, बाबुराव बागूल पुरस्कार, दक्षिण महाराष्ट्र साहित्य सभेचा पुरस्कार, इत्यादींचा समावेश होतो. *परिव्राजक* या कथासंग्रहाचा अनेक ठिकाणी अभ्यासक्रमात समावेश झाला होता.

गौतमीपुत्र कांबळे यांनी परिवर्तनवादी चळवळीमध्ये काम करताना प्रत्यक्षात आलेले अनुभव, निर्माण झालेल्या समस्या, दु:खाने घेरलेली माणसे समजून घेण्याचा प्रयत्न केला. हे करत असताना आपल्याला पक्क भान असलेली विचारप्रणाली, तत्त्वज्ञान *परिव्राजक* या कथांमधील कथांच्या रुपांतून वाचकांसमोर आणण्यात ते यशस्वी झाले आहेत. म्हणून केवळ फुले-आंबेडकरीकथेच्या क्षेत्रातच नव्हे तर अखिल मराठी कथाकारांच्यामध्ये त्यांचे स्थान अत्यंत महत्त्वाचे आहे.

संदर्भ :

- गायकवाड, प्रशांत, *मराठी कथेतील नवे वळण: परिव्राजक*, लोकायत प्रकाशन, सातारा २०१७

Photocatalytic environmental remediation of cassiterite-titania nanocomposite

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Summary: Nanocrystalline cassiterite (SnO_2), titania (TiO_2) and cassiterite - titania (SnO_2-TiO_2) have been synthesized by microwave method. X-ray diffraction study was reveals that cassiterite properly supported on the surface of titania. Nano sized cassiterite, titania and cassiterite - titania nanocomposite were confirmed by transmission electron microscopy technique. The particle size of the SnO_2, TiO_2 and their nanocomposite is in the range of 12-18 nm. The enhanced photocatalytic activity is observed in the SnO_2-TiO_2 composite as compared to SnO_2 and TiO_2.

Keywords: cassiterite; titania; nanocomposite; photocatalytic degradation; disperse red

Introduction

The textile dyes and dye intermediates with high aromaticity and low biodegradability have emerged as major environmental pollutants and nearly 10-15% of the dye is lost in the dyeing process and is released in the wastewater which is an important source of environmental contamination. As dyes are designed to be chemically and photolytically stable, they are highly persistent in natural environments. The improper handling of hazardous chemicals in textile water also has some serious impact on the health and safety of workers putting them into the

high risk bracket for contracting skin diseases like chemical burns, irritation, ulcers, etc. and respiratory problems [1–5].

Photocatalytic degradation using solar radiation is a potential technique for the removal of the organic contaminants from water. Photocatalytic reactions at the surface of metal oxide have been attracting much attention in view of their practical applications to environmental cleaning. Metal oxide represents an effective photocatalyst for water purification and for self-cleaning surfaces. Additionally, it can be used as antibacterial agent because of strong oxidation activity and superhydrophilicity [6]. Photocatalysts like TiO_2, Al_2O_3, CdS, WO_3, ZrO_2 and V_2O_5 have been investigated for the treatment of these effluents with the aim of mineralizing the dyes completely [7, 8]. When photocatalysts are dispersed on other oxides, its surface area increases and it can lead to enhanced photocatalytic activity. The increased activity was attributed to the increased surface acidity of the mixed oxide.

TiO_2 is a high band gap semiconductor that is transparent to visible light and has excellent optical transmittance. The American Food and Drug Administration (FDA) has approved the use in human food, drugs and cosmetics and compounded in food contact materials such as cutting board and other surfaces in contact with unprotected food [9]. For photovoltaic applications, TiO_2 photo-catalyst is effective in solar light or light from visible region of the solar spectrum need to be developed as future generation photo-catalytic material [10]. TiO_2 has high refractive index and good insulating properties and as a result it is widely used as protective layer for very large scale integrated circuits and photovoltaic cells as well as antireflective coatings, gas sensors, electro-chromatic displays and planar waveguides.

SnO_2 is a special oxide material because it has a low electrical resistance with high optical transparency in the visible range. Due to these properties, apart from gas sensors, SnO_2 is being used in many other applications, such as electrode materials in solar cells, light-emitting diodes, flat-panel displays, and other optoelectronic devices where an electric contact needs to be made without obstructing photons from either entering or escaping the optical active area and in transparent electronics, such as transparent field effect transistors [11, 12]. SnO_2 owing to a wide bandgap is an insulator in its stoichiometric form. However, due to the high intrinsic defects, that is oxygen deficiencies, tin Also; SnO_2 is an n-type semiconductor and has many applications.

TiO_2 and SnO_2 nanomaterials reveal that they are promising materials for optoelectronic devices due to its excellent electrical and optical properties. The observed photocatalytic activity of the composite was correlated with the proper microstructure of this composite and the

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Gas Sensing Application of Ceria, Cassiterite and Ceria-Cassiterite Nanocomposite

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Abstract

Ceria, Cassiterite and Ceria-Cassiterite nanocomposites are studied as potential candidates for gas sensors. The particles of CeO_2 core and SnO_2 shell nanocomposite were prepared by microwave method. X-ray diffraction and transmission electron microscopy were used to characterize the CeO_2, SnO_2 and CeO_2/ SnO_2 core shell nanocomposites. The obtained results from XRD show that the CeO_2 nanoparticles coated on SnO_2 yields diffraction peaks correspond to the crystalline SnO_2 phase. Also, TEM results show that the nanocomposite particles have a spherical morphology and a narrow size distribution. The thickness of CeO_2 shell on the surface of SnO_2 particles was about 7 nm. The particle size of the CeO_2 and SnO_2 and their nano composite is in the range of 10-20 nm. The electrical resistivity is decreasing with increasing temperature for all the samples. This indicates that all the samples show semiconductor like behavior.

The present work describes the gas-sensing performance of the nanostructured CeO_2, SnO_2 and CeO_2-SnO_2 powder towards ethanol, LPG, H_2, CO_2, NH_3 andCl_2. It was found that the material exhibits high selectivity and sensitivity towards 60 ppm LPG at the operating temperature of 150^{O}C.

Keywords: Ceria, cassiterite, nanocomposite, gas sensors, PPM.

Introduction

Gas sensors based on metal dioxide and their nanocomposites have attracted much public attention during the past decades due to their excellent potential for applications in environmental pollution remediation, transportation industries, personal safety, biology and medicine[1-3].

Numerous efforts have therefore been devoted to improving the sensing performance of metal oxides. In those effects, the construct of nanoheterostructures is a promising in gas sensing modification which shows superior sensing performance to that of the single component based sensors. Since the 20th century, atmospheric pollution has been proved to be one of most urgent issues. For the sake of controlling the exhaust emissions, gas sensors for the quantitative detection of various toxic and harmful gases have been widely developed as a result of their high response, outstanding selectivity, excellent repeatability and good stability[4–6].

So far a variety of gas sensors such as metal oxide semiconductor-based gas sensors[7–12], solid electrolyte-based gas sensors[13], electrochemical gas sensors[14], carbon-based gas sensors[15–17], organic gas sensors[5,6] and so on have been extensively investigated.

Amongst these different types of gas sensors, resistance type metal oxide gas sensors offering low cost, simple manufacturing approaches and excellent sensitivity to the great majority of gases have attracted considerable attention during the past several years[18,19].

SnO_2 is a special oxide material because it has a low electrical resistance with high optical transparency in the visible range. SnO_2 owing to a wide bandgap is an insulator in its stoichiometric form. However, due to the high intrinsic defects, that is oxygen deficient SnO_2 is an n-type semiconductor and has many applications. Similarly, CeO_2 is reported to be a predominantly ionic conductor, exhibits n-type conductivity under certain conditions. Cerium dioxide is an inexpensive and relatively harmless material that presents several characteristics that could be potentially advantageous for gas sensing applications. SnO_2 and CeO_2 nanomaterials reveal that they are promising materials for optoelectronic devices such as solar cells, conductive layers and transistors.

In this study, we briefly summarize and highlight the development of CeO_2, SnO_2 and CeO_2-SnO_2 based heterostructure gas sensing materials with diverse models, including semiconductor/semiconductor nano-heterostructures, which have been investigated for effective enhancement of gas sensing properties through the increase of sensitivity, selectivity and stability.

Also, we report the synthesis, characterization and gas sensing of CeO_2, SnO_2 and CeO_2-SnO_2 novel microwave system and describe the gas-sensing performance of the nanostructured CeO_2, SnO_2 and CeO_2-SnO_2 powder towards ethanol, LPG, H_2, CO_2, NH_3 andCl_2.

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"An Efficient Synthesis Of Substituted Isoxazole Derivatives Using Ultra Sound Sonication Method"

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Abstract: *A series of synthesis of some substituted isoxazole derivatives using efficient ultra sound sonication method in methanol solvent. Firstly the synthesis of different substituted chalcones using substituted aldehydes and substituted acetophenones using triethylamine as base in ethanol solvent under sonication. In second step synthesized substituted chalcones is reacted with two equivalents of hydrochloride salt of ammonium hydroxide, sodium oxalate and methanol under sonication at 30-35^{0}C to afford a substituted isoxazole derivatives in 90-98% of yields. The structures of the synthesized compounds were confirmed on the basis of NMR, and MS analysis. This method has a several advantages over current reaction methodologies, such as shorter reaction times, simple work-up procedure and good percent yields.*

Keywords: *isoxazole, chalcones, ammonium hydroxide, sodium oxalate, methanol, sonication.*

1. INTRODUCTION

Generally the nitrogen, oxygen and sulphur containing heterocyclic scaffolds are immense important in the designing of bioactive molecules[1]. One of the cyclic five member nitrogen and oxygen containing compound is isoxazole. Isoxazole and its derivatives generally possess various biological activities due to its unique chemical and structural properties, they are also playing important role as building blocks for the synthesis of natural products as well as therapeutic agents[2,3,4].

The different substituted isoxazoles derivatives are also attract a growing attention of chemist, due to the high biological activity exhibited by specimens of these compounds[5]. The isoxazole heterocycle is a fragment of molecules of quite a number of pharmaceuticals, e.g., of leflunomid, isocarboxazid, valdecoxib, edonentan, sulfamethoxazole, sulfisoxazole[6,7,8] and lot of others. Along with these isoxazole derivatives are also kinase inhibitors and antitumor agents were reported[9,10,11,12]. Literature survey recently found that the synthesis of substituted isoxazolylureas, and they were found to increase the cytotoxicity of antitumor pharmaceuticals cis platin and carboplatin thus permitting the reduction of the therapeutic dose of these very toxic substances[13]. The complex forming properties of substituted isoxazoles and its biological activity are considerably determined by the functional groups of the heterocycles[14,15].

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नव निकष

हिन्दी साहित्य के नव उत्कर्ष, नव संचेतना
और नव भावबोध की प्रतिनिधि मासिकी

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कुछ लाशें थी...!
कुछ अस्पतालों के अन्दर
तो कुछ बाहर,
कुछ चिताओं पर तो
कुछ श्मशान के बाहर कतारों में
कुछ नदियों में तैरती हुई भी थीं
कुछ और भी लाशें हैं
जो खड़ी हुई हैं
उसके समर्थन में
जो जिम्मेदार है
हर एक लाश के लिए...!

आई.एस.एस.एन-०९७५-०८२७

नव निकष

हिन्दी साहित्य के नव उत्कर्ष, नव संचेतना
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[illegible] सम्पादक की सहमति आवश्यक नहीं है।

साहित्य चिंतन

गुलजार के गीतों में आम आदमी

● डॉ. नाज़िम शेख़

गुलज़ार के गीतों की यात्रा लंबी है लेकिन इस में ठहराव कहीं नहीं है। नदी का पानी जिस तरह निरंतर बहता रहता है ठीक वैसे ही गुलज़ार के गीतों की यात्रा निरंतर पचास से अधिक वर्षों से चलती रही है। लोग बदले, लोगों की रुचि बदली और गुलज़ार के गीतों के शब्द भी लोगों के रुचि के अनुरूप बदलते रहे। जितनी पुरानी पीढ़ी उनके पुराने फिल्मी गीतों को पसंद करती है उतनी ही नई पीढ़ी उनके नए फिल्मी गीतों को पसंद करती है।

गुलज़ार मूलतः उर्दु और पंजाबी के कवि हैं, लेकिन बचपन से ही भाषा से लगाव के कारण उन्होंने उत्तरी भारत की अनेक भाषाओं में अपनी कविताएं एवं गीत लिखे। गुलजार का पूरा जीवन संघर्षमय रहा, अपने जीवन के शुरू के दिनों में उन्हें एक पेट्रोल-पम्प पर काम करना पड़ा, वहाँ से जब वे मुंबई आए तब उन्हें एक गॅरेज में काम करना पड़ा। वे हिंदी फिल्मी दुनिया में भी संघर्ष के साथ कार्यरत रहे। फिल्मी अभिनेत्री राखी के साथ शादी तो की लेकिन वह बहुत दिनों तक टिक नहीं पाई। बेटी मेघना के जन्म के पश्चात दोनों ने एक-दूसरे से अलग रहने का फैसला किया लेकिन तलाक नहीं लिया। बेटी मेघना भी आज बतौर फिल्म निर्देशक का काम कर रही है। गुलज़ार जैसे व्यक्तित्व वाले व्यक्ति दुनिया में बहुत कम दिखाई देते हैं। सफेद कुर्ता और पायजामा, हमेशा चेहरे पर मुस्कुराहट, बोलने में अत्यंत मृदभाषी, उर्दू और हिंदी के साफ उच्चारण। गुलजार को चाहे जितना सुनों ऐसा लगने लगता है कि और सुनते रहें। गुलज़ार की इस अदा से न केवल फिल्मी दुनिया बल्कि आम भारतीय आदमी भी उनसे प्रभावित हुए बगैर नहीं रहता। गुलजार को भारतीय सभी भाषाओं से लगाव है। उनके द्वारा किए गए बंगाली भाषा के प्रमुख साहित्यकार रविंद्रनाथ ठाकुर और शरत बाबू की रचनाओं के उर्दू अनुवाद बड़े लोकप्रिय हुए तो मराठी के प्रसिद्ध कवि कुसुमाग्रज (वि.वा. शिरवाडकर) जी की कविताओं का भी हिंदी-उर्दू अनुवाद बड़ा ही सराहा गया। अर्थात गुलज़ार की अपनी भाषा भले ही उर्दू-पंजाबी रही हो, लेकिन उन्होंने भारतीय अनेक भाषाओं का अध्ययन किया है तथा उन भाषाओं के बडे साहित्यकारों की कृतियों का अनुवाद भी किया है। फिल्मी दुनिया में आने के पश्चात भी वे वहाँ के बड़े निर्देशकों का, संगीतकारों का,. गीतकारों का बडा सम्मान करते रहे। ऋषिकेश मुखर्जी, बिमल राय, सचिनदेव बर्मन, शैलेन्द्र, कवि प्रदीप और मीनाकुमारी का वे दिल की गहराईयों से सम्मान करते हैं। इन सब के प्रति उनकी गहरी आस्था है। गुलज़ार आज फिल्मी दुनिया में और भारतीय मीडिया में एक लोकप्रिय शख़्सियत की हैसियत से पहचाने जाते हैं। उन्होंने अपनी कविताओं में और गीतों में भारतीय आम आदमी को अपनी नज़रों से ओझल होने नहीं दिया। भारतीय आम आदमी की समस्याओं का चित्रण उनकी अनेक कविताओं में तथा गीतों में दिखाई देता है। एक जुलाह पर लिखी कविता में वे कहते हैं –

"मुझको भी तरकीब सिखा कोई, यार जुलाहे!
अकसर तुझको देखा है कि ताना बुनते
जब कोई धागा टूट गया या खत्म हुआ
फिर से बांध के
और सिरा कोई जोड के उसमें
आगे बुनने लगते हो
तेरे इस ताने में लेकिन
इक भी गांठ गिरह बुनतर की
देख नहीं सकता है कोई
मैंने तो एक बार बुना था एक ही रिश्ता
लेकिन उसकी सारी गिरहें
साफ नजर आती हैं, मेरे यार जुलाहे।" (यार जुलाहे)

गुलज़ार ने केवल आम आदमी की बात नहीं की बल्कि उससे अपना रिश्ता बरकरार रखा। आम आदमी की छोटी-छोटी जरूरतों को गुलजार ने अपनी कविताओं का विषय बनाया है। स्पष्ट है गुलज़ार के व्यक्तित्व में हमें अपनेपन की मिठी सुगंध महकती है। गुलज़ार ही के शब्दों में उनके व्यक्तित्व को

कल्पना ही तो हम कह सकते हैं -

"आओ सारे पहन लें आइने, सारे देखेंगे अपना ही चेहरा।"

गुलजार की शायरी अपने समय की बेहतरीन शायरी है। गुलजार ने अपने जीवन में बहुत से उतार-चढाव देखे हैं। उनका पूरा जीवन संघर्ष में बीता है, उनके गीतों में जो संवाद आए हैं वह कहीं और के नहीं हैं वे सभी संवाद और प्रतिवाद समाज से लिए हुए हैं। गुलज़ार के गीत कल्पना की उड़ान नहीं बल्कि समाज की यथार्थवादी संवेदना से बने हैं। उनके गीतों में सामाजिक यथार्थ होने के कारण उनका हर गीत श्रोताओं को एक नया विचार अलग प्रकार के शब्द और निराशा से भरे जिन्दगी में आशावादी स्वर प्रदान करता है। जिन्दगी से नाराज न होकर जिन्दगी से लड़ने का संदेशा उनके अनेक गीतों में मिलता है-

"तुझ से नाराज नहीं जिन्दगी हैरां हूँ मैं
तेरे मासूम सवालों से परेशान हूँ मैं
हां परेशान हूँ मैं
जीने के लिए सोचा ही नहीं, दर्द संभालने होंगे
मुस्कुराऊँ कभी तो लगता है,
जैसे होठों पे कर्ज रखा है,
तुझ से नाराज नहीं जिन्दगी हैरान हूँ मैं
तेरे मासूम सवालों से परेशान हूँ मैं।" (मासूम)

गुलज़ार के गीतों में जीवन की छोटी-छोटी सुविधाओं के लिए संघर्ष-रत मनु य का सीधा-सटीक चित्रण हुआ है। उनके गीतों का अक्स ही भारतीय आम मनुष्य की सीधी-साधी जीवन-शैली है। गुलज़ार ने जब आगे चलकर खुद फिल्म-निर्देशन किया तब भी उन्होंने हिंदी फिल्मों में उस समय चलनेवाले 'ॲक्शन फिल्मों' को नहीं चुना बल्कि जिन्दगी से लड़नेवाले सीधे-साधे आम आदमी को ही अपने फिल्मों का नायक बनाया। उनकी ही पटकथा और निर्देशन में बनी 'आँधी' फिल्म के एक गीत में वे कहते हैं -

"तेरे बिना जिन्दगी से कोई शिकवा तो नहीं
शिकवा नहीं, शिकवा नहीं, शिकवा नहीं,
तेरे बिना जिन्दगी तो लेकिन, जिन्दगी तो नहीं,
जिन्दगी नहीं, जिन्दगी नहीं, जिन्दगी नहीं,
काश होता हो, तेरे कदमों से, चुनके मंजिल चले,
और कहीं, दूर कहीं,
तुम अगर साथ हो, मंजिलों की कमी तो नहीं,
तेरे बिना जिन्दगी से कोई, शिकवा तो नहीं" (आंधी)

जब गुलज़ार इस प्रकार के शब्द लिखते हैं तो महसूस होने लगता है कि कहीं यह संवेदना हमारी अपनी तो संवेदना नहीं है। गुलज़ार के रूप में किसी आम व्यक्ति की संवेदना को पहचानने वाला मनोवैज्ञानिक बोल रहा है ऐसा लगने लगता है। गुलज़ार के गीतों में ज़िन्दगी के उन लमहात का जिक्र हुआ है जहाँ व्यक्ति अपने आप को भूलकर अपने से ज्यादा अपने साथी की फिक्र करने लगता है। उनके प्रेम-गीतों में केवल प्रेम की उडान नहीं है बल्कि प्रेम की बारिकियों का चित्रण मिलता है। गुलज़ार ने जो फिल्में बनाई वह अकसर आम आदमी के 'घर' से सम्बन्धित हैं। इस घर में रहनेवाले पति-पत्नी के प्रेम का उनकी छोटी-छोटी संवेदनाओं का बखूबी चित्रण उनके गीतों में दिखाई देता है-

"आपकी आँखों में कुछ, महके हुए से राज हैं,
आपसे भी खुबसूरत, आपके अंदाज हैं।
आपकी बातों में फिर कोई, शरारत तो नहीं,
बेवजह तारीफ़ करना, आपकी आदत तो नहीं।
आपकी बदमाशियों के, ये नये अंदाज हैं,
आपकी आंखों सें कुछ, महके हुए से राज हैं।" (घर)

गुलजार के गीत में उनके अपने जीवन को हैरान करनेवाला सफर दिखाई देता है। उनके गीत मानों उनके जीवन का एक हिस्सा ही हैं। उनके गीतों में बदलते हुए समय को भी देखा जा सकता है। जब गुलजार ने फिल्मों में गीत लिखना शुरू किया तब हिंदी फिल्मों में साहिर, मजरूह, शकील बदांयूनी, हसरत जयपुरी, शैलेंद्र जैसे मंझे हुए गीतकार अपने गीतों से हिंदी फिल्मी दुनिया को अजरामर कर रहे थे, ऐसे समय में अपने वजूद को बरक़रार रखते हुए एक से बढ़कर एक लोकप्रिय गीत लिखना यह उस समय का कमाल ही था। इन सभी बडे गीतकारों के बीच रहकर गुलज़ार ने अपनी अलग प्रकार की शैली को विकसित किया। इसी कारण तब से लेकर आज-तक गुलज़ार अतीत और वर्तमान में भी अपना सिक्का जमाए हुए हैं। फिल्म ख़ामोशी के सभी गीत गुलजार की अलग पहचान सिद्ध करते हैं-

"वो शाम कुछ अजीब थी, ये शाम भी अजीब है
वो कल भी पास पास थी, वो आज भी करीब है,
झुकी हुई निगाह में, कहीं मेरा खयाल था,
दबी-दबी हँसी में इक, हसीन सा सवाल था,
मैं सोचता था, मेरा नाम गुनगुना रही है वो
न जाने क्यूँ लगा मुझे, कि मुस्कुरा रही है वो,
वो शाम कुछ अजीब थी, ये शाम भी अजीब है।" (खामोशी)

सहज भाव से लिखे गुलज़ार के गीतों में आम आदमी की संवेदना झलकती है। उनके गीतों में मानवीयता की झलक देखने मिलती है। उनका हर गीत मानवतावाद की कसौटी पर खरा उतरता है। हिंदी फिल्मी गीतकारों में दो प्रकार के गीतकार दिखाई देते हैं। एक को गीतकार हैं जिन्होंने उर्दू भाषा के अत्यंत परिनिष्ठित शब्दों का प्रयोग किया तो दूसरे प्रकार के वो गीतकार हैं जिन्होंने अवाम की साधारण भाषा का प्रयोग अपने गीतों में किया। गुलजार दूसरे प्रकार के गीतकारों में रहे जिन्होंने उत्तरी भारत या मुंबई में बोली जानेवाली आम भाषा का प्रयोग अपने गीतों में किया -

"हुजूर इस कदम भी न इतरा के चलिए
खुले आम आंचल न लहरा के चलिए,
बहुत खुबसूरत है हर बात लेकिन,
अगर दिल भी होता तो क्या बात होती,
लिखी जाती फिर दास्तान-ए-मुहब्बत,

एक अफसाने जैसे मुलाकात होती,
हुजूर इस कदर भी न इतरा के चलिए।"(मासूम)

गुलज़ार ने उर्दू भाषा के आम शब्दों का प्रयोग कर अपने गीतों को भारतीय आम आदमी तक पहुँचाया। सन १९६०-१९७० के दशक के गुलज़ार के गीत आज भी श्रोताओं के मुख पर दिखाई देते हैं, इसका कारण उनकी साधारण भाषा है। उनकी सोच में सामाजिक द्वंद्व है, वो गीतों को सीधे आम आदमी से जोड़ते हैं। उपर्युक्त गीत में 'अगर दिल भी होता तो क्या बात होती' पंक्ति के माध्यम से आम नायक की संवेदना को सीधे सादे शब्दों में अभिव्यक्त किया गया है। गुलज़ार ने आम आदमी के दुःखों को शिद्दत से महसूस किया है। उनके प्रेम-गीत भी आम नायक के मन की बात को ही कहते हैं, इसी कारण सुननेवाला उसे अपने आप अपनी भावनाओं के साथ जोड़ता है-

"मैंने तेरे लिए ही, सात रंग के सपने चुने,
सपने सुरीले सपने,
कुछ हंस के, कुछ गम के,
तेरे आखों के, साए चुराये,
रसीली यादों में,
मैंने तेरे लिए ही, सात रंग के सपने चुने।" (आनंद)

गुलज़ार के गीतों में आम आदमी की जीने की जद्दोजहद है तो दूसरी ओर अपने प्रेम को पाने के लिए की गई कोशिश है। उनके गीतों में कल्पना की उड़ान कहीं नहीं है। सीधी-साधी संवादात्मक शैली में लिखे उनके गीत हम सारों से बात करते हैं। ये गीत निरंतर गुफ्तगू करते प्रतीत होते हैं। यह गीत अपने आप में आत्मकेंद्रित नहीं हैं। सीधी-सरल जबान में समाज के रंग और हमरंग हो उठते हैं। यह गीत अपने ज़िन्दगी की तलाश किताबों में नहीं करते, आम आदमी की वेदना में करते हैं-

हमारे समाज ने नारी को केवल देह तक सीमित रखा है, उसे उससे उपर उठाकर कभी नहीं देखा गया नारी भी मानवीय है, वह हमारी जीवन-साथी है इसे दिखाने का प्रयास गुलज़ार के कई गीतों में हुआ है। स्त्री-पात्रों के कई रूप उनके गीतों में दिखाई देते हैं। फिल्म 'रूदाली' की नाइका समाज से घबराकर अपने-आप से ही कहती है-

"दिल हूम-हूम करे, घबराए,
घन धम-धम करे, गरजाए,
एक बूंद कभी पानी की,
मेरे अंखियों से बरसाये,
जिस तन को छुआ तूने, उस तन को छुपाऊँ,
जिस मन को लागे नैना, वो किसको दिखाऊँ,
वो मोरी चंद्रमा, तेरी चांदनी अंग जलाए,
उंची तोरी अटरी, मैं ने पंख लिए कटवाए।"(रूदाली)

इस प्रकार गुलज़ार के गीतों में नारी की अंतरिक संवेदना को अभिव्यक्त किया गया है। गुलज़ार नारी के रिश्तों के गूढ़ यथार्थ को बडे सहज भाव से अपने गीतों में लाते हैं, जैसे मानों वे अपने ही हाल को बयाँ कर रहे हो। नारी जीवन की सहन, आंतरिक, दिलकश अनुभूतियों को गुलज़ार ने अत्यंत सुंदर शब्दों में पिरोया है -

"हजार राहें मुड़ के देखी,
कहीं से कोई सदा न आई,
बड़ी वफा से निभाई तुमने,
हमारी थोड़ी सी बेवफ़ाई, ---
जहाँ से तुम मोड़ मुड़ गए थे,
वो मोड़ अभी वही खड़े हैं,
बडी वफा से निभाई तुमने---" (थोड़ी सी बेवफ़ाई)

कहा जा सकता है कि गुलजार हिंदी फिल्मों के उन पुराने और नए गीतकारों के बीच की कडी रहे जिन के गीतों में पुराने और नए गीतों का मेल दिखाई देता है। वे एक ऐसे संवेदनशील गीतकार रहे जिन के गीतों में मनुष्य की बुनियादी समस्याओं का वास्तववादी चित्रण मिलता है। गुलजार के गीतों के शब्द संगीत की तरह मधुर एवं कोमल रहे। उनके गीतों को सुननेवाला श्रोता भावविभोर हो जाता है। गुलज़ार का हर गीत एक साहित्यिक सुंदर कविता है। उनके गीतों में साहित्य के सभी तथ्य मिलते हैं। छोटी-छोटी ज़िन्दगी की समस्याओं को गुलज़ार ने अपने गीतों में पिरोया है। उन के गीतों को सुनकर हर-दम यह एहसास होने लगता है कि यह शब्द हमारे आस-पास के शब्द हैं, यह संवेदना किसी और की नहीं यह संवेदना मेरी अपनी संवेदना है। खुशी और दुःख को गुलज़ार ने उतनी ही सहजता से अभिव्यक्त किया है। अनेक संगीतकारों को यह कहते हुए सुना है कि गुलज़ार के गीतों को संगीतबद्ध करते समय विशेष मेहनत नहीं करनी पड़ती, उनके गीतों के शब्द खुद अपने-आप में ही संगीत का ऐहसास दिलाते हैं। गुलज़ार के शब्दों में वह जादू है जिस से आम श्रोता उन गीतों से इतना तादातम्य प्रस्थापित करता है कि वह अपने सुख-दुःख को भूलकर उन गीतों में ही खो जाता है। उनके गीतों में जिन शब्दों का प्रयोग हुआ है वह उर्दू के शब्द है, उनमें अदब (साहित्यिकता) तो है ही लेकिन दुरूहता नहीं है। शब्द बोझिल नहीं हैं, आम श्रोता इन शब्दों को अपने अंतरंग से महसूस कर लेता है।

"नाम गुम हो जाएगा, चेहरा ये बदल जाएगा
मेरी आवाज़ ही पहचान है, गर याद रहे
जो गुज़र गई कल की बात थी
उम्र तो नहीं, एक रात थी
रात का सिला अगर फिर मिले कहीं
मेरी आवाज़ ही पहचान है।" (किनारा)

गुलज़ार की आवाज को हर दम याद किया जाएगा। पिछले पांच दशकों से उनके गीतों ने लोगों के मन को मोह लिया है और आगे भी न जाने कितने दिन शायद यह आवाज याद की जाती रहेगी। ◆

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आठवाँ अंतर्राष्ट्रीय हिंदी अधिवेशन

(गोवा)

मुख्य संयोजक एवं प्रबन्ध संपादक

जय कान्त मिश्रा

प्रधान संपादक

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(पंजीकृत न्यास)

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साठोत्तरी हिंदी दलित कविता में मानवतावादी स्वर

मानवतावाद का स्वर लगभग हर कविता में दिखाई देता है साठोत्तरी हिंदी दलित कविता इसे अपवाद नही हैं। युग का साहित्य बदलती हुई परिस्थिति के अनुरुप बदलता है। साहित्य अपने समय की मांग के अनुसार लिखा जाता है–साठोत्तरी दलित कविता इस बात का सबूत है। इस काल के दलित कविता में दलित जीवन की संवेदनाओं की प्रौढ अभिव्यक्ति हुई है। इन दलित कवियों ने दलित जीवन खुद सहा था। अभावग्रस्त जीवन, रोटी की तलाश, घर की समस्या, प्रस्थापितों द्वारा किया जाने वाला अन्याय, बचपन से ही इन कवियों को दर–दर भटकना पड़ा, उन्हें जिन यातनाओं से गुजरना पड़ा, उसका यथार्थ चित्रण उनकी कविताओं में हुआ है–

"याद करो
उस माँ का चेहरा
जिसका बेटा सरेआम पीटा गया
निर्ममता से
जिसने चाही थी करनी दोस्ती
जंगल के फूलों
और नदी के लहरों से"

(ओमप्रकाश वाल्मीकि – बस्स ! बहुत हो चुका–पृ० 42)

कवि अपने परिवार के शोषित जीवन का चित्रण अत्यंत शब्दों में करते हैं। कवि को उनके माँ के सामने सिर्फ इसलिए पीटा जा रहा है, क्योंकि उन्होंने अपनी इच्छा से जीवन जीना चाहा था। वह अपनी इच्छा से फूलों और नदी के लहरों को पसंद करने लगे थे। कवि भारतीय समाज की मानसिकता को अभिव्यक्त करते हैं। सवर्णों द्वारा दलितों को शारीरिक यातनाएँ तो दी ही जाती हैं, लेकिन उससे भी अधिक मानसिक यातनाएँ दी जाती हैं। जाति–पाति के भेदभाव और वर्ण–व्यवस्था में कोई बदलाव नहीं आया हैं। जयप्रकाष कर्दम लिखते हैं–

"मक्कार हैं वे लोग
जो कहते हैं कि,
वर्णव्यवस्था अप्रासंगिक हो चुकी हैं।
जब तक स्मृतियॉ रहेंगी
रामायण, गीता और वेद रहेंगे
तब तक शुचिता रहेंगी।

(जयप्रकाश कर्दम 'गूंगा नहीं था मैं', पृ० 30)

दलितों को अपनी इच्छा से जीवन जीने नहीं दिया जा रहा है। उसे आज भी सवर्णों के इशारे पर ही चलना पड़ता है। आज दलित युवक पढ़–लिखकर अपने अधिकारों के प्रति सजग हुआ है, वह अपने अधिकारों के प्रति संघर्ष कर रहा है। लेकिन उसे अपने संघर्ष की सजा भुगतनी पड़ रही है। जयप्रकाश कर्दम लिखते हैं–

"सीखना होगा दलितों को भी,
कलम का महत्व
हथियार के रुप में उसका प्रयोग, क्योंकि,
कलम से लिखे जा सकते हैं,
परिवर्तन के गीत
उध्वस्त किए जा सकते हैं अन्याय के किले"

(जयप्रकाश कर्दम 'तिनका–तिनका का आग में', पृ० 30)

आज–तक दलित चुप ही रहा है, लेकिन चुप रहने का खामियाना उसे सदियों से भुगतना पड़ा है, इसीलिए वह अब चुप नहीं रहना चाहता। कवि दलितों के आक्रोश को विद्रोह में बदलते देख रहा है। इसी विद्रोह को वह अपने तीखे शब्दों द्वारा प्रस्तुत करता है–

"बस्स।
बहुत हो चुका चुप रहना
निरर्थक पडे पत्थर
अब काम आयेंगे संतप्त जनों के"

(ओमप्रकाश वाल्मीकि 'बस्स ! बहुत हो चुका', पृ० 80)

दलित अब अन्याय और अत्याचार सहने के विरोध में है। वह अब हम सारों से यही प्रश्न पूछता है कि क्या हम 'मानव' नहीं है। क्या हमारी यातनाएँ मानव की यातनाएँ नहीं हैं। अब सवर्णों के प्रति उसकी वाणी अत्यंत कठोर हो चुकी है।

सवर्णों ने संस्कृति को मानों ऐसे जकड़कर रखा है, जैसे उसपर उन्हीं का अधिकार हो स अब दलितों को केवल किसी की सहानुभूति की आवश्यकता नहीं बल्कि उसे अब सब के साथ बराबर का दर्जा चाहिए और जब तक वह नहीं मिल सकता तब–तक वह चुप रहने वाला नहीं है। कवि दलितों के संघर्ष के साथ उसकी मांग को बुलंद करते हैं।

दलित–श्रमिक खुद दुःख कष्ट सहन कर लेते हैं, लेकिन किसी दूसरों को कष्ट नहीं देते है। खुद भूखे–प्यासे और नंगे रहकर दूसरों को सुख देने की साचते रहते हैं, खुद हमेशा से शोषित रहते हैं लेकिन किसी का शोषण नहीं करते।

निष्कर्षतः कहा जा सकता है कि, साठोत्तरी हिंदी कविता में दलित जीवन की सही दास्तान का चित्र अपनी अंतरंगता से उभर कर प्रकट हुआ है। हजारों वर्षों से एक समाज ने जो दुःख भोगा, जो सहा, जिन परिस्थितियों से वह गुजरा, उसकी प्रतिक्रिया, अभिव्यक्ति, उस व्यवस्था के प्रति विद्रोह इन कविताओं में दिखाई देता है। यह कविताएँ वंचितों की वेदना का स्वर है। वे दलितों को संघटित होकर एक साथ संघर्ष करने तथा अपनी स्थिति में सुधार लाने की प्रेरणा देते हैं। यह कविताएँ घृणा, अन्याय, अत्याचार करने की, जो सदियों से मानसिकता रही है, उसके साथ लडाई करने, जूझने और अपने हक की सुविधा, व्यवस्था प्राप्त करने का आह्वान करती हैं। अत्याचार सहते वर्ग की आँखें खोलने का पूरा–पूरा प्रयास इन कविताओं ने किया है।

डॉ० नाजिम शेख,
कोल्हापुर, महाराष्ट्र

आंतरराष्ट्रीय बहुभाषिक शोध पत्रिका

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३ वही

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५ ताऊ जी कितने अच्छे हैं — योगिता यादव, कुम्लाई कलियाँ, शिवना प्रकाशन, पृष्ठ ४७

६ ताऊ जी कितने अच्छे हैं — योगिता यादव, कुम्लाई कलियाँ, शिवना प्रकाशन, पृष्ठ ५८

७ हिस्से का आसमान — अंजु शर्मा, कुम्लाई कलियाँ, शिवना प्रकाशन, पृष्ठ ६१

८ वही, पृष्ठ ५८

९ होठों की बिजली — विभा रानी, कुम्लाई कलियाँ, शिवना प्रकाशन, पृष्ठ ७७

१० होठों की बिजली — विभा रानी, कुम्लाई कलियाँ, शिवना प्रकाशन, पृष्ठ ८४

११ वही, पृष्ठ ८०

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77

हिन्दी की बालफिल्में

डॉ.सहदेव वर्षाराणी निवृत्तीराव
श्री विजयसिंह यादव महाविद्यालय, पेठवडगाव
ता. हातकणंगले जि. कोल्हापुर

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राष्ट्र निर्माण में बालसाहित्य बेहद रचनात्मक और महत्वपूर्ण भूमिका निभाता है। आज का बालक ही कल का नीति–निर्माता और निर्धारक होता है। यदि बच्चों को समुचित नैतिक शिक्षा, संस्कार एवं मानवीय मूल्यों से रुबरु करवा लिया जाए तो निसंदेह वे राष्ट्र प्रगति पर गतिमान होंगे।

बालसाहित्य में बालफिल्में भी एक घ्सी विधा है, जो बच्चों को खूब पसंद आती है। जो उन्हें रोचकता के साथ–साथ ज्ञान और मनोरंजन भी देती है। उनके मनोजगत पर सीधा असर करके सहज रुप से उन्हें अपनी ओर आकर्षित करती है। इस संदर्भ में रेखा जैन का कथन दृष्टव्य है– बच्चों में कला के प्रति वही व्यावसायिक रुझान और मजबुत होता है जो मीडिया उन्हें परोसता है।१

हिन्दी सिनेमा के सौं सालों के इतिहास में हिन्दी बाल सिनेमा का भी बृहद इतिहास रहा है। अन्य भारतीय भाषाओं की तुलना में हिन्दी में बाल फिल्मों का निर्माण अधिक हुआ है। राजकपूर से यह दौर प्रारंभ होकर अमीरखान ने भी बच्चों को केंद्र में रखकर बालफिल्मों का निर्माण किया है। बालफिल्में बच्चों का केवल मनोरंजन ही नहीं कराती, अपितु बच्चों से जुडी

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"आधुनिक हिन्दी कवयित्रियों के काव्य में नारी चित्रण"

डॉ. सहदेव वर्षाराणी निवृत्तीराव
सह्योगी प्राध्यापक श्री विजयसिंह यादव महाविद्यालय, पेठवडगाव ता. हातकणंगले जि. कोल्हापुर *Email- varsha.sahadev@gmail.com*

हिन्दी कविता में पुरुष लेखकों का बोलबाला था, लेकिन आठवे दशक के बाद स्थिति बदली और कवयित्रियों ने अपना स्थान सुरक्षित कर लिया है। आधुनिक कवयित्रियों के पास एक नया जीवन अनुभव है; इससे काफ़ी कुछ नया लिखा जा रहा है। प्राचीन काल से लेकर आज की कविता स्त्री के अधिकारों के लिए संघर्ष करती रही है। आज की हिन्दी कविता में स्त्री विचार केंद्र में है। वैसे विमर्शात्मक स्त्री-लेखन 19 वी सदी के प्रारंभ से ही चला आ रहा है। किन्तु उसमें जो परिवर्तन आता गया वह सराहनीय है। प्रारंभ में स्त्री-विमर्श पुरुष विरोधी था लेकिन आज पुरुष विरोधी मानसिकता में परिवर्तन आया है। उसके बाद 20 वी सदी की स्त्री-विमर्श संबंधी कविताओं में कविता के विषय पुरुष न होकर सामाजिक रुढियाँ रही। पितृसत्तात्मक सामाजिक व्यवस्था में मुक्ति की आकांक्षा को कवयत्रियोंने अपना विषय बनाया जो कि सराहनीय प्रयास है।

आज हिन्दी की कवियित्रयाँ प्रतिरोध के स्वरों को जगाने का दायित्व निभा रही है। आज की हिन्दी कविता में स्त्रियाँ अपनी पहचान, स्वतंत्रता और अधिकारों के बार में सोचने लगी है। स्त्रियाँ अब सांसारिक मुद्दों से ऊपर उठकर लिख रही है। उनका लेखन चूल्हे-चौके, आपसी रिश्ते, द्वेष, प्रेम आदि सांसारिक बातें से काफ़ी ऊपर उठ चुका है। विभिन्न मुद्दों पर वे अपने विचार बेबाकी से व्यक्त कर रही है। विशेष बात यह है कि इस सदी की कविता में स्त्री-विमर्श देहवादी विमर्श न बने, इस ओर भी ध्यान दिया जा रहा है। भारतीय संस्कृति पुरुषप्रधान संस्कृति है। अत्यंत प्राचीन काल से ही नारी के उन्मुक्त आचरण पर यहाँ रोक लगाई है। केवल लडकी है इसलिए वह जोर से बोल नहीं सकती, हँस नही सकती, रो नहीं सकती, उछल नहीं सकती। चुपचाप सबकुछ सहने के लिए विवश है। लेकिन आज की हिन्दी कवयित्रीयोंने स्त्री-अधिकारों के पक्ष में बात की है। आज तो हिन्दी में अनेक कवयित्रियाँ सक्रिय है। इतनी बडी संख्या में इतनी श्रेष्ठ कवयित्रियाँ इससे पहले कभी नहीं हुई। ये कवयित्रियाँ लगातार हिन्दी कविता के परिदृष्य को व्यापक बना रही है। अनामिका, गगन गिल, सविता सिंह, कात्यायनी, निर्मला पुतुल, निर्मला गर्ग, अनीता वर्मा, इन्दिरा इन्दु, राजी सेठ, क्षमा कौल, स्नेहमयी चौधरी, कमल कुमार, रश्मि भारद्वाज, लवली गोस्वामी, पूनम अरोडा, संध्या कुलकर्णी और प्रतिभा गोटिवले आदि अनेकानेक स्त्री-कवियों की कविताएँ केवल स्त्री-मुक्ती की चेतना को ही नहीं वरन् संम्पूर्ण समाज के रूपांतर की कामना को वाणी दे रही है।

आज की हिन्दी कविता में स्त्री लेखन की सर्वप्रथम जो प्रवृत्ति दृष्टिगत होती है वह है - 'अस्मिता की खोज'। आज के समय भी सर्वाधिक उन्नत, स्वतंत्र एवं समानतावादी समाज में भी स्त्री सबसे कम स्वाधीन है। मानव-जीवन के प्रारंभिक वर्षों को छोड दे तो स्त्री बंदी जीवन ही बिताती रही है। आज के स्त्री लेखन में नायिका न तो भोग्या बनना चाहती है न पूज्या; बल्कि एक हाड-मॉस की स्त्री की तरह बराबरी और प्रेम चाहती है। समकालीन कविता इसी अस्मिता की पहचान करवा देती है। इसलिए आज की कविताएँ नारी-मुक्ति की दृष्टि से महत्वपूर्ण है। आज की नारी को वह पुरूष के समकक्ष दर्जा देने की बात करते हुए नारी के अस्तित्व एवं महत्व वर प्रकाश डालती है। समाज में आज भी नारी को देखने का दृष्टिकोन नहीं बदला है। पुरूष हमेशा नारी पर दबाव डालता है। वह उसका शारिरीक और मानसिक दोनों रूपो में शोषण करता है। उसे उसके सम्मान, गरिमा और अस्मिता से दूर रखता है।

आज के स्त्री-लेखन ने अपनी कविता के माध्यम से स्त्रियों के अस्मिता के संकट के लिए मौन को जिम्मेदार माना है। और स्पष्ट किया कि अस्तित्व का संकट है तो उसका विरोध, विद्रोह के माध्यम से किया जा सकता है। 'एक बार फ़िर' कविता में निर्मला पुतुल ने स्त्री की अस्मिता की तलाश की है-

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डॉ. गिरिराजशरण अग्रवाल
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58

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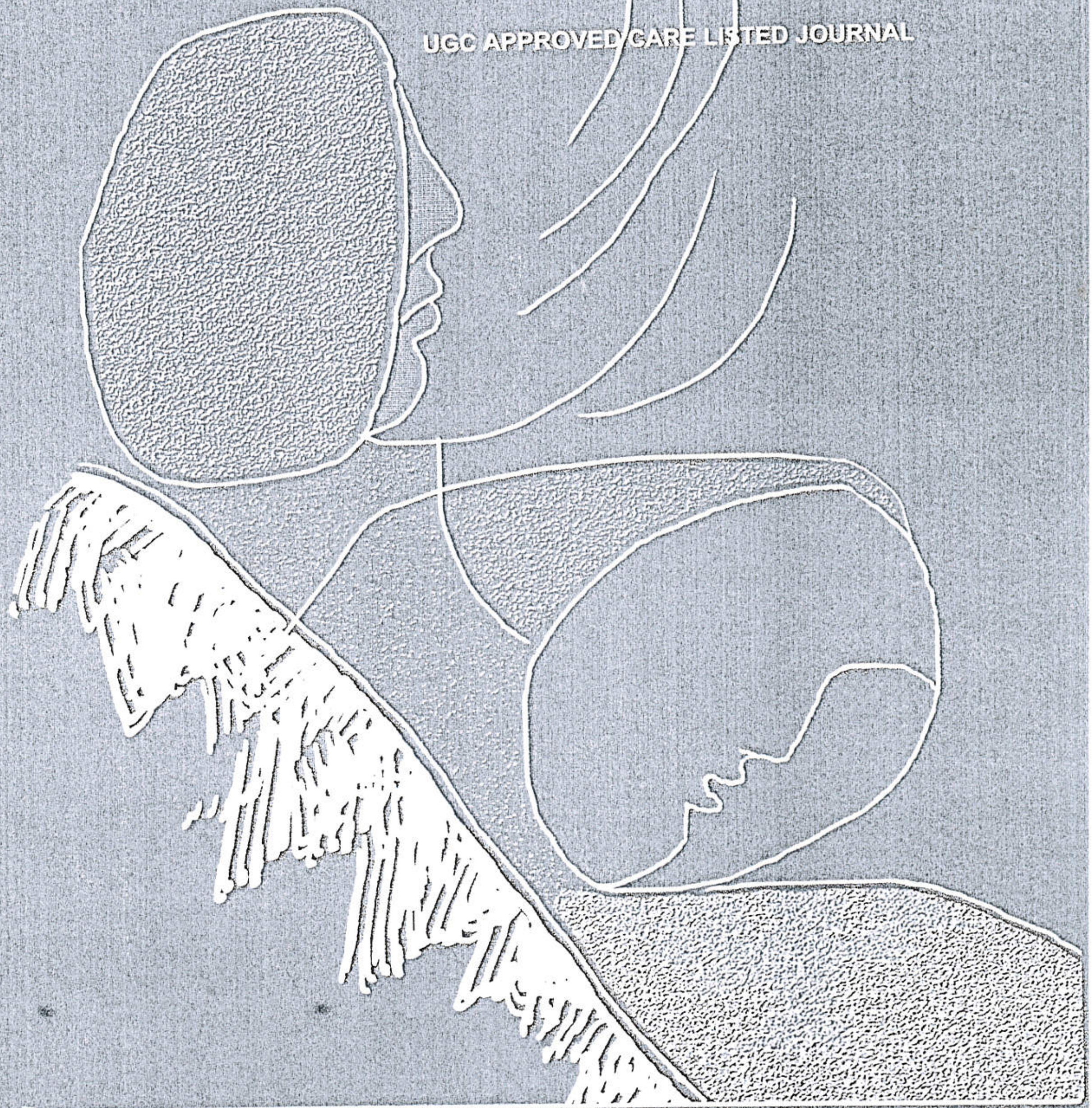

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हिंदी भाषाशिक्षण और डिजिटल माध्यम

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ता॰ हातकणंगले जिला कोल्हापुर

हिंदी भाषा शिक्षण में डिजिटल माध्यमों की भूमिका अतुल्य है। वर्तमान समय की सर्वाधिक महत्त्वपूर्ण जरूरत डिजिटल शिक्षा बन गई है। कंप्यूटर के अविष्कार ने मनुष्य के सभी कार्यों में क्रांतिकारी परिवर्तन किया है। इंटरनेट के अविष्कार ने तो मनुष्य को संपूर्ण विश्व के साथ जोड़ दिया हैं वर्तमान में कोविड 19 के चलते शिक्षा डिजिटल माध्यमों पर ही चल रही है। ऐसे में डिजिटल शिक्षा का ज्ञान होना समय की पुकार है।

किसी भी भाषा के सर्वांगीण विकास के लिए यह आवश्यक है कि उससे संबंधित सामग्री डिजिटल साधनों पर अधिक मात्रा मे उपलब्ध हो। डिजिटल शिक्षा वर्तमान समय की महत्त्वपूर्ण जरूरत है। हिंदी के विकास और वैश्विक प्रचार-प्रसार में डिजिटल साधनों की भूमिका अतुल्य है। कंप्यूटर के अविष्कार से हुई डिजिटल क्रांति एक महत्त्वपूर्ण परिवर्तन है। इंटरनेट ने मनुष्य को एक ऐसा ऑनलाइन प्लेटफॉर्म दिया है जिसके माध्यम से वह बिना किसी बाधा के संपूर्ण विश्व से जुड़ सकता है। वर्तमान समय मे डिजिटल माध्यमों की वजह से हम समय, स्थान और संसाधनों की सीमितता से बच सकते हैं। ऑनलाइन तकनीकी के प्रयोग से विश्व में कहीं भी और कभी भी शिक्षण दिया जा सकता है। इंटरनेट या इलेक्ट्रॉनिक सामग्री द्वारा शिक्षण दिया जा सकता है।

वर्तमान में डिजिटल शिक्षण संपूर्ण विश्व में चिरपरिचित शब्द बन गया है। विश्व की प्रमुख भाषाओं में सभी प्रमुख विषयों में पर्याप्त मात्रा में डिजिटल शिक्षा की सामग्री प्राप्त की जा सकती है। इसमें हिंदी भी पीछे नहीं है। सरकारी और संस्थागत स्तर पर अनेक प्रयास हो रहे हैं। जैसे–ईपीजी पाठशाला, इसी प्रकार का एक उदाहरण है। हिंदी भारत की एक प्रमुख भाषा है। इसलिए विश्व के अनेक देशों के विद्यार्थी हिंदी सीखते है वर्तमान में हिंदीभाषा शिक्षण को डिजिटल माध्यम से जोड़ना जरूरी है। डिजिटल माध्यम से तात्पर्य है मोबाइल और कंप्यूटर। आज हर क्षेत्र में कंप्यूटर मोबाइल महत्त्वपूर्ण भूमिका निभा रहे हैं। शिक्षण क्षेत्र भी इससे दूर नहीं। इसलिए हिंदीभाषा शिक्षण में कंप्यूटर का उपयोग अपरिहार्य है।

वर्तमान समय में मोबाइल एक मिनी कंप्यूटर के रूप में कार्य कर रहा है। हिंदीभाषा शिक्षण के लिए स्मार्टफोन एक प्लेटफॉर्म की तरह प्रयोग किया जा रहा है। उपयुक्त माध्यम से हिंदीभाषा शिक्षण सामग्री हर प्रकार से पढ़ाई जा सकती है–ऑनलाइन तथा ऑफलाइन। ऑनलाइन के लिए इंटरनेट जरूरी है, तो ऑफलाइन के लिए इंटरनेट की आवश्यकता नहीं है। हिंदीभाषा शिक्षण के लिए दोनों ही प्रकार के डिजिटल माध्यम का प्रयोग करके ज्ञान प्राप्त करने की प्रक्रिया ई लर्निंग है। पारंपारिक अध्ययन से दूर इलेक्ट्रॉनिक माध्यम का प्रयोग करते हुए किया

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58

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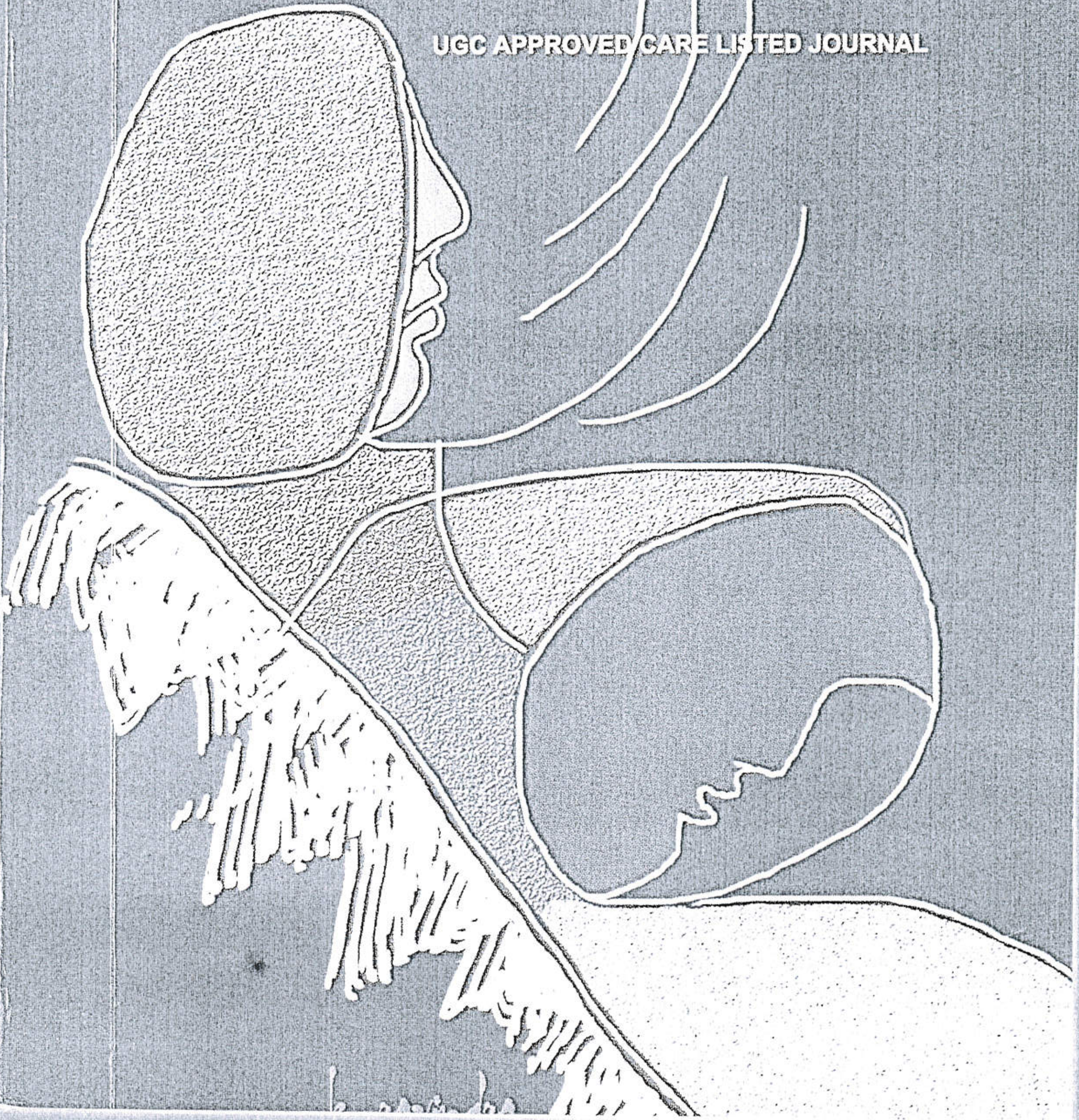

स्वतंत्रता के हामी मुकेश मानस की नजर में प्रेम एक बड़ा मानवीय मूल्य था। उन्हें लगता था कि प्रेम एक प्रगतिशील शक्ति है जो हमें जनवादी और लोकतांत्रिक बनाती है। वह व्यक्ति का ही नहीं; परिवार, समाज, देश और विश्व का भी जनवादीकरण करती है। इतिहास गवाह है कि हर समय समाज में प्रेम ने सकारात्मक भूमिकाएँ निभाई हैं। उसने हमेशा मानवता के इतिहास को खूबसूरत बनाया है। अशिव अप्रिय का हमेशा विरोध किया है इस कारण ही प्रेम प्रगतिशील मूल्य है।[21]

सच ये है कि फासीवाद, सांप्रदायिकता, जाति, जनतंत्र, राजनीति, संस्कृति, विचारधारा, विमर्श व पूँजीवादी सत्ता उनकी चिंताओं के केंद्र थे। उनकी चिंताएँ कई बार इस परिधि को भी लाँघकर बृहत्तर हो जाती थीं। मानवता, प्रकृति, प्रेम और इकोलॉजी के बारे में भी वे सोचते थे जैसे 'कोयलगान' नामक अपनी एक कविता में कहते हैं कि 'कहाँ गए सब जंगल?/ कहाँ गए सब बाग-बगीचे?/ कहाँ गए सब खूबसूरत फूल?/ जो ये कोयल गा रही है/ दिल्ली जैसे महानगर में रहने वाले/ मेरे जैसे एक कवि के घर में।'[22] इसी तरह अपनी एक और छोटी कविता 'परिंदे' में वे कहते हैं कि 'उड़ो/ कि तुम परिंदे हो/ उड़ो/ कि उड़ना तुम्हारा धर्म है/ उड़ो/ कि सारा आकाश तुम्हारा है।'[23]

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शोध निर्देशक
श्री विजयसिह यादव महाविद्यालय, पेठ वडगाँव

भूमंडलीय ताप वृद्धि अथवा प्रकृति पर मनुष्य के अतिक्रमण से असंतुलित हुए पर्यावरण के कारण आज जिन प्रलंयकारी प्राकृतिक आपदाओं का संकट खड़ा हुआ है, उनके प्रति पिछली लगभग आधी सदी से पर्यावरणविद् सचेत करते आ रहे हैं। वे जिस चिंतन को प्रबंधों-निबंधों, भाषणों-संवादों, आंदोलनों के रूप में प्रसारित कर रहे हैं उसी चिंतन को नए कवि अपनी सीधी, सरल, प्रांजल कविताओं के रूप में जन-जन तक पहुँचाने का काम कर रहे हैं। युगद्रष्टा कवि परशुराम शुक्ल जिस संकट के प्रति सचेत कर रहे हैं, वह आज एक वैश्विक समस्या बन गई है। विश्व की सभी भाषाओं के कवियों ने अपनी रचनाओं मे प्रकृति सौंदर्य के वैविध्यपूर्ण रूपों के अनगिनत चित्र उकेरे हैं। मानव समाज की भौतिक प्रगति, वैज्ञानिक प्रगति उपभोग की बढ़ती प्रवृत्ति से एक से प्रकृति का अधाधुंध दोहन होने लगा है, वहीं दूसरी ओर उसका रूप प्रदूषित और असंतुलित होने लगा है। पर्यावरण चिंतन के विभिन्न क्षेत्रों में से एक महत्त्वपूर्ण क्षेत्र बालसाहित्य है, जो शब्दों रचनाओं के माध्यम से पर्यावरण के प्रति सामाजिक चेतना जाग्रत करता है।

हिंदी साहित्य में परशुराम शुक्ल जी का नाम बाल साहित्यकार के रूप में सर्व परिचित हैं। उन्होंने कविताएँ, कहानियां, बाल धारावाहिक, बाल उपन्यास, बाल एकांकी और बाल गीत लिखकर हिंदी बाल साहित्य को समृद्ध बनाया हैं। बालसाहित्य को एक विशेष विधा के रूप में पहचान बनाने में परशुराम शुक्ल जी का योगदान रहा है। इनके लेखन से देश में ही नहीं बल्कि विदेशों में भी बालसाहित्य ख्याति प्राप्त कर चुका है। आज पूरे विश्व में बच्चों के स्वास्थ्य के लिए बालसाहित्य की आवश्यकता महसूस की जा रही है। बच्चों के स्वास्थ्य में पर्यावरण की अहम भूमिका रही हैं। पर्यावरण जितना स्वच्छ रहेगा उतना बच्चों का स्वास्थ्य अच्छा रहेगा। परशुराम शुक्ल जी ने अपनी कविताओं में बच्चों में पर्यावरण के प्रति जागरूकता उत्पन्न की है तथा पर्यावरण-संबंधी विस्तृत जानकारी दी है। परशुराम शुक्ल जी ने बालसाहित्य में नए प्रयोग किए हैं। उन्होंने विज्ञान, प्रकृति एवं पर्यावरण जैसे काव्य विषयों के द्वारा बालसाहित्य को अधिक समृद्ध बनाया है।

हिंदी बालसाहित्य में पर्यावरण चेतना के प्रथम तथा अब तक के सर्वप्रमुख कवि परशुराम शुक्ल हैं। उन्होंने प्रकृति के पर्यावरणीय महत्त्व को पहुँचाने हुए सबसे पहले अपनी कविताओं के माध्यम से उसके संरक्षण का संदेश प्रसारित किया। साथ ही मनुष्य द्वारा प्रकृति दोहन तथा विभिन्न प्रकार के प्रदूषणों द्वारा उसका असंतुलन बढ़ाने के प्रति सावधान किया। शुक्ल जी ने

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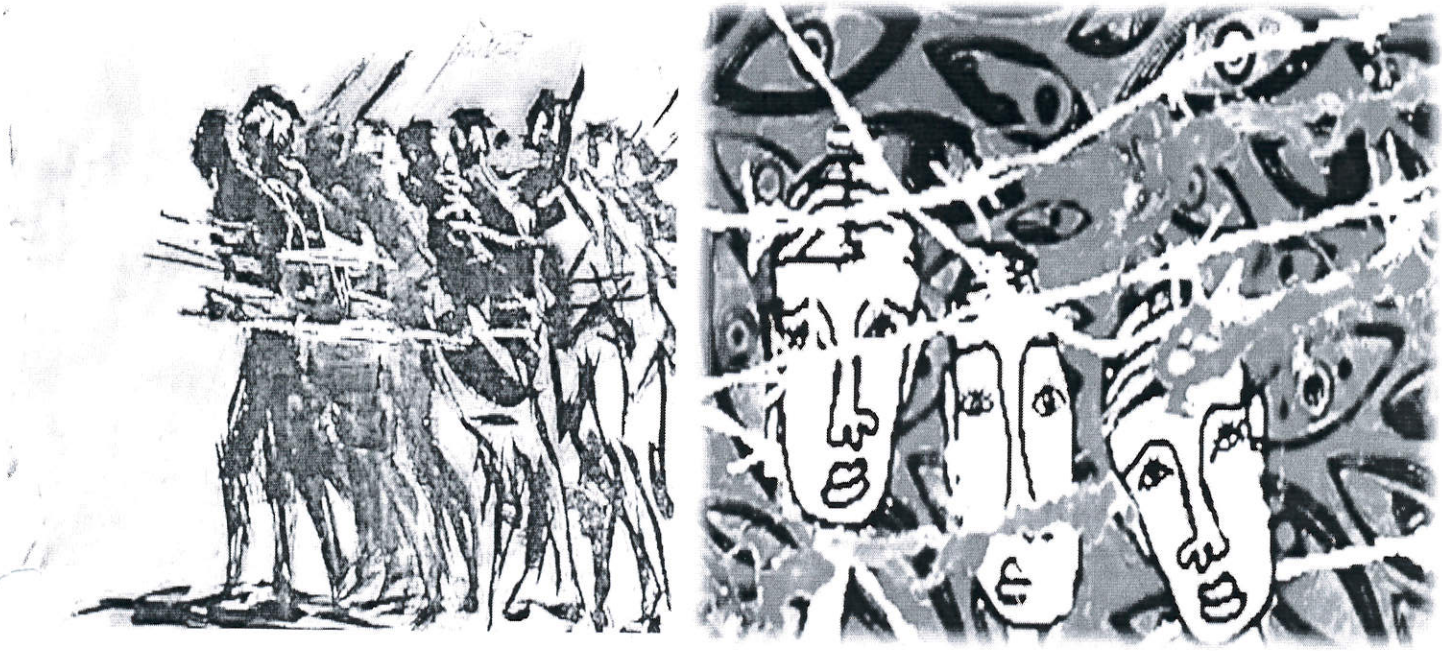

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CONTENTS

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SOCIOLOGICAL STUDY OF THE OLD AGE HOME AND THE SOCIO-PSYCHO PROBLEMS OF ELDERS IN MAHARASHTRA

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Abstract

Globally, aging is a serious problem today. Old age home, day care centre etc. are not the measures/ solutions on it. However, various problems of the elderly in the old age home are being felt with intensity today. That is why researcher chose the "Sociological study of the socio-psychological problems of elderly in the old age home in Maharashtra"

For the present study, the researcher has collected primary data by using observations, Interview techniques. The researcher has collected data by secondary sources also. For this study lottery, method is used for selection of sampling. Also, purposive sampling method and self-selection method is used.

In the present study, researcher tries to understand the socio-psychological problems of elderly in the old age home in Maharashtra. Also, present study focuses on the nature; scope & structure of old age home in Maharashtra.

During this study, the researcher has focused following things, the number of old age homes for women only is very low (03.92%), the number of urban cultured old age home is higher (66.50%), information & benefits of various government schemes for the elderly do not reach to the beneficiaries who are a dire need and elderly are facing problems like inactiveness, loneliness & depression etc. conclusions are outcome of this study.

Keywords: *aging, psychological, old age home, government schemes.*

Introduction

According to the American scientist Lansing, "elderly means step by step process of changing with time. It ends in episcopal death."[1] Also according to Dr. Rohini Patwardhan, being adult means not only depends on time i.e year, month & day and physiology but it is depending on surrounding atmosphere, social condition, person's mental health, economical condition and hereditary characteristics of person. In short, aging means not only impact of only one process but it is aggregated impact of all symptoms.[2] In modern era, the problems of adults is increasing with the number of adults.

Total percentage of elderly is 08.83% in world population during 1985. It is predicted

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CONTENTS

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UNDERSTANDING THE NOTION OF CASTES IN WESTERN MARATHWADA REGION: FROM THE PERSPECTIVE OF ANNIHILATION OF CASTES.

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Abstract

The study is focusing on the position among religious notion of castes as well as notion of castes in villages and cites in western Marathwada Region. The study is depending upon the theoretical approaches developed by Joytiba Phule, and Dr. B.R. Ambedkar in understanding the caste realities in India. The study design in explorative nature therefore primary and secondary has been collected from three districts (Aurangabad, Jalna, and Beed) of Marathwada region of Maharashtra. Annihilation of Caste' approach believes on the real method of breaking up the caste system is destroying the religious notions.

The study discussed four dimensions of the subjects that is Position among religious notion, Notion related Indian Constitution, caste practices in villages and Castes practices in cities. As a conclusion of study found that, the core response among religious notion has been comprised level.

Key Words:. *Annihilation of Caste, Indian Constitution, Notion, Marathwada region*

Introduction:

The worldwide scholars have been attracted towards the study of caste system and its unique nature. They studied caste system through various perspectives. The important thing is that, they have seen two streams of studies. One is represented to the dominant school of thoughts and the second has been used innovative methods to understand realities. The innovative method rejects the dominant school of thoughts, which argued that caste is dead or that hierarchy is replaced by competing equalities. (BAWS-vol-3, 2008, 141)

The perspective of Phule and Ambedkar on the caste issue is nothing but the perspective of annihilation of caste. They understand mechanism of caste stabilization and find out ways for the annihilation of caste system. The presents study focusing on this perspective to understand the present caste status.

The Marathwada region known for their feudalistic nature and caste atrocities. It is

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Analysis Of Vegetation Dynamics Based On Ndvi By Using Time Series Landsat Imagery Of Konkan Coast.

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Abstract –

The Normalized Difference Vegetation Index (NDVI) is the most widely used satellite-consequent index of vegetation health and density. Since climate is one of the most imperative factors affecting vegetation condition, satellite-derived vegetation indexes have been often used to evaluate climatic and environmental changes at local and universal scale. The proposed study attempted to investigate the temporal vegetation dynamics in the Western Ghat using historical NDVI time-series. ***Approach****: For this aim, Time series data obtained from scientific agency of United States named The United State of Geological Survey. The Landsat- 5 & 8 (30m resolution) image of study area has been acquired for the period of 10 year in the month of January-February and October-November with minimum cloud cover. The USGS's Landsat dataset was freely available and gives global coverage over an extensive time period. First of all, the selected NDVI base data had been preprocessing with Level-1 product is Atmospheric or Geometric Corrections with FLAASH Module in Envy 5.3 and with Level-2 product Layer Stacking in ERDAS IMAGINE 2011 software. Computations of NDVI of 2008 to 2018 carried by using mean NDVI surface and standard deviation surface. Several routines had been developed for purpose of applying suitable statistical analysis techniques to the historical information in the database in order to identify the long-term trend components of generated NDVI time-series and extract vegetation dynamics. Specific tests had been then considered in order to define the validity of results.* ***Results****: The existence of clear regional trends of NDVI, both declining and inclining had been showed, which helped to highlight areas subject, respectively to fall or raise in vegetation greenness.* ***Conclusion****: As the relationship between the NDVI and vegetation productivity was well established, these estimated long-term trend components may be also, with much more concern, related to historical and ongoing land degradation or improvement processes.*

Keywords: *NDVI, vegetation health, land degradation, Time series.*

Introduction -

Vegetation is an indication of presence of healthy environment and presence of adequate water resources. We cannot imagine environment without it. Vegetation associates with soil, water and atmosphere. Plants have their existence due to presence of chlorophyll concentration in the leaves. Plants get primary direct light from sun and generate food. Vegetation plays major role in the life cycle and it is directly related to human life and in turn, the human activities also influence their density. Climate is now a global issue (Lioubimtseva and Henebry 2009). Climate changes affect the water resources distribution, which are influenced with changes in precipitation. Rapid change of climate greatly impacts natural ecosystem (water bodies). Many studies suggest that vegetation coverage assist mitigate of soil erosion, drought studies, Landscape disturbances, agricultural activities and need early sign. Seasonal change play key role to study and analyze the vegetation response and climate change, which can improve the quality of environment. Remote sensing has provided data to evaluate environment change research during the past decades and it is helping regional or global base research which is a better option as long term analysis. In remote sensing, the differential response of the vegetation components to the electromagnetic radiations means used to identify their presence as well as the intensity of the vegetation. There are various such techniques which are in use for monitoring health of vegetation. Normalized Difference Vegetation Index (NDVI) is the spectral index i.e., used for detecting the vegetation changes with time. NDVI quantifies vegetation by measuring the difference between near-infrared reflectance (which vegetation strongly reflects) and red light (which vegetation absorbs).

Significance Of The Study-

Time series data analysis for vegetation health assessment has been used to assess changes in biodiversity, to classify vegetation, to examine climate trends, to estimate water content of soils remotely, to monitoring a drought.

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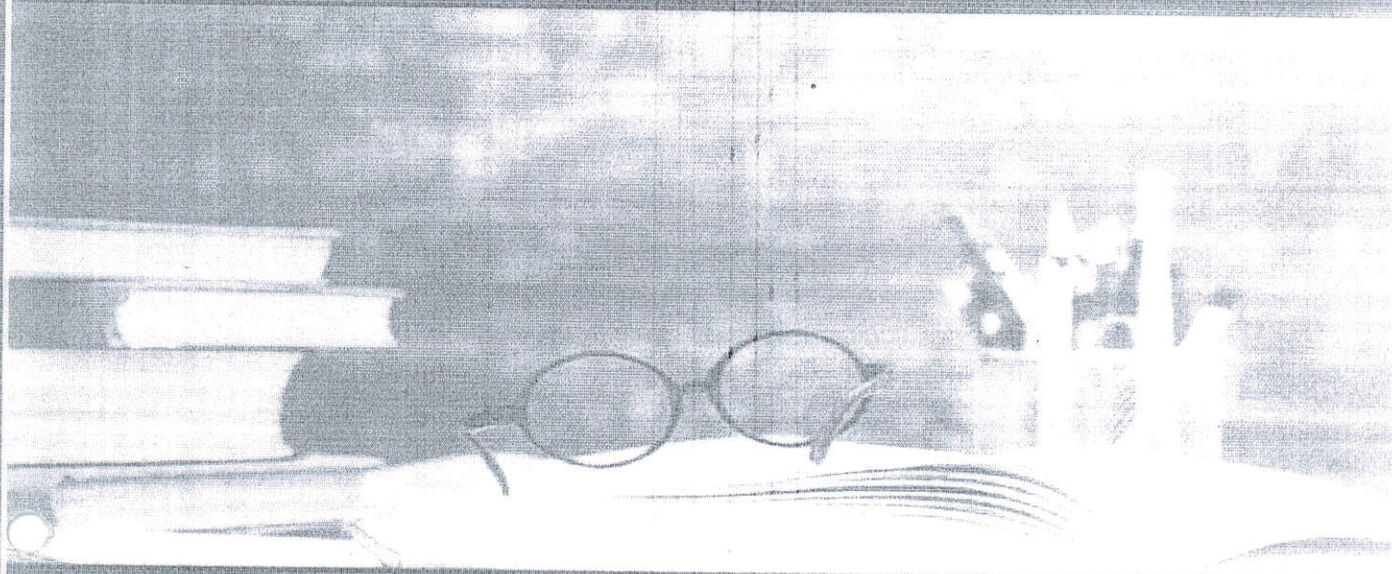

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India's national crime record bureau in the past 20 years nearly 3 lakh farmers have committed suicides in the country. In the year 2018, first three months of the years (January, February, and March) records 696 suicides in Maharashtra. This farmers belongs to 3 regions of the state via; Marathwada (arid belt), North Maharashtra and West Maharashtra (the sugar belt). From these three regions Marathwada shares the highest number of suicides.

The Marathwada is known as the arid belt of Maharashtra. Now it famous as suicide belt of Maharashtra and whole Maharashtra is stepping towards becoming the "Suicidal Capital of India". The Marathwada region lies in the rain shadow zone of the state. The low amounts of rainfall lower the yield. This is not compensated by highest prices. Thus the farmers suffers from low yield low price & high cost of production & trap in to this cycle which finally push him in to debt which leads to the suicide. This phenomenon is known as agrarian crisis.

In the view of above, a study on suicides by farmers in Maharashtra, specifically in Marathwada region of Maharashtra has taken as research topic for this paper.

Objectives:

- To study the Spatio-temporal distribution of farmer suicides in Marathwada region
- To study the factors responsible for incidence of farmers suicide in Marathwada region

Data sources and Methodology:

The data have been collected through primary as well as secondary sources. To study the farmer suicide, primary data was collected by asking questions to 200 local people and farmers in Marathwada region with the help of well-designed scheduled cum questionnaire. For this systematic random sampling techniques were used. The secondary data were collected from various governmental and non-governmental reports, newspapers and articles. The concern data were collected from district socio-economic review and district census handbook. Collected data were analysed by using Likert scales and then represent it with the help of tables, charts and diagrams.

Study Region:

Marathwada region is geographically situated between 17°38'53" North to 20°40'51" North Latitude and 74°33'28" East to 78°21'12" East longitudes. The region has on its borders Telangana state on the East, Nashik and Ahmednagar districts on the West, Jalgaon, Buldhana and Akola districts on the North and Solapur district on the South. Geographical area of Marathwada is 64434 sq. km. and the population is 1,87,31,872. In Marathwada, there are 8

districts, 76 Talukas, 64 Towns and 8495 villages as per census 2011. The soil of Marathwada is generally stiff and dark coloured. The land of the region is flat with elevation ranging between 300 and 900 meters. Godavari is the important river flowing through Marathwada particularly serving the districts of Aurangabad, Nanded and Parbhani.

Result and Discussion:

Spatio-temporal distribution of Farmers suicide:

As per the table number 1 show that, from the year 2010 to 2015 there is continue increase in farmer suicide in Marathwada. After that from the year 2015 to 2019 there is slight decrease in farmer suicide. The highest number (1133) of suicide cases recorded in the year 2015 while it is least (191) in the year 2010. (Table 1)

From the year 2010 to 2017 there are 4516 farmer suicide cases were recorded in eight ditrict of marathwada. The highest number (1223) of farmer suicide recorded in Beed followed by Nanded (814), osmanabad (621), and Aurangabad (498). While least farmer suicide cases (189) were recorded in Hingoli District (Table 2)

Table 1

Temporal distribution of farmers suicide:

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
India	15964	14027	13754	11772	12360	12602	11370	2917	2761	
Maharashtra	3141	3337	3786	3146	2568	3228	3361	1398	1307	2532
Marathwada	191	169	198	207	574	1133	1053	991	618	835

Source: Divisional Commissioner Office, Aurangabad

Table 2

District wise Farmer Suicide in Marathwada Region (2010-17)

District	Aurangabad	Latur	Beed	Parbhani	Jalna	Hingoli	Osmanabad	Nanded	Total
No. of farmer suicide	498	371	1223	494	306	189	621	814	4516

Source: Divisional Commissioner Office, Aurangabad

Factors responsible for Farmer Suicide:

Table number 3 shows that, the following reasons are of farmer suicides according to the expert in the field of agriculture and farmers:

- **Natural causes**

According to 80 percent respondents, natural calamities are the main cause of farmer's suicide. The effective agricultural production is mostly depends on favourable weather condition. Due to the impact of climate change, heavy rain, floods, droughts, uneven and unequal raining, and heavy cyclones occurs so the farmers are not able to take qualitative and quantitative production from their farm. Therefore, there is very much gap between expectation and actual production from the farm, which cause heavy economic burden to the farmer force to commit suicide.

- **Economic Causes**

More than 80 percent respondent strongly reported that increase in cost of production also forces to the farmers to commit suicide. Even some times all the conditions are favourable but farmers don't get proper return of their product. Most of the time farmers are not able to recover cost price of their product. Marginal & small farmers don't have another option for earning. Continuous losses turn them to become insolvent and frustration of the same forces them to commit suicides.

Agriculture requires more capital for smooth functioning but more than 66 percent of the farmers are marginal land owners and they are economically poor. So they are facing economic problems for successful running of agricultural activities. At the same time nationalize banks are not willing to lend funds to farmers as there is no surety to return it. Because of that farmer go towards the private money lenders. Private money lenders gave the lend funds to them by mortgage their land. Even they lends funds to farmers, they charges very high rate or compound rate of interest.

In addition to this, farmers has their family responsibilities like child education, children's marriages and health provisions of their family members, which requires huge money. The burden of these entire things turns farmers towards suicides.

- **Political Causes**

Government plays an important role in making policy and decision in agriculture sector. More than 90 per cent respondent strongly agreed that, the government are failing to take effective measures for agriculture. They frequently declare various relief packages for farmers but failing to take effective implementation of the same. So the needy farmers don't get the benefits of such packages.

- **Social Causes**

Illiteracy, tradition and culture also forces to farmers to commit suicide. Due to illiteracy and inadequate knowledge, they turn to rights and rituals of orthodox and other religious activities such as dowry which require more money. If the farmers fails to perform all these traditions and cultural activities they become frustrate and turn towards suicide.

- **Other causes:**

Sometimes due to the economic frustration, farmer becomes drug addicted and drunker. Due to the addiction of drug, he loses the self-control and farmer turn to commit suicide.

Table 3
Factors responsible for Farmer Suicide:

Reasons for farmers suicide	No of Respondent (%)				
	Not at all	A little	Moderately	Very Much	Extremely
Natural Calamities	2	2.5	15.5	18.5	61.5
Increasing Debt	1.5	3.5	6	31.5	57.5
Lack of irrigation	3.5	6.5	10	20.5	59.5
Mono cropping	5.5	9.5	18.5	15.5	51
Debt bondage	5	10	15	20	50
Lending method	3.5	13.5	21.5	30.5	31
Government loans not readily available	6.5	5	4.5	4.5	79.5
Lack of capital	3.5	9.5	21	25.5	40.5
Marginal land	1.5	11.5	20.5	25.5	41
Rising prices of fertilizers and seeds	6.5	6	16.5	26	45
Lack of side business	3.5	10.5	15.5	21	49.5
Poor price for farm produce	0	0	9.5	12	78.5
Economic hardship	0	4	4	22	70
Insufficient power supply	12.5	12.5	16	19.5	39.5
Increased cost of cultivation	0	4.5	10.5	18	67
Sugarcane phobia	8.5	10.5	10.5	11	59.5
BT Cotton seeds	9.5	9.5	21	23.5	36.5
Addictions	57.5	16.5	11	4	11
Stress and family responsibility	5	5	0	28.5	61.5
Social prestige	5	4.5	20.5	31	39
Marriage problem, the dowry method	6.5	3.5	13.5	16	60.5
Physical and Mental Health problems	19	24.5	4.5	24	28
Family strife	14	14	21	11	40
Labour problem	0	0	9.5	20.5	70
Government apathy	0	0	8.5	31	60.5

Source: Calculated by author

Correlation between Farmer suicide and Working Population:

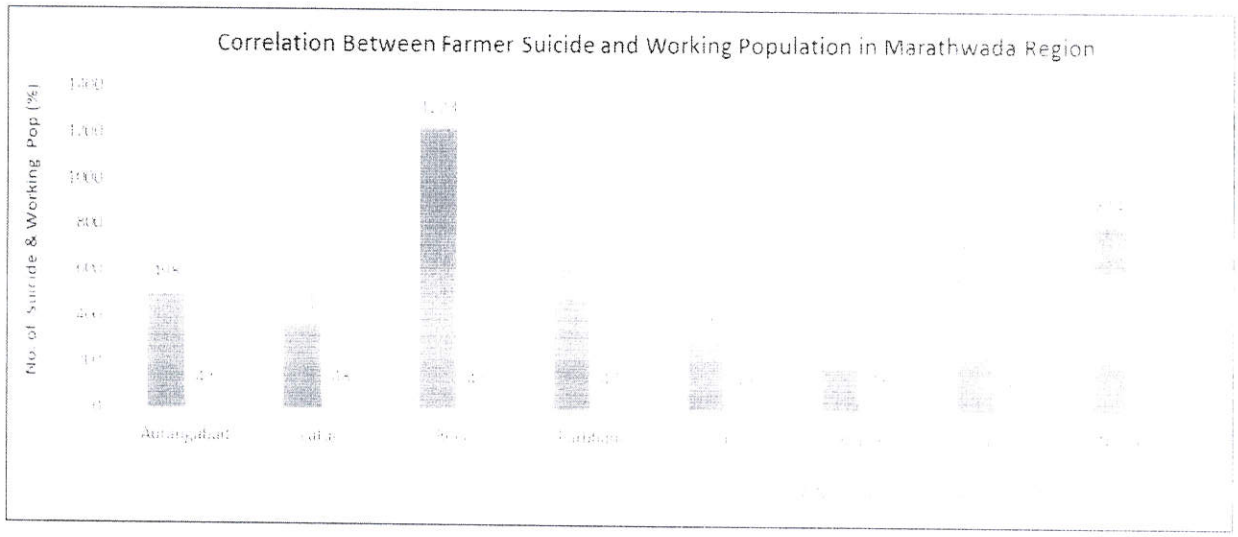
Figure 1 shows that, the correlation between farmer suicide and working population in Marathwada region. There is negative relationship between farmer suicide and percentage of working population to the total population. The Beed district having minimum percent of working population (43%) record the highest farmer suicide cases (1223). While Hingoli district records highest percentage of working population (48 %) results minimum farmer suicides (189). (Fig 1)

Correlation between Irrigated Area and Suicide Cases:

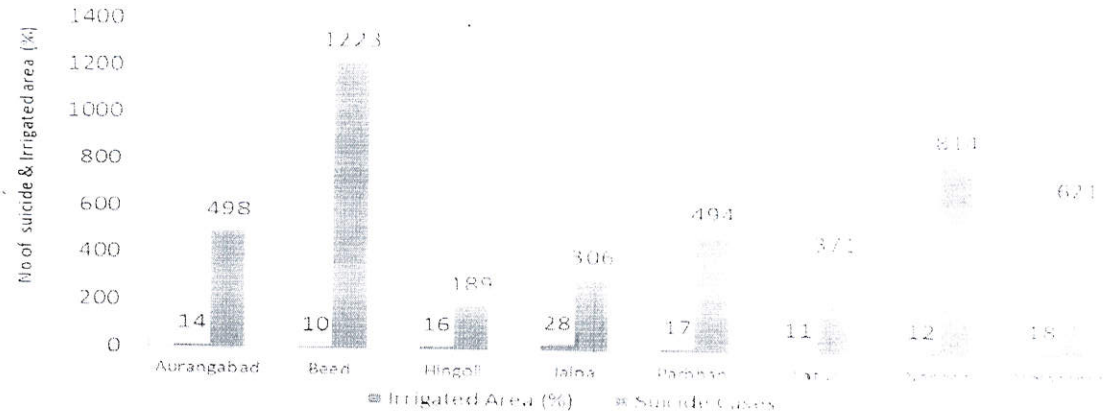
Figure 2 shows that, positive correlation between percentages of irrigated land to the total land and number of farmer suicides in the study area. The Beed district having minimum percentage of irrigated land (10%) to the total land recorded highest number of farmer suicide (1223). On the other hand, Jalana district having highest percentage of irrigated land (28%) recorded least farmer suicide (306) (Fig 2)

Correlation between Farmer Suicide and Rainfall Intensity:

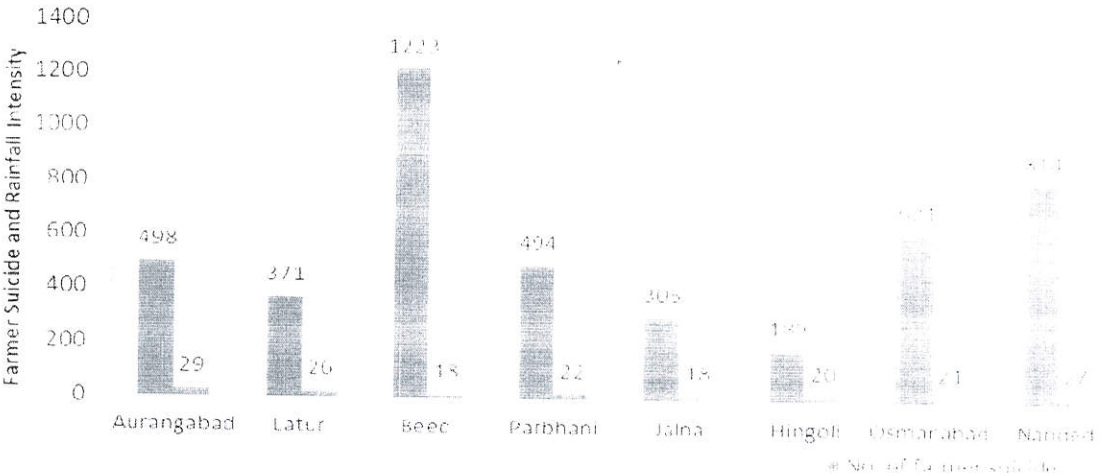
Figure 3 shows that, there is negative relation between rainfall intensity and farmer suicide. Beed district recorded least rainfall intensity (18) resulted the highest farmer suicide (1223). Aurangabad district recorded highest rainfall intensity (29) having less suicide cases (498). (Fig 3)



Correlation Between Irrigated Area and Suicide Cases in Marathwada



Correlation Between Farmer Suicide and Rainfall Intensity in Marathwada



Conclusions:

- Since 2015, the number of farmer suicides has decreased slightly.
- Beed district has the highest number of farmer suicides and Hingoli has the lowest.
- Natural disasters, lack of irrigation, non-availability of government loans, inadequate prices for agricultural produce and economic distress have led to an increase in farmer suicides.
- The lower the rainfall intensity, the higher the suicide rate.
- An increase in the working population shows a decrease in the number of farmer suicides.
- An increase in irrigation facilities leads to a decrease in farmer suicides.
- Farmers who have committed suicides primarily included those who relied on mono-cropping specifically sugarcane

Suggestions:

- To select drought resistant crops according to the geographical environment
- To create awareness among the farmers to adopt multi-cropping system instead of mono cropping system.
- The government must fix the Minimum Support Price (MSP) of all crops before sowing.
- Social awareness needs to be created to stop undesirable practices like dowry.

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CROP DIVERSIFICATION REGIONS IN KOLHAPUR DISTRICT OF MAHARASHTRA

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Contents

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Abstract:
Agriculture is a prime economic activity of peoples in Kolhapur district. The concept of region is significant in study of agricultural geography. Agricultural regionalization provides a sound footing and explanation of agricultural practices in an area. Crop diversification is an important method of agricultural regionalization and it is useful for analysis of agricultural practices and planning at micro level such as in Kolhapur district. In the present research paper an attempt has made to delineate crop diversification regions in Kolhapur district of Maharashtra by applying Gibbs and Martin's index of crop diversification. Different crop diversification regions are the results of difference in soil properties, availability of irrigation facilities and farmer's changing trend towards taking different crops in a season from same piece of field.
Keywords: Region, Agricultural Regionalization, Crop Diversification.

Introduction:

The concept of region developed in the 18th century is still a basic notion in geography. Classically, 'region is a differential segment of the earth surface' (Whittlesy, 1929) or an area having homogeneity in physical and cultural characteristics. As this phrasing suggest, the study of regions was for long time closely identified with a definition of geography as the study of areal differentiation. The delineation of crop diversification regions help in understanding the attributes of agriculture of the given region and explains the decision making process of the farmers. An in-depth understanding of such regions also helps in generalization and the formulation of sound strategies for agricultural planning and development. Diversification in cropping pattern means a variety of crops cultivation on the arable land. The study of crop diversification is of vital important in judging the competition amongst crops for area, scope for rotation in order to maintenance of fertility of soil which ultimately affects agricultural productivity. Crop diversification implies obtaining of the maximum number of crops from the soil. The risk due to natural hazards could be reduced by adopting crops diversification. Crop diversification may refer to the competition that exists among crops in a region. (K. Neerja and B. Krishna Reddy and Y.V. Ramaniah 2004).

Study Area:

Kolhapur district is located between 15^0 43' and 17^0 17' North latitude and 73^0 40' and 74^0 42' East longitude of southern Maharashtra (Census of India, 1991), (Fig. 2.1). The Sangli district lies to the north, the Belgaum district of Karnataka State is to the east and south, Ratnangiri and Sindhudurg districts of Maharashtra are to the West. The region receives an average rainfall of 1900 mm. The main rivers of Kolhapur district are the Krishna, the Warana, the Panchanganga, the Dudhganga, the Vedganga and the Hiranyakashi. The total numbers of villages are 1196 and towns are 18 (District Socio-Economic Review, 2011).

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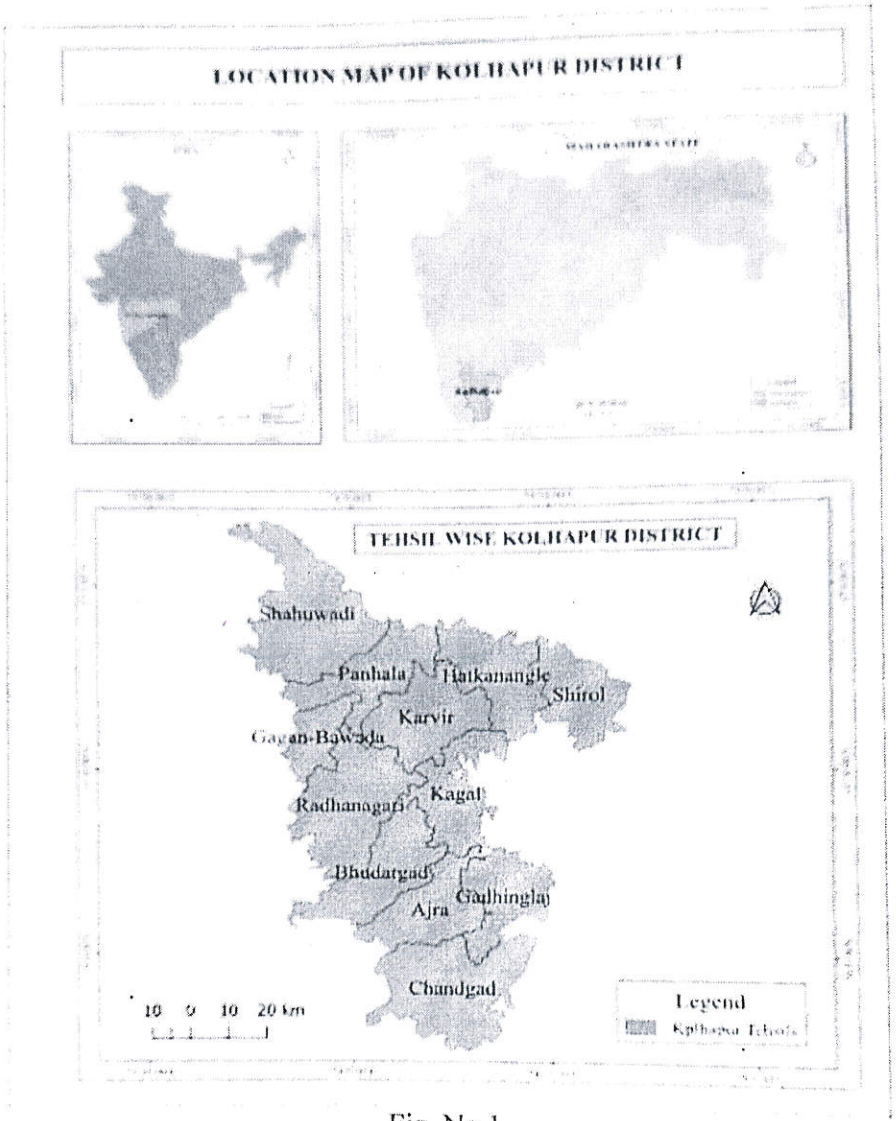

Fig. No.1

Objective:
To delineate and analyze the crop diversification regions in Kolhapur district.

Data Base and Methodology:
The present work is based on secondary data. The data related to cropping pattern is collected from District Socio-Economic Abstracts of Kolhapur district. Crop diversification is a number of crops cultivated in a farm in a particular season. The study of crop diversification done by a number geographers and economist and they were developed different techniques. In the present study, Gibb's and Martin's (1962) crop diversification Index are used. The formula used for calculation for the crop diversification index is as below:

$$\text{Index of crop diversification} = 1 - \frac{\sum X^2}{(\sum X)^2}$$

Where,
X = is the per cent of the total cropped area occupied by each crop.

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The calculated data has classified into three categories such as high, moderate, and low diversification regions. These zones are as below:

i. High diversification (above 0.80 %)
ii. Moderate diversification (0.70- 0.80 %)
iii. Low crop diversification (Below 0.70 %)

Crop Diversification Analysis

The study of crop diversification is an important aspect in agricultural geography. Crop diversification index is useful for measuring the degree of crop diversification in an area. This method has an advantage over the other methods in the sense that the hectare area of crops need not to be reduced to percentages and the magnitude of diversification is in direct proportion; hence for the present study of crop diversification analysis Gibbs and Martin's index has been applied.

High Diversification Region (above 0.80 %)

In 1990-91, it is found that eight tehsils have high diversification of crops. High diversification region covered 74.61 per cent (344862 ha) area to total cropped area in Kolhapur District (Table No.1). The tehsils having high diversification of crops are Radhanagari, Gadhinglaj, Hatkanangle, Kagal, Panhala, Karvir, Ajara, and Chandgad tehsils (Fig. No.2). During the 2018-19 the high crop diversification has been absent in the Kolhapur district.

Table No.1 Crop Diversification of Kolhapur District

Type of Diversification	Index Value	Number of Tehsil		Area in Hectares		Area in %	
		1990-91	2018-19	1990-91	2018-19	1990-91	2018-19
High	> 0. 80	8	0	344862	0	74.61	0.00
Moderate	0.80 to 0.70	4	7	117369	249045	25.39	55.70
Low	< 0.70	0	5	0	198057	0.00	44.30
Total		56	58	462231	447102	100.00	100.00

Source: Govt. of Maharashtra, Socio-economic Abstract 1990-91 and 2018-19

Moderate Diversification Region (0.70 to 0.80 %)

The year 1990-91 has been reported that there are four tehsils having moderate diversification of crops and this region covered 25.39 per cent (117369 ha) area to the total cropped area (Table No.1). According to Fig. No.2 moderate diversification in the Shahuwadi, Shirol, Gaganbavada and Bhudargad tehsils of Kolhapur district. During the 2018-19 the moderate crop diversification has been increased and it is observed in seven tehsils of the study area (Fig. No.2). The area under this category is 55.70 per cent (249045 ha) to the total cropped area in the study region (Table No.1). The moderate diversification region is Panhala, Gaganbawada, Kagal, Ajara, Gadhinglaj Bhudargad and Chandgad tehsil.

Low Diversification Region (Below 0.70 %)

In 1990-91, it is observed that absence of low diversification category. In 2018-19 shows five tehsils are Shahuwadi, Radhanagari, Karvir, Hatkangale and Shirol experienced low diversification of crops. This category of crop diversification occupied 44.30 per cent (198057 ha) area to the total cropped area in the Kolhapur. The characteristic of this in Kolhapur District shows the mindset of farmers of Kolhapur District to take traditional agricultural crops to meet their domestic needs from the farmland in the crop season.

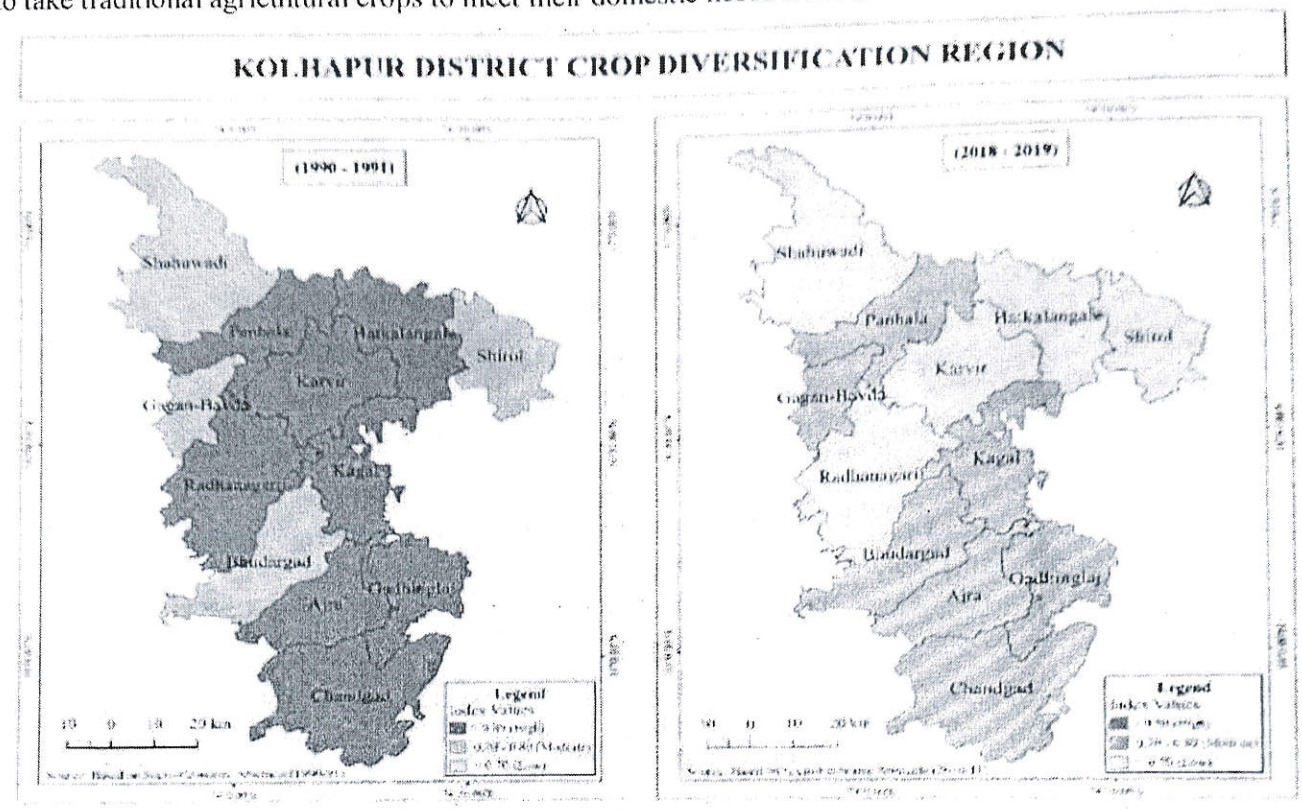

Fig. 5.13

Conclusion

Gibb's and Martin's index is used in order to delineate crop diversification regions in the study area. High diversification of crops is observed in 8 tehsils in 1990-91. Moderate diversification of crops is observed in 4 tehsils in 1990-91 and in7 tehsils in 2018-19. Low diversification of crops is observed in 5 tehsils in 2018-19. It observed that moderate and low diversification of crops has increased while high diversification of crops has decreased in the study area during the period of investigation. Due to the increasing demand for varied crops lead high diversification of crops in Kolhapur district.

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Land use and Land cover Mapping of Yerala river Basin Using Geospatial Technologies

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Abstract:

Land use and land cover mapping is important aspect of the planning and management of natural and man-made resource in the region. In the present study the land use and land cover mapping done for the Yerala river basin using geospatial technology. The Landsat 8 satellite image is used to analyze the area under different land use and land cover classes. Remote sensing data with good spatial resolution is very useful and accurate, and reliable for the analysis. In the Yerala river basin the agricultural land, forest, water bodies, barren and fallow and classes are found.

Keywords: *Land Use and land cover, Yerla River, Geospatial Technologies*

Introduction

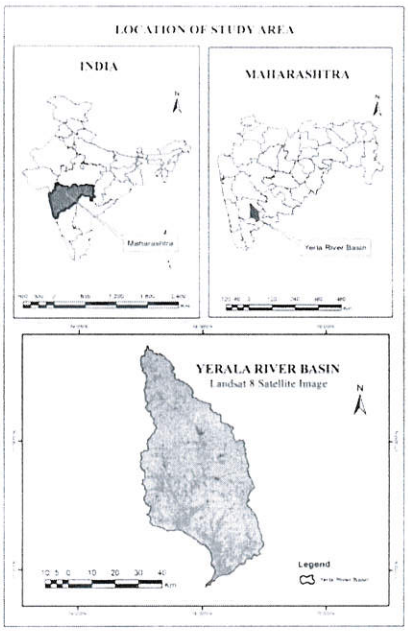
Land use and land cover is key parameter in the planning process. Remote sensing data is providing temporal database for analysis and planning. Irrigation planning, site selection of the surface rainwater harvesting, agricultural planning and management, soil erosion analysis, forest mapping, change detection analysis is done through analysis and future development process applied on the basis of landuse and land cover mapping database. Landsat 8 satellite data and geospatial technology is used to prepare the land use and land cover of the Yerala river basin. The river basin is good hydrological unit the study of land and water resources.

Objective

The main objective of the present analysis is mapping of land use and land cover for the planning and management of natural resources.

Study Area

The study area is west part of Maharashtra state bounded by Latitude 16^0 55' to 17^0 28' N and Longitude 74^0 20' to 74^0 40' E and covered by survey of India toposheets no 47 K – 5, 6, 7, 8, 10, 11, 12, 47 L - 9 on the scale 1:50,000 it covers total geographical area of 3029 sq.km and includes two districts (Satara and Sangli) in Maharashtra. The Yerala River is tributary of the Krishana River (Fig.1).



Materials and Methods

The secondary data is collected from following sources, Landsat Satellite images, Earth Explorer (http://earthexplorer.usgs.gov). The satellite image is important source of database for mapping of land use and land cover.

Table .1 Details of Satellite Data

Satellite	Sensor	Path	Row	Year
Landsat 8	OLI and TIRS	146 & 147	48	2017

The land use /land cover map created using supervised classification method in ERDAS Imagine software and field check done for the proper land use and land cover mapping.

Result and Discussion

The land use and land cover includes anthropogenic and natural features on the earth's surface. The land cover with agriculture and vegetation affects on the surface runoff and results into high rate of infiltration, where as the built-up area and hard rock terrain are having less infiltration rate. Land use and land cover plays an important role in groundwater resource development, because it controls different hydrological process which affects the groundwater potential. The land use and land cover for the present study was derived from the Landsat ETM satellite image which was downloaded from the USGS earth explorer website. The map was prepared using ERDAS Imagine software and using supervised classification method. The Yerala river basin covered by different classes such as forest, barren land, built-

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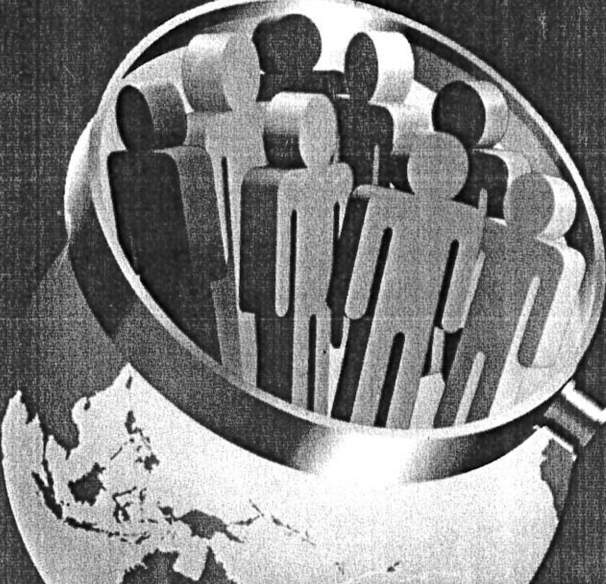

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राजर्षी शाहू महाराजांचे जलव्यवस्थापनाचे धोरण

प्रा. डॉ. नितेश प्रेमनाथ सुरवसे
श्री. विजयसिंह यादव महाविद्यालय, पेठ वडगाव, जि. कोल्हापूर

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प्रस्तावना

राजर्शी शाहू महाराजांनी आपल्या अवघ्या अठ्ठावीस वर्षाच्या कालखंडात सत्ता ही जनहितार्थ राबवून कोल्हापूर संस्थानचा कायापालट घडवून आणला. त्यांचे आर्थिक धोरण हे शेती व उद्योग या दोन प्रमुख व्यवसायांचा कायापालट करणारे होते. त्यांच्या काळातच कोल्हापूर शहराच्या पाणीपुरवठयाची मुहुर्तमेढ रोवली गेली.सन १८८१ ते १८८४ मध्ये कळंबा तलावाची बांधणी करून शहरास फिल्टर केलेले पाणी पुरवठयाची योजना या काळामध्ये राबवली. आपल्या संस्थानात विविध योजना अंमलात आणून अनेक तलाव बांधले. राधानगरी धरणासारखा महत्वकांक्षी प्रकल्प हाती घेतला. राधानगरी धरणामुळे कोल्हापूरच्या परिसरात हरित क्रांती घडून आली. त्यामुळेच राजर्षी शाहू महाराजांचे जलव्यवस्थापन विषयक धोरण महत्वाचे ठरते.

राजर्षी शाहू महाराजांच्या तत्कालीन कालखंडात जे अनेक संस्थानिक होते त्यांच्यापेक्षा शाहू महाराजांचे आर्थिक धोरण हे या इतर संस्थानिकांपेक्षा वेगळे होते.[१] त्यामागे सर्वांगीण आर्थिक धोरण प्रगती व समाजाच्या मागासलेल्या वर्गाचे कल्याण हे ध्येय होते. मागासलेल्या वर्गाचा दुबळेपणा नष्ट करून त्यांची आर्थिक परिस्थिती सुधारणे हा त्यांचा उद्देश दिसून येतो. छ. शाहू महाराजांच्या या आर्थिक धोरणा पाठीमागे उत्पन्न व संपत्तीच्या बाबतीतील विषमता नष्ट करणे, किमान वेतन व रोजगाराची हमी देणे, खाजगी क्षेत्रातील सर्वोत्तम बाबींचा उपयोग समाजास व्हावा या दृष्टीने प्रयत्न करणे इ. उद्दिष्टयांचा समावेश होता.

दुष्काळाची परिस्थिती

इ.स. १८९६ ते १८९० या पाच वर्षाच्या कालखंडात दोन वेळा मोठा दुष्काळ महाराष्ट्रात पडला. दुष्काळामुळे मोठी हानी सहन करावी लागली. या दुष्काळाच्या काळात सामान्य जनता, प्राणी यांचे झालेले हाल शाहू महाराजांनी पाहिले होते. या दुष्काळाच्या काळात मनुष्य व प्राणी यांची काळजी त्यांनी घेतली होती. या दुष्काळाच्या काळात पिण्याच्या पाण्याच्या टंचाईबाबत उपाययोजना केली. पुरेसा पाणी उपलब्ध व्हावे म्हणून महाराजांनी वडगाव, शिरोळ, रायबाग, रूकडी, शहापूर इ. ठिकाणी २० हून अधिक लहान मोठे तलाव बांधण्यात आले तर भेडसगाव, कटकोळ, अतिग्रे इ. ठिकाणी असणाऱ्या तलावांची दुरूस्ती करण्यात आली. सरकारी आणि खाजगी विहरीतील गाळ काढण्यात आला.[२] विहिरी खोल करण्याकडे आणि त्यातील गाळ काढण्याकडे महाराजांचे लक्ष असे. पक्क्या व कच्च्या विहिरी जितक्या जास्त बांधता येतील तितक्या बांधल्या जाण्यात अषी त्यांची योजना होती.[३] शाहू महाराज गादीवर आले त्यावेळी गारगोटी येथे पिण्याच्या पाण्याची टंचाई होती म्हणून त्यांनी तेथे पुरेसा गोडया पाण्याचा पुरवठा करण्याची योजना तयार केली.[४] पाऊस असेल तेव्हा अगर पाऊस नसेल तेव्हा सुध्दा संस्थानाला पाण्याचा पुरवठा झाला पाहिजे असा त्यांचा दृष्टीकोन होता.

सार्वजनिक पाटबंधारे धोरण (Mass Errigation Policy)

वारंवार पडणाऱ्या दुष्काळामुळे त्यावर मात करण्यासाठी पायाभूत स्वरूपाची योजना तयार करावी असे शाहू महाराजांना वाटत होते. इ.स.१९०२ मध्ये दोन महत्वपूर्ण जाहिरनामे शाहू महाराजांनी दिले त्यामधील हा एक महत्वपूर्ण जाहिरनामा म्हणजे सार्वजनिक पाटबंधारे धोरणाचा होता. इ.स. १९०२ साली त्यांनी सार्वजनिक पाटबंधारे धोरण (Mass Errigation Policy) जाहीर केले.[५] एवढयावरच थांबले नाहीत तर त्यावर खास इरिगेशन ऑफिसरची नेमणूक करण्यात आली. या खात्यामार्फत संस्थानातील प्रत्येक गावची पाटबंधाऱ्याच्या दृष्टीने तपशिलवार पाहणी पहिल्यांदाच घेण्यात आली. आणि त्यावर उपाययोजना

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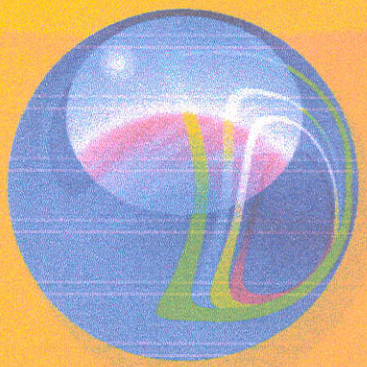

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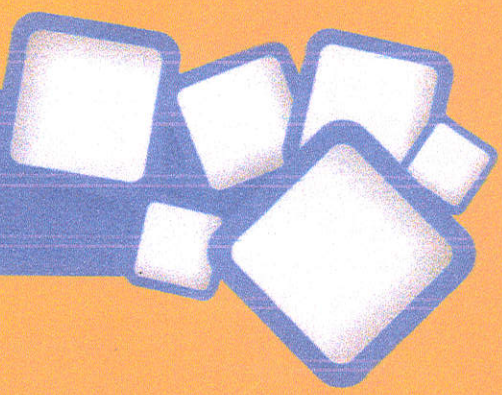

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Kanpur Philosophers

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Reflection of Dalit Labour and Caste in the Selected Dalit Autobiographies

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Abstract
India is a multicultural nation with its amalgam of religion and people. Her long traditional history of Vedic foundation of Hindu religion and scripture maintained class structure based on occupations/labor.The duality of labor divided labor entities into white color and menial jobs, consequently segregating society into upper caste and lower caste. The division of people based on labor hierarchy pushed Dalits to the bottom of the social pillar. The pushing at labor marginality forced them to do menial works that have little work value in society. This low laborer' degradation debased and devalued Dalits.They are 'bonded Labors' similar to slavery and are devoid of any kind of benefits (social, economic,medical) and have to perform menial works. Dalit autobiographies are full of his account of hard-working laborers.Siddalingaiah, Gunshekara, Namdev Nimgade, and Bama depict Dalit labor in their life narrativesand bring forth the issues of caste, dignity, and violation of human rights of Dalit people.

ntroduction:

'ast key determinant of the social Divide

Underlying the hierarchical social system is the fundamental Hindu idea that people are born into an existence that is the fruit of their past karma. One's social status in life is therefore traditionally considered predetermined and immutable and the individual must adhere to the particular practices and dietary rules of his or her jati (Michael D. Coogan 159-160)

Caste/untouchability has been an inherent mark of Hindu society. Even after its legal abolition, it is essentin our actions and psyche.Caste is a deep-rooted thought which has a perspective of a casteist mindset that cannot go towards caste free society even after seventy years of independence, it's a fact we cannot deny.Ours is a public state where the Indian constitution grantees equal treatment irrespective of caste, class, religion,language,culture, etc. However Dalits- men,women, and children- have been facing discrimination in terms caste,gender,culture, labor,poverty, etc. The discrimination based on these issues poses a question of Dalit's human dignity and human rights violation.

The caste has concertized the social division of Indian society. India is a multicultural nation with its amalgam of religion and people. Her long traditional history of Vedic foundation of Hindu religion and scripture maintained class structure based on occupations/labor. This is explained clearly by Magdum thus,

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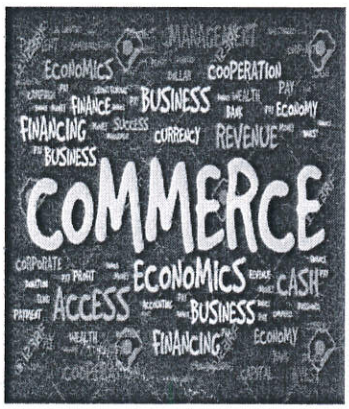

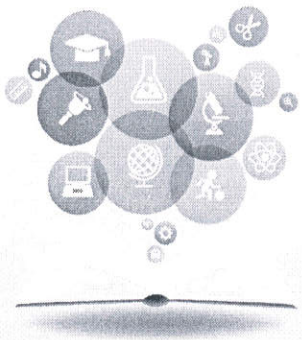

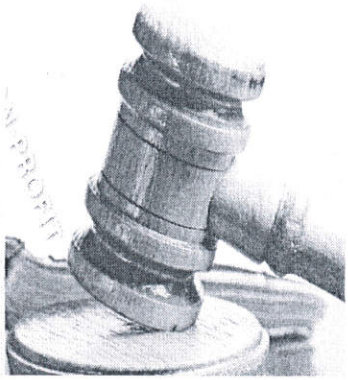

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नवीन कृषी कायदे-२०२०

डॉ.रमेश हणमंत कारंडे

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मोबाईल: ९४२२७५१००६,८२०८९५३००५

प्रस्तावना:

भारत हा शेतीप्रधान देश असून २०११ च्या जनगणनेनुसार ६८% पेक्षा जास्त लोक ग्रामीण भागात राहत असून त्याचा प्रमुख व्यवसाय शेती हा आहे.देशाच्या विकासासाठी व लोकांच्या कल्याणासाठी शेती क्षेत्र हे अतिशय महत्वाचे आहे.शेतकऱ्याने आपल्या शेतीत मेहनतीने पिकवलेले धान्य बाजारात विक्रीसाठी आणतो तेथेच व्यापारी आणि दुकानदारांच्या मक्तेदारीमुळे तो शोषणास बळी पडत असल्याचे दिसून येते. शेतीतून येणारे धान्य शेतकऱ्याच्या उदरनिर्वाहाचे एकमेव साधन असते. परंतु शेती पूर्णतः निसर्गाच्या लहरीपणावर अवलंबून असून पिकवलेल्या धान्याला हमीभाव मिळेल याची शाश्वती असत नाही. या सर्व बाबीचा विचार करता केंद्रसरकारने २०२० मध्ये नवीन कृषी कायदा संमत केला आहे. केंद्र सरकारने ५ जून २०२० रोजी एक वटहुकुम काढून १७ ऑगस्ट २०२०,९ सप्टेबर व ११ सप्टेबर २०२० रोजी त्याचे कायद्यात रुपांतर होण्याकरता लोकसभेपुढे मांडले. लोकसभेत व राज्यसभेत २० सप्टेबर २०२० ला नवीन कृषी कायद्याला मंजुरी मिळाली. भारताच्या राष्टपतींनी २७ सप्टेबर २०२० रोजी या कायद्याला मंजुरी दिली.

सन २०१७ मध्ये केंद्र सरकारने शेती सुधारणेसाठी बरीच मॉडेल अधिनियम प्रसिद्ध केले होते. कृषी स्थायी समितीने (२०१८-१९) नमूद केले कि मॉडेल ॲक्टमध्ये सुचवलेल्या अनेक सुधारणाची अंमलबजावणी राज्यांकडून केली गेली नाही. विशेषतःसमितीला असे आढळून आले कि भारतीय कृषी बाजारपेठेचे नियमन करणारेकायदे(जसे कृषी उत्पन्न बाजार समिती) योग्य आणि प्रामाणिकपणे अंमलबजावणी होत नाहीत किंवा त्यांचा हेतू पूर्ण होत नाही.केंद्रीकरण म्हणजे कृषी बाजारातील स्पर्धा कमी करणे व बाजारातील मध्यस्ताचा हस्तक्षेप कमी करणे,अयोग्य कमिशन,मार्केट फी आणि कृषी क्षेत्राला हानी पोहचवणाऱ्या संघटनाची मक्तेदारी नाहीसी करणे. त्याअनुषंगाने जुलै २०१९ मध्ये सात मुख्यमंत्र्याची समिती स्थापन केली गेली. समितीने आपला अहवाल सादर केल्यानंतर जून २०२० च्या पहिल्या आठवड्यात केंद्राने तीन अध्यादेश काढले त्याला आपण नवीन कृषी कायदे म्हणून ओळखतो.

कृषी विधेयक २०२०:

सरकारने मंजूर केलेली कृषी विधेयके प्रामुख्याने 'एक राष्ट एक कृषी बाजार' या संकल्पनेवर आणली गेली आहेत यामुळे शेतकऱ्यांना त्यांचे उत्पादन देशात कोठेही विक्री करण्याचे स्वातंत्र्य मिळते.कृषी उत्पन बाजार समितीमध्ये मिळणाऱ्या किमान आधारभूत किंमतीपेक्षा जादा किमतीला शेतकरी आपला माल विकू शकणार आहे.

१.शेती उत्पन्न व्यापार आणि वाणिज्य (प्रोत्साहन व सुलभता) विधेयक:

भारतीय संसदेने शेतीच्या संदर्भात तीन नवीन कायदे केले आहेत त्यात पहिल्या कायद्यानव्ये सरकारची अशी योजना आहे की असे तंत्रविकसित केले जाईल ज्यामुळे शेतकऱ्यांना आपल्या आवडत्या ठिकाणी वस्तू विकता आल्या पाहिजेत. इतकंच नव्हे तर यानुसार शेतकरी दुसऱ्या राज्यांतील लायसन्सधारक व्यापाऱ्यांशी व्यापार करू शकतात. म्हणजेच शेतकऱ्यांना शेतमाल बाजारसमिती व्यतिरिक्त कोठेही विकण्याचे स्वातंत्र प्राप्त होईल.याचा मुख्य उद्देश शेतकऱ्यांना त्याच्या मालाला स्पर्धात्मक बाजाराच्या माध्यमातून चांगली किंमत मिळवून देणे हा आहे.या कायद्यान्वये शेतकऱ्याच्या शेतमालावर कोणताही कर किंवा अधिभार आकारला जाणार नाही.

या कायद्याचे फायदे:

१.या कायद्यान्वयेशेतकऱ्यांना शेती करताना अनेक पर्याय उपलब्ध असतील.(जसे आपल्या शेतातून कोणते पीक घ्यायचे,आपला शेतमाल कोणत्या व्यापाऱ्याला विकावयाचा इ.) ज्यामुळेशेतकऱ्यांना शेती करताना अधिक मदत होईल.

२.या कायद्याने शेतमाल विक्रीसाठी येणारा खर्च कमी होऊन त्यांच्या शेतमालास योग्य किंमत प्राप्त होईल.

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Preparation and Characterization of Titanium Dioxide Thin Film Photoelectrode for Solar Cell Application

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Abstract

A chemical bath deposition method has been used to deposit good quality titanium dioxide (TiO_2) thin films at 78°C temperature. Titanium trichloride complexed with ethylene diamminetetraacetic acid was used as precursor in acidic media to deposit TiO_2 on conducting indium tin oxide (ITO) coated glass substrates. The film is annealed at 200, 400 and 600°C and further characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive spectroscopy (EDS), atomic force microscopy (AFM) and UV-visible spectroscopy. In addition, the effects of annealing temperature on structure, morphology and optical properties of TiO_2 thin films have been investigated. The optical absorption study shows that with annealing optical band gap decreases from 3.6 to 3.3 eV. The photoelectrochemical cell performance of TiO_2 annealed at 600°C observes maximum efficiency and fill factor 3.2% and 0.56.

Keywords: *TiO_2, Titanium trichloride, Optical absorption, Photoelectrochemical cell.*

1. Introduction:

Titanium dioxide (TiO_2) is low cost, low toxic, abundant inorganic semiconductor material with good chemical, thermal and thermodynamically stability. It is being used since ancient time as additive and whitening agent. The research regarding TiO_2 has, however, boosted too much during the last few decades due to its applications in photocatalysis and solar harvesting purposes. Commonly, TiO_2 exist in three crystalline forms; anatase, rutile and brookite. The rutile phase is thermodynamically more stable finds more number of applications. The anatase and brookite forms converts to rutile at around 600°C temperature. Additionally, TiO_2 in thin film form find number of applications in hydrophobic material, electrochromic devices, gas and biosensor, corrosion protection, bactericide [1-3], purifier of environmental pollutants [4], photovoltaic and photocatalysis [5-7].

A number of methods such as magnetron sputtering [8], pulsed laser deposition (PLD) [9], chemical vapour deposition (CVD) [10], sol-gel [11], gel oxidation [12], screen printing [13], anodic oxidation, and electrophoretic deposition [12] etc. are available to deposit TiO_2 films. The physical deposition methods are quite expensive as compared to chemical methods due to shortcomings such as small area deposition, sophisticated instrument requirement, high working cost, extreme cleaning of system after each deposition etc. On the other hand, chemical methods are low cost, giving films of comparable quality to those obtained by physical methods. The method is capable of producing oxide films at relatively low temperature. Among various deposition techniques, chemical bath deposition yields stable, adherent, uniform and hard films with good reproducibility by a relatively simple process. The researchers have fascination towards the chemical bath deposition (CBD) of TiO_2 thin films due to its simplicity and low cost, besides the capability to achieve large area coating [14].

In this communication, we attempted to deposit TiO_2 films on ITO and glass substrate chemically and investigated the effect of annealing temperature on the structure, morphology, optical and photoelectrochemical properties of TiO_2 thin films.

2. Experimental:

TiO_2 thin films have been prepared by chemical bath deposition method on ITO and commercial glass substrate. 5 ml of $TiCl_3$ (15 wt.% in HCl, Loba Chemie, India), 20 ml double

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Photoelectrochemical and photocatalytic activity of nanocrystalline TiO_2 thin films deposited by chemical bath deposition method

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ABSTRACT

The thin films of nanocrystalline TiO_2 were synthesized using titanium isopropoxide as a source of Ti on fluorine-doped tin oxide (FTO) and commercial glass substrates by chemical bath deposition method. The resultant films were annealed at different temperatures (300, 400 and 500 °C) for 3 h. The annealed nanocrystalline thin films were thoroughly characterized by XRD, SEM, UV–Vis. DRS, PL, FT-IR, Raman and TEM. The XRD study shows the average crystallite size of TiO_2 is 15 nm having anatase phase, while as temperature increases crystallite size increases. SEM and TEM results show elongated spherical shape of TiO_2 nanocrystals. Optical absorption spectra show the band gap energy decreases from 3.2 to 3.1 eV as annealing temperature increases. From the PL spectra, an emission peak observed at 600 nm is due to the indirect band gap and defects present in the material. The FT-IR spectrum of TiO_2 thin film annealed at 400 °C shows the band at 532 cm^{-1} due to O–Ti–O stretching vibrations confirms the formation of anatase TiO_2. The Raman spectrum shows an intense peak at 149 cm^{-1} and four weaker peaks are characteristics of anatase phase of TiO_2. The photodegradation efficiency of methyl orange (MO) was observed to be 92% by using TiO_2 thin film within 90 min under UV–Vis. light. It shows enhanced photoconversion efficiency of 1.02% under UV light.

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ORIGINAL RESEARCH PAPER

Zoology

EVIDENCE FOR ENDOCRINE DISRUPTING EFFECTS OF LEAD ON TELEOST *CIRRHINUS MRIGALA*

KEY WORDS: Cirrhinus Mrigala, Lead, Endocrine, Teleost

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ABSTRACT

Lead is one of the elements that can be described as purely toxic. Lead displaces biologically important metals interfering with a variety of body's chemical reactions. A variety of environmental contaminants including heavy metals interfere the endocrine axis of fish. Lead is reported with endocrine disruptive potential. Lead affects the hypothalamus pituitary gonadal axis at multiple sites. In the present work an effort is made to explore qualitative changes in the pituitary gland cell types of Cirrhinus mrigala after an acute and chronic exposure to lead. The study revealed the toxic effects of lead on endocrine functions of a teleost which further affects the fecundity of fish. The present study provides a manifold confirmation on the endocrine disrupting effects of lead in fish.

INTRODUCTION

Lead is oldest and versatile common metal. It has a long environmental persistence and never loses its toxic potential if ingested. The toxic effects of lead have been reported for over 2000 years in both humans and animals [1-2]. Recent reports indicated that lead can cause neurological, gastrointestinal, reproductive, circulatory, immunological, histopathological and histochemical changes in the animals [3-5]. Lead displaces biologically important metals such as calcium, zinc and magnesium interfering with a variety of body's chemical reactions. Low levels of lead pollution could cause some adverse effects on fish health and reproduction [6-7]. The endocrine master gland pituitary is a complex neuroepithelial structure. The teleostean pituitary varies in the organization, arrangement and orientation of its different components from species to species. The anterior, intermediate, and posterior lobes of the pituitary gland act as separate entities and distinct cell populations, secretory products and regulatory mechanisms characterize each. The morphological, histological and histochemical studies on the pituitary gland of Cirrhina mrigala Lal et al. [8]. gave a view to gain insight into seasonal changes in cellular composition of pituitary gland. Studies on fish pituitary glands proved that many physiological functions like growth, reproduction, reproduction related behavior, instinct for nitrification, regulation of body electrolyte balance and gonad development are controlled by hormones that are released from the pituitary gland, in the same way that it functions in mammals [9-10]. The pituitary gland contains highly differentiated and committed cells which synthesize unique hormone products. Different cell types of pituitary progress after initial patterning only after the induction of specific transcription factors [11-12].

The gonadotropes vary depending on the moment of the reproductive cycle, age and sex of the animal. Seasonal changes in the gonadotropes during the annual reproductive cycle have been reported in fish [13-15]. A variety of environmental contaminants including heavy metals interfere the endocrine axis in fish [16-17]. Heavy metals such as lead, cadmium, arsenic, nickel, zinc and mercury are also reported to have an endocrine disruptive potential. Pb contamination may alter endocrine regulated processes such as longevity, development, sexual receptivity, fertility and locomotion [18]. Gonads of teleosts are affected by lead pollution which thereby affect reproductive behaviour [19]. Secretary activity of pituitary has been shown to be affected by metals [20] and is proved to be a soft target for cadmium. Female rainbow trout exposed to lead reduced the mean number of basophil responsible for GTH production [21]. Pb affects the hypothalamus-pituitarygonadal axis at multiple action sites Ronis et al., [22] and causes reproductive impairment [23]. Various heavy metals are often present in the same polluted environment at the same time, studies of their interactive effects on gonadal activity would be more meaningful. Considering all these evidences, the present work was undertaken to investigate the changes in pituitary gland of C. mrigala after an acute and chronic exposure to lead acetate.

MATERIALS AND METHOD:

C. mrigala (70-72g weitht and 19-20cm length) irrespective of sex were collected from reservoir at Kalambe village near Kolhapur, Maharashtra, India. Fishes were acclimatized for 15 days to laboratory conditions. The laboratory water was analyzed for different physico-chemical parameters (APHA, 2010) and for lead. LC50 for lead acetate was statistically determined [24]. Well acclimatized fishes showing no signs of stress were selected and divided into three groups of ten each for exposure to toxicant. The first group served as a control and other two groups were exposed to sublethal concentrations of lead acetate. A dose of 28.2 ppm ($1/10^{th}$ of LC50) and 14.1 ppm ($1/20^{th}$ of LC50) of lead acetate was administered to experimental group daily for 30 days. The experiment was carried out in replicate both for acute (96 hrs.) and chronic (30 days). Immediately after completion of exposure period the fish of both the sexes were decapited to locate pituitary gland. The pituitary gland was fixed in Bouin's fluid for 48 hours with a change after 24 hours. Fixed tissues were processed for sectioning. The sections of pituitary gland were stained with Azan Heidenhain method for identification of the pituitary cell types, because the Azan stain intensifies the differences between acidophils, basophils and chromophobes. Azan' Stain, Mallory Heidenhain's [25] staining of Pituitary gland was followed.

Immunohistochemisty for pituitary gland:

Preparation of working solution Phosphate Buffered Saline (PBS):

To 800 ml of double distilled water in a flask 8 gm NaCl, 0.2g KCl, 1.44g of Na_2HPO_4 and 0.25g of KH_2PO_4 were added and dissolved. The pH of solution was adjusted to 7.4 with 1M HCl. The solution was poured in a volumetric flask and final volume was made to 1liter. 44 0.05 % Diaminobenzedine tetrahydrochloride (DAB) in 0.015 % H_2O_2: 50 mg DAB (Diaminobenzedine tetrahydrochloride) in 100 ml PBS added with 250 µl 6% H_2O_2. Source and working dilutions of antisera Anti-chorionic Gonadotropin (alpha + beta subunits) (HCG) antibody produced in rabbit (Sigma Aldrich, product number C8534) was used as primary antibody. The primary antiserum was diluted with PBS at dilution of 1:100.

Anti-Rabbit IgG –Peroxidase produced in goat (Sigma-Aldrich, product number Ao545) was used as secondary antibody. The secondary antibody was diluted with PBS at a dilution of 1:400. For immunohistochemical analysis, pituitary tissue sections were immunostained by using anti-human chorionic gonadotropin (a and B chain) developed in rabbit as a primary antisera and anti-rabbit IgG peroxidase

produced in goat as secondary antisera. To confirm the specificity of the immunoreactive procedures, adjacent sections were validated according to the steps, but the primary antiserum was replaced with PBS or normal secondary antibody (instead of primary antiserum). Following immunostaining, the sections were examined and documented using image.

RESULTS AND DISCUSSION

A-1) Control Pituitary Gland: The control pituitary gland showed a spherical appearance. Histologically the gland showed two distinguished components adenohypophysis and neurohypophysis. The typical three regions of adenohypophysis RPD, PPD and PI were recognizable. The RPD showed smaller but distinct acidophils. The PPD was populated by small gonadotropes. Thyrotropes and somatotropes were also observed. The gonadotropes were without secretary granules (Fig. 1 (1, 2, 3)).

A-2) LC0: The examination of pituitary gland after exposure to LC0 concentration (250ppm) of lead acetate for 96h, showed similar organization of the cells like control. However, the population of all types of cells appeared to be decreased. The abundance of gonadotropes was reduced. Penetration of thick nerve fibres was noticed in PI. (Fig. 1 (4, 5, 6)).

A-3) LC50: The examination of pituitary gland after exposure to LC50 concentration (282ppm) of lead acetate for 96h showed altered organization. Acidophils in RPD and PPD were dense. However, the basophils, gonadotropes and thyrotropes were both, less active and reduced in size. Loss of cells at certain regions (PPD) and vacuolization was noticed (Fig. 1 (7, 8, 9).

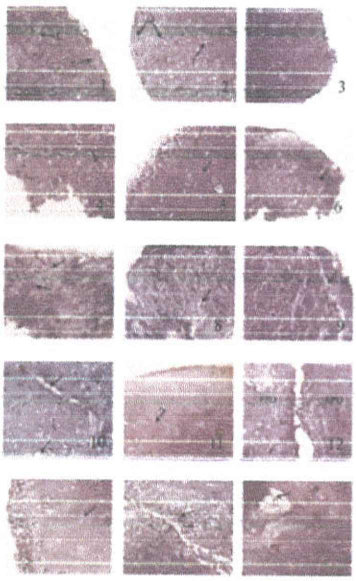

Figure 1: Microphotograph of pituitary gland of C. mrigala exposed to different concentrations of lead acetate (1-3: Section of pituitary gland of C. mrigala from control group (400X)., 4-6: Section of pituitary gland of C. mrigala exposed to LC0 concentration of lead acetate (400X). (Arrow in 5 indicates vacuolization and 6 shows vacuolization.). 7-9: Section of pituitary gland of C. mrigala exposed to LC50 concentration of lead acetate (400X). (Arrow in figures indicates vacuolization in cells and separation of cells.), 10-12: Section of pituitary gland of C. mrigala exposed to 1/20th of LC50 concentration of lead acetate (400X). (Arrow in figure 10 indicates dilation in nerve fibers.), 13-15: Section of pituitary gland of C. mrigala exposed to 1/10th of LC50 concentration of lead acetate (400X). (Arrow in 13 indicates vacuolization, in 14, it indicates alterations in compact arrangement of cells while in figure 15, it indicates appearance of cystic structure.) In figures, G – Gonadotropes. M – Melanocyte, PI – Pars intermedia, T – Thyrotropes, S – Somatotropes.

A-4) Chronic: Chronic effect of 1/20th (14.1ppm) of LC50 concentration of lead acetate for 30 days has shown disintegration in the glandular parts. The compact arrangement and dense population were altered and a scarce population of each type of cell was observed. Gonadotropes appeared to be rare. Loss of nuclei from different cells was common. Cytoplasmic degranulation in some of the cells was also noticed. Atrophy and weak reactivity with the dyes was observed. The RPD and PPD demarcating cleft was prominent. Disintegration of cells at certain regions was seen. Small cystic structures filled with a proteinaceous colloid like material were seen. Pituitary showed small cystic lesions in Rathke's cleft (Fig. 1 (10, 11, 12)).

The exposure at 1/10th (28.2 ppm) of LC50 concentration of lead acetate for 30 days showed intense effects as compared to exposure to 1/20th (14.1ppm) of LC50 concentration. Alterations in compact arrangement and dense population were extreme (Fig. 1 (13, 14, 15)). Number of all types of cells were decreased. Vacuolization, loss of structural integrity in PPD cells was observed. Presence of large intercellular spaces between cells of pituitary gland suggested that the cells are atrophic and the gland is structurally impaired. Small cystic structures filled with a proteinaceous colloid like material were seen in PPD. The cystic structures may be due to inflammation of gonadotropes. Pituitary also showed small cystic lesions in Rathke's cleft.

Immunohistochemistry of pituitary gland after exposure to heavy metals

A) Changes in pituitary gland after exposure to heavy metals - The normal histological structure and changes induced by lead acetate in pituitary gland of C. mrigala at acute and chronic concentrations are shown by immunohistochemical means in Fig. 2.

B) A-1) Control Pituitary Gland: The control pituitary gland showed a spherical appearance.

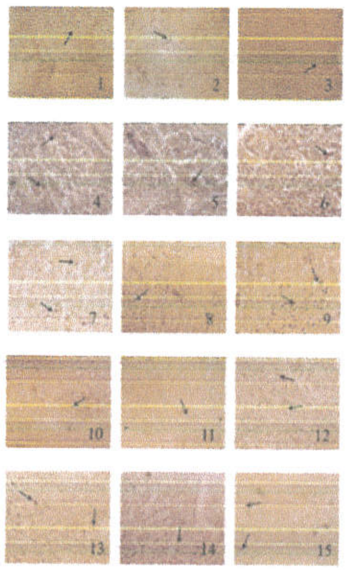

Figure 2: Microphotograph of pituitary gland of C. mrigala exposed to different concentrations of lead acetate (Demonstration by immunohistochemistry) 1-3: Section of pituitary gland of C. mrigala from control group (400X). 4-6: Section of pituitary gland of C. mrigala exposed to LC0 concentration of lead acetate (400X). 7-9: Section of pituitary gland of C. mrigala exposed to LC50 concentration of lead acetate (400X). 10-12: Section of pituitary gland of C. mrigala

exposed to 1/20th of LC50 concentration of lead acetate (400X). 13-15: Section of pituitary gland of C. mrigala exposed to 1/10th of LC50 concentration of lead acetate (400X). (Arrow in all figures indicates immunoreactivity.)

Histologically the gland showed two distinguished components adenohypophysis and neurohypophysis. The typical three regions of adenohypophysis RPD, PPD and PI were recognizable. The RPD showed smaller but distinct acidophils. The PPD was populated by small gonadotropes. Thyrotropes and somatotropes were also observed. The gonadotropes were without secretary granules. The gonadotropes showed immunoreactivity with anti HCG. The reactivity was moderate (Fig. 2 (1,2,3)).

C) A-2) LC0: The examination of pituitary gland after exposure to LC0 concentration (250ppm) of lead acetate for 96h, showed similar organization of the cells like control. However, the population of all types of cells appeared to be decreased. The abundance of gonadotropes was reduced. The immunoreactivity (Fig. 2 (4, 5, 6)) was reduced as compared to control.

D) A-3) LC50: The examination of pituitary gland after exposure to LC50 concentration (282ppm) of lead acetate for 96h showed altered organization. Acidophils in RPD and PPD were dense. However, the basophils, gonadotropes and thyrotropes were both less active and reduced in size. Immunoreactivity was reduced as compared to control. (Fig. 2 (7,8,9)

E) A-4) Chronic: Chronic effect of 1/20th (14.1ppm) of LC50 concentration of lead acetate for 30 days has shown disintegration in the glandular parts. The compact arrangement and dense population of gonadotropes was altered and a scarce population was observed. Atrophy of gonadotropes was seen. Atrophy resulted in weak reactivity with the antibodies. There was a considerable reduction in immunoreactivity of gonadotropes (Fig. 2 (10, 11, 12). Small cystic structures filled with a proteinaceous collide like material were seen. Pituitary showed small cystic lesions in Rathke's cleft. The exposure at 1/10th (28.2ppm) of LC50 concentration of lead acetate for 30 days showed intense effects as compared to exposure to 1/20th (28.2ppm) of LC50 concentration. Alterations in compact arrangement and dense population were extreme. Number of all types of cells decreased. Vacuolization, loss of structural integrity in PPD cells was observed. Presence of large intercellular spaces between cells of pituitary gland suggested that the cells are atrophic and the gland is structurally impaired. Small cystic structures filled with a proteinaceous colloid like material were seen in PPD. The cystic structures may be due to inflammation of gonadotropes. Pituitary also showed small cystic lesions in Rathke's cleft. The alterations produced due to lead acetate exposure resulted in reduced immunoreactivity in the pituitary gland (Fig. 2 (7-15)).

DISCUSSION

Absorption of lead through different organs in fish may lead to high mortality and cause many biochemical and histological alterations in survived fish [26]. The gonads of teleosts are affected by lead followed by alterations in reproductive behaviour [27]. Puntius conchnofus exposed to copper, zinc and lead resulted in disappearance of oocytes from the ovaries [28] by inducing atresia in ovary [29].

Detection of causes of fish mortality after exposure to lead need studies on central nervous system [30]. Pb contamination may alter endocrine regulated processes such as longevity, development, sexual receptivity, fertility and locomotion [31]. Gonads of teleosts are affected by lead pollution which thereby affect reproductive behaviour (Weber, 1993). Lead accumulation in brain of some fish species resulted in decreased reproductive potential due to alteration in hypothalamohypophyseal ovarian function [32-33]. Zn, Pb, Hg and As interfere with sex hormones and adrenal cortex hormones steroidogenesis to alter reproduction and sex differentiation [31]. Effects of Pb on 17B-estradiol, testosterone and cortisol are biphasic, with stimulatory effects after low level exposure and inhibitory effects after high level exposure [34]. Heavy metals, such as arsenic, cadmium, copper, lead and mercury are known aquatic toxicants and cause deleterious effects on density, diversity and productivity of aquatic organisms [35]. Reproductive effects of heavy metals in combination have received little attention [36]. Various heavy metals are often present in the same polluted environment at the same time, studies of their interactive effects on gonadal activity would be more meaningful.

Exposure to cadmium chloride in catfish Clarias batrachus caused a significant increase in the ACTH cells, while thyrotropin and gonadotropin secreting cells showed inactivation and accumulation of secretory products [37]. Chromium induced impact on the pituitary ovarian axis has been demonstrated [38]. Deleterious effects of cadmium on the pituitary gland were reported by Pundir and Saxena (1992) [39]. It is reported by Kumari and Gopal (1991) [40] in Puntius sarana that high concentrations of $CdCl_2$ influence the pituitary gonadotropes by bringing about gradual accumulation of secretory granules. Pituitary secretory activity is affected by metals [41]. This endocrine gland is particularly sensitive target to cadmium toxicity [42]. Pundir et al. [43] studied pituitary gland of fish Puntius ticto after chronic exposure to cadmium. Further, loss of structural organization and change in shape and size of pituitary gland was reported. Prominent vacuolization was displayed by PPD cells. Singh et al. [44] studied pituitary gland of Heterpneustes fossilis in response to cythion and hexedrin treatment. Observations were similar in agreement with Pundir. et al [43] studied the pituitary gland of rainbow trout Salmo gairdneri fingerlings in response to hypotonic environment and thiourea and reported cellular lysis and vacuolization. Remarkable changes in pituitary gland and inflammation of pituitary gland of Puntius ticto exposed to weedone were observed by Verma et al., [45]. Gradual accumulation of secretary granules in gonadotropes was reported in cyprinid fish Puntius sarana exposed to high concentration of cadmium chloride [56]. Ronis et al., [46] 99 showed alterations in pituitary activity due to metals. Cadmium showed a cytotoxic effect on the gland with an evident alteration in adenohypophyseal cells. Murrel and walking catfish exposed to 10-50 µg/l of methyl mercury, inorganic mercury or a mercurial fungicide and smaller, inactive and fewer gonadotropes were reported, in both species [47]. Atrophic changes of the pituitary corticotropes in cortisol impaired fish from sites contaminated with heavy metals were shown by Hontela et al., (1992) [48]. The reduced cell size, reduced cell area and presence of large intercellular spaces indicate the atrophy and structural impairment. Hontela, (1997) [49] observed structural and functional impairement of pituitary in fish exposed to craft mill effluent with smaller corticotropes and larger intercellular spaces in the exposed fish. Favorito (2010) [28] suggested a direct correlation between accumulation of cadmium in the brain and alteration of the normal occurance and distribution of the corticotropes, lactotropes and gonadotropes cells and their secretary activity. Hachfi and Saklym (2010) [50]. reported that cadmium could be the toxicant principally acting on hypothalamic pituitary axis. Simultaneous exposure to cadmium and lead lower the membrane fluidity in pituitary gland. It affects the membrane function and cause alterations in receptor binding and secretary mechanisms of pituitary hormones (Pillai et al., 2002) [51]. In general, a number of trace elements have been shown to have a negative effect on endocrine function in fish. Ruby et al. (2000) investigated the effects of lead exposure on sexually maturing female rainbow trout. Fish exposed to 10 µg/L of waterborne lead (Pb (NO))

during the period of recrudescence had significantly lower GSIs and oocyte diameters than control fish on 12th day. In addition, Ruby et al. (2000) assessed the effect of lead on the pituitary gland, the source of GTH. They found that the mean number of GTH producing granular pituitary basophils was lower in lead exposed females than in controls, suggesting the site of action of lead may be the pituitary. Thomas (1988) administered lead to Atlantic croaker in the diet (1.34 mg/70g fish/day). After 30 days, the GSI in the croaker was only 32 percent of controls. The exposure to lead also resulted in lower circulation. Cadmium has been associated with elevated levels of E2 and enhanced gonadal growth in female Atlantic croaker (Micropogonias undulatus).

In the present study, the pituitary gland of C.mrigala after exposure to lead acetate showed decrease in abundance of cellular population and distinct vacuolization in PPD cells. Smaller, inactive and fewer gonadotropes were observed in pituitary gland of treated fish. The results indicated the gonadotropes were primary targets of Pb toxicity [59]. Hontela et al., (1992), Kumari, M., Gopal, N. H. (1991), Favorito (2010) [34] in which toxic effects of Pb on pituitary gland were investigated. Thus, it is possible that small, inactive and structurally altered gonadotropes are a toxic response to the stress induced by Pb.

CONCLUSIONS

Results from the present study demonstrate that the gonadotropes of Cirrhinus mrigala were the primary targets of Pb toxicity. Pb toxicity could disturb the pituitary gonadal cycle by structural and functional alterations in gonadotropes. The alterations in histology of different regions were correlated with the intensity and time of exposure to the toxicant. The histopathological studies with Azan staining and immunohistochemistry revealed that the sub lethal concentrations of xenobiotics like lead causes deleterious effects on pituitary gland of C. mrigala. Undesirable changes in gonadotropes may further lead to changes in gonadotropin levels. The present studies strongly suggest that lead may exert endocrine disruptions impairing the gonadotropes necessary for reproduction.

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