



SHRI SHIVAJI EDUCATION SOCIETY, AMRAVATI'S

SHRI SHIVAJI ARTS, COMMERCE AND SCIENCE COLLEGE, MOTALA

(NAAC Re-accredited with C Grade with CGPA 1.86)

ISO 9001: 2015 Certified College



3rd Cycle
Assessment & Accreditation by NAAC

CRITERION – III

Research, Innovations and Extension

Q₁M – 3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year



Shri Shivaji Education Society Amravati's
**SHRI SHIVAJI ARTS, COMMERCE & SCIENCE COLLEGE,
 MOTALA, DIST. BULDHANA (M.S.)**



(NAAC Re-accredited with C Grade with CGPA 1.86)

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Outward No. SSACSCM/.....

Date: 20/05/2023

Declaration

This is to certify that the information, reports, true copies of the supporting documents, numerical data, etc. furnished in this file have been verified by the IQAC and the Head of the Institution. The data is found correct.

Hence the certificate.


 IQAC CO-ORDINATOR
 Shri Shivaji Arts, Commerce
 and Science College, Motala




 Principal
 Shri Shivaji Arts, Commerce
 & Science College Motala,
 Dist. Buldana

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Table No. 3.3.2.1: Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Page No.
2021-22				
1	Prof. N.N. Maskar	75 Years of Indian Independence and Women's Empowerment in Movies	-	09
2	Dr. Chitra D. Morey	'Challenges And Hurdles in The Journey of Women Empowerment At 75th Anniversary Independence	-	17
3	Prof. P. R. Chate	Amrit Mahotsava Of Independence and Women's Problems in Reality	-	22
4	Prof. P. R. Chate	-	Indian Agricultural Law's and Development of Agriculture	30
5	Prof. C.N. Rathod	-	The Term Diaspora: Origin and Literature in A Nutshell	37
6	Dr. Sunita Borde, Dr. Sushil Jawale, Dr. Amol Thosar, Dr. Arun Gaware	Cestode Fauna	-	40
7	Prof. Dinesh Mahadeo Dhage	Recent Agriculture Development and Its Issue	-	45
8	R. W. Ukey	-	A Report of Dicot Leaf Julianiophyllum Mohgaonensis from Deccan Intertrappean Beds of Mohgaon Kalan, Madhya Pradesh, India	54
2020-21				
1	Purushottam Rangrao Chate	-	Reasons For Less Productivity of Indian Agriculture	60
2	Morey Chitra D.	-	Physico-Chemical Analysis Of Gulbheli River and Nalganga Reservoir, Nalgangapur, Dist. Buldana, Maharashtra State, India	69
3	Arun Gaware , Rahul Khawal, Sunita Borde and Vijay Lakwal	-	On A New Cestode of Moniezia (Cestoda-Anoplocephalidae) From the Intestine of Capra Hircus (L.) From Ghansavangi, District Jalna (M.S.)	81

4	Rahul Khawal, Arun Gaware , Sunita Borde, Vijay Lakwal	-	Histopathological Study of Lytocetus Species Infection in Host Intestine Clarias Batrachus(L) From Kham River, Aurangabad (M.S.) India	86
5	V.R.Lakwal, A.P.Rajput, M.S.Kharate, P.B.Pardeshi, A.B. Gaware , R.R.Khawal, D.S.Kharate	-	Biochemical Profile and Inhibitory Effect of Haliclona Permollis (Bowerbank, 1866) Marine Sponge of Ratnagiri, West Coast of India	90
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1	Prof. P. R. Chate	-	Self-Help Groups and Women Empowerment	98
2	Prof. D.M. Dhage	-	Research Methods and Forms of Research Process	106
3	Prof. G.S. Kiroche	-	Thoughts Of Pandit Jawaharlal Nehru on Democracy	111
4	Prof. P.M. Gaiki	-	Coupled Map Lattice on Diffusion Limited Aggregate: Dynamics on A Random Fractal	119
5	Abhay Chandrakant Thakur	-	Spontaneous Biochemical Changes of Pesticides on Fresh Water Catla in Buldhana	127
6	Arun Gaware , Asha Bidkar and Sunita Borde	-	Morphological And Molecular Study Of Stilesia Sp. (Cestoda: Anaplocephalidea) A Cestode Parasite Of The Domestic Goat Capra Hircus (L.) In Jalna District (M.S.), India	131
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1	Prof. Avinash Suresh Meherkar	-	Rabindranath Tagore a Social Reformer	141
2017-18				
1	Prof. P.R. Chate	-	Agricultural Development and Poverty Alleviation	148
2	Prof. P.R. Chate	-	Globalization And Indian Agriculture System	157
3	Prof. G.S. Kiroche	-	Indian Mall Culture: Concepts of Malls	167
4	Prof. G.S. Kiroche	-	Indian Economy Growing Through E-Commerce	176
5	Prof. V.N. Dhumal	-	Training As a Part of Human Resource and Management	186

3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year

3.3.2.1: Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years,

Year	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Number	08	05	06	01	05


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Status of Women at
75th Anniversary
of Indian **INDEPENDENCE**



Dr. Rajani Shikhare
Dr. Pravin Sonune
Dr. Hanmant Helambe
Dr. Santosh Nagre

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संशोधनकर्ती

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भारत आपल्या स्वातंत्र्याची 75 वर्षे तमाम भारत देशवासियांसाठी एक खास पर्व आहे. आज देशाने सांस्कृतिक, सामाजिक, राजकीय, आर्थिक, लष्करी, क्रीडा आणि तांत्रिक क्षेत्रात विकासाच्या प्रवासात अनेक नवे विक्रम झाले आहेत. चित्रपट क्षेत्रही त्याला अपवाद नाही. भारतीय चित्रपटसृष्टीची सुरुवात ही पौराणिक चित्रपटांमधून झाली असली तरी सामाजिक चित्रपटांनी समाजमनावर आपले स्थान निर्माण केले. समाजात वावरत असतांना सर्जनशील व संवेदनशील व्यक्तींना अनेक चित्रपटांकरीता विषय मिळाले. त्या काळातल्या अनेक प्रश्नांपैकी स्त्रियांचे समाजातले स्थान हा एक गहन प्रश्न होता.

समाजातल्या महिलांना योग्य स्थान मिळावे, त्यांचे व समाजाचे प्रबोधन व्हावे असे विषय पडद्यावर आणले. 1940 साली 'अछूत कन्या'तून एका दलित महिलेची कथा सांगण्यात आली. त्यानंतर हिंदी चित्रपटांमध्ये स्त्रीला आदर्शवादी, प्रेमळ आई, बहिण, वहिनी, मुलगी, पत्नी आणि मैत्रीण म्हणून दाखविले. जी क्षणभर बंडही करते व भावनेने किंवा विरोधामुळे शेवटी शरणागती पत्करते. अशा चित्रपटांमध्ये 'चित्रलेखा', 'महल', 'दहेज', 'सुजाता', 'में चूप रहूंगी', 'बंदिनी', 'काजल', 'साहब बीबी और गुलाम', 'पाकिजा', 'परिणीता', 'निकाह', 'उमराव जान' इ. स्त्री जाणिवेने सुसज्ज चित्रपटांची निर्मिती झाली.

1980 नंतर समांतर सिनेमाने स्त्रियांच्या मुक्त भावनांना नवे आकाश दिले. स्वातंत्र्याचे नवे रंग मिळाले, त्यांना त्यांच्या हक्काची जाणीव मिळाली. अशा चित्रपटांमध्ये सदर 'मदर इंडिया', 'मंडी', 'बाजार', 'भूमिका', 'मिर्च मसाला', 'वॉटर', 'फायर', 'दामिनी', 'सत्ता', 'अस्तित्व', 'जुबेदा', 'चांदनीबार', 'लज्जा', 'गुलाबगॅंग', 'फॅशन', 'क्विन', 'मेरी कोम', 'इंग्लिश विंग्लीश', 'मर्दानी' इ. चित्रपटांनी नवा आयाम देवून स्त्रीची बदलती प्रतिमा अत्यंत संवेदनशीलतेने मांडली.

हिंदी चित्रपट सृष्टीतील महिला सक्षमीकरण :

पारंपारिक स्त्रीभावनेला छेद देणार्या विषयांवरही चित्रपट तयार झाले. अशाच काही चित्रपटांमधून स्त्री चेतना शोधण्याचा प्रयत्न करण्यात आला आहे.

१) मदर इंडिया (1957) :

राधा ही शेती करणारी स्त्री आहे. पतीच्या पश्चात मुलांचा सांभाळ करून स्वतःचे नशीब घडवते. अत्याचार करणार्या आपल्याच मुलाला मारते. ऐंशीच्या दशकातील कौटुंबिक चित्रपटांमध्ये पारंपारिक परिस्थितीविरुद्ध बंडखोर आणि क्रांतिकारी स्त्रीचे चित्रण सुरू झाले. प्रचलित व्यवस्थेत महिलांचे स्थान टिकवून ठेवण्यासाठी तिचे परस्पर वैर चित्रपटांमधून उमटत होते. काळाच्या प्रकोपाला तोंड देत परिस्थितीने भाग पडलेल्या महिला प्रातिनिधिक स्वरूपात सिनेमाच्या पडद्यावर दिसल्या. पुरुषप्रधान व्यवस्थेत स्वाभिमानाने जगणारी स्त्री आंतरिक शक्ती ओळखू लागली. विवाह संबंधावर आधारीत 'अर्थ' (1982) स्त्री जीवनाचा आंतरिक संघर्ष या चित्रपटात मांडलेला आहे. पुजाचा नवरा इंदर जो घराचे स्वप्न पाहतो. मानसिकदृष्ट्या अस्थिर कवितासाठी पूजाला सोडून जातो. पूजा नोकरी मिळवून आयुष्यातील अडचणींशी झुंज देत असतांना कविता पुजाचे लग्न मोडल्याच्या अपराधाने इंदरला सोडते. पुन्हा पूजाकडे येण्याचा प्रयत्न इंदर करतो तेव्हा पूजा त्याला आपल्या आयुष्यात येण्यास नकार देते.

एक चादर मैलीसी (1986) मध्ये परंपरेतून निर्माण होणार्या स्त्रियांच्या समस्यांचे चित्रण करण्यात आले आहे. 'राणो' ही चित्रपटाची नायिका. हिला दोन मुले असूनही हुंड्यासाठी सासुकडून छळ होतो. दारूड्या पतीकडून मारहाण. जेव्हा राणोच्या पतीचा बलात्काराच्या आरोपात खून होतो, तेव्हा राणोला तिच्यापेक्षा 10 वर्षांनी लहान असलेल्या दिरासोबत चार घालण्याच्या परंपरेनुसार लग्न लावले जाते.

रूदाली (1993) मध्ये उच्च जातीच्या पुरुषांच्या मृत्युबद्दल शोक साजरे करणार्या राजस्थानच्या महिला व्यावसायिक जातीच्या स्त्रियांचे चित्रण करण्यात आले आहे. स्थानिक जमीन मालकाचा मुलगा नायिकेचा प्रियकर आहे. पण तिचा मद्यपी पती मृत्यु, अपंग मुलाचे भविष्य पाहून ती गरीबीतही प्रियकराकडे पैसे मागत नाही.

दामिनी (1993) या चित्रपटातून बलात्काराच्या समस्येवर आधारित एका महिलेच्या न्यायासाठी संघर्षाची कथा आहे. जी पीडित मोलकरीणसाठी तिच्या स्वतःच्या श्रीमंत सासरच्या लोकांविरुद्ध उभी राहते. दस्युराणी फुलनदेवी यांच्या जीवनावर आधारित 'बॅडिट क्वीन' (1994) फुलनच्या माध्यमातून खालच्या जातीतील महिलांचे लैंगिक शोषण, पोलिसांचे असहकार, बलात्कार, डकैत बनण्यासाठी हातात बंदूक घेऊन बदला घेणे, शेवटी पक्षातील महिला आणि लहान मुले यांना डोळ्यासमोर आत्मसमर्पण करते. 'फायर' (1996) हा समलैंगिकतेच्या विषयावरील पहिला भारतीय चित्रपट आहे. राधा आणि सिता या पात्रांमधून प्रकट होते की, स्त्रियांनाही लैंगिक सुखाचा अधिकार आहे. पण जर नवरा तिला सुख देऊ शकत नसेल तर स्त्री परंपरा आणि दुर्दैवाच्या साखळ्या तोडून कर्मकांडाच्या विरोधात बंड करते. 'मृत्युदंड' (1997) हा चित्रपट महिलांवरील सामाजिक आणि लैंगिक अन्यायावर आधारित आहे. केतकी या चित्रपटाची नायिका अत्याचारित गाव प्रमुखापासून आपल्या पतीला योग्य मार्गावर आणते आणि गावातील स्त्रियांचेही रक्षण करते.

'चांदनी बार' (2001) एका जातीय दंगलीत आपले कुटुंब गमावलेली मुमताज, काकांच्या वासनेची शिकार झालेली मुंबईच्या डान्सबारमध्ये नाचण्याची आणि फ्लर्ट करण्याची तयारी करते. एका गुंडाशी लग्न करून काही क्षण आनंदाने जगते. पण नवरा चकमकीत मरण पावतो. आपल्या मुलाला तुरुंगातून सोडविण्यासाठी मुमताजला शरीर विकावे लागते. 'फिजा' (2001) मध्ये मुंबई दंगलीत हरवलेल्या आपल्या भावाचा शोध घेणार्या बहिणीची कथा आहे, की जो दहशतवादी बनला आहे. शेवटी त्या भावाची ती हत्या करते. 'जुबैदा' (2001) मधून जगण्याच्या स्वातंत्र्यापासून आणि आत्मनिर्णयाच्या क्षमतेपासून दूर असलेल्या नायिकेचे बंड दाखविले आहे. वडिलांचा अहंकार, समाधानाचे साधन बनलेल्या झुबैदाला करिअर, लग्न, घटस्फोट असे निर्णय स्वतंत्रपणे घेता येत नाही. आकाशाची स्वप्ने पाहणारी झुबैदा बंड करून फतेहपूरच्या राजाशी लग्न करते पण अनेक अटींसह.

'डर्टी पिक्चर' (2011) दक्षिणात्य अभिनेत्री सिल्क स्मिताचे वादग्रस्त जीवन रेखाटले आहे. प्रेक्षकांची अक्षील वृत्ती, पैसे कमावण्याची अव्यावसायिक पद्धत. चित्रपटात नाव कमावण्याची इच्छा असलेली रेश्मा योग्य मार्ग न मिळाल्यामुळे सर्वस्व पणाला लावते. ती पडद्यावर निर्लज्ज होते. पण तिची बंडखोरी समाजातील वाईट वृत्तींवर प्रहार करायला थांबत नाही. व्यावसायिक अपयश,

व्यसनाधिनता, प्रेमाच्या नावावर होणारी फसवणूक आणि सर्वसामान्य स्त्रीसारखी अनेक स्वप्ने पाहून रेश्मा आपले जीवन संपविते. 'फॅशन' या चित्रपटातून मॉडेलिंगच्या व्यवसायातील तडजोडी, यशानंतरचा आत्मविश्वास, मादक पदार्थांचे अतिसेवन करणाऱ्या मेघनाला वडिलांच्या प्रोत्साहनाने छोट्या शहरातील मुलीचा फॅशन मॉडेल बनण्यासाठी घर सोडून जाण्यास प्रवास दाखविला आहे.

'वॉटर' या दीपा मेहता यांच्या चित्रपटाच्या माध्यमातून विधवा महिला आश्रमाची स्थिती दाखवण्यात आली होती. त्याठिकाणी धर्माच्या व समाजसेवेच्या नावाखाली चाललेल्या अनेक गैरप्रकारांना वाचा फोडण्यात आली होती.

'लज्जा' या चित्रपटामधून एखाद्या संकटात सापडलेल्या महिलेच्या मागे इतर महिला कशाप्रकारे उभ्या राहू शकतात व त्या तिला कशी मदत करतात, हे दाखविण्याचा प्रयत्न केला आहे. 'मर्दानी' या चित्रपटाने केवळ एका स्त्रीचा एका बीभत्स व्यवसायाकडेही लोकांचे लक्ष वेधले आहे. या चित्रपटातून स्त्रियांनी आपले रक्षण कसे करावे हे तर दाखवले आहेच त्याचबरोबर समाजातल्या कायद्यांना सार्वत्रिक रूप असले तरी त्यामागे व्यक्तिगत संवेदनांनाही महत्त्व दिले पाहिजे असा संदेश दिला आहे.

'दंगल' या चित्रपटातून 'म्हारी छोरीया छोरोसे कम है के' असे म्हणत स्त्री-पुरुष समानतेचा संदेश देत मिस्टर परफेक्शनिस्ट आमीर खानने बॉलीवुडमध्ये चांगलीच मोठी 'दंगल' केली.

'देह इश्किया' ही एक नव्हे तर तीन महिलांची कथा आहे. माधुरी दीक्षित व हुमा कुरेशी यांनी पडद्यावर साकारलेली भूमिका एका स्त्रीच्या जवानीतील सर्व पैलू अतिशय चांगल्या पद्धतीने रेखाटले आहे. आतापर्यंत फक्त स्त्रीलाच लग्नासाठी पुरुषांची मानसिकता पूर्ण करण्यापूरतीच मर्यादा होती पण इथे प्रकरण उलटे आहे. इथे माधुरी दीक्षितने आयुष्यातील एकटेपणा तोडण्यासाठी पुरुषांच्या आधार घेत नाही तर अनेक पुरुष स्वतःला एकमेकांपेक्षा चांगले दिसण्यासाठी धडपडत आहे. स्त्री अस्मितेच्या दृष्टीकोनातून हा एक नवीन आस्वाद घेणारा चित्रपट आहे.

'हायवे' मधून आपल्याला आपल्या घरात डोकावण्याची संधी देतो. आपल्या घरात येणारे नातेवाईक, सोबती, शेजारी यांच्या लक्ष ठेवायला शिकविते. आलिया भट्टने ज्या निरागसतेने आणि

गांभीयाने तिच्या घरात लैंगिक अत्याचाराला बळी पडलेल्या व्यक्तीचे पात्र जगले आहे. सामाजिक बंधनात अडकलेल्या मुलीला स्वतःच्या घरातून शारीरिक व मानसिक रितीने मुक्त व्हायचे असते. अपहरणकर्त्यांच्या जवळ तिला जास्त सुरक्षित वाटते.

'गुलाब गॅंग'मध्ये रज्जो (माधुरी दीक्षित) माधवपूर या गावातील गुलाब गॅंगची लीडर आहे. असहाय्य महिलांची रक्षा करणारी व लहान मुलींना शिकविणाऱ्या स्त्रीची व्यक्तिरेखा साकारली आहे. या गॅंगमधील महिला स्वतःला पुरुषांपेक्षा कमी समजत नाही. मारपीट करायला घाबरत नाही. 'रॉड इज गॉड' चा उपयोग करणारी आहे.

'मिर्च मसाला' (1987) केतन मेहता दिग्दर्शित मिर्च मसालामध्ये एका सामान्य खेड्यातील स्त्रीची कहाणी आहे. स्मिता पाटील यांनी सोनूबाईची भूमिका अतिशय सशक्तपणे रेखाटली आहे. यामध्येच दीपाली नवलने गाव मुखियाच्या पत्नीची भूमिका केली आहे. आपल्या मुलीच्या शिक्षणासाठी पतीच्या इच्छेविरुद्ध बंड पुकारते. प्रतिगामी काळातील महिला सक्षमीकरणाची खरोखरच एक प्रभावी कथा रेखाटली आहे.

'कहानी' या चित्रपटातून एका सशक्त स्त्रीचे चित्रण केलेले आहे. विद्या बालन तिच्या हरवलेल्या पतीच्या शोधात आहे. गरोदरपणाच्या शेवटच्या तिमाहीत ती लंडन ते कोलकता एकटीच प्रवास करते आणि तिचा हरवलेला नवरा शोधते. खुप सहनशील, निडर, धाडसी महिलेचं चित्रण केलेलं आहे. 'इंग्लिश-विंग्लिश' गौरी शिंदे दिग्दर्शित एका स्त्रीचा स्वतःला शोधण्याचा प्रवास दाखविला आहे. चित्रपटाचे कथानक पूर्ण त्या स्त्रीभोवती (श्रीदेवी) फिरते. जिला तिची मुले आणि पती इंग्रजी बोलता येत नाही म्हणून कमी लेखतात. जेव्हा ती तिच्या भाचीच्या लग्नासाठी न्युयॉर्कला जाते तेव्हा ती तिथे गुप्तपणे इंग्रजी स्पिकींग वर्गात सामील होते. सुरुवातीला घाबरलेली आत्मविश्वास कमी असलेली अनेक अडचणींवर मात करून एक मजबूत वृद्ध स्त्री म्हणून उदयास येते.

'पिंक'ने राष्ट्राला सांगितले आहे की जेव्हा एखादी महिला 'नाही' म्हणते तेव्हा याचा अर्थ 'नाही' होतो. तिने कोणते कपडे घातले किंवा कोणती जीवनशैली जगते हे महत्त्वाचे नाही. तिला तिच्या इच्छेविरुद्ध काहीही करण्यास भाग पाडले जाऊ शकत नाही. अमिताभ बच्चन एका वकिलाच्या भूमिकेत आहे जो प्रभावशाली कुटुंबातील कुख्यात मुलांविरुद्ध कायदेशीर लढाईत अडकलेल्या

मुलींसाठी लढतो. 'लिपस्टिक अंडर माय बुरखा' हा महिलांच्या लैंगिकतेवर आधारित चित्रपट आहे. निर्भयपणे स्त्रीवादी चित्रपट. 'क्विन' 2014 चा वंडर हिट, ज्याने कंगणा राणौतला तरुण स्त्रियांमध्ये युथ आयकॉन म्हणून जोडले. ही एका भोळ्या आणि अंतर्मुख मुलीची सहज वयात येणारी कथा आहे. जिचे लग्न होणार आहे म्हणून उत्साहीत असून एका भंगलेल्या स्वप्नातील अश्रु पुसून शॉक देऊन उभ्या राहिलेल्या मुलीचे पात्र साकारले आहे.

'मेरी कोम' ही एका भारतीय बॉक्सरची खरी जीवनकथा आहे. स्त्रीच्या चैतन्य आणि पुरोगामी जाणिवेची सर्वात मोठी अभिव्यक्ती आहे. मुलींसाठी व स्त्रियांसाठी प्रेरणादायी ठरलेली फिल्म 'मेरी कोम'ची कथा एका साध्या स्त्रीच्या संघर्षाने सुरू होते. ज्याला पहिला विरोध घरातच होतो. शून्यातून यशाच्या उंच शिखरावर पोहचणाऱ्या महिलेची ही कहाणी आहे. स्त्री अस्मितेचे उत्तम उदाहरण मेरी कोमने लग्नानंतर बॉक्सिंग क्षेत्रात पुनरागमन करून दोन मुलांची आई असूनही अनेक अडचणींवर मात करून भारताला आंतरराष्ट्रीय स्तरावर पोहचविणाऱ्या स्त्रीची संघर्षमय जीवनकथा आहे.

अशाप्रकारे अनेक दशकांपासून हिंदी चित्रपटातून महिलांच्या सक्षमीकरणाचे विविध पैलूंचे दर्शन दिसते. सबला नारी बनून तिच्या हक्कांसाठी उभी राहणारी, अन्यायाविरुद्ध आवाज उठविणारी, तिच्या प्रतिष्ठेसाठी आणि स्वाभिमानासाठी लढणारी आणि गरज पडल्यावर बंड करणारी स्त्री बनून विविध क्षेत्रात आपली छाप टाकणाऱ्या आजच्या स्त्रीचे प्रभावी सादरीकरण केले आहे.

निष्कर्ष :

1. स्त्री अस्मिता, समर्पण, शक्तीची जाणीव दिसून येते.
2. चित्रपटातून स्त्रीची वास्तववादी व अभिमानास्पद दर्शन घडविले आहे.
3. बदलत्या काळाचे व संस्कृतीचे प्रभावीपणे सादरीकरण केले आहे.
4. महिला केंद्रीत चित्रपटांनी समाजात क्रांती आणण्याचा प्रयत्न केला आहे.
5. चित्रपटांच्या नायिकांमध्ये दुर्गांमातेचे रूप दिसून येते. हा बदल खरोखरच स्वागतार्ह आहे. कारण आजपर्यंत प्रेमळ, सोशिक, अत्याचारीत, पिडीत अशा स्त्रीचे रूप दर्शविले जात होते.

संदर्भ :

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“Challenges And Hurdles in The Journey of Women Empowerment at 75th Anniversary Independence”

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According to Charles Darwin theorem “Struggle for existence”. In the long history of humankind and its evolution woman has been a counterpart to man struggling for this survival of the species, propagation of the species and with the standing natural calamities just like man but with the evolution of human civilization and the inception of society her status saw a massive change. In the ancient Indian society women were adored and worshipped as Goddess.

However, in the middle age the status of women got down to a great extent. In the society women are considered only to perform duties like bring up children, caring every family member and other household activities as well as women are only for the home. Now a days women are breaking all the barriers of social issues and problems against them in the society. Earlier to this women were facing a lot of problems because of male dominated patriarchal society systems.

Some of the major hurdles and challenges, modern women are still facing problems which are given below-

- 1) **Gender Discrimination** - Women are considered as a weaker section of the society then even girls children are becoming real victims of the discrimination gender discrimination effect's women in the areas like nutrition, education, health care decline of female population job public life and gender etc.
- 2) **Female Education** - woman's education percentage is very low in India specially in the rural areas because they are discouraged for a higher education like professional and technical ones.

3) **Unemployment** - Women are getting more problems in searching their suitable work they become more prone to exploitation and harassment in the work areas.

4) **Unbearable Condition** - Boss intentionally they are given more work and harder task by their boss intentionally. They have to prove they are devotion seriousness and sincerity towards work time to time. Unbearable conditions womens who are uneducated more prone to drivers and dissertation by their husbands on any stage of life they have to live whole life with fear of divorce. In some cases, they have to finish their life because of unbearable conditions.

5) **Violence** - Against women according to the report of crime record Bureau of the central home ministry women are being victims of violence at a huge level day by day because of increasing crimes against women they may face violence within the family like dowry related harassment, death, marital rape, wife battering sexual abuse, deprivation of healthy food, female genital mutilation and mental depression inside or outside the families like rape murder kidnapping etc.

6) **Woman Empowerment.** - Globalization has presented new challenges and hurdles for the realization of the goal of human equality benefits of the growing global economy have been unevenly distributed leading to wider economic disparities the feminization of poverty increases gender inequalities through often deteriorating working conditions and unsafe working environment specially in the rural areas.

7) **Woman and Economy** - Woman perspectives will be included in designing and implementing macro-economic and social policies by institutional inaction their participation in such processes like reinterpretation and definition of conventional concepts of work whenever necessary for example in census records to reflect women contribution as a producers and workers.

8) **Poverty Eradication** - Since, women comprise the majority of population below the poverty line and are very often in situation of extreme poverty given the harsh realities of intra household and social discrimination there will be improved implementation of programs which are already woman oriented with special targets for women other supportive measures would be taken to ensure adequate flow of credit through extent financial institutions and banks so that all women below poverty line how easy access to credit.

9) Agriculture - Then woman and agriculture now actually the agriculture, the cropping or plants was firstly started by women. This is the critical role in ancient periods in agriculture as a producer, women in soil conservation soil forestry dairy development and other occupations like horticulture livestock including small animal husbandry poultry, fishers etc that will expand to women workers in the agricultural sector. Next woman an industry the major role played by women in electronics information technology food processing agro industry and textile has been crucial to the development of this sectors suitable measures will be taken to enable the woman to work on the night shift in factories this will be accompanied with the support services for security transportation etc.

Then support services the provision of support services for women like childcare facilities including crèches at workplaces and educational institutions woman friendly personal policies will also be drawn up to encourage women to participate effectively in the developmental process.

10) Social empowerment - Of women first education equal education for women and girls will be ensured. Reducing the gender gap in secondary and higher education what do we focus area gender sensitive curricular would be developed at all levels of educational system in order to address stereotyping as one of the causes of gender discrimination.

11) Health - The policies like infant mortality rate maternal mortality rate set out in the national population policy 2000 women should have access to comprehensive affordable and quality healthcare the social development and health consequences of HIV or aids and other sexually transmitted diseases will be tackled from a gender perspective some effective problems of infants and maternal mortality early marriages the availability of good and accurate data at micro level on deaths bars marriages is required. in accordance with commitment of national population policy 2002 to population stabilization this is the critical need of men and women to have access to safe.

12) Nutrition- In the view of high risk of malnutrition and disease that woman face at all the three critical stages like infancy childhood adolescent and reproductive phase use of nutrition education would you be mad to address the issues of intra household imbalances in the nutrition. Nutrition and the special needs of pregnant and lactating women women's participation will also be ensured in the planning superintendents and

delivery of the system.

13) Drinking water and sanitation - There is a need of women in the provision of safe drinking water, sewage disposal, toilet facilities and sanitation. Within accessible reach of households, especially in rural areas and urban slums. Women's participation will be insured in the planning, delivery and maintenance of such services, housing and shelters, planning of housing colonies and provision of shelter both in rural and urban areas and safe housing and accommodation, women including single women heads of households, working women, students and trainees.

14) Environment - Women will be involved in the policies and programs for environment conservation and restoration. Women will be involved in spreading the use of solar energy, bio gas, smokeless chulas, another rural application so as a visible impact of these measures in influencing the ecosystem and in changing the lifestyles of rural women.

15) Science and technology - To motivate the girls to take up science and technology, location and also ensure that development projects with scientific and technical inputs involve women fully. Efforts to develop appropriate technologies suited to human needs as well as to reduce drug abuse will be given a special focus too.

Apart from that, women in difficult circumstances like extreme poverty, best 22 main women in conflict situations, women affected by natural calamities, women in less developed regions, the disabled widows, single women in difficult circumstances etc.

Conclusion:

Women need to be made visible in order to understand how and why international power takes the forms it does by A. N. Lewis 1990. To sum up, women empowerment cannot be possible unless women come with and help to self-empower themselves. There is a need to formulate reducing feminised poverty, promoting education of women and prevention and elimination of violence against women. The hardest challenge will be to change attitudes given that many barriers to women empowerment. If we have need to empower the woman truly so for that first first start from your home start up from yourself then truly and faithfully success of real woman empowerment. Accept the challenges and struggle for the hurdles of woman empowerment.

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स्वातंत्र्याचा अमृतमहोत्सव व महिलावर्गाच्या वास्तव समस्या .

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प्रस्तावना :-

जिच्या हाती पाळण्याची दोरी । तीच जगाते उद्धारी ।

राष्ट्रसंत तुकडोजी महाराज यांच्या ग्रामगीतेतील वचनाप्रमाणे जगाच्या विकासाची धुरा स्त्रियाकडे आहे. या सृष्टीवर स्त्री-पुरुष या दोन वर्गापैकी स्त्री कडे सृजनत्व अधिकार आहे. कोणत्याही समाजाच्या विकासाचे मापदंड त्या विकासक्षम समाजातील महिला किती सक्षम आहेत यावरून त्या समाजाच्या प्रगतीचे मोजमाप करता येते. भारताच्या अधुनिक इतिहासाच्या जडणघडणीत अगणित व्यक्तिरेखा आहेत त्यामध्ये इंदिरा गांधी सारख्या पंतप्रधान पद भूषविणार्या कर्तृत्ववान महिलांचा समावेश आहे. ज्या समाजात स्त्रिया सक्षम असतात तो समाज सुदृढ व विकासशील असतो. आपल्या देशाचा विचार केला तर ज्या महिलांचे लोकसंख्येच्या दृष्टीने जवळपास पन्नास टक्के संख्याबळ आहे. मात्र त्याप्रमाणात शिक्षण, रोजगार, अर्थकारण, समाजकारण, राजकारण यामधील स्त्रियांचा वाटा उपेक्षित असल्याचे दिसते. कारण जागतिक पातळीवरील मानवविकास निर्देशांक, लिंगाधारित निर्देशांक, असमानतेचा निर्देशांक, बेरोजगारी, दारीन्द्र्याचा निर्देशांक इत्यादी मध्ये भारताची होत असलेली पीछेहाट अथवा घसरण वास्तव चित्र स्पष्ट करत आहे. या सर्व मंदावलेल्या स्थितीला स्वातंत्र्याच्या अमृतमहोत्सवी वर्षाच्या अनुशंगाने सकारात्मक विचार होणे आवश्यक आहे. पुरोगामी महाराष्ट्राच्या राजकारणात महिलांचा वाटा केवळ ७% आहे. महाराष्ट्राची अवस्था जर ही असेल तर इतर राज्याबाबत परिस्थिती अलहिदा. स्वातंत्र्याच्या लढ्यात भारतात व महाराष्ट्रात जी आंदोलने उभी राहिली त्यामध्ये स्त्री नेतृत्वाचा सिंहाचा वाटा राहिला आहे. त्यामध्ये राणी लक्ष्मबाई व सावित्रीबाई फुले या सारख्या अनेक कर्तृत्ववान

महिला या देशाला लाभल्या.त्यांनी समज व देशाला नवी दिशा दिली ही आपल्यासाठी अभिमानाची बाब आहे. सर्वसमावेशक विकासाच्या बाबतीत विचार केला तर महिला वर्गवार अन्याय झालेला दिसतो. स्त्री ही आई,बहिण आणि पत्नीची भूमिका पार पाडत कौटुंबिक जबाबदारी समर्थपणे पेलत असते.पुरुषप्रधान संस्कृतीत स्त्रिया पुरुषावर अवलंबून असल्यामुळे त्यांना निर्णय घेण्याचा फारसा अधिकार नसतो.अधुनिक काळात त्यांना राजकीय,प्रशासकीय व व्यवस्थापन क्षेत्रात पुरुषांच्या बरोबरीने संधी मिळाली पाहिजे,तरच त्यांचा आर्थिक दर्जा सुधारेल व राष्ट्राच्या प्रगतीत त्यांचे योगदान वाढेल.प्रत्येक स्तरावरील महिलांच्या समस्या वेगवेगळ्या आहेत.तरी सर्वसाधारण महिलांच्या समस्यांचा विचार केला तर कौटुंबिक समस्या,आरोग्याच्या समस्या,सामाजिक समस्या,शिक्षणाच्या समस्या,चरित्र्य हनन,दुय्यम दर्जा,पक्षपात पणा,बंदिस्त जीवन या सारख्या असंख्य समस्या आहे. करण कुटुंबातील लिंगभेदावर आधारित श्रमविभागणी,मध्यमवर्गीय कुटुंबातील स्त्रियांचे योगदान,राजकीय क्षेत्रातील महिला वर्गाची पदाधिकारी व कार्यकर्ता म्हणून संख्या नगण्य,निर्णय प्रक्रियेपासून कोसोदूर,धर्माधीष्टीत व कौटुंबिक कायदे व त्याचा होणारा दुजाभाव आणि एकूण संपत्तीत स्त्रियांना किरकोळ हिस्सा इत्यादी बाबी पुरोगामी व महासत्ता होणार्या देशाला मारक ठरू नये. कोणत्याही राष्ट्राला सर्वसमावेशक विकास साधण्यासाठी महिला वर्गाला दुर्लक्षून चालणार नाही.

भारतातील महिला वर्गाची निर्देशंकानुसार स्थिती :-

जागतिक स्तरावर विकासाचे मोजमाप करण्यासाठी विविध संकल्पना मांडण्यात आल्या.१९९० पासून मानव विकास निर्देशंकानुसार विकासाचे मोजमाप करण्यात येत आहे.२०२० च्या मानव विकास अहवालानुसार १८९ देशांमध्ये भारताचा क्रमांक १३१ आहे.भारताच्या शेजारी व सार्क मध्ये सभासद असणार्या देशांचा मानव विकास अहवाल आपल्या पेक्षा उत्तम आहे.२०१० पासून लिंगाधारित निर्देशंक काढण्यास सुरुवात झाली.या अहवालात स्त्रियांना राजकीय,निर्णय प्रक्रियेत मिळणारे स्थान,आर्थिक व सामाजिक संधी आणि समानतेचा विचार केला जातो.२०२० नुसार भारताचा हा निर्देशंक ०.४८८ असून एकूण १६२ देशांमध्ये भारताचा १२३ व क्रमांक आहे.या निर्देशंकाच्या अहवालानुसार भारतात एकूण महिला पैकी १३.५% महिलांना संसदीय प्रणालीत स्थान मिळते.हायस्कूल पर्यंत चे शिक्षण फक्त २७.७% महिला घेवू शकतात जे की पुरुष ५६.६% घेतात,स्त्रियांचा श्रम बाजारातील सहभाग फक्त २७% आहे त्यावरून स्त्रियांना संधीच्या बाबतीत पराकोटीची असमानता असल्याचे जाणवते.लैंगिक विषमता

निर्देशांकात ०.८३५ असणे म्हणजे निर्देशांक मध्यम पातळीची स्त्री-पुरुष समानता दर्शविते.भरताची स्त्री-पुरुष समानता या पेक्षाही कमी असल्याचे दिसते.या सर्व बाबीचा विचार केला तर आज भारतीय स्वतंत्र्याच्या पाऊणशे वर्षाकडे वाटचाल करत असतांना देशाच्या विकासाकरता स्त्री-पुरुष समानता असणे आवश्यक आहे.

महिलांच्या विविध समस्या:-

भारतात ६५% जनता ग्रामीण भागात वास्तव्याला आहे.ग्रामीण व निमशहरी भागात महिला वर्गाचे स्थान नगण्यच असल्याचे दिसून येते. आधुनिक युगात त्यांना राजकीय, प्रशासकीय, व्यवस्थापन क्षेत्रात पुरुषांच्या बरोबरीने संधी मिळाली पाहिजे, तरच त्यांचा आर्थिक दर्जा सुधारेल व राष्ट्राच्या प्रगतीत त्यांचे योगदान वाढेल. प्रत्येक स्तरातील महिलांच्या समस्या वेगवेगळ्या आहेत. तरी सर्वसाधारण समस्यांचा विचार केला तर पुढील प्रमाणे समस्यांची वर्गवारी करता येईल. कौटुंबिक व सामाजिक हिंसाचार, शिक्षणाच्या व आरोग्याच्या समस्या इ.

कौटुंबिक हिंसाचार:-

भारतीय संस्कृती व रितीरिवाजानुसार स्त्री-पुरुषाचा विवाह होतो.मात्र महिलांना त्यांच्या लग्नानंतर अनेक समस्यांचा सामना करावा लागतो.अशा प्रकारातील समस्या ह्या ग्रामीण व शहरी भागात वेगवेगळ्या असतात. आज आपण विज्ञान-तंत्रज्ञानाच्या क्षेत्रात खूप प्रगती केली, तरी आपल्यातील वैचारिक पातळी विज्ञान व तंत्रज्ञानासारखी उंची गाठण्यास कमी पाडत आहे.जर एकाद्या स्त्री ला आपत्य न झाल्यास किंवा मुलगी झाली व मुलगा होत नसल्यास आई-वडील,सासू-सासरे शोक करतांना दिसतात. महिलांना त्यांच्या मर्जी विरुद्ध गर्भ लिंगनिदान करायला लावतात व मुलगी असेल तर त्या महिलेला दोष दिला जातो.गर्भपात करण्याचे सल्ले दिले जातात. "ज्याच्या पदरी पाप त्याला मुली आपोआप" अशा भावना लोकांच्या मनात आहे. म्हणूनच स्त्री भ्रूणहत्या मोठ्या प्रमाणावर होत आहे. कौटुंबिक हिंसाचारात हुंडाबळी, माहेरून पैसे आणण्यासाठी मारहाण, मुले झाले नाहीत किंवा फक्त मुलीच झाल्या म्हणून शारीरिक त्रास, व्यसनी पती असल्याने संपूर्ण कुटुंबाची जबाबदारी, चारित्र्यावरून संशय घेणे या सारख्या असंख्य समस्या कुटुंबाच्या दबावामुळे व महिला वर्गाच्या सहनशीलतेमुळे सर्वासमोर येत नाही.मुलीला घरामध्ये कुठल्याही बाबतीत अगदी तिचे स्वतःचे लग्न केव्हा व्हावे याबाबतसुद्धा निर्णय घेण्याचे स्वातंत्र्य नसते. मुलगी वयात आली

की माता पित्यांना तिचे ओझे वाटू लागते. तिला घरात ठेवणे म्हणजे त्यांना मोठी जबाबदारीच वाटू लागते. मुलगी म्हणजे काचेचे भांडे असते आणि म्हणून घरातील मोठी माणसे तिच्या लग्नाचा निर्णय परस्परच घेऊन टाकतात. मुलीचे लग्न १८ वर्षापूर्वी करू नये का कायदा सर्वांना मान्य असते. परंतु प्रत्यक्ष व्यवहारात मात्र चित्र अगदी उलट दिसते. आजही ग्रामीण भागात विवाहाचे सरासरी वय १५-१७ वर्षे आहे.

सामाजिक हिंसाचार :-

मानव हा सामाजिक प्राणी आहे. या समाजात स्त्री-पुरुष हे दोन वर्ग आहेत. निसर्गाने त्यांच्या मध्ये भेद केलेला आहे. आपल्या देशातील पुरुषसत्ताक कुटुंब पद्धतीमुळे समाजात विविध प्रकारे महिलांना त्रास दिला जातो. यात छेडाछेड, विनयभंग, बलात्कार, दुय्यम दर्जा या सारखे अनेक मुद्दे येतात. आजच्या मोबाईल क्रांतीच्या युगात तंत्रज्ञानाचे फायदे तसेच असंख्य तोटे सुद्धा आहेत. या साधनाच्या वापर करून विशेष महिला व मुलींच्या बाबतीत अनेक अपराध घडलेले आहेत. एकतर्फी प्रेमातून केला जाणारा असिड हल्ला, चाकू हल्ला. ऑफीस मध्ये काम करणाऱ्या महिलांना अनेकदा छेडाछेडीच्या प्रसंगाला तोंड द्यावे लागते. या सगळ्यामागे महिलांना असलेले दुय्यम स्थान, तिच्यावर प्रस्थापित केलेला मालकीहक्कच कारणीभूत आहे. बहुतांश पुरुषांना असे वाटते की लग्न करून आणलेली स्त्री ही आपल्या मालकीची वस्तू असते. तिच्यावर अन्याय, अत्याचार करणे आपला हक्कच आहे. ती अबला आहे व प्रतिकार करू शकणार नाही असे गृहीत धरूनच स्त्रियांवरील अत्याचार केला जातो. अगदी महाभारतातील द्रौपदी पासून तर वर्तमानातील निर्भया पर्यंत असंख्य घटना याच भारत देशात घडल्या. अत्याचाराच्या घटना घडल्यावर त्याचे पडसाद रस्त्यांपासून संसदेपर्यंत उमटतात. कॅन्डल मार्च निघतो, जलदगती न्यायालयात केसेस चालतात मात्र अशा घटना होऊ नयेत म्हणून जनजागृती करण्यात आपण कमी पडतो.

शिक्षणाच्या समस्या:-

महिलांना फक्त चूल आणि मूल एवढ्या संकुचित मानसिकतेतून समाजाने बाहेर पडले पाहिजे. करण देशाचा सर्वांगीण विकास करायचा असेल तर महिला वर्गाला समान संधी देणे काळाची गरज आहे. शिक्षण व व्यक्तीच्या विकासाचा मुख्य पाया असतो. स्त्रियांना मात्र शिक्षणापासून जाणीवपूर्वक दूर ठेवण्यात आले. त्या मुळे स्त्री-पुरुष समानता तत्व रुजविण्यात असंख्य अडचणी आल्या. मुली शाळेत जाऊ लागल्या त्या समाजमानसिकतेमुळे नाही तर सरकारने सर्वांना प्राथमिक शिक्षण सक्तीचे व मोफत केले आहे म्हणून. असे असूनही आज सुद्धा सगळ्या मुली शाळेत जातातच असे नाही. प्राथमिक शाळेच्या नोंदणीच्या वेळी

१०० मुलांमध्ये ४५ मुली असे व्यस्त प्रमाण दिसते. त्याचप्रमाणे घरामध्ये कुठलीही अडचण असो, सर्वात प्रथम घरी ठेवले जाते ते मुलीला. शाळेच्या पटावर नियमित गैरहजर राहणार्या ४ विद्यार्थ्यांपैकी ३ मुलीच असतात. प्राथमिक शाळेत नोंदणी केलेल्या १० मुलींमध्ये केवळ २ मुलीच आपले प्राथमिक शिक्षण पूर्ण करू शकतात. मुलींची शाळा चालू राहिली तरी घरातील कामे, जबाबदार्या पारपाडत तिला अभ्यास करावा लागतो. महिला ह्या शिक्षणाच्या क्षेत्रात आजही मागे आहेत. आज वर्तमान काळात मुलींना ग्रामीण भागातून शिक्षणासाठी पाठवले जात नाही. मुलींना शिकून काय करायचं हाच विचार आपल्या समाजत घट्ट रुजला आहे. पण महिलांना शिक्षण दिले तर त्या आपल्या कुटुंबा बरोबरच देशाचा विकास करू शकतात. महिलांसाठी सरकारने विविध शैक्षणिक योजना आणल्या आहेत पण जो पर्यंत समाजाची मानसिकता बदलत नाही तो पर्यंत त्या योजनांचा फायदा महिलांना मिळणार नाही.

आरोग्याच्या समस्या:-

भारत देशातील प्रत्येक दोन महिलांमागे एक महिला कोणत्या ना कोणत्या आरोग्याच्या तक्रारीने ग्रस्त आहेत. ३५ टक्के महिला गंभीर स्वरूपाच्या अशक्त आहे. राक्ताशय सारखा आजार जवळ –जवळ बहुतांश महिलांमध्ये आढळून येतो. महिलांसाठी पुरेशा वैद्यकीय सोयी उपलब्ध नसल्यामुळे त्यांच्यामध्ये ही समस्या निर्माण झाली असल्याचे मत काही महिला डॉक्टरांनी व्यक्त केले आहे. महिलांच्या जीवनात आरोग्य हा शेवटून प्राधान्याचा विषय असतो. लहान-मोठ्या आजारासाठी महिलावर्गाने डॉक्टरकडे जाण्याची गरज नसते, असे सरसकट मानले जाते. त्यामुळे त्यांचे हे लहान-मोठे आजार बघता बघता गंभीर स्वरूप धारण करतात. विशेष करून कर्करोगाच्या बाबतीत ही गोष्ट लक्षात येते. महिलांची मानसिकता सहनशीलतेची असल्यामुळे त्या कर्करोगाच्या पहिल्या अवस्थेतील त्रास तसाच अंगावर काढतात आणि जेव्हा त्या तपासण्यासाठी म्हणून डॉक्टरकडे जातात तेव्हा कर्करोग पुढच्या अवस्थेत गेलेला असतो. भारतात महिलांमध्ये गर्भाशय व स्तनाच्या कर्करोगाचे प्रमाण जास्त आहे. त्यामागचे खरे कारण त्यांच्याकडे होणारे दुर्लक्ष हेच कारण आहे. भारतात कुपोषण आणि कुपोषणाची चर्चा खूप होते. अशा कुपोषित बालकांचे अवेळी होणारे मृत्यू ही मोठी गंभीर समस्या मानली जाते. मात्र महिलांमधील कुपोषण गंभीर समस्या आहे. भारतात एकूण लोकसंख्येच्या पन्नास टक्के स्त्रिया आहेत आणि या निम्म्या लोकसंख्येला आज शिक्षण आरोग्य, नोकरी, व्यवसाय इत्यादी सर्वच क्षेत्रांमध्ये जाणीवपूर्वक मागे ठेवले जाते. स्त्रियांना फक्त कुटुंबामध्येच नाही तर एकूण समाजातच दुय्यम स्थान आहे. आरोग्य, आहार

याबाबतीत विचार करायचा म्हटला तरीसुद्धा मुलाला प्राधान्य दिले जाते. मुलगा थोडा जरी आजारी पडला तरी त्याला डॉक्टरकडे नेऊन औषधोपचार केले जातात. परंतु मुलगी आजारी पडली तर तिच्याकडे दुर्लक्ष केले जाते. जेव्हा तिचा आजार बळावतो जरा गंभीर स्वरूप धारण करतो तेव्हाच तिला दवाखान्यात नेले जाते. अशी वागणूक देण्यामध्ये कुटुंबातील आई आणि वडील दोघांनाही आपण काही चुकीचे करत आहोत असे वाटत नाही. साहजिकच पाच वर्षांखालील मुलीच्या मृत्यूचे प्रमाण याच वयोगटातील मुलांपेक्षा जास्त असलेले आढळते. तसेच आहारातील पौष्टिक ताजे सक्स अन्न घरातील मुलगा व इतर पुरुषांना दिले जाते व लहान मुलगी तिची आई यांना निकृष्ट अन्न मिळते. परिणामी ती मुलगी कुपोषितच राहते.

जन्माला येतांना समस्या :-

देशातील बहुतांश भागात आजही मुलगी जन्माला आली की घरातील मंडळी निराश झालेली दिसतात. "रात्र-दिन अंम्हा युद्धाचा प्रसंग." अशी अवस्था महिला वर्गाची आहे. शहरी भागात काही सुशिक्षितांमध्ये अशी परिस्थिती नसेल परंतु बहुसंख्य कुटुंबांमध्ये विशेषतः ग्रामीण भागामध्ये हेच चित्र प्रामुख्याने दिसते. किंबहुना मुलगी जन्मालाच येऊ नये, मुलगाच हवा, यासाठी मुद्दाम प्रयत्न केले जातात आणि म्हणून गर्भावस्थेत लिंगपरीक्षा केली जाते. मुलगी ही परक्याचे धन म्हणून वाढवली जाते. तिला बरेचदा नीट वागविले जात नाही. कित्येक डॉक्टर, सोनोग्राफी सेंटर कायदे-कानून धाब्यावर बसवून केवळ पैसा कमविण्यासाठी गर्भलिंग चाचणी करून निष्पाप कळ्या गर्भात खुडण्याचे पातक करतात. महासत्ता उदयास येणार्या देशाला ही अतिशय शरमेची बाब आहे.

सारांश:-

आपल्या सामाजिक जडणघडणीमध्ये स्त्रीची भूमिका ही एकाच पद्धतीने रंगवलेली आढळते. स्त्री ही उदात्त कुटुंबातील सदस्यांच्या उन्नतीसाठी त्याग करणारी, इतरांसाठी स्वतःच्या गरजा बाजूला सारणारी अशीच असावी ही अपेक्षा केली जाते आणि ह्या सर्वांची सुरुवात तिच्या जन्मापासूनच झालेली आढळते. आता सगळ्यात महत्त्वाचे म्हणजे स्त्रियांनी आपल्या मुला/ मुलींना वाढवतांना समानतेची वागणूक देऊन वाढविले पाहिजे म्हणजे पुन्हा एकदा स्त्रियांनाच आपल्या मुला/ मुलींना अधिक डोळसपणाने व जागरूकतेने वाढविण्याची जबाबदारी पार पाडावी लागणार आहे. आजपासूनच जर घराघरात मुलामुलींना समान वागणूक मिळू लागली तर आज नाही परंतु पुढील दोन तीन दशकांमध्ये आपल्या समाजामध्ये स्त्री

विरोधी भूमिकेचा जोर कमी झालेला दिसेल आणि कुटुंब व समाजामध्ये स्त्रिया आत्मविश्वासाने व निर्भीडपणे वावरताना दिसू शकतील. ज्या कुटुंबामध्ये अशा तऱ्हेने प्रयत्न झालेले आहेत त्या कुटुंबामध्ये स्त्रियांचे स्थान निश्चितपणे उंचावलेले आपल्याला दिसते. आत्मनिर्भर भारतासाठी या देशातील स्वावलंबी झालेल्या स्त्रिया आपल्या पुरुष साथीदारांबरोबर संसाराचा गाडा सक्षमपणे प्रगतीवर नेतील याबद्दल शंका नाही.

संदर्भग्रंथ :-

- १) भारतीय अर्थव्यवस्था -दत्त सुंदरम-एस.चांद प्रकाशन नवी दिल्ली २०१७
- २) भारतीय अर्थव्यवस्था- रमेश सिंह-एमसी.ग्रा.हिल.दिल्ली -२०२०
- ३) भारतीय अर्थव्यवस्था – डॉ.जी.एन.झामरे पिंपळपूर प्रकाशन नागपूर (सु.अ.)-२०१६
- ४) आधुनिक भारताचा इतिहास –डॉ.बी.एल. ग्योव्हर (सु.अ.)- एस.चांद प्रकाशन नवी दिल्ली २०१७
- ५) गांधी नंतरचा भारत रामचंद्र गुहा अनुवाद शारदा साठे मॉजेस्टीक पब्लिकेशन मुंबई-२०१८
- ६) महिला सबलीकरण – डॉ.सुवर्णा सूर्यवंशी-ऑरेंज बुक प्रकाशन धुळे -२०२१

मासिक:-

- १) लोकराज्य मार्च-२०२१
- २) योजना मार्च-२०१७

अहवाल :-

- १) मानव विकास निर्देशांक अहवाल -२०२०
- २) इन्टरनेट संकेतस्थळ-विकासपेडिया

The book is an attempt to analyze the progress achieved towards the women empowerment in particular and gender equality in general at 75th anniversary of India's Independence and also the road ahead in this regard from highlighting the challenges and hurdles and suggesting remedial measures in order to achieve women empowerment in India.



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भारतीय कृषी कायदे व शेतीचा विकास – एक मृगजळ
प्रा.पुरुषोत्तम रंगराव चाटे
 (अर्थशास्त्र विभाग प्रमुख) श्री.शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय, मोताळा, जि.बुलडाणा

गोष्टवारा :-
 भारत देशामध्ये ज्याप्रमाणे विविधतेत एकता आहे. अगदी त्याच्या विरुद्ध परिस्थिती शेतीक्षेत्रामध्ये एकतेत प्रचंड मोठ्या प्रमाणात भिन्नता व विविधता आढळून येते. कारण या एकाच देशात वातावरणात उष्ण हवामानापासून ते थंड हवामानापर्यंतचे प्रदेश अस्तित्वात आहेत. त्याच बरोबर पर्जन्यमानात आणि पाण्याच्या उपलब्धतेत सुद्धा खूप तफावत आहे. या सर्व विविधतेमुळे आपल्या देशात अनेक पिके घेतली जातात. त्याचप्रमाणे लागवड करण्याच्या पध्दती सुद्धा भिन्न-भिन्न असल्याचे दिसून येते. या सर्व वैविध्याचा विचार करता भारत देशामध्ये एकसारखे कृषी प्रतिमान तयार करता येणार नाही. याचाच अर्थ आपली शेती विकासाची प्रक्रिया खूप गुंतागुंतीची आहे. यावास्तव स्थितीचे भान ठेवून आजपर्यंत शासनव्यवस्थेने, कृषी वैज्ञानिकांनी कृषी विकासाच्या व विस्ताराच्या कार्यक्रमांची अंमलबजावणी केल्याचे आढळून येत नाही. या चुकीच्या प्रवृत्तीमुळे भारत देश नैसर्गिक दृष्ट्या संपन्न असून धोरणकर्त्यांच्या बाबतीत पंगू आहे. म्हणून जागतिकस्तरावर कृषी बाबतीत भारत खूप पिछाडीवर आहे. कृषी क्षेत्रासामोरील आव्हाने, वास्तव परिस्थिती, विकासाची व्युत्पत्ती आणि कायदे व धोरणांमधील सुस्पष्टता भारतीय शेतीविकासात मैलाचा दगड ठरू शकते. परंतु त्याकरिता शासनकर्ते व धोरणकर्त्यांचा प्रामाणिकपणा व सचोटीने काम करण्याची गरज खूप महत्त्वाची असेल.

संशोधनाची उद्दिष्टे :-
 १) शेती विकासातील आव्हानांचा अभ्यास करणे.
 २) शेती विकास व ग्रामीण विकास याचा सहसंबंध तपासणे.

संशोधनाची गृहितके :-
 १) शेतीक्षेत्रामध्ये संकटे व संधी वाढत आहे.
 २) शेतीमध्ये खर्चाचे प्रमाण वाढत आहे.

संशोधन पध्दती :-
 प्रस्तुत संशोधनासाठी दुय्यम साधन सामग्रीचा वापर करण्यात आला आहे. त्यामध्ये संदर्भ ग्रंथ, वर्तमानपत्रे व मासिके यांचा समावेश आहे.

प्रस्तावना :-
 कृषी व्यवसाय केवळ भारत देशातील नव्हे तर जगातील सर्वांत प्राचीन व महत्त्वपूर्ण व्यवसाय म्हणून मान्यता पावलेला आहे. प्राचीन काळात आदिमानव फळे व कंदमुळे गोळा करून आपला उदरनिर्वाह करत असत. सुमारे ११,००० वर्षांपूर्वी भटकंती करणाऱ्या या मानव जातीच्या समूहास असे लक्षात आले की, झाडांवरून जमीनीवर पडणारे बियाणे पाऊस पडल्यानंतर योग्य वातावरण मिळताच रुजते व उगवते. यावरूनच अन्नधान्य प्रक्रियेचे सुरुवात झाली. जगातील मानवी वसाहतीच्या प्रथम पाऊलगावठ्या इजिप्त देशातील नाईल नदीच्या किनाऱ्यावर दिसून येतात. याच ठिकाणी कृषी व्यवसायाला सुरुवात झाल्याचे दाखले इतिहासात दिसतात. या व्यवसायात पाण्याचे महत्त्व जोखून नाईल नदीवर पहिले धरण बांधण्यात आले. धरणातील पाण्याचा उपयोग शेतीसाठी करण्यात आला. भारत हा कृषीप्रधान देश असून शेती भारतीय अर्थव्यवस्थेचा कणा आहे. कारण आज एकाविसाव्या शतकात देखील भारताच्या एकूण लोकसंख्येपैकी प्रत्यक्ष व अप्रत्यक्ष शेतीवर अवलंबून असणाऱ्या जनतेचे प्रमाण ६५% आहे. भारताचा विचार करता चीनपेक्षा लागवडीयोग्य शेतजमीन जास्त आहे. गंगा, ब्रह्मपुत्रा, यमुना, कृष्णा, गोदावरी या नद्या आहेत. विशाल असा समुद्र किनारा भारताला लाभलेला आहे. जल, जंगल व पशुधन मोठ्या प्रमाणावर असून पिकांच्या उत्पादनासाठी असणारे वातावरण पोषक आहे. तरी सुद्धा जगातील प्रगत राष्ट्रांच्या कृषी उत्पादकतेचा विचार केल्यास भारताची कृषी उत्पादकता कमी असल्याचे दिसते. याचे मुख्य कारण आजसुद्धा भारतातील बहुतांश शेतकरी पारंपारीक पध्दतीने शेती करतात, मोठ्या प्रमाणात होत असलेले जमीनीचे तुकडीकरण, वाढती लोकसंख्या या सारख्या अनेक घटकांमुळे शेतीच्या उत्पादकतेवर प्रतिकूल परिणाम होताना दिसतो.

भारतीय शेतीची वास्तविकता :-
 भारतीय शेती व शेतकऱ्यांच्या विदारक परिस्थितीवर भाष्य करताना स्वतंत्र भारताचे पहिले कृषीमंत्री डॉ. पंजाबराव उपर्यक्ष भाऊसाहेब देशमुख यांनी अतिशय परखड मत व्यक्त केले होते. त्यांच्या मते आर्थिक दृष्टीकोनातून भारतीय शेतकरी कर्जबाजारी नाही. उलट भारतीय भांडवलदार, व्यापारी सरकार यांना शेतकऱ्यांनी गेल्या शतकात एवढे प्रचंड कर्ज दिले, की तेवढे कोणतही सरकार देऊ शकणार नाही. मात्र या शोषिकांची कमाल ही, की यांनी शेतकऱ्यांचे कर्ज परत न करता बूडवले आणि शेतकऱ्यांनाच कर्जबाजारी म्हणून घोषित केले. आज वर्तमान काळात कृषीक्षेत्रामध्ये अनेक स्थित्यंतरे घडलेली आहेत. परंतु तरीसुद्धा भारतीय कृषीक्षेत्र विविध संकटांनी ग्रासलेले आहे. त्यामध्ये कधी अस्मानी, तर कधी सुलतानी संकटे चाक्रिय पध्दतीने शेती व शेतकऱ्यांच्या मागे असल्याचे दिसते. भारतीय शेतीची अवस्था तर

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पाणी आहे, वीज नाही.
वीज आहे, पाणी नाही.
झाल्या पीकाला मोल नाही.
फाटक्या चप्पलीला सोल नाही.
तरी कोणाला आपला बोल नाही.

वरील काव्यात शेतीचे जे विदारक चित्र उभे केले आहे, त्यापेक्षा वेगळे चित्र नाही. आज जमीनीचे मोठ्या प्रमाणावर तुकडीकरण झालेले आहे. एक हेक्टरपेक्षा कमी आकारमान असलेल्याशेताचे प्रमाण ७०% पेक्षा अधिक आहे. त्या क्षेत्रात यांत्रिकीकरण किंवा आधुनिक तंत्रज्ञानाचा वापर करण्यासाठी मर्यादा येतात. स्वातंत्र्याच्या अमृतमहोत्सवानंतर सुध्दा शेती क्षेत्रात अनेक समस्यांनी ग्रासलेले आहे. आज किमान आधारभूत किंमत, कृषी कायदे, शेतकरी आंदोलन, कृषी मालांची नासाडी, शासनाने उदासीन धोरण इत्यादी अनेक बाबतीत शेतकऱ्यांना ठगवले जाते.

कृषी क्षेत्रासमोरी आव्हाने :-

भारताचे पहिले पंतप्रधान पंडीत जवाहरलाल नेहरू यांनी त्यावेळी आचार्य विनोबा भावे यांना सांगितले होते की, ज्या राष्ट्राचा सभोवतालच्या निसर्गाशी संबंध राहत नाही, ती राष्ट्र क्षीण होतात. त्यांचा क्षय होतो. आज सुध्दा नेहरूजींचे हे वाक्य चपखर लागू पडते. आज देशामधील कृषीक्षेत्रामध्ये उदासीनता आहे. म्हणून हरितक्रांतीच्या वेळी जी चुक झाली होती ती आज करून घ्यायला पाहिजे. (Grow More Crop) कारण भौगोलिकदृष्ट्या ज्या भिन्नता आहेत, त्यामुळे शेतीच्या उत्पादनाला व पीक वेगळेपणा मर्यादा येतात. उदा. सोयाबीनसारखे पीक भारतामधील निवडक सहा ते सात घटकराज्यात चांगल्या प्रकारे येऊ शकते. उदा. मध्यप्रदेश, तेलंगाना, कर्नाटक, राजस्थान व गुजरात. त्यासाठी भारताच्या भौगोलिक गुणधर्मतेचा विचार करून पीकरचना कार्यक्रम तयार करणे गरजेचे उरते. आपल्या कृषीक्षेत्रात जिरायती जमीनीचे प्रमाण ६०% पेक्षा अधिक आहे. त्याचा विचार करून कमी पावसावर येणारे व पाण्याचा ताण सहन करणाऱ्या वाणाचे संशोधन करणे ही काळाची गरज आहे. शेतमालाच्या किमतीसंदर्भात योग्य धोरण असावे. केवळ धोरणच असून भागणार नाही. तर त्यांची अंमलबजावणी होणे व शेतकऱ्यांना योग्य मोबदला मिळणे हे कृषी व्यवस्थेसमोर खरे आव्हान आहे. कृषी क्षेत्राच्या विकासासाठी कागदोपत्री धोरणाची गरज नसते तर घडाडोने निर्णय घेऊन त्यांची अंमलबजावणी करणारे व दुरुदृष्टी असणारे शासनकर्ते पाहिजे.

शेती विकासाची दयनीय स्थिती :-

भारतात शेती व्यवसायाचा विचार करता प्राचीन काळी उत्तम शेती, मध्यम व्यापार, कनिष्ठ नोकरी अशी त्रिसूत्री कार्यरत होती. देशात इंग्रज सत्ता स्थापन झाल्यापासून कृषी क्षेत्राच्या शोषणाची नवनवीन दालने खुली झाली. आज ६५% जनता ग्रामीण भागात वास्तव्याला आहे. जोपर्यंत खेडी स्वयंपूर्ण होणार नाहीत, तोपर्यंत देशातील दारिद्र्य, बेरोजगारी, उपासमार, भ्रष्टाचार, अनारोग्य हे कमी होणार नाही. देशातील नकारात्मक प्रवृत्तीला समूळ नष्ट करण्यासाठी एकमेव उपाय म्हणजे कृषी विकास होय. स्वातंत्र्यानंतर पहिल्या पंचवार्षिक योजनेत शेती विकासावर जास्त भर देण्यात आला. त्यानंतर बहुतेक योजना शेती क्षेत्राला दृष्टीय दर्जा देण्यात आला. बहुतांश वेळा धोरणकर्ते व राज्यकर्ते यांच्यात कृषी संबंधात गल्लत व गफलत वाढत गेली. त्याचा बळी कृषी क्षेत्र उरले. शेती व शेतकऱ्यांचे दुःख व दैन्यावस्था निस्तारण्यासाठी शासनकर्त्यांना शेती विकास म्हणजे ग्रामीण विकास व ग्रामीण विकास म्हणजे शेती विकास हे समीकरण समजणार नाही, तोपर्यंत शेती व शेतकऱ्यांचे शोषण होत राहणार हे सांगण्यासाठी कोणत्याही तत्ववेत्त्यांची गरज नाही. देशात शेतीविकासाच्या मुख्य कार्याला बगल देऊन एकात्मिक ग्रामीण विकास, ईंदिरा आवास योजना, स्वर्णजयंती, स्वयंरोजगार, बेरोजगार भत्ता, पंतप्रधान धरकुल असे आणि यासारख्या असंख्य योजना चालविल्या जात आहेत. सरकार कोणतेही असले तर योजनांचा कालावधी व योजनांचे नाव बदलून बाळसे केले जाते. आमच्या जगण्यात आनंद, हवेहवेसापणा मग शेतकऱ्यांच्या जीवनात या सर्व गोष्टी कधी येणार? त्या येण्यासाठी योग्य उपाय व अंमलबजावणी करण्याची सुबुद्धी आमच्या धोरणकर्त्यांना कधी येणार? ही कृषी विकासामधील खरी मेख आहे. कारण राज्यकर्त्यांच्या सत्तापिपासू व स्वार्थी धोरणाच्या त्यागाशिवाय शेती विकासाचा सुदिन उजाडणार नाही.

शेतीविषयक कायदे व संभ्रम :-

स्वातंत्र्यानंतर कृषी व्यवसायाचा विकास करण्यासाठी अनेक कृषी कायदे निर्माण करण्यात आले. शेतकऱ्यांचे शोषण करणारे अनेक कायदे रद्द देखील करण्यात आले. त्याचप्रमाणे कमला जमीन धारणा सिलिंग अॅक्ट असे शेतकरी हिताचे नवीन कायदे अंतर्भूत करण्यात आले. जागतिकीकरणाच्या स्विकारानंतर कृषीमध्ये नवनवीन प्रवाह उदयास आले. शेती व शेतकऱ्यांच्या फायद्याच्यादृष्टीने कायद्यामध्ये कमी अधिक संभ्रमावस्था दिसून येते. भारत देशात २०२० मध्ये तीन नवीन कृषी कायदे पारित करण्यात आले. त्यामध्ये

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- २) शेतकरी (सशक्तीकरण आणि संरक्षण) किंमत आश्वासन आणि कृषी सेवा करार कायदा २०२०
- ३) अत्यावश्यक वस्तू (दुरुस्ती) कायदा २०२०

या तीन कायद्यांचा समावेश आहे. वरील कायद्यांविरुधात शेतकरी मागील १ वर्षांपासून कोरोनासारख्या महामारीत सुध्दा आंदोलन करीत आहेत. ज्यामध्ये अनेक शेतकऱ्यांचे बळी गेले आहेत. वास्तव शेतकरी कायदे शेतकऱ्यांच्या हितासाठी असतील तर त्याला

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विरोध का होत आहे. शेतकऱ्यांना शासन कायदे समजावून देण्यात अपयशी ठरले का? या कायद्यामुळे शेतकऱ्यांच्या मालकीच्या जमीनी धनदांडगे लोक बळकावतील का? पुन्हा कंपनी सरकार स्थापन होईल का? अशा संप्रभावस्थेमुळे शेतकरी आंदोलन करीत नसतील ना? या प्रश्नाचा योग्य अभ्यास करून सरकारने शेतकरी बांधवांच्या मनातील गैरसमज दूर करणे गरजेचे आहे. कारण शेती देशातील असंघटीत लोकांचा सर्वात मोठा खाजगी व्यवसाय असला तरी, असंख्य अकुशल लोकांना रोजगार पुरविणारा आधारस्तंभ आहे याचे भान सरकारने ठेवणे गरजेचे आहे.

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- ४) मनोज हाडवळे, जून २०१८, "कृषी पर्यटन-एक पुरक व्यवसाय" सकाळ प्रकाशन, पुणे.
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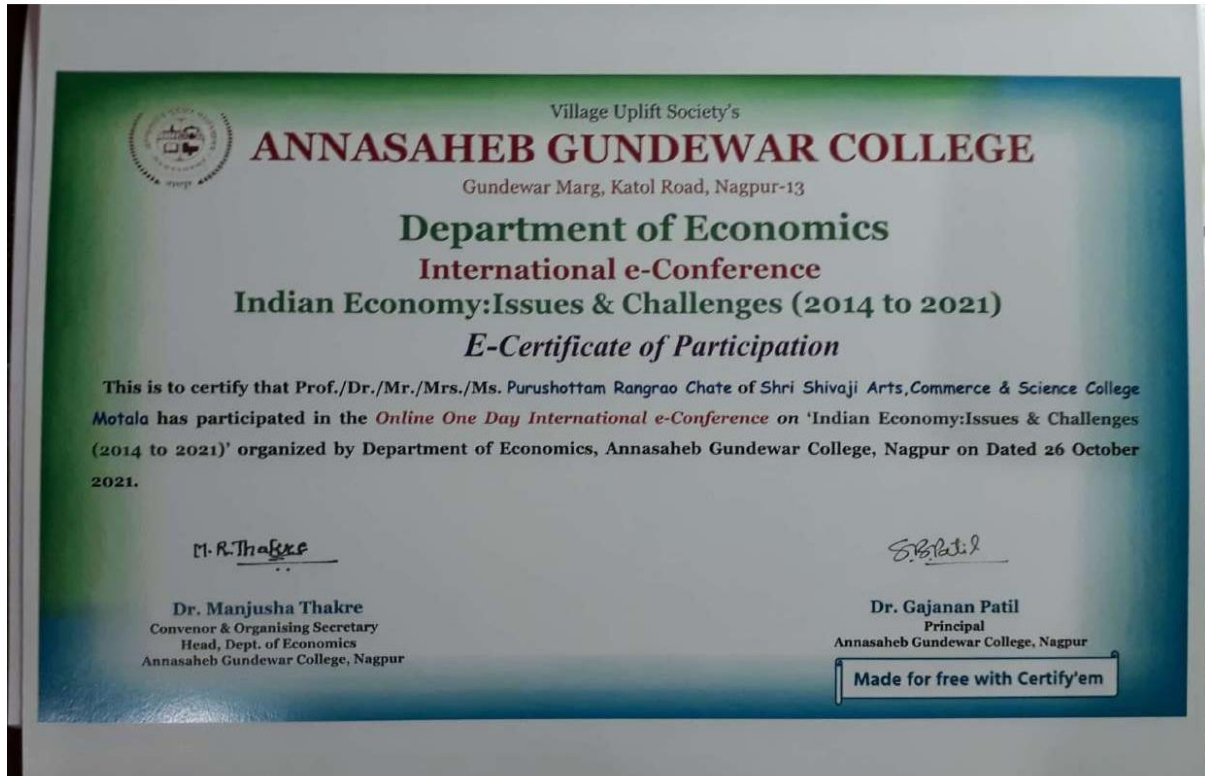
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*An International Peer-Reviewed Open Access Journal***THE TERM DIASPORA: ORIGIN & LITERATURE IN A NUTSHELL***Academic year - 2021-22***PROF.C.N.RATHOD**Head, Dept. of English
Shri Shivaji College,
Motala Dist.Buldana**ABSTRACT:**

One aspect of today's world is the mixture of creative elements of various worldly cultures. Diaspora literature includes an idea of a homeland, a place from where the displacement takes place and telling of the stories of unpleasant and harsh journey undertaken due to economic compulsions. Desire for the homeland, making of a new home, adapting to the power, relationship between the minority and majority are some of the common features.

Keyword: Geographic, Diaspora, Domination, Thrive, Homeland, Ancestral.

Etymologically, the term Diaspora has come to us from Greek translation of the Hebrew Bible. As a matter of fact, this translation was called the Septuagint and was the project of Greek speaking Jews living in the Egyptian diaspora. The entire Septuagint could be described literature because it was the work of Jews who were living outside their homeland. And their translation reflects that orientation. But specific books within it such as the books of Tobit and Judith which feature Jewish protagonists living outside the land or under foreign domination and which reflect on how the Jews might conduct themselves in this situation, could be described as especially diasporic because of their contents and concerns.

A distinction can also be drawn between exile and diaspora for defining further what diaspora literature is. This difference between exile and diaspora may lie in a book's attitude towards the homeland and towards the migration. An exile lays stress on the forced nature of the migration and the freshness of the experience of leaving the homeland. An exile is not neutral and exiled people normally possess a single minded desire to return to their homeland.

In contrast, living in diaspora may assume a certain accommodation to living away from the homeland and a sense that it is possible to survive and even thrive in the adopted country. Diaspora implies a more neutral or even a more positive view than exile does. Diasporic literature may be mindful to the ancestral native land, but the nostalgia for it has lessened, if not disappeared. And diasporic literature is, moreover engaged by the possibilities of the new location. Diasporic living stops short of assimilation because the community still maintains its distinctive identity and its status as a minority people.

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Diaspora, from the Greek word for scattering, describes the dispersion of a people from their homeland. Again a simple definition of diaspora literature, then would be that it the works written by the authors who live outside their native land. The term identifies a work's distinctive geographic origins. But diaspora literature may also be defined by its contents, not considering where it was written e.g. the story of Joseph is often called a diaspora story because although its final form was written within the land of Israel, it describes how Joseph learn to survive outside his homeland. The Book of Job also may be an example of diaspora literature.

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CESTODE FAUNA

A REVIEW



(Reported from Maharashtra state)

Dr. Sunita Borde
Dr. Sushil Jawale

Dr. Amol Thosar
Dr. Arun Gaware

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CESTODE FAUNA

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● Edited by ●

Dr. Sunita Borde
Dr. Sushil Jawale
Dr. Amol Thosar
Dr. Arun Gaware

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Cestode Fauna / v



The book "Cestode Fauna- A Review" gives detailed information about the species in the Class Cestoda. Research in the Helminth research laboratory in the Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. The research on cestode fauna has been happening for five decades in the Helminth research laboratory. The published material is a compilation of the research carried out in the lab over the years in the form of a review by including the advances.

Class Cestoda is divided into two subclasses Cestodaria and Eucestoda.

This book gives information about three species from subclass Cestodaria with order Caryophyllidea and 68 species from subclass Eucestoda with nine orders and eighteen families. This book contains information about three new families, 13 new genera with 71 new and redescribed species.

It also covers the Molecular study of nine species from both the subclasses.

Dr. Sunita Borde, Professor, Department of Zoology

- Ph.D. 1997, under the guidance of Dr. G. B. Shinde.
- Served in Yashwantrao Chavan College, Sillod, Dist. Aurangabad upto 2008.
- Working as Professor since 2008 in Department of Zoology, Dr. B. A. M. University, Aurangabad, Maharashtra till the date.
- Teaching experience and Research experience- 26 years.
- Research guidance- 15 students awarded and 8 students are working.
- Research project- Two.
- Worked as a Member Board of Studies in zoology, Dr. B. A. M. University, Aurangabad (2006- 2008).
- Chairman –Sexual Harrasment of women at work place cell, Dr. B. A. M. University, Aurangabad. (M.S) India in 2017-2021.
- Worked as a External referee for Ph.D. Viva- Voce exam in different universities, Referee for Evaluation of Book Publication, Subject Expert on Selection Committees, Editorial Board of T.P.R. Journal and BOS member of SRTM University, Nanded.
- Life Member of Society of Life Science. (F.S.L.Sc.), Indian Society of Parasitology, Indian Science Congress Association, National Environmentalist Association and Flora and Fauna
- Awarded Fellow of Society of Life Science. (F.S. L. Sc.), Scientist of the Year 2016 by IFEE, Kolkatta and G. B. Shinde Gold Medal Award 2017 by Society of Life sciences.
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RECENT AGRICULTURE DEVELOPMENT AND ITS ISSUE

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Introduction

Agriculture plays a vital role in India's economy. Over 58 per cent of the rural households depend on agriculture as their principal means of livelihood. As per the 2nd advised estimates by the Central Statistics Office (CSO), the share of agriculture and allied sectors (including agriculture, livestock, forestry and fishery) is estimated to be 17.3 per cent of the Gross Value Added (GVA) during 2016-17 at 2011-12 prices.

The Indian food industry is poised for huge growth, increasing its contribution to world food trade every year due to its immense potential for value addition, particularly within the food processing industry. The Indian food and grocery market is the world's sixth largest, with retail contributing 70 per cent of the sales. The Indian food processing industry accounts for 32 per cent of the country's total food market, one of the largest industries in India and is ranked fifth in terms of production, consumption, export and expected growth. It contributes around 8.80 and 8.39 per cent of Gross Value Added (GVA) in Manufacturing and Agriculture respectively, 13 per cent of India's exports and six per cent of total industrial investment.

Structure and Structural Transformation of Indian Agriculture

The agriculture sector in India has undergone significant structural changes in the form of decrease in share of GDP from 30 percent in 1990-91 to 14.5 percent in 2010-11 indicating a shift from the traditional agrarian economy towards a service dominated one. This decrease in agriculture's contribution to GDP has not been accompanied by a matching reduction in the share of agriculture in employment. About 52% of the total workforce is still employed by the farm sector which makes more than half of the Indian population dependent on agriculture for sustenance. However, within the rural economy, the share

of income from non-farm activities has also increased.

With the declining share of agriculture to GDP, the continuing high pressure of population on agriculture and the increasing fragmentation of land holdings leading to decreasing availability of cultivated land area per household, the agriculture sector alone would hardly be in a position to create additional employment opportunities to sustain the livelihood of the rural households. This calls for creation of additional employment opportunities in the non-farm and manufacturing sector, especially in agro based rural industries which have area specific comparative advantage in terms of resources endowment and development possibilities. This would require suitable skill development of the people so as to gainfully employ them in non-farm activities. This alone would be able to make agriculture viable in a sustainable manner. In addition, by creating more employment and absorbing some of the surplus labour in agriculture, this will contribute to achieving our objective of inclusive growth.

Growth Performance of Agriculture : Overall Growth

The growth performance of the agriculture sector has been fluctuating across the plan periods . It witnessed a growth rate of 4.8 per cent during the Eighth plan period (1992–97). However, the agrarian situation saw a downturn towards the beginning of the Ninth plan period (1997–2002) and the Tenth plan period (2002–07), when the agricultural growth rate came down to 2.5 percent and 2.4 percent respectively. This crippling growth rate of 2.4 percent in agriculture as against a robust annual average overall growth rate of 7.6 per cent for the economy during the tenth plan period was clearly a cause for concern. The trend rate of growth during the period 1992-93 to 2010- 11 is 2.8 percent while the average annual rate of growth in agriculture & allied sectors GDP during the same period is 3.2 percent.

Irrigation, Seeds, Fertilizers and Credit

There is no doubt that the overall size, quality, and efficiency of investment are always the key drivers of growth in any sector. In case of public investments in agriculture, as defined in the National Accounts Statistics, more than 80 percent is accounted for major and medium irrigation schemes. Even in the case of private investments in agriculture, almost half is accounted for by irrigation (minor, primarily through groundwater, but also now increasingly drip, etc.). So irrigation remains the most dominant component in the overall investment in agriculture. Without proper use of water, it is difficult to get good returns on better high yielding seeds and higher doses of

fertilizers. Water will remain a critical input for agriculture in the decades to come until science develops seeds that can thrive in dry climate with very little water. The net sown area has remained around 141 million hectares during the last 40 years. The cropping intensity, i.e., the ratio of gross cropped area to Indian Agriculture: Performance and Challenges net cropped area has however, gone up from 118 per cent in 1970-71 to 138 percent in 2008-09.

Emerging Demand—Supply Imbalances

With the Indian economy growing at 8 percent and higher expenditure elasticity of fruits & vegetables and livestock as compared to cereals, there is an increasing pressure on the prices of such high value perishable commodities. The per capita monthly consumption of cereals has declined from 14.80 kg in 1983-84 to 12.11 kg in 2004-05 and further to 11.35 kg in 2009-10 in the rural areas. In the urban areas, it has declined from 11.30 kg in 1983-84 to 9.94 kg in 2004-05 and to 9.37kg. in 2009-10. The agricultural production basket is still not fully aligned to the emerging demand patterns.

Government Initiatives

Given the importance of the agriculture sector, the Government of India, in its Budget 2017–18, planned several steps for the sustainable development of agriculture-

- Total allocation for rural, agricultural and allied sectors for FY 2017-18 has been increased by 24 per cent year-on-year to Rs 1,87,223 crore (US\$ 28.1 billion). A dedicated micro-irrigation fund will be set up by National Bank for Agriculture and Rural Development (NABARD) with a corpus of Rs 5,000 crore (US\$ 750 million). The government plans to set up a dairy processing fund of Rs 8,000 crore (US\$ 1.2 billion) over three years with initial corpus of Rs 2,000 crore (US\$ 300 million).
- The participation of women in Mahatma Gandhi National Rural Employment Gurantee Act (MGNREGA) has increased to 55 per cent and allocation to the scheme has been increased to a record Rs 48,000 crore (US\$ 7.2 billion) for FY2017-18.

Some of the recent major government initiatives in the sector are as follows:

- With an aim to boost innovation and entrepreneurship in agriculture, the Government of India is introducing a new AGRI-UDAAN programme to mentor start-ups and to enable them to connect with potential investors.

- The Government of India has launched the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) with an investment of Rs 50,000 crore (US\$ 7.7 billion) aimed at development of irrigation sources for providing a permanent solution from drought.
- The Government of India plans to triple the capacity of food processing sector in India from the current 10 per cent of agriculture produce and has also committed Rs 6,000 crore (US\$ 936.38 billion) as investments for mega food parks in the country, as a part of the Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA).
- The Union Cabinet, Government of India, approves Rs 9,020 crore (US\$ 1.4 billion) as Extra Budgetary Resources (EBR) for execution of projects under Accelerated Irrigation Benefits Programme (AIBP) and their command area development (CAD) works under PMKSY.
- A new platform for selling agricultural produce named e-RaKam has been launched by the Government of India and will operate as a joint initiative of Metal Scrap Trade Corporation Limited and Central Railside Warehouse Company Limited (CRWC).
- The NITI Aayog has proposed various reforms in India's agriculture sector, including liberal contract farming, direct purchase from farmers by private players, direct sale by farmers to consumers, and single trader license, among other measures, in order to double rural income in the next five years. The Ministry of Agriculture, Government of India, has been conducting various consultations and seeking suggestions from numerous stakeholders in the agriculture sector, in order to devise a strategy to double the income of farmers by 2022.
- The Government of India has allowed 100 per cent FDI in marketing of food products and in food product e-commerce under the automatic route.

Market Size

India's GDP is expected to grow at 7.1 per cent in FY 2016-17, led by growth in private consumption, while agriculture GDP is expected to grow above-trend at 4.1 per cent to Rs 1.11 trillion (US\$

1,640 billion). It ranks third in farm and agriculture outputs. As per the 2nd Advance Estimates, India's food grain production is expected to be 271.98 MT in 2016-17. Wheat production in India is expected to touch an all-time high of 96.6 MT during 2016-17. Production of pulses is estimated at 22.14 MT. India has been the world's largest producer of milk for the last two decades and contributes 19 per cent of the world's total milk production. India is emerging as the export hub of instant coffee which has led to exports of coffee reaching 177,805 tons valued at US\$ 447 million between April-August 2017, as against 162,641 tons valued at US\$ 363.1 million during the same period last year.

India topped the list of shrimp exporters globally, as the value-added shrimp exports rose 130 per cent year-on-year to 23,400 tons in 2016. The production of food grains in India reached a record 275.68 million tonnes (MT) during FY 2016-17, as per the Fourth Advance Estimates (AE) released by the Department of Agriculture, Cooperation and Farmers Welfare, Government of India. The total sown area for kharif crops was 68.53 million hectares as on July 2017, compared to 67.34 million hectares on July, 2016.

Conclusion

Agriculture plays a vital role in India's economy. Over 58 per cent of the rural households depend on agriculture as their principal means of livelihood. As per the 2nd advised estimates by the Central Statistics Office (CSO), the share of agriculture and allied sectors (including agriculture, livestock, forestry and fishery) is estimated to be 17.3 per cent of the Gross Value Added (GVA) during 2016-17 at 2011-12 prices. The Indian food industry is poised for huge growth, increasing its contribution to world food trade every year due to its immense potential for value addition, particularly within the food processing industry. The Indian food and grocery market is the world's sixth largest, with retail contributing 70 per cent of the sales. The Indian food processing industry accounts for 32 per cent of the country's total food market, one of the largest industries in India and is ranked fifth in terms of production, consumption, export and expected growth. It contributes around 8.80 and 8.39 per cent of Gross Value Added (GVA) in Manufacturing and Agriculture respectively, 13 per cent of India's exports and six per cent of total industrial investment.

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A Report of Dicot Leaf *Julianiophyllum Mohgaonensis* from Deccan Intertrappean Beds of Mohgaon Kalan, Madhya Pradesh, India

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ABSTRACT

The black fossiliferous chert was collected from Mohgaonkalan Deccan Intertrappean Beds of Chhindwara district (Lat. 21° 30' N to 22° 50' N and Long 78° 15' to 79° 20'E). Serial peels were taken by cellulose acetate peel technique. The leaf was studied from peel sections. It is dicotyledonous, dorsiventral, bifacial leaf measuring 5 mm in width, left arm 1.5 mm in width and 200 μm in thickness while right arm is completely preserved 3 mm thick and shows blunt end; the midrib region, is 500 – 700 μm thick. From Deccan Intertrappean beds, so far numbers of dicotyledonous and monocotyledonous leaf impressions have been described by many authors. However, only few leaf petrifications are reported for example- *Aerophyllites intertrappea*, *Deccanophyllum intertrappea*, *Dorsiventrophyllum chitaleyii*, *Julianiophyllum sahnii*, *Corokiophyllum mohgaonkalanites*, *Salicaceophyllum mohgaensis*, *Marcgraviaceophyllum mohgaonse*, *Acanthophyllum shiblii*. After comparisons with the leaves of modern families as well as reported fossil leaves. It greatly resembles with *Julianiophyllum sahnii* (Kapgata, 1998). Hence it is created a new species named *Julianiophyllum mohgaonensis* sp. nov. The specific name is after the fossiliferous locality Mohgaonkalan.

Keywords: Fossil, Dicot, Leaf, Deccan Intertrappean, Maastrichtian

I. INTRODUCTION

This paper deals with the anatomy of a dicotyledonous leaf from the Deccan Intertrappean beds of Madhya Pradesh. The specimen was collected from well-known fossiliferous locality Mohgaonkalan of Chhindwara district (Lat. 21° 30' N to 22° 50' N and Long 78° 15' to 79° 20'E). From Deccan Intertrappean beds, so far numbers of dicotyledonous and monocotyledonous leaf impressions have been described by many authors. However, only few leaf petrification are reported for example- *Aerophyllites*

intertrappea Chitaley & Patil (1970), *Deccanophyllum intertrappea* Sheikh & Kolhe (1980), *Dorsiventrophyllum chitaleyii* Mistri et al. (1995), *Julianiophyllum sahnii* Kapgate (1998), *Corokiophyllum mohgaonkalanites* Narkhede & Patil (2003), *Salicaceophyllum mohgaensis* Kapgate et al. (2008), *Marcgraviaceophyllum mohgaonse* Kapgate & Paliwal (2010), *Acanthophyllum shiblii* Ramteke D. D. & Kapgate D. K.

Present specimen of dicot leaf is considered to be similar to the reported dicot leaf of *Julianiophyllum*

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sahnii Kapgate (1998) from the same locality with some differences.

II. METHODOLOGY

The black fossiliferous chert was collected from Mohgaonkalan Deccan Intertrappean Beds of Chindwara district. After itching with HF acid, the specimen appeared in the form of a long strip showing the preservation of one complete arm and other being incompletely preserved. Serial peels were taken by cellulose acetate peel technique. The leaf was studied from peel sections.

III. OBSERVATION

On observation of peel sections it is clear that, this preserved leaf is a dicotyledonous dorsiventral bifacial leaf which shows distinct midrib at middle of leaf lamina. The complete leaf specimen measures 5 mm in width showing the preservation of one complete arm and other being incompletely preserved. At the midrib region, it is $500 \times 700 \mu\text{m}$ thick. The left arm of the leaf is incompletely preserved (Plt. Fig.1) measure 1.5 mm in width and $200 \mu\text{m}$ in thickness while right arm is completely preserved 3 mm thick and shows blunt end (Plt. Fig.3). On both side of midrib, lamina is $200 \mu\text{m}$ in thickness. The left side lamina shows a single lateral vein which cut obliquely. Total width of lamina could not be traced due to its incomplete preservation.

This leaf specimen shows following anatomical characteristics:

Epidermis: The leaf shows an epidermis on both upper and lower surface. Well-preserved upper epidermis is one celled thick, without any outgrowth and stomata. Both upper and lower epidermis is single layered with compactly arranged columnar parenchymatous cells. The lower epidermis shows certain gaps at place and these might be the stomata but the structure of

stomata is not clear. A thin cuticle is present on the upper epidermis.

Mesophyll Tissue: The epidermis is followed by mesophyll tissue which is differentiated into upper palisade tissue and lower spongy tissue (Plt. Fig. 2). Cells of palisade parenchyma are compactly arranged and present towards upper and lower epidermis. They are 2-3 layered towards the upper epidermis and single layered toward lower epidermis. The cells measure about 30 to $45 \mu\text{m}$ in height and 12 - $20 \mu\text{m}$ in breadth and are filled with brown deposition, may be fossilized chloroplast.

The spongy parenchyma occupies the major portion of the leaf. Some cells of spongy parenchyma are oval to ellipsoidal in shaped. The cells of spongy parenchyma are flattened and loosely arranged with intercellular spaces. They are arranged in 3 to 5 layers and bounded on lower side by single layered epidermis. The cavities in spongy parenchyma might be substomatal chambers. At places few cavities present may be secretory canals.

Midrib: Midrib is large and triangular which is distinctly preserved measures $700 \times 500 \mu\text{m}$ in size. The vascular bundle in this region is somewhat saucer shape in outline. It is conjoint, collateral and without distinct bundle sheath (Plt. Fig. 2). Phloem is preserved towards the lower side and xylem is faces the upper side.

Lateral veins: The left side lamina shows a single lateral vein which cut obliquely and measures $220 \mu\text{m}$ thick (Plt. Fig. 4). The vascular bundles are collateral with few conducting elements of xylem. Phloem is not clear but some thin walled cells are observed towards the lower epidermis which might represent phloem.

IV. DISCUSSION AND CONCLUSION

From the above description following important features are confirmed:

- This leaf is a dicotyledonous dorsiventral bifacial leaf which shows distinct midrib at middle of leaf lamina.
- Specimen showing the preservation of one complete arm and other being incompletely preserved.
- The right arm is completely preserved and shows blunt end.
- The left side lamina shows a single lateral vein.
- Single layered upper and lower epidermis with cuticle.
- Absence of epidermal out growth.
- Mesophyll differentiated into palisade and spongy parenchyma.
- Absence of hypodermis.
- Presence of lateral vein.
- Single, large and triangular midrib with saucer shaped, conjoint, collateral vascular bundle without bundle sheath.
- Stomata-like gaps restricted to the lower epidermis only.

From the above discussion present described specimen is confirmed as dicotyledonous leaf.

V. IDENTIFICATION:

For identification of specimen, above mentioned characters of fossil leaf is compared with the leaves of modern families as well as reported fossil leaves.

Comparison with Modern Families:

It is compared with tropical families like Caryocaraceae, Margraviaceae, Apocynaceae, Julianiaceae, Bergia of cosmopolitan family Elatinaceae, Shortia uniflora of a temperate family Daiapensiaceae, as their leaves shows resemblance with above described leaf such as dorsiventral, having

secretory canal, without epidermal outgrowth and stoma mostly confined to the lower epidermis etc. (Table: 1).

Comparison with Reported Species:

This specimen also compared with a fossil dorsiventral leaves Dorsiventrophyllum agashei (Kolhe, 1980) and Julianiophyllum sahnii (Kapgate, 1998). It is also compared with other reported fossil leaves but differ mainly in size and general characters. (Table 2)

Table: 1 showing comparison with modern families.

Present specimen <i>Julianiophyllum agashei</i> sp. nov.	Specific features of <i>Dorsiventrophyllum</i>	Species of <i>Elatinaceae</i>	<i>Julianiaceae</i>	<i>Apocynaceae</i>	<i>Margraviaceae</i>	<i>Caryocaraceae</i>
Dicotyledonous dorsiventral bifacial leaf with distinct midrib at middle of leaf lamina. The right arm is completely preserved and shows blunt end. The left side lamina shows a single lateral vein. Single layered upper and lower epidermis with cuticle. Absence of epidermal out growth. Mesophyll differentiated into palisade and spongy parenchyma. Presence of lateral vein. Single, large and triangular midrib with saucer shaped, conjoint, collateral vascular bundle without bundle sheath. Stomata-like gaps restricted to the lower epidermis only.	Absence of hairs and glandular outgrowths, differentiation of mesophyll into single layered palisade and 2-3 layered spongy parenchyma and vascular bundle without any bundle sheath.	Absence of hairs and glandular outgrowths, hypodermis and presence of secretory canal.	Dorsiventral leaf with or without hypodermis, presence of canals, stomata on lower epidermis by mesophyll.	They are with very thick cuticle, 1-2 layered epidermis, vascular bundles enclosed by a complete bundle sheath.	They are with very thick cuticle, 1-2 layered epidermis, vascular bundles enclosed by a complete bundle sheath.	They are with very thick cuticle, 1-2 layered epidermis, vascular bundles enclosed by a complete bundle sheath.
	Presence of stomata on both surfaces.	Stomata on both surfaces.	Epidermal vascular bundle multicellular	Presence of resin canal in phloem, mostly situated enlarged spherules in the mesophyll.	Elongated vascular bundles in between palisade and spongy parenchyma.	

From the above comparisons (Table No-1) it will be clear that the present specimen shares good many features with leaf of Julianiaceae but show some differences.

Table: 2 showing comparison with reported Species.

Dorsiventrphyllum agashei (Kolhe, 1980)	Julianiophyllum sahnii (Kapgata, 1998)	Present specimen Julianiophyllum mohgaonensis sp. nov.
Prominent midrib, conjoint and collateral vascular bundle without bundle sheath, mesophyll differentiated into single layered palisade parenchyma and spongy parenchyma and single layered epidermis.		Dicotyledonous dorsiventral bifacial leaf with distinct midrib at middle of leaf lamina.
	Presence of secretory canals. Absence of sinuous, large parenchymatous epidermal cells, triangular nature of vascular bundles.	The right arm is completely preserved and shows blunt end. The left side lamina shows a single lateral vein. Single layered upper and lower epidermis with cuticle. Absence of epidermal out growth. Mesophyll differentiated into palisade and spongy parenchyma. Presence of secretory canals. Absence of hypodermis. Presence of lateral vein. Single, large and triangular midrib with saucer shaped, conjoint, collateral vascular bundle without bundle sheath. Stomata-like gaps restricted to the lower epidermis only.

From the above (Table No-2) Characters, it is prove that the present fossil described here approaches closely to leaf of Julianiaceae but differs from it in few minor details. It greatly resembles with Julianiophyllum sahnii (Kapgata, 1998). Hence it is created a new species named Julianiophyllum mohgaonensis sp. nov. The specific name is after the fossiliferous locality Mohgaonkalan.

VI. DIAGNOSIS

Julianiophyllum mohgaonensis sp. nov.

Dicotyledonous, dorsiventral, bifacial leaf measuring 5 mm in width, left arm 1.5 mm in width and 200 µm in thickness while right arm is completely preserved 3 mm thick and shows blunt end; the midrib region, is 500 × 700 µm thick, the left side lamina shows a single 220 µm thick lateral vein; epidermis single-layered with parenchymatous cells, epidermal outgrowth and hypodermis absent, stomata-like gaps restricted in the lower epidermis only; mesophyll differentiated into upper palisade tissue and lower spongy tissue, cells of palisade parenchyma measure about 30 to 45µm in height and 12- 20µm in breadth are compactly arranged, 2-3 layered towards the

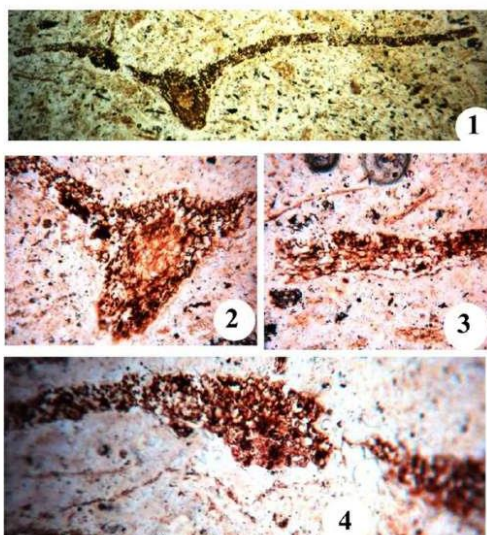
upper epidermis and single layered toward lower epidermis; spongy parenchyma are flattened, 3 to 5 layers loosely arranged cells with intercellular spaces, bounded on lower side by single layered epidermis; few secretary canal like cavities present in mesophyll tissue; large and triangular midrib measures 700 × 500µm in size; vascular bundle is conjoint, collateral and without distinct bundle sheath, saucer shape in outline; phloem is preserved towards the lower side and xylem is faces the upper side.

Holotype:- RWU/Dicot Lf./29/Deposited at Dept. of Botany, J. M. Patel College, Bhandara.

Horizon:- Deccan Intertrappean Series of Madhya Pradesh.

Locality:- Mohgaon Kalan of Chindwara District.

Age:- Late Cretaceous (Maastrichtian).



PLATE

Explanation of plate: 1. T. S. leaf showing median vascular bundle and laminar arm. (45X), 2. Midrib region with saucer shaped vascular bundle. (90X), 3. Part of arm showing its blunt end. (90X), 4. Left side lamina showing a single lateral vein. (45X)

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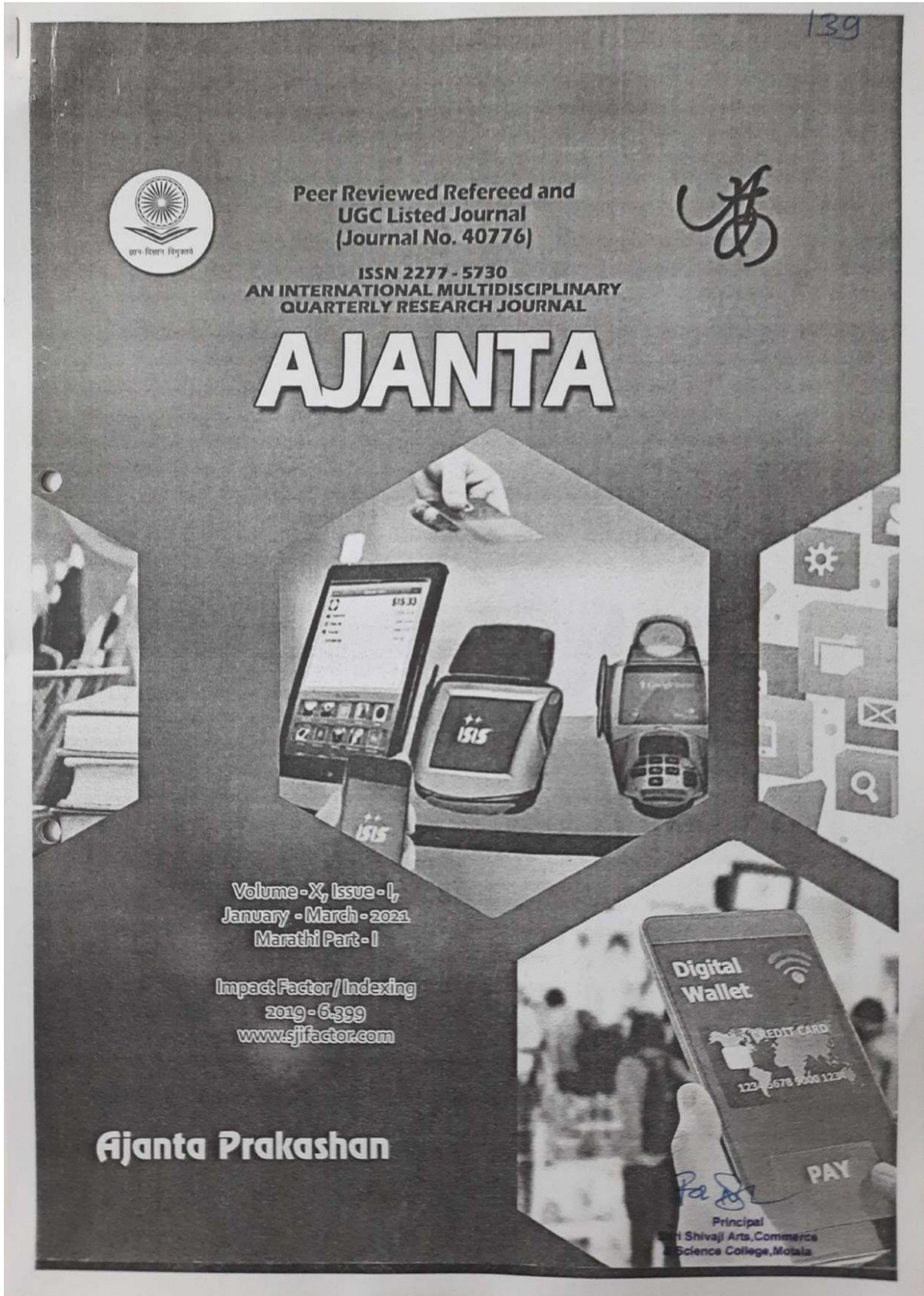
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१९. भारतीय शेतीच्या अल्प उत्पादकतेची कारणे

पुरुषोत्तम रंगराव चाटे

सहा. प्राध्यापक अर्थशास्त्र, श्री शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय मोताळा, जि. बुलडाणा.

प्रस्तावना

शेतीचा शोध १०,००० हजार वर्षांपूर्वी लागल्याचे इतिहासात दाखले आहेत. शेतीचा शोध शिकार व अन्नाच्या शोधात वणवण भटकण्यापेक्षा एका जागीच अन्न मिळविण्याचा मानवी जीवनातील महत्वपूर्ण टप्पा होय. शेतीचा शोध हा मानवी जीवनाच्या स्थिरतेचा पाया ठरला असे म्हणणे वावगे ठरणार नाही. शेती व्यवसाय हा अत्यंत पुरातन असा व्यवसाय आहे. शेती व्यवसायाने मानवाच्या भटकांती अवस्थेतील जीवनाला स्थैर्य प्राप्त करून दिले. मानवाच्या अन्नधान्याची गरज शेतीच्या माध्यमातून पूर्ण करण्यात येते. तामिळनाडू येथील महान संत तीरुवलूर यांचे एक प्रसिद्ध वचन आहे. जो अन्नधान्य पिकवून इतरांना जगवतो त्यापुढे सर्व जग नतमस्तक असते. दोन हजार वर्षां अगोदरचे हे संतवचन भारतीय शेतीचे वास्तव वर्णन करते. मानवी जीवनात शेतीला अनन्य साधारण महत्व आहे. जागतिक शांततेचे पुरस्कर्ते राष्ट्रपिता महात्मा गांधी यांच्या विवेचनानुसार बुद्धी व श्रम यांच्यात फारकत झाल्यामुळे देशातील शेती व्यवसाय पंगु झाला आहे. आपल्या देशातील शेती क्षेत्र अनेक संकटातून विकसित झाले आहे. १९६० पर्यंत आपल्या देशाची जागतिक पटलावर अन्नधान्य आयात करणारा देश म्हणून ओळख होती. परंतु हरितक्रांती नंतर अन्नधान्याच्या बाबतीत आपण स्वयंपूर्णतेकडे वाटचाल करून अन्नधान्य निर्यातदार देशाच्या पंक्तीत जावून बसलो. भारत देशामध्ये ६ लाख खेडी आहेत. या विशाल खंडप्राय देशातील ६०% जनता उदरनिर्वाह करण्यासाठी प्रत्यक्ष शेतीवर अवलंबून आहे. सकल राष्ट्रीय उत्पन्नात शेती क्षेत्राचा वाटा २०११-२० च्या आकडेवारीनुसार १७.०६% आहे. महाराष्ट्र राज्याचे माजी मुख्यमंत्री स्व. यशवंतराव चव्हाण यांच्या मताप्रमाणे शेती हा शंभर तोंडाचा राक्षस आहे. देशातील बेकारी, बेरोजगारी, भूकबळी, गरिबी, बालमजुरी, गुन्हेगारी समूह नष्ट करण्यासाठी शेती विकास हा रामबन उपाय आहे. शेती व ग्रामीण भागांचा विकास करण्यासाठी जागतिकीकरणाच्या नंतर करण्यात आलेले प्रयत्न काही अंशी तोकडे पडल्याचे दिसते. आपल्या देशात जमिनीचे तुकडीकरण व विभाजन मोठ्या प्रमाणात झाले आहेत म्हणून विकास कार्य करतांना अडथळे निर्माण होतात.

भारत एक खंडप्राय देश आहे. तसेच या देशात वातावरणात प्रचंड विषमता आढळून येते. पर्जन्यमान व पाण्याची उपलब्धता ही देखील भिन्न आहे. या भिन्नतेमुळे भारतात बहुविध प्रकारची पिके घेण्यात येतात. येथील पिक लागवड पद्धती मध्ये विविधता आढळून येते. त्यासाठी भारतात शेतीच्या प्रगतीबाबत विचार करायचा असल्यास एकसूत्री धोरण राबविणे फायदेशीर ठरणार नाही. याचाच अर्थ या देशातील शेती विकासाची समस्या खूप गुंतागुंतीची आहे. या बाबीचा विचार करून आपल्या देशात कृषिक्षेत्रात कृषीवैज्ञानिक, संशोधक, कृषीअभ्यासक आणि राज्यकर्ते यांनी कृषी सुधारणांचा आराखडा तयार केला नाही. या चुकीमुळे आज देशाचा कृषी उत्पादन व उत्पादकतेच्या संदर्भात जागतिक पातळीवर मागे पडल्याचे जाणवते. वास्तविक कृषी विकासाला चालना देण्यासाठी व्यवहाराच्या पातळीवर नैसर्गिक सुविधा व

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बलस्थाने लक्ष्यात घेवून विकास कार्यक्रमाची सुरुवात करणे आवश्यक आहे. भारत देश विकसनशील देश असल्यामुळे शेती क्षेत्राचा राष्ट्रीय उत्पन्नातील वाटा आजही महत्त्वपूर्ण आहे. शेती क्षेत्राच्या विकासात आजही बराच मोठा वाव आहे त्यामुळे या क्षेत्राचा विकास घडवून आणल्यास ग्रामीण विपन्नावस्था, दारीन्द्र्य, बेकारी व ग्रामीण जनतेचे शहराकडे होणारे स्थलांतर रोखता येईल.

भारतातील प्रमुख पिकांची संभाव्य उत्पादकता व प्रत्यक्ष उत्पादन

अ.क्र.	अन्नधान्य पिके	संभाव्य उत्पादन क्षमता	प्रत्यक्ष उत्पादन (२०११-१२)
१	तांदूळ	४०००-५८१० कि.ग्रा.	२३८३ कि.ग्रा.
२	गहू	६०००-६८०० कि.ग्रा.	३१७७ कि.ग्रा.
३	ज्वारी	३०००-४२०० कि.ग्रा.	९६२ कि.ग्रा.
४	मका	६०००-६८०० कि.ग्रा.	२४७८ कि.ग्रा.
५	कापूस	७००-८५० कि.ग्रा.	४९१ कि.ग्रा.
६	ज्युट	२५००-३००० कि.ग्रा.	२४८९ कि.ग्रा.
७	ऊस	९६०००-१११२०० कि.ग्रा.	७१६६७ कि.ग्रा.

Source :- Indian Economy, Misra/Puri, Himalaya Publishing House, Mumbai, 31st revised edition.

वरील कोष्टकावरून आपणास असे दिसून येते की भारतात हरितक्रांती होवूनसुद्धा गव्हाचे उत्पादन ३१७७ कि.ग्रा.व संभाव्य उत्पादन क्षमता ६०००-६८०० कि.ग्रा.प्रति हेक्टर आहे.हेच चित्र इतर प्रमुख पिकांच्या बाबतीत लागू होते.भारतात कृषी क्षेत्राची उत्पादकता कमी असण्याची अनेक कारणे आहेत.त्यामध्ये लोकसंख्येचा अतिरिक्त भार,परंपरागत शेती कसण्याची पद्धती,निसर्गावर अवलंबन,स्पर्धेचा आभव, निरक्षरता,जमीनधारणा पद्धती,जमिनीचे तुकडीकरण ,जलसिंचन सुविधांचा अभाव,सुधारित बी-बियाणाचा तुटवडा,शासनाची उदासीन धोरणे,कृषिमाल हमी भावाची गुंतागुंतीची परिस्थिती,भांडवलाचा आभाव आणि शेतीच्या संशोधनाचा खालावलेला दर्जा.या सर्व बाबींचा परिपाक भारतीय शेतीची उत्पादकता कमी आहे.

भारतीय शेतीच्या अल्प उत्पादकतेची कारणे

भारतीय कृषी उत्पादकतेत जी कुंठीत अवस्था निर्माण झालेली आहे त्यास अनेक कंगोरे आहेत.

1. **जमिनीचे अपखंडन** - भारत देशातील ९३% शेतकरी वर्गाकडे ४ हेक्टर पेक्षा कमी जमीन आहे.यातील ८०% शेतकरी सीमांत भूधारक म्हणजे ज्याच्याकडे जमिनीचे क्षेत्रफळ २ हेक्टर पेक्षा कमी आहे.५४ % शेतकरी वर्गाकडे १ हेक्टर इतकी जमीन आहे.एकूण शेतीच्या क्षेत्रापैकी ६५% क्षेत्र कोरडवाहू आहे.
2. **बाजार धारजिनी व व्यापारी शेती** - भारतीय शेतीचा प्रामुख्याने स्वतंत्र्य पूर्व काळ,स्वतंत्र नंतर चा काळ व अलीकडे जागतिकीकरणाचा काळ या मध्ये शेती व्यवसाय अनेक स्थित्यंतरे झालेली दिसतात.वर्तमान काळातील शेती कौटुंबिक गरजा पूर्ण करण्यापेक्षा बाजाराच्या गरजा पूर्ण करणारी बनली आहे.

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3. संकरित बी-बियाणांचा प्रश्न - संकरित बियाणे शेतकरी दरवर्षी विकत घेत असतो पर्यायाने संकरित बियाणांच्या बाबतीत शेतकरी परावलंबी झालेला आहे.त्यात बोगस बियाणे व खते यांचा सुळसुळाट पाहायला मिळतो.
4. माती व पाण्याचे व्यवस्थापनाकडे झालेले दुर्लक्ष - १९८० नंतर भारतीय शेती मधील जमीन व पाणी या प्रमुख घटकाकडे अक्षय्य दुर्लक्ष झालेले दिसते.मात्र वर्तमानकाळात मातीचे स्वास्थ्य हा परवलीचा शब्द बनलेला आहे.मातीचे आरोग्य मापनाचा मार्ग म्हणजे शेतीमधील सेंद्रिय कर्ब होय.भारतासारख्या उष्णकटिबंधीय प्रदेशात जमिनीचा सेंद्रिय कर्ब १% पाहिजे.तो केवळ ०.४% असल्याचे दिसते.मातीचे सेंद्रिय कर्ब जेवढे जास्त तेवढे जमिनीचे आरोग्य उत्तम.त्याचप्रमाणे पाण्याचा काटेकोरपणे वापर व सिंचनाची सुयोग्य साधनाची निवड या बाबीकडे दुर्लक्ष करणे चुकीचे ठरते.
5. सेंद्रिय व शाश्वत शेतीचे वास्तव - वर्तमान परिस्थिती पाहता सेंद्रिय शेती चा अवलंब करणे एक दिव्य होय.कारण जमीन कसणारे अधिक असून धारणक्षेत्र कमी आहे.आर्थिक,सामाजिक व नैसर्गिक दृष्टीकोनातून शाश्वत शेती करणे आणि सातत्य राखणे,शेतीमध्ये कामाल नफा,दीर्घकाळ संतुलित उत्पन्न पातळी टिकविणे व स्पर्धेत टिकून राहणे यात भारतीय शेतकरी अनेक अडथळ्यामुळे टिकाव धरू शकत नाही.
6. नैसर्गिक विविधता व लहरीपणा - भारतीय शेती हा मान्सून चा जुगार आहे.करण स्वातंत्र्याच्या ७० वर्षांनंतर आपण फक्त ३५% जमिनीला सिंचित करू शकलो.आपल्या देशात मोठ्या प्रमाणावर भौगोलिकदृष्ट्या भिन्नता आढळून येते.त्याचा परिपाक शेतीचे उत्पादन सर्व घटकराज्यात कमी -जास्त दिसते.
7. शासकीय धोरण लकवा - कृषी हा विषय राज्य सूचित येतो.म्हणून केंद्रसरकार कृषी विषयावर जास्त काळजीपूर्वक विचार करतांना दिसत नाही.शेती मधील उत्पादन वाढावे याकरिता शासनाचे धोरण स्थिर व फलदायी असावे.तेव्हा कृषी उत्पादकतेत सुधारणा होईल.शेती च्या प्रश्नावर पण राजकारण होते त्यामुळे शेतीची उत्पादकत कमी असल्याचे दिसून येते.

संदर्भ ग्रंथ

1. भारतीय अर्थव्यवस्था - दत्त सुंदरम.
2. भारतीय अर्थव्यवस्था - मिश्रा पुरी
3. कृषी अर्थशास्त्र - डॉ.विजय कविमंडन
4. शेती,शेतकरी आणि अर्थकारण - रमेश पाध्ये
5. कृषी अर्थशास्त्राची मुलतत्वे - डॉ.लीला पाटील
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7. इंटरनेट वरील संकेतस्थळ


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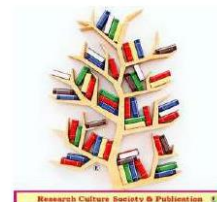


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Physico-Chemical Analysis of Gulbheli River and Nalganga Reservoir, Nalgangapur, Dist. Buldana, Maharashtra State, India

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Abstract: Water is one of the essential commodities of everyday life and is placed in position just after air. Drinking water is never pure. Water naturally contains minerals and microorganisms from the rocks, soil and air with which it comes in contact. Human activities can add many more substances to water. But drinking water does not need to be pure to be safe. In fact, some dissolved minerals in water can be beneficial to health. A survey conducted by WHO in 1975 on community water supplies revealed the fact that in India while 80% of the population in urban areas had access to community water supplies and only 18% of the rural population had reasonable access to safe water. To assess, the water quality parameters for sustainability of all living organism.

Key Words: Physico - chemical parameters, Wrinkler's method, Gulbheli River, and Nalganga

Introduction:

Water is also known as "Blue Diamond". It is one of the most precious gifts of creature given by the nature. Man uses water for different purposes like drinking, washing, in agriculture, food processing and in some many other applications. People say Earth is "Blue Planet" because largest part of the earth is occupied by water. Water covers more than 70% of the earth surface, 97.3% is in ocean and 20% is fresh water. There exists a continuous exchange and circulations and water between the earth and atmosphere. The great philosopher, Aristotle has defined together with air fire and earth as constituents of the universe.

Aquatic ecosystem consists of two water bodies that is fresh water body, and marine water body. Lakes, rivers, streams, ponds, and reservoirs are the fresh water bodies. Whereas, seas and oceans are the marine water bodies one. Water is not man-made, it is the natural substance that is found in three states liquid, solid, and gas. Today, pure water is an essential resource for life. For human being pure water use is not always available naturally due to occurrence of suspended and dissolved impurities in water. Good quality of drinking water is essentially needed for all the people throughout the world. The best quality of potable water is free from different sources like lakes, rivers, hand pumps, wells and others.

Due to absence of pure drinking water and the presence of microbial contamination, health problems occur in almost all the citizens. Most of the contaminants are introduced into environment through anthropogenic as well as natural phenomenon. WHO has published 17 types of bacteria can be found in tap water which can cause water borne diseases that affect human health? Today's situation is the need of pure as well as fresh water assessment of water quality is assured for the protection of environment and precious human lives and for all living beings. Most of the rivers, streams and reservoirs are contaminated. We see that, millions of people in the world struggling for pure drinking water. The ecology of reservoirs is radically different from that of the parent river. Dams alter river hydrology both up and downstream of the river. The obstruction of river flow and the consequent inundation trigger off sudden transformation of lotic environment into a lentic one. Physico-chemical factors are very important in the estimating the constituent of water and concentration of contaminant. The chemical factors and biological factors are interrelated and interdependent. The important physical and chemical parameters influencing the aquatic environment are temperature, rainfall, pH, salinity, dissolved oxygen and these parameters are the limiting factors for the survival of aquatic organisms observed by Mahesh et al., (2013).

India is facing a serious problem of natural resource scarcity, especially that of water in view of population growth and economic development. Most of fresh water bodies all over the world are getting contaminated, and decreasing the potability of water. All life is depending on water and exists in nature in many forms like ocean, river, lake, clouds, rain, snow, and fog also. High quality of water required only for drinking purposes while other uses like agriculture and industry, the quality of water is quite flexible and water contaminated up to certain extent in general sence is regarded as pure. Due to use of contaminated water, human population suffers from water borne diseases. This is due to the

low temperature in winter season. Also, by Gorde and Jadhav (2013) showed the water quality parameters slightly higher in the wet season than in the dry season.

Therefore, for the protection of aquatic life bioassay is primary oriented towards developing water quality and then used to develop water quality standards. In future there is a need to preserve and maintain water quality standards. There are some points are considering under the head need of investigation.

Need of Investigation:

- To study the process of water analysis of streams, rivers and reservoir.
- To know whether water from a particular supply of water is suitable for specific purpose such as drinking, irrigation.
- To know the quality of water used and proposed to be used for human being.
- To ascertain if the supplies maintain the required degree of purity and to find out to the extent of any variation which occur.
- To suggest the best method of purifying rivers, streams and reservoir water.

Materials and Method:

The study was conducted on Nalganga reservoir situated 20 Km away from Malkapur, which lies between 20° 43' 34" N latitude and 76° 10' 49" E longitude. The study evolved physico-chemical parameters from the year February 2011 to January 2013. For the study two sampling locations were selected which were as follows.

- 1) Gulbheli River
- 2) Nalganga reservoir.

Nalganga Reservoir:

Maharashtra state has occupied a pride to be at the heart of the country. Not only this, it has also received an ecologically fragile western coast of 500km and its geographical area also has received the benefits of being situated at the southern tip of the Satpuda mountain and at the east to the Western Ghats. This geographical situation of the state has bestowed with rich flora and fauna flourished. These two ranges Western Ghats and Satpudas have gifted many perennial rivers to the state. However, irrigation department have tap these water sources and created good water potential for the development of the state. However, the major and minor irrigation projects that have created in past 50 years have been adopted by many endangered land migratory birds. Some of the reservoirs have really become ideal wetlands and supporting rich avian fauna. Nalganga reservoir is among one of these major irrigation projects of Maharashtra State. It comes in Buldana irrigation division of Akola Irrigation Circle (Maharashtra). Nalganga river, tributary of Tapi river, originates in the hills near Rohinkhed village close to Buldana town and flows through Wadgaon, Sanglad villages and meets Purna river near Muktainagar in Jalgaon district. Nalganga reservoir is an earthfill reservoir, constructed about 16 miles from source across Nalganga river near village Sanglad in the state of Maharashtra in India. This has resulted information of Nalganga reservoir named after the river Nalganga itself. This reservoir was constructed as part of irrigation project by the government of Maharashtra in the year 1967 and impounds Nalganga river nearest city to Reservoir is Malkapur and the Reservoir is situated in Motala Taluka of Buldana district of Maharashtra, around 8741 hectars land of 28 villages. This reservoir is spread across an area of 1098 hectars and benefits. The purpose of this water reservoir is irrigation as Summary and Conclusion:

Collection of samples:

Water samples were collected from different station by using glass and polythene bottles. Before collection of water sample the bottle rinsed and cleaned thoroughly. Water were collected from deep and shallow level of water. For the analysis of physico-chemical parameter of Water by using Winkler's method.

Observation and Result: Physico-chemical parameters:

The observations and results are as presented in Table No. 1.1.1 and 1.1.2.

1) Atmospheric Temperature

In the present study revealed that, in 2011-2012, the atmospheric temperature recorded minimum in the month January of winter season and maximum atmospheric temperature were

recorded in the month of May in summer season, while in 2012-2013, the atmospheric temperature was observed minimum in January of winter season and maximum in May month of summer season at sampling station - Gulbheli. This entire tributary meet to the Nalganga reservoir, the atmospheric temperature were minimum in winter season, moderate in monsoon season and maximum in summer season.

At Nalganga reservoir, in 2011-2012, the atmospheric temperature minimum in the month of January of winter season, while maximum in the month of May of summer season. Similarly, in 2012-13, the minimum atmospheric temperature was recorded in January month of winter season, moderate in September of monsoon season and maximum atmospheric temperature were observed. In 2011-2012, the atmospheric temperature showed fluctuation because of rainfall less than 2012-2013. So, the atmospheric temperature range is variable than that of each month of each season.

The atmospheric temperature values were maximum in summer season while temperature values were minimum in winter season because during the summer season, solar radiation and clear sky condition enhanced the atmospheric temperature. Whereas, during the monsoon season rainfalls and cloudy skies brought down the atmospheric temperature and subsequently the water temperature noted decreased trend. In winter season due to cloudy skies and low intensity of light the atmospheric temperature is lower than another season.

Temperature is one of the most important factors in the aquatic environment that regulates various physico-chemical activities. According to Singhai et al., (1990) the atmospheric temperature varies with the water temperature and also found by a direct relationship between atmospheric and water temperature. Also, by Afreen (2010) from Rui project, Bade et al., (2009) in Sai reservoir, Latur.

2) Water Temperature

In the present study, in 2011-2012, the water temperature observed minimum in January of winter season, while moderate in monsoon season and rised water temperature in the month of May in summer season. Similarly, in 2012-2013, water temperature were decreased in January month of winter season, moderate in monsoon season and higher in the month of May of summer season at sampling station Gulbheli, and the last sampling station Nalganga reservoir also. In summer season water temperature higher because of low water level, low velocity of water, clear atmosphere and greater solar radiations.

The minimum water temperature in the rainy seasons and winter months because of frequents clouds, high percentage of humidity, high current velocity and high-water levels reported by Pawale and Lokhande (2012) observed Dhanora reservoir, Nanded; Lokhande (2013) noted water temperature fluctuation of Dhanegaon reservoir, Osmanabad.

The significant correlation between ambient temperature and water temperature were observed and pointed out the seasonal changes were mainly dependent on water temperature. The low oxygen values coincided with high temperature during the summer months reported by Pawar and Phulle (2005) studied in Pethwadaj dam of Nanded; and Ugale (2011) studied on Jakekur project of Osmanabad.

3) Hydrogen ion concentration (pH)

In the present study, at sampling station N1- Khadki, the lowest pH values were recorded in the month of September in monsoon season, while medium in winter season and highest in May of summer season in 2011-2012. In 2012-2013, the lowest value of pH in September of monsoon season, At sampling station Gulbheli river, the pH values were lower in August of monsoon season and moderate in winter season, while higher in May of summer season in 2011-2012. Similarly, the pH values were recorded lower in September of monsoon season, higher in May of summer season in 2012-2013. Similar observations at sampling station N8- Nalganga reservoir. The values of pH were noted lower in September of monsoon season, while higher in May of summer season in 2011-2012. Jakhar and Rawat (2003) observed the maximum pH during summer, explained by correlating rise of temperature with increase in rate of photosynthesis which results in higher consumption of carbon-dioxide. Jaybhaye et al., (2006) observed in a minor reservoir of Sawana of Hingoli, Maharashtra.

The alkaline pH river water is the presence of alkalinity minerals in water. The variation occurs in the pH values to change in the values of CO₂, carbonate and bicarbonate in the water reported by APHA (1998); Gatlewar et al., (2011). The lower values of pH cause tuberculation and corrosion while the higher values produced incrustation, sediment, deposition and difficulties in chlorination for disinfections of water investigated by Trivedi and Goel (1984).

4) Total Alkalinity

The total alkalinity were recorded minimum in January month of winter season, while moderate in monsoon season and were recorded maximum in the month of May in summer season during 2011-2012 and in 2012-2013, total alkalinity were minimum in the month of January of winter season, maximum in the month of May in summer season at sampling station Nalganga reservoir. In 2011-2012, the total alkalinity values were noted minimum in December of winter season, and maximum in May of summer season. In 2012-2013, the total alkalinity values were minimum in January of winter season while total alkalinity were observed maximum in May of summer season at sampling station Gulbheli, during 2011-2012, the values of total alkalinity were observed minimum in January of winter season, while moderate in monsoon season and total alkalinity were maximum in May of summer season.

In 2012-2013, the total alkalinity was recorded minimum in December month of winter season and maximum in the month of May in summer season. The alkalinity values trend showed maximum in summer and minimum in monsoon. The increased the rate of organic decomposition during which CO₂ is liberated, this liberated CO₂ reacts with water to form HCO₃, thereby increasing the total alkalinity in summer. The decreased alkalinity values of water were due to the dilution by the rain water in monsoon. In the present study observed that both the year 2011-2012 and 2012-2013, at sampling station of Gulbheli tributary showed total alkalinity range were maximum due to the domestic waste, and human activities, so that tributaries rivers become contaminated.

The alkalinity values were maximum in May of summer season due to increase in bicarbonates in the water and minimum in winter due to high photosynthetic rate reported by Hulyal and Kaliwal (2011). The higher values of total alkalinity were with high bicarbonate contents in the rivers studied by Hujare (2008); Chinnaiah and Rao (2011). Chaudhary et al., (2013) reported variation in the values of total alkalinity which interferes with the water quality. The values were high during the summer and low during winter. The fall values during monsoon due to dilution of water. The high value of alkalinity indicates the presence of weak and strong base such as carbohydrate and hydroxide in the water body. Also similar observation reported by Latha and Mohan (2010); Dhanorkar (2011); Rahul (2012) observed that declined alkalinity during summer.

5) Chloride

In the present study period, 2011-2012, moderate in winter season and maximum in the month of May of summer season, similar values of chloride at sampling station N8- Nalganga. The concentration of chloride were minimum in September of monsoon season, while maximum in May of summer season in 2011-2012 and in 2012-2013. At sampling station N3- Gulbheli in 2011-2012, the minimum concentration of chloride were noted in July month of monsoon season, while moderate in winter season and maximum concentration of chloride were noted in May of summer season, while in 2012-2013, concentration of chloride were observed minimum in the month of September of monsoon season, and maximum in May of summer season. The chloride concentration range of the Gulbheliriver were observed higher than that of other river and streams because of high anthropogenic and animal activities in summer season, and low due to diluted with rain water in rainy season.

Chloride anion is generally present in natural water. The chloride concentration is higher in organic wastes and its higher level in natural water is definite indication of impured water from domestic sewage. Higher chloride concentration during summer season due to high temperature and higher evaporation while lower concentration in rainy season due to dilution of water. The ecological significance of chloride lies in its potential to regulate salinity of water and exert consequent osmotic stress in biotic communities. The increase in chloride concentration in Lakes, Rivers and Dams is due to the discharge of Municipal and industrial wastes reported by Kalwale and Savale (2012). Adoni (1985) attributed high chloride values due to increased organic matter, chloride also increases the degree of eutrophication also by WHO (1993); Lohar and Patel (1998). Similar trend of chloride ion concentration was given by Garg et al., (2010).

6) Total Hardness

The low values of total hardness were in the month of September in monsoon season, while moderate in winter season and the values were higher in May of summer season in 2011-2012 and similar result obtained in 2012-2013 at N8- Nalganga reservoir.

In 2011-2012, total hardness were declined noted in September of monsoon season, while moderate in winter season, and inclined in May of summer season. In 2012-2013, the declined values were observed in September of monsoon season and were inclined in April of summer season at sampling station N3- Gulbheli. In the present study the inclined trend were noted in the three

sampling stations of Gulbheli. The higher values of hardness were noted in summer due to decreased water level and evaporation of water. Similar observations studied by Sahib (2011); Sanghpal et al., (2011). Total Hardness of water is the sum of concentration of alkaline earth metal cations. The lower values during rainy season attributed to dilution on account of heavy precipitation were reported by Rajalaxmi and Shreelatha (2005). Salve and Hiware (2008) reported that the total hardness were higher in winter, moderate in monsoon, and lower in summer season.

7) Calcium Hardness

The concentrations of calcium ions were decreased in September of monsoon season, while medium in winter season and the concentrations were increased in the month of May in summer season in 2011-2012, and in 2012-2013 also similar trend showed at sampling station Gulbheli, and at Nalganga reservoir.

It is an important constituent in all organisms and is incorporated into the shells of many invertebrates and bones of vertebrates. Calcium is most abundant ion in the fresh water and in an important in shell construction, bone building and plant precipitation of lime studied by Vasanthi et al., (2009). The maximum values were found to be below the desirable limit. The maximum values were recorded in the summer season as high temperature causes rapid decomposition of organic matter and minimum values were recorded in the winter season due to low temperature. Similar results were observed by Rajshekhar et al., (2007); Thitame and Pondhe (2010) and Sheikh et al., (2013).

8) Magnesium Hardness

The magnesium hardness of the water were decreased in the month of September in monsoon season, while moderate in winter season, and increased in the month of May of summer season in 2011-2012. In 2012-2013, the values of magnesium concentration were noted minimum in September of monsoon season, and maximum values were noted in the month of May in summer season at sampling station Nalganga reservoir also.

In 2011-2012, the values of magnesium were recorded minimum in August of monsoon season, while moderate in winter season, and maximum was recorded in May of summer season. While in 2012-2013, the magnesium values were minimum July of monsoon season, and maximum noted in May of summer season at sampling station N3- Gulbheli. In 2011-2012, the value of magnesium was recorded minimum in September month of monsoon season, while moderate in winter season, and was recorded maximum in May of summer season.

Gulbheli river, the magnesium level showed increased trend indicated impurity of water. Magnesium is absolutely essential for chlorophyll bearing plants and algae. Magnesium appears to act as a carrier of phosphorous. The season wise analysis showed that minimum in rainy season and maximum in summer season.

Similar findings by Sachidanandamurthy and Yajurvedi (2006); Singh et al., (2012). Generally, magnesium content is lower than calcium ions in natural water also follows the same trend in the fish ponds due to the addition of animal manures and other waste in the water bodies, which increases the values of magnesium. These element increases the hardness of the water reported by Choudhary et al., (2010) observed in a Kolar dam in different season.

9) Turbidity

The values of turbidity were minimum in February, and May month of summer season, while were maximum turbidity in September of monsoon at N8- Nalganga reservoir. At sampling station Gulbheli, the values of turbidity were lower in the month of March in summer season, while moderate in winter season and maximum in the month of September in monsoon season during 2011-2012. In 2012-2013, the values of turbidity were minimum in May of summer season, and maximum in the month of September in monsoon season. The range of turbidity was noted above the desirable limit so that sampling stations are contaminated like N3- Gulbheli.

In the present study, the maximum turbidity values were maximum during monsoon and minimum during summer. High values of turbidity in monsoon due to suspended influx of rain water from catchments and cloudiness, less penetration of light, washes silts, sand, high organic matter and low transparency due to suspended inert particulate matter. However, low values of turbidity in summer due to clear atmosphere, evaporation of water and high light penetration.

Turbidity is the suspension of particles such as clay, silt and organic matter. Maximum values were observed in the month of July in monsoon season, while minimum during October of winter season. During rainy season silt, clay and suspended particles contribute to the turbidity values while during winter season settlement of silt, clay and suspended particles resulting low turbidity. High

turbidity during rainy season has been reported by Garg et al., (2006); Nikam et al., (2011). Turbidity is a measurement of the cloudiness of water, measured by passing a beam of light through the water and measuring photometrically. Cloudiness is caused by material suspended in water, clay, silt, organic matter.

10) Total Dissolved Solid

In the year 2011-2012, the values of total dissolved solid were minimum in the month of January of winter season, while moderately fluctuated in summer season, and the values of total dissolved solid were maximum in the month of September in monsoon season. Similar results observed in 2012-2013, the total dissolved solid were minimum in January of winter season, and maximum in the month of September in summer season at sampling station Nalganga reservoir.

The values of total dissolved solid were observed minimum in the month of January of winter season, while moderate in summer season, and were noted maximum in the September of monsoon season during 2011-2012. While, in 2012-2013, the values of total dissolved solid were recorded minimum in January month of winter season, and were noted maximum in the month of July in monsoon season at sampling station N3- Gulbheli.

In the present study, the Gulbheli river was mostly contaminated due to suspended organic and inorganic matter present in water by anthropogenic activities. Total dissolved solid values were maximum during monsoon and minimum during winter. High values of total suspended solid in monsoon due to siltation, deterioration, heavy precipitation and mixing run off rain water which carried mud, sand and others mixed in the streams, rivers and dam water.

The total dissolved solids are the amounts of particles that are dissolved in the water. The seasonal distribution of total dissolved solid is minimum in winter season and maximum in the rainy season. It slightly fluctuated in the summer season due to the leaching of surrounding rain water reported by Chinnaiyah et al., (2011). The quantity of total dissolved solid was proportional to the degree of contamination reported by Rain and Thatcher (1990); Naik et al., (2012).

The high amount of total dissolved solid in pre-monsoon due to increase in the rate of evaporation of water and high concentration of total dissolved solid is an indication of nutrient that leads to eutrophication reported by Latha and Ramchandra (2010); Thakre et al., (2012); Panigraha and Patra (2013).

11) Dissolved - Oxygen

Dissolved-oxygen values were observed low in the month of February of summer season, while moderate in monsoon season, and higher in January month of winter season during 2011-2012. While in 2012-2013, the value of dissolved-oxygen were recorded low in May month of summer season, and were noted maximum in the month of January in winter season at sampling station Gulbheli station.

At sampling station Nalganga reservoir, dissolved-oxygen were recorded lower in May month of summer season, while moderate in monsoon season, and were noted higher values in the month of January of winter season in 2011-2012. In 2012-2013, also low values were noted in May of summer season, and high values were noted in January month of winter season.

The large fluctuation of dissolved-oxygen value obtained maximum than three rivers like Gulbheli.

Dissolved Oxygen is extensively used as a parameter determining the water quality and to evaluate the degree of freshness of lotic ecosystem. Dissolved Oxygen content indicates the health and ability of water body to purify itself through biochemical processes. Oxygen is also needed for many chemical reactions that are important to lake functioning, such as oxidation of metals, decomposition of dead and decaying matters stated by Rajagopal et al., (2010).

Dissolved oxygen in water comes from the atmosphere due to the air action. Algae and aquatic plants also release oxygen to water through photosynthesis ICMR (1975). The oxygen content of natural water varies with temperature, salinity, turbulence, respiration and photosynthetic activity of algae and higher plants and the atmospheric pressure. Dissolved oxygen values were higher in ponds where there was good aquatic life observed by Trivedi and Goel (1986); Verma and Saxena (2010); Tiwari and Ranga (2012).

12) Biological - Oxygen - Demand (BOD)

The values of biological oxygen demand were recorded minimum in January month of winter season, while maximum were noted in May of summer season in 2011-2012. In 2012-2013, the values of biological oxygen demand were recorded lower in January month of winter season, and higher were recorded in May month of summer season at sampling station Gulbheli and also at Nalganga

reservoir. The greater amount of decomposable matter present in water body of Gulbheli river greater the oxygen demand by microorganisms and increases the values of biological oxygen demand due to that reason these three rivers are contaminated.

In the present investigation, the maximum biochemical oxygen dissolved in summer is probably due to high microbial activities. Similar findings made by Gaddamwar and Rajput (2012); Lokhande et al., (2013). Increasing trend of biological oxygen demand and decreasing trend of dissolved oxygen towards downstream, clearly indicates increasing load of contamination towards downstream of river. The season wise analysis showed that in present investigation minimum in winter season and maximum in summer season. The fluctuations of the values from season to season were possible due to the presence of organic matter and microbial activity.

Biological oxygen demand variations were observed maximum being in contaminated waters and minimum in pollution free waters by Solanki and Karlikar (2011). Biological oxygen demand increases with the increased inflow of the domestic waste. High biological oxygen demand depletes the oxygen level to a critical condition thus indicating the contamination status of water stated by Parmar (2012).

13) Chemical – Oxygen - Demand (COD)

The values of chemical oxygen demand were observed declined in April month of summer season, while moderate in winter season, and inclined values were noted in September month of monsoon season in 2011-2012. In 2012-2013, the values of chemical-oxygen-demand were noted lower in February month of summer and higher in September month of monsoon season at sampling station N3- Gulbheli.

In 2011-2012, the chemical-oxygen-demand values were recorded lower in May of summer season, while moderate in winter season, and higher values were recorded in September of monsoon season. Similar observation in 2012-2013, the value of chemical oxygen demand were lower in May month of summer season, and higher value was recorded in September of monsoon season at sampling station at Nalganga reservoir.

The chemical oxygen demand were found highest in Gulbheli river, because of this was illegal discharge of slaughter house waste, dumping of garbage, poor (sewage) and surface run off to Motala river.

The season wise analysis showed that the values of chemical oxygen demand were minimum in summer season and maximum in rainy season. The minimum and maximum values of chemical oxygen demand recorded in the reservoir water due to the presence of accumulation of organic matter at the bottom of reservoir water. Similar observation made by Drusilla et al., (2004); Zombade et al., (2012). High value of chemical oxygen demand than biological oxygen demand indicates high degree of organic contamination studied by Adholia and Vyas (1992); Thirumala et al., (2006).

Chemical oxygen demand is a reliable parameter for judging the extent of contamination reported by Hamey et al., (2013). The Chemical oxygen demand of water increases with increasing concentration of organic matter. The maximum desirable value of chemical oxygen demand is 40 ml/L for drinking water.

Summary and Conclusion:

Nalganga reservoir is the main source of drinking water as well as agriculture purpose for nearby situated villages. Today most of the water bodies are receiving millions of liters of sewage, domestic effluents and industrial effluents, agricultural runoff containing several kinds of harmful substances. These substances are making water unfit for human consumptions and its various other uses. It is very necessary to obtain accurate and timely information regarding the quality of any water body in order to applied sound public policy and implement water quality improvement programme.

In brief summarizing the present study results, it is very clear that in summer, monsoon and winter season showed different seasonal fluctuations in various physico-chemical parameters of water of Nalganga reservoir and its tributaries such as Gulbheli river.

Among the rivers Gulbheli was found contaminated because of some physico-chemical parameters like total alkalinity, chlorides, total hardness, calcium, magnesium, turbidity, total dissolved solids, Biological oxygen demand, chemical oxygen demand values were found in higher range than the other rivers and streams feeding Nalganga reservoir and also due to the domestic sewage and human activities. This river site was not fit for drinking purposes.

In conclusion, today our responsibility is to preserve water and to avoided contamination. Public awareness is essential to effective water resources management changes in basic behavior and practices are necessary to achieve long term improvement in water use and water quality.

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On A New Cestode Of *Moniezia* (Cestoda-Anoplocephalidae) From The Intestine Of *Capra Hircus* (L.) From Ghansavangi, District Jalna (M.S.)

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Abstract: The present investigation deals with systematic observation of the cestode parasites *Moniezia* Blanchard, 1891, that is, *Moniezia mehdii* Sp. Nov. collected from the intestine of domestic goat *Capra hircus* Linnaeus, 1758 at Ghansavangi, District Jalna. The present worm comes closer to all the known species of the genus *Moniezia* in general topography of organ but differs due to having the scolex small squarish, mature proglottids nearly two times broader than long, testes small, oval to rounded in shape, 130-140 in numbers, cirrus pouch large cylindrical, ovary horse-shoe shaped, vitelline gland post ovarian, inter proglottidal glands 15-16 in numbers.

Keywords: *Anoplocephalidae*, *Capra hircus*, Jalna, *Moniezia*

1. INTRODUCTION:

The genus *Moniezia* was established by Blanchard, 1891. Skrjabin and Schulz (1937) divided this genus in to three subgenera as follows:

- 1) Inter proglottidal glands grouped in rosettes-----*Moniezia*.
- 2) Inter proglottidal glands arranged lineally-----*Blancharia*.
(Some time absent)
- 3) Inter proglottidal glands absent-----*Baeriezia*.

The present worm agrees in all characters with subgenus *Blancharia*. Skrjabin and Schulz, 1937 includes having two species *M. (B.) benedeni* (Moniez, 1879), Skrjabin and Schulz, 1937 and *M. (B.) pallida*, Monnig, 1926. In India Shinde *et al.*, 1985 added two species of the genus i.e. *M. (B.) aurangabadensis* and *M. (B.) bharalae* from *Ovis bharal* in Aurangabad district, (M.S.), India. Later on Patil, *et al.*, 1997 described *M. (B.) warnanagarensis* from *Capra hircus* (L.). In 1999 Nanware, *et al.* erected *M. (B.) kalawati* and Kalse, *et al.* erected *M. (B.) murhari* from *Capra hircus* (L.). In 2004, Pawar *et al.* added *M. (B.) Shindei* and Tat and Jadhav B. V. added *M. (B.) hircusae* from *Capra hircus* (L.). Pokle, *et al.* added *M. (B.) caprai* from *Capra hircus* (L.). Borde, *et al.*, 2007 erected new species i.e. *M. (B.) rajalaensis* from *Capra hircus* (L.). *M. (B.) caprae* is added by Nanware S. S. 2010. Padwal, *et al.* 2011 added *M. (B.) govindae* from *Capra hircus* (L.). Later Humbe, *et al.*, erected four more species i.e. *M. (B.) babai*, 2011, *M. (B.) ovisae*, 2011, *M. (B.) osmanabadensis*, 2012 and *M. (B.) devraoi*, 2013. Later on Barote, *et al.* added two more species i.e. *M. (B.) shegaonesis*, 2013 and *M. (B.) shivajiraovae*, 2014. Ravi Solunke, 2015 erected *M. (B.) sureshi* and Amol Thosar, *et al.*, 2015 erected *M. (B.) jadhavii* from *Capra hircus* (L.). Later on *Moniezia (B.) marathwadensis* is added by Shaikh Kalim 2015, *Moniezia (B.) bhalchandrai* is added by Kalse A. T. *et al.*, 2016, Sunita Borde, *et al.*, 2017 erected *M. (B.) bordeae* from *Ovis bharal* (L.) and Jadhav V.M. *et al.* 2018 erected *Moniezia (B.) madhavae* from *Capra hircus* (L.). Recently Amol Thosar, *et al.*, 2020 *Moniezia (B.) shilae*, added to this genus from *Capra hircus* (L.).

The present communication, deals with the description of a new species, *Moniezia mehdii* Sp. Nov. collected from the *Capra hircus* Linnaeus, 1758 at Ghansavangi, District Jalna.

2. MATERIALS AND METHODS:

Cestode parasites were collected from the intestine of *Capra hircus* (L.) from Ghansavangi, District Jalna (M.S.) India. These cestodes were preserved in 4% formalin and stained with Acetocarmine or Harris Haematoxylin, passed through various alcoholic grades, cleared in xylene, mounted in D.P.X. and drawings are made with the aid of Camera Lucida. All measurements are given in millimeters. The identification is made with the help of Systema Helminthum.

3. DESCRIPTION:

The cestodes are long consisting scolex, neck and proglottids. Proglottids are immature and mature. The scolex is small in size, squarish in shape and measures, 1.567 (1.485-1.650) in length and 1.435 (1.386-1.485) in width. The suckers are large, oval in shape, four in numbers, arranged in two pairs, obliquely placed and measures, 0.429 in diameter. The neck is long and measures, 5.362 (5.280-5.445) in length and 0.957 (0.924-0.990) in width. Mature proglottids are large in size, rectangular, almost two time broader than long, each proglottids with a double set of reproductive organs and measures, 3.663 (3.630-3.696) in length and 7.837(7.425-8.25) in width. The testes are small, oval to rounded in shape, 130-140 in numbers, scattered in the posterior half of the segment in between two longitudinal excretory canals and measures, 0.049 (0.033-0.066) in diameter. The vas-deference is long, thin coiled tube and measures, 0.940 in length and 0.033 in width. The cirrus pouch is large, cylindrical, situated in middle margin of the segments and measures, 0.445 (0.396-0.495) in length and 0.297 (0.264-0.330) in width. The cirrus is thin tube, cylindrical, inside the cirrus pouch and measures, 0.445 in length and 0.297 in width. The ovary large, horse shoe shaped, compact with acinia, two in numbers and measures, 1.419 (1.353-1.485) in length and 1.320 (1.320 -1.320) in width. The ootype is small, elongated, anterior to the ovary and measures, 0.099 in diameter. The vagina posterior to cirrus pouch, long tube reaches to the ootype and measures, 0.858 in length and 0.049 in width. The genital pores medium in size, oval in shape, bilateral, middle in position and measures, 0.198 (0.165-0.231) in length and 0.066 (0.066-0.066) in width. The vitelline gland small, oval in shape, compact, post-ovarian and measures, 0.247 (0.231-0.264) in diameter. The Inter-proglottidal glands present in between two proglottids, oval to rounded, 15-16 in numbers, arranged in a single row in between two longitudinal excretory canals, and measures, 0.379 (0.330-0.429) in diameter. The longitudinal excretory canals are thin, present on both lateral sides of segments along the body length and measures, 0.082 (0.066-0.099) in width.

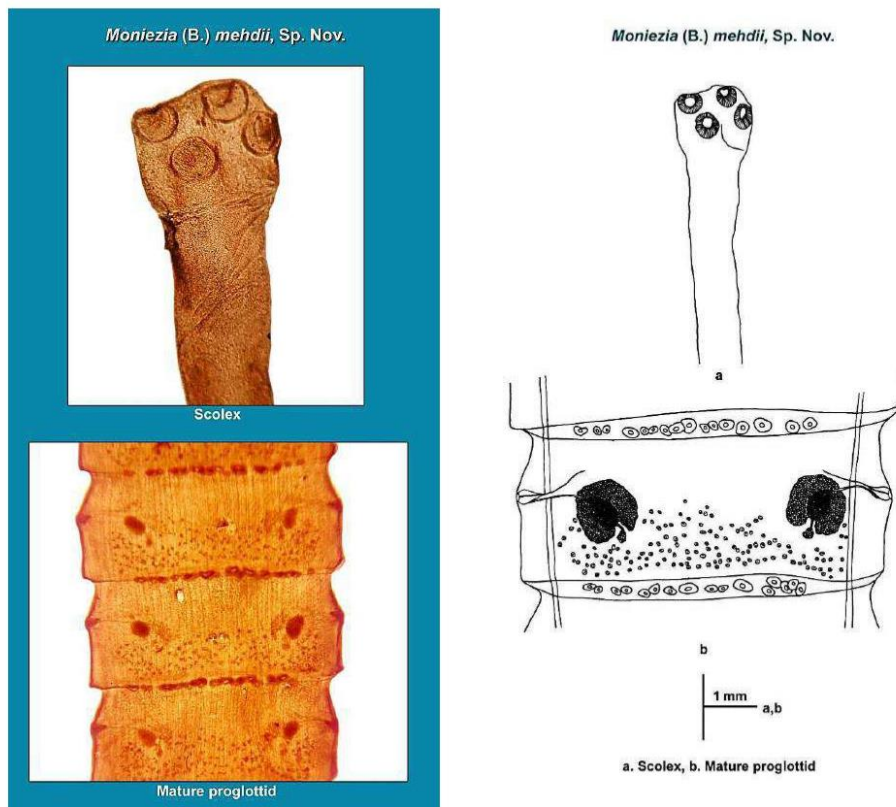


Fig. 1 Microphotograph And Camera Lucida Of
 a) Scolex; B) Mature Proglottid

4. RESULTS AND DISCUSSION:

The genus *Moniezia* was erected by Blanchard in 1891. The worm under discussion is having the scolex small squarish, mature proglottids nearly two times broader than long, testes small, oval to rounded in shape, 130-140 in numbers, cirrus pouch large cylindrical, ovary horse-shoe shaped, vitelline gland post ovarian, inter proglottidal glands 15-16 in numbers.

- The present worm differs from *Moniezia* (B) *benedeni*, Moniez, 1879, Skrjabin and Schulz, 1937, which is having numerous proglottids broader than long, posterior proglottids fleshy, testes 500 in numbers, arranged in two groups, cirrus pouch short and wide, vas deferens with 2-3 coils, ovary compact, in the center of the segments, eggs well developed, inter proglottidal glands liner and close to the posterior margin of the segments, arranged transversely and reported from the Calves and Lambs.
- The present cestode differs from *Moniezia* (B) *pallida*, Monnig, 1926, which is having the uterus external, dorsal and ventrally over excretory canals, the inter-proglottidal glands varying in size and reported from the host horse in South Africa.
- The present parasite differs from *Moniezia* (B) *aurangabadensis*, Shinde, *et al.* 1985, which is having the scolex quadrangular, testes small, 1100-1200 in numbers, vas deferens coiled, cirrus pouch cylindrical, oval with some rounded acini, gravid proglottids broader than long, uterus reticulate, inter proglottidal glands 12-15 in numbers and reported from *Ovis bharal* (L.).
- The present tapeworm differs from *Moniezia* (B) *bharalae*, Shinde, *et al.*, 1985, which is having testes rounded, 190-200 in numbers, vas deferens short, elongated, fusiform, genital pores bilateral, sub marginal, ovary compact, inter proglottidal glands arranged in two rows, small in size, 38-44 in numbers and reported from *Ovis bharal* (L.).
- The present form differs from *Moniezia* (B) *warananagarensis*, Patil, *et al.* 1997, which is having scolex large, globular, testes 300-320 in numbers, distributed throughout the proglottids, in single field, ovary indistinctly lobed with 13-15 short, blunt acini, transversely elongated, inter proglottidal glands, 56 in numbers, oval, medium in size, cirrus pouch medium, oval, transversely elongated, slightly obliquely placed and extend beyond longitudinal excretory canal.
- The present cestode differs from *Moniezia* (B) *kalawati*, Nanware, *et al.* 1999. Which is having squarish scolex, oval shaped cirrus pouch, testes small, oval, distributed throughout the segment, 172 in numbers, ovary medium, short, blunt acini, and 54 inter proglottidal glands in the inter segmental region, medium, oval either single or paired, irregularly arranged in the central width of the segments and leaving space on each lateral side.
- The present tapeworm differs from *Moniezia* (B) *murhari*, Kalse, *et al.*, 1999, in having the scolex squarish, testes 405-415 in numbers, cirrus pouch elongated in the anterior region of the segments, ovary inverted horse shoe shaped, indistinctly bilobed each with numerous short, blunt, round, acini and inter proglottidal glands 63 in numbers.
- The present parasites differs from *Moniezia* (B) *caprai*, Pokale, *et al.*, 2004, which is having the scolex is medium, squarish, with large four suckers, without rostellum, testes oval in shape, 255-260 in numbers, cirrus pouch is medium in size and ovary medium in size, kidney shaped.
- The present worm differs from *Moniezia* (B) *shindei*, Pawar, *et al.*, 2004 in having scolex large, mature segments craspedote, testes 190-200 (195) in numbers, scattered all over segment and ovary a single mass, large, oval, cirrus pouch oval, elongated, in center of the segment and vitelline gland large, oval, internal to ovary.
- The present cestode differs from *Moniezia* (B) *hircusae*, Tat and Jadhav B. V., 2004 which is having scolex large, globular, mature segments big, craspedote, testes 168 in numbers, small, scattered in a single field, ovary large, oval, a single mass, in anterior half of the segment, inter proglottidal glands 14-15 in numbers, large, oval and cirrus pouch in anterior 1/3rd region of the segment.
- The present cestode differs from *Moniezia* (B) *rajalaensis*, Borde, *et al.* 2007, in having scolex large, globular, mature proglottids squarish, broader than long, testes 250-260 in numbers, medium, scattered throughout proglottids, ovary large, horse shoe shaped, inter proglottidal glands 31-32 in numbers, large, oval and cirrus pouch oval.
- The present cestode differs from *Moniezia* (B) *caprae*, Nanware S.S., 2010 in having scolex large, mature segment big, almost three and a half times broader than long, testes 84-85 in numbers, medium in size, oval in shape, ovary large, bilobed, inter proglottidal glands 40 in numbers, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *govindae*, Padwal, *et al.*, 2011 in having scolex large, globular, mature proglottids big, broader than long, testes 100-140 in numbers, medium, scattered throughout proglottids, ovary large, compact, nut shaped, inter proglottidal glands 40-42 in numbers, large, oval and cirrus pouch elongated.
- The present cestode differs from *Moniezia* (B) *babai*, Humbe, *et al.*, 2011 in having scolex globular, mature segment four times broader than long, testes 190-220 in numbers, small in size, rounded in shape, ovary large, rounded, inter proglottidal glands 18-20 in numbers, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *ovisae*, Humbe, *et al.*, 2011 in having scolex broad anteriorly and narrow towards neck, mature segment two times broader than long, testes 155-165 in numbers, small in size, rounded in shape, ovary large, bilobed, inter proglottidal glands 32-35 in numbers, oval, rounded and cirrus pouch on each side.

- The present cestode differs from *Moniezia* (B) *osmanabadensis*, Humbe, *et al.*, 2012 in having scolex globular, mature segment five times broader than long, craspedote, testes 170-200 in numbers, small in size, rounded in shape, ovary large, bilobed, inter proglottidal glands 38-40 in numbers, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *devraoi*, Humbe, *et al.*, 2013 in having scolex quadrangular, mature segment four times broader than long, testes 160-180 in numbers, small in size, rounded in shape, ovary large, bilobed, inter proglottidal glands 40-45 in numbers, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *shegaonensis*, Barote, *et al.*, 2013 in having scolex globular, mature segment four to five times broader than long, testes 190-220 in numbers, small in size, rounded in shape, ovary compact, inter proglottidal glands 20-25 in number, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *shivajiraovae*, Barote, *et al.*, 2014 in having scolex squarish, large in size, mature segment six to eight times broader than long, testes 84-95 in numbers, small in size, rounded in shape, ovary horse-shoe shaped, inter proglottidal glands 40-42 in numbers, oval, rounded and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *sureshi*, Ravi Solunke, 2015 in having scolex oval, quadrangular, mature segment four to five times broader than long, testes 180-185 in numbers, single field, unevenly distributed, ovary medium, horse-shoe shaped, in appearance having numerous short, blunt acini, inter proglottidal glands 18-19 in numbers, oval and cirrus pouch on each side.
- The present cestode differs from *Moniezia* (B) *jadhavi*, Amol Thosar, *et al.*, 2015 in having scolex squarish, mature segment craspedote, five times broader than long, testes 210-220 in numbers, small, oval to round, ovary horse-shoe shaped, compact, inter proglottidal glands 46-52 in numbers, arranged lineally in one or two rows, cirrus pouch small oval.
- The present cestode differs from *Moniezia* (B) *marathwadensis*, Shaikh Kalim, 2015 in having scolex quadrangular, mature segment five times broader than long, testes 125-130 in numbers, small, oval in shape, ovary compact with numerous blunt acini, inter proglottidal glands 50-52 in numbers, arranged lineally in one or two rows, cirrus pouch large, elongated, oval.
- The present cestode differs from *Moniezia* (B) *bhalchandrai*, Kalse A.T. *et al.*, 2016 in having scolex quadrangular, mature segment rectangular in shape, almost four and half times broader than long, testes 196-200 in numbers, oval in shape, ovary medium in size, inverted cup shaped, inter proglottidal glands 13-14 in numbers, oval in shape, highly muscular, single regularly and lineally arranged, cirrus pouch large, oval in shape.
- The present worm differs from *Moniezia* (B) *bordeae*, Sunita Borde *et al.*, 2017 in having scolex quadrangular, mature segment nearly four to five times broader than long, testes 130-170 in numbers, spread in the medulla in between the longitudinal excretory canals, ovary bean shaped, small, forms concavity posteriorly, inter proglottidal glands 5-9 in numbers, arranged single row, cirrus pouch on each side and reported from *Ovis bharal* (L.).
- The present cestode differs from *Moniezia* (B) *madhavae*, Jadhav V.M. *et al.*, 2018 in having scolex quadrangular, mature segment near five times broader than long, testes 45-60 in numbers, medium in size, oval in shape, ovary distinctly bilobed, inter proglottidal glands 40-42 in numbers, oval in shape, cirrus pouch small in shape, curved.
- The present cestode differs from *Moniezia* (B) *shilae*, Amol Thosar *et al.*, 2020 in having the scolex quadrangular, mature proglottids nearly four times broader than long, craspedote in shape, testes small in size, oval to rounded, 180-210 in numbers, cirrus pouch oval, ovary large, compact, horse-shoe shaped, vitelline gland post ovarian, inter proglottidal glands 26-30 in numbers.

The above differentiating characters are valid enough to erect a new species for these cestodes and hence the name *Moniezia* (B) *mehdii* Sp. Nov is proposed, in honour of late Prof. Syed Mehdi Ali, well known Helminthologist in India and Ex-head and professor, Department of Zoology, Dr. Babasaheb Ambedkar University, Aurangabad-431004.

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**Histopathological Study Of *Lytocestus* Species Infection In Host Intestine
Clarias Batrachus (L) From Kham River, Aurangabad (M.S) India**

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Abstract: In the present investigation occurrence and pathological changes caused by cestode parasites *Lytocestus* Species in the intestine of fresh water fishes, *Clarias batrachus* (Linn.) from Kham river, Aurangabad (M.S) India are studied. The worm *Lytocestus* Sp. attached to the intestine of host *Clarias batrachus*. In T.S. of intestine of *Clarias batrachus* it has been observed that the cestode attached to the intestinal layer and slowly damaged the host intestinal villi, invaded deep and sucking the content in the region of villi.

Keywords: *Clarias batrachus*, Histology, Kham River, *Lytocestus*.

1. INTRODUCTION:

The term 'host-parasites relationship' correctly designates an intimate interaction, between two or more distinct organisms, in which the one benefits while causing damage to the others. The study of parasites and parasitism is without an end. One could go on and on like this as the various aspects are not only important but quite interesting too. What about the host-parasites and parasites-parasites relationship as also the relationship between the definitive and intermediate hosts of the parasites.

The Caryophyllidean cestodes produce disease to the fishes by inducing mild irritation, inflammation between the folds, thinning of intestinal walls and sometimes death resulting from dysfunctioning of intestinal mucosa. The other remarkable feature of the Caryophyllidean cestodes is the presence of prominent secretory glands which are used by the parasites for establishment. The structure and function of scolex glands in different species of Caryophyllidean cestodes were studied in detail by Hayunga (1979) and Hayunga and Mackiewicz (1988). They reported that the scolex glands were more developed in those species, which lack attachment organs and suggested that the secretion of the glands was used by the parasite to adhere to the host intestine.

The host parasite relationship has studied by Mitra and Shinde, 1980 of *Amoebotaenia indiana* and *Hymenolepis nana* by Bailey, 1951. The establishment and distribution of *Raillietina cesticillas* in the fowl was by Foster and Daughtery, 1959, cestode relationship of hill stream, fishes was observed by Chauhan and Malhotra, 1981. Host various parasite responses were described Mitchell, 1981. Histopathological changes were also observed *Moniezia* from *Capra hircus* (L.) by Nanware and Jadhav, 2005, *Circumncobothrium* and *Senga* from *Mastacembalus armatus* by Fartade Asawari and Sunita Borde, 2011 and Marine Cestode from marine fish by Anarse Sandeep and Borde Sunita, 2012. Noteworthy work was carried out on histopathological changes caused by cestode parasites by Mackiewicz *et al.*, 1972, Molnar *et al.*, 2003, Rubela *et al.*, 2006, Williams, 2007, Jadhav *et al.*, 2012, and Laxma Reddy and Benarjee, 2014.

The foregoing literature survey clearly reveals that Caryophyllidean parasites cause considerable damage and therefore great economic losses to the fishermen. Thus, these groups of parasites require attention of parasitologists to develop an integrated control programme.

The present communication deals with the study of histopathology of *Lytocestus* species infection in host intestine *Clarias batrachus* from Kham River, Aurangabad (M.S) India.

2. MATERIAL AND METHODS:

For the histopathological study, intestines of fishes were dissected to observe the rate of infection. Some fishes were found to be infected and some non-infected. Both infected and non-infected hosts intestine were dissected and

fixed in Bouin's fluid to study histopathological changes. The fixative inhibits the post mortem changes of the tissues. Then tissues were washed, dehydrated through alcoholic grades, cleared in xylene and embedded in paraffin wax (58-62°C).

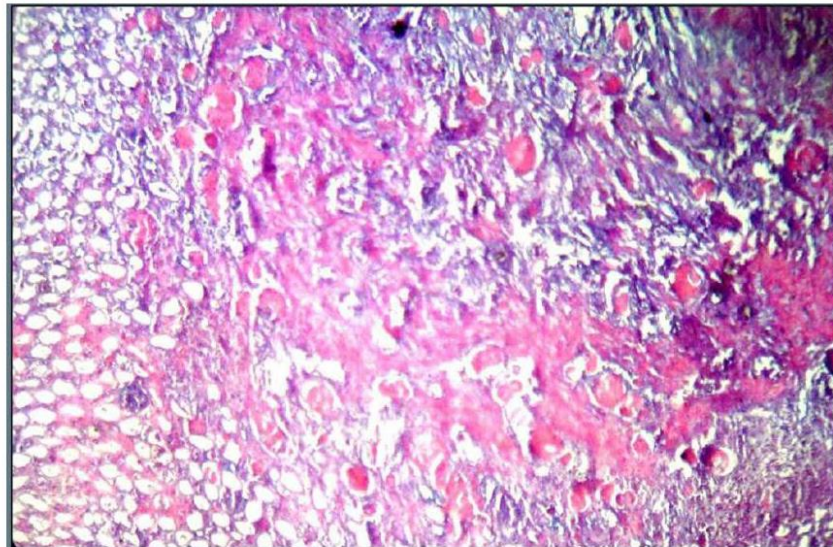
The blocks were cut at 7µ and slides were stained in Eosin haematoxylin double staining method. Best slides or sections were selected and observed under the microscope.

3. RESULT AND DISCUSSION:

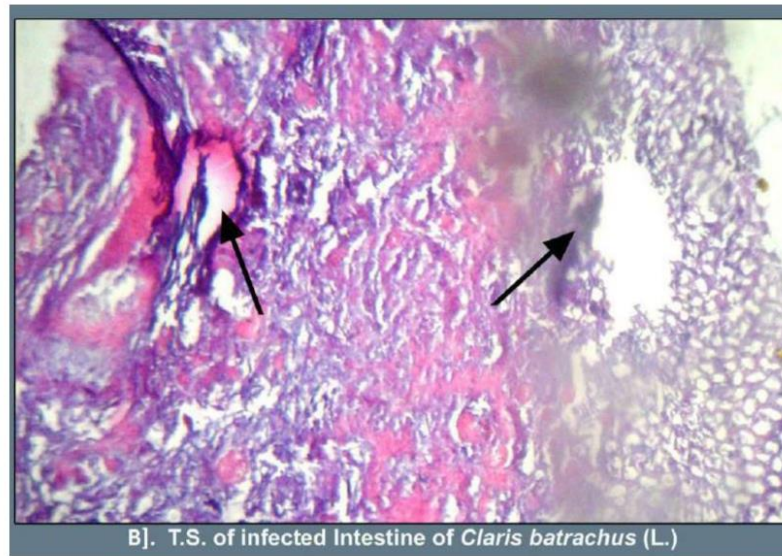
From the present communication the results indicate that some of the intestines were found to be infected with cestode parasite. In T.S. of non-infected intestine of *Clarias batrachus* (L.) it has been observed normal intestinal villi and other layers of intestine. In T.S. of infected intestine of *Clarias batrachus* (L.) has been observed that the cestode attached to the mucosal, sub-mucosal and muscularis mucosa of intestine and slowly damaged the hosts intestinal villi, invaded deep and forming the cyst like structure for sucking the content from the region of the intestine. Healthy intestine showed, healthy villi and all layers are clearly observed, whereas infected intestine has been observed that the worm attached to the mucosal layer of intestine and slowly invades to the deeper layers of the host tissue.

The worm *Lytocestus* Sp. attached to the intestine of host *Clarias batrachus*. In T.S. of intestine of *Clarias batrachus* it has been observed that the cestode attached to the intestinal layer and slowly damaged the hosts intestinal villi, invaded deep and sucking the content in the region of villi.

In the present study case the damage of *Lytocestus* sp. observed is similar to the damage reported by Satpute and Agrawal (1974) and A. S. Raipalli and A. L. Deshmukh (2018). However, the helminths crosses majority of the intestinal layers (internal epithelium, submucosa, muscularis layer) and come to lie near serosa suggesting that, it is very dangerous and destructive parasites to the definitive host (C. J. Hiware, 2008). The worm is not only successful to enter into the intestine forming the ulceration in the intestinal wall causing damage to the host tissue but the parasite may affect host physiology in many ways that induce stress in the host. The parasitic infection in turn disturbs the metabolic pathways (Esch GW et al., 1977). The intestinal cells of the host become stretched and distorted causing mechanical obstruction of the lumen of fish intestine (Bauer., 1968; Ahmad and Sanahullah, 1979; Scott and Grizzle, 1979). During heavy infection, the intestine gets blocked causing death of the host (Bauer et. al., 1981). In some cases, high number of parasites reduces the diameter of the lumen by more than 50% which affects the movement of the food through the intestine (Shostak and Dick, 1986). Marty, G. (2008) reported the Atlantic salmon (*Salmo salar*) had ananisakid larva partly embedded in the wall of an intestinal caecum.



A]. T.S. of non-infected Intestine of *Clarias batrachus* (L.)



4. CONCLUSION:

From the above histopathological discussion it can be concluded that helminth parasites like *Lytocestus* Sp. finds the nutritive material from the intestine of hosts *Clarias batrachus* (L.) which is essential for their nourishment and growth. While taking nourishment parasites invade host tissue resulting tissue damage causing mechanical injury to the host at the attachment site.

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Biochemical Profile and Inhibitory Effect of *Haliclona permollis*
(Bowerbank, 1866) Marine Sponge of Ratnagiri, West Coast of India

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Abstract: The intertidal marine sponge, *Haliclona permollis* was assessed for the antimicrobial effect of various crude extracts, against pathogenic microbes by agar well diffusion method as well as to determine preliminary biochemical screening. The methanol and acetone depicted strong positive antimicrobial activity. It may be due to the presence of alkaloids, glycosides, tannins, flavonoids, proteins and amino acids, steroids, carbohydrate, fats and fixed oil. The hexane and chloroform showed weak positive antimicrobial activity because presence of biologically active compounds in small quantity. The investigation indicated that *Haliclona permollis* remain an interesting source for antimicrobial activity and also suggest that could be a good source of the secondary metabolite. However it required further investigation for isolation of pure compound.

Keywords: Antimicrobial activity, *Haliclona permollis*, Biochemical profile, Intertidal, Pathogens.

1. INTRODUCTION:

The marine sponges are the oldest metazoan group and characterized as sessile active filter feeders [1]. Sponges are simple, multicellular, sessile animals with no true tissue layers or organs [2]. This rocky shore area directly exposed to sea and it inhabited by diverse flora and fauna. Sponges are the most primitive multicellular animals that have existed for more than 800 million years. The sponges (Porifera), being evolutionarily ancient inhabit every type of marine benthic environment [3]. Sponges are primitive marine invertebrate's presence of high number natural products than any other marine phylum. The marine sponges are broadly distributed from intertidal zones to thousands of meters deep in the ocean [4].

The sponges are one of the richest sources of biologically active secondary metabolites and chemical diversity (5) (6). Until now, more than 5000 different compounds have been isolated and identified from about 500 species of sponges (7) with nearly 800 of them exhibiting antibiotic activity (8). These natural products belonged to different class of compounds like terpenoids, alkaloids, macrolides, polyether's, nucleoside derivatives and peptides. In recent time attention has been directed to the search of bioactive peptides from sponges, being actually a well-established sector in the research of marine natural product. Antitumor studies were conducted with 19 marine natural products in a number of experimental and clinical models proved that sponges act as an excellent source for bioactive compounds (9).

Marine sponges are a rich source of structurally novel and biologically active secondary metabolites [10]. Over 60% of potentially useful bioactive compounds discovered from living organisms have been obtained from marine fauna, 70% of which detected from sponges [11]. The sponge class Demospongiae is known for producing the largest number and diversity of secondary metabolites isolated from marine invertebrates [12]. Many sponge or sponge symbiont-derived metabolites are potent antibacterial, antifungal, anti-feeding and antifouling compounds [13]; a number of bacteria associated with sponges were found to be the sources of antibiotics and other bioactive compounds in the marine environment [14].

However, the bioactive potential of compounds from Indian sponges has been little studied, especially west coast of India. Therefore, In the present investigation report the antimicrobial and biochemical potential of marine intertidal sponge, *Haliclona permollis* collected from Ratnagiri coast (16°55'N73°16'E).

2. MATERIALS AND METHODS:

Collection of sample & preparation of crude extract-

The marine sponge, *Haliclona permollis* were collected from the low intertidal rocky pools of Ratnagiri coast (16°55'N 73°16'E), Maharashtra, India. The sponge was collected by an eco-friendly. Identified sponge tissues samples were washed with sea water, air dried and chopped into small size and extracted with 1000 ml (1:10) methanol, acetone, chloroform and hexane for about 7 days. Then extract was filtered through Whatmann paper No. 1 and solvent was processed by rotary vacuum evaporator (Buchi type-Superfit, Bangalore) under reduced pressure to get the crude extract of sponge. The concentrated extract was used for further study.

Antibacterial activity of *Haliclona permollis*

The assays were performed by agar well diffusion method is widely used to evaluate the antibacterial activity of crude extracts [15]. The four pathogenic bacterial strains were used as test organisms such as *Escherichia coli*, *Salmonella typhi*, (Gram negative bacteria) *Bacillus subtilis*, *Staphylococcus aureus* (Gram positive bacteria). All bacteria were stored at -20°C until use. Cells were grown at 3°C in Muller Hinton broth to an OD 420 = 1.9 (approx. 105 CFU/mL), and were transfer to Muller Hinton agar. The broth cultures swabbed onto agar medium so as to achieve a lawn of confluent bacterial growth separately for each strain. The sterile stainless steel borer (6 mm) was used to make well in the agar medium. Five wells were bored in each plate. The sponge crude extract (100µg/mL) was loaded in to the well and to find out the inhibitory potential. Triplicate plates were maintained for each test. Discs of Streptomycin (25µg/ml) were used as positive control. The bacterial assay plates were incubated at 37°C for 24 hrs. Growth of bacteria around each well was observed carefully and the diameter of the zone of inhibition around each agar well was measured using a Hi-media zone reader.

Antifungal activity of *Haliclona permollis*

The assays were performed by agar well diffusion method is widely used to evaluate the antifungal activity of crude extracts [15]. Assays were performed by agar well diffusion method. The crude extract was tested against *Aspergillus* spp., *Penicillium* spp., *Alternaria* spp. and *Fusarium* spp. The fungal cultures were maintained in 0.2% Sabouraud dextrose broth; each fungal inoculum was applied on plate and evenly spread on Sabouraud dextrose agar using a sterile cotton swab. The Fluconazole discs were used as the positive control. The sponge crude extract (100µg/mL) was loaded in to the well and to find out the inhibitory potential. The fungal assay plates were incubated at 28°C for 48 hrs.

Preliminary biochemical screening of *Haliclona permollis*

The preliminary biochemical analysis was carried out using following methods [17, 18]. The sponge crude extracts were qualitatively analyzed for the presence of various biologically active compounds.

1. Detection of alkaloids

- i. **Mayer's Test:** Extracts were treated with Mayer's reagent (potassium mercuric iodide). The formation of a yellow coloured precipitate indicates the presence of alkaloids in the extract.
- ii. **Wagner's Test:** Extracts were treated with Wagner's reagent (Iodine in Potassium Iodide). The formation of a brown/reddish precipitate indicates the presence of alkaloids in the extract.
- iii. **Dragendroff's Test:** Extracts were treated with Dragendroff's reagent (solution of Potassium Bismuth Iodide). The formation of a red precipitate indicates the presence of alkaloids in the extract.
- iv. **Hager's Test:** Extracts were treated with Hager's reagent (saturated picric acid solution). The formation of yellow coloured precipitate confirmed the Presence of alkaloids.

2. Detection of glycosides

Legal's Test: The extracts were treated with sodium nitropruside in pyridine and sodium hydroxide. The pink to blood red colour indicates the presence of cardiac glycosides in the extract.

3. Detection of tannins

- i. **Gelatin Test:** To the extract, 1% gelatin solution containing sodium chloride was added. The formation of a white precipitate indicates the presence of tannins in the extract.
- ii. **Ferric Chloride Test:** With 1% ferric chloride solution the extract gives blue, green, or brownish green colour indicating the presence of tannins.

4. Detection of flavonoids

- i. **Alkaline Reagent Test:** Extracts were treated with few drops of sodium hydroxide solution. The formation of intense yellow colour, it becomes colourless on addition of dilute acid indicates the presence of flavonoids in the extract.
- ii. **Lead acetate Test:** Extracts were treated with few drops of lead acetate solution. The formation of a yellow coloured precipitate indicates the presence of flavonoids in the extract.
- iii. **Shinoda Test:** Take 2-3 ml of extract, a piece of magnesium ribbon and 1 ml of conc. hydrochloric acid was added. The Pink or red coloration of the solution indicates the presence of flavonoids in the extract.
- iv. **Zinc Hydrochloride Test:** To the test solution, add a mixture of zinc dust and conc. Hydrochloric acid. It gives red colour after few minutes.

5. Detection of proteins and amino acids

- i. **Xanthoproteic Test:** The crude extracts were treated with few drops of concentrated nitric acid. The formation of a yellow colour indicates the presence of proteins.
- ii. **Ninhydrin Test:** To the extract, 0.25% w/v ninhydrin reagent was added and boiled for few minutes. The formation of a blue colour indicates the presence of amino acid.

6. Detection of saponins

Foam Test: Take the 0.5 gm of extract was shaken with 2 ml of water and Then formation of foam persistently for ten minutes it indicates the presence of saponins in the extract.

7. Detection of sterols and terpenoids

Salkowski's Test: Extracts were treated with few drops of concentrated sulphuric acid, red colour at the lower layer indicates presence of steroids and formation of yellow colour at the lower layer indicates the presence of terpenoids in the extract.

8. Detection of carbohydrates

- i. **Molisch's Test:** Filtrates were treated with 2 drops of alcoholic α -naphthol solution in a test tube. The violet ring at the junction indicates the presence of Carbohydrates in the extract.
- ii. **Benedict's Test:** Filtrates were treated with Benedict's reagent and heated gently. The orange red precipitate indicates the presence of reducing sugars in the extract.
- iii. **Fehling's Test:** Filtrates were hydrolysed with diluted HCl, neutralized with alkali and heated with Fehling's A & B solutions. The formation of a red precipitate indicates the presence of reducing sugars in the extract.
- iv. **Selwanoffs Test:** Take 1 ml of a sample solution of extract is placed in a test tube. The 2 ml of selwanoffs reagent (a solution of resorcinol and HCL) is added. The solution is heated in a boiling water bath for two minutes. The formation of red product indicates the presence of carbohydrates.
- v. **Camelisation Test:** 1 ml crude extract were treated with strong sulphuric acid, it gives a burning sugar smell. This indicates the presence of carbohydrates in the extract.

9. Fats and Fixed Oils

Stain Test: The small amount of extract was pressed between two filter papers. The oily stain on filter paper indicates the presence of fixed oil in the extract.

3. RESULTS:

The *Haliclona permollis* crude extracts methanol, acetone, chloroform and hexane were used to investigate the antimicrobial activity against four human pathogenic bacteria as well as four plant pathogenic fungal species; and the preliminary biochemical screening. Figure 1 shows result of in vitro testing of sponge extracts against pathogenic bacteria. Inhibition zones of sponge crude extracts against the specific test organisms were measured in mm. The crude extract restricted the growth of pathogens strains on the media around wells. The maximum inhibition zone (5-7 mm) was observed in methanol and acetone crude extract against *Escherichia coli*, *Salmonella typhi*, *Bacillus subtilis*, *Staphylococcus aureus*. The minimum inhibition zone (2-4 mm) was noticed in chloroform and hexane extract against all four pathogenic bacterial strains.

The figure 2 shows results of sponge crude extract against plant pathogenic fungal species. The maximum inhibition zone (5-7 mm) was observed in methanol crude extract against *Aspergillus* spp., *Penicillium* spp., *Alternaria* spp. and *Fusarium* spp. and acetone extract shows (4-5) inhibition against *Aspergillus* spp., *Penicillium* spp., *Alternaria* spp. and *Fusarium* spp.. The minimum inhibition zone (1-3.5 mm) was noticed in chloroform and hexane extract against all four pathogenic fungal strains.

The figure 3 to figure 10 depicted the various biochemical present in different extracts of sponge *Haliclona permollis*; the methanol and acetone crude extract contains alkaloids, tannins, flavonoids and proteins and amino acids, steroids, carbohydrates, fats and fixed oils strongly in high quantity; as well as chloroform and hexane extract contains presence of secondary metabolites in small quantity.

4. DISCUSSION:

In the present study the crude methanol, acetone, chloroform and hexane extracts of *Haliclona permollis* showed antimicrobial action against the bacteria and fungi. The crude extract of methanol shows maximum antimicrobial activity against all test microorganisms. The sponges shows wide spectrum of antibacterial efficacy and exhibited the growth of all the test bacteria. The reports on antibacterial activity of sponges revealed their activity on gram positive bacteria. Various studies have confirmed the predominance of gram negative producers in the marine environment [19]. Marine sponge *Aplysina cavernicola* produces the aeropylsinin, aerthionin derivatives, with some antibiotic activity against *Bacillus subtilis* and *Proteus vulgaris* [20].

Various studies have been done on anti-microbial properties of the bacteria associated with the sponges. The antibiotics produce by these bacteria ranged from broad spectral to species specific [21]. The discovery of new classes of antibiotics is necessary due to the increased incidence of multiple resistances among pathogenic microorganisms to

drugs that are currently in clinical use [22]. The Sponges of Demospongiae class are known to produce the largest number of secondary metabolites, most of them with medically relevant biological activities and important ecological roles [23].

Sponges are primitive marine invertebrates present high number of natural products than any other marine phylum. Many of their products have strong bioactivities including anticancer, antimicrobial, larvicidal, hemolytic and anti-inflammatory activities and are often applicable for medical use [24]. The anti-tumour activity of cell free extracts from sponge associated actinomycetes might be due to the presence of the biologically active compounds alkaloids and gunitin [25]. Hence, the present results profounded the promising antimicrobial activity of *Haliclona permollis* against eight active pathogenic strains. The study shows that *Haliclona permollis* possessed excellent source of antimicrobial properties and secondary metabolites.

5. CONCLUSION:

The present investigation reveals that the marine sponges *Haliclona permollis* shows the potential source for the antimicrobial and biochemical properties. The methanol and acetone depicted strong positive antimicrobial activity. It may be due to the presence of alkaloids, glycosides, tannins, flavonoids, proteins and amino acids, steroids, carbohydrate, fats and fixed oil. The hexane and chloroform showed weak positive antimicrobial activity because presence of biologically active compounds in small quantity. The investigation indicated that *Haliclona permollis* remain an interesting source for antimicrobial activity and also suggest that could be a good source of the secondary metabolite. Probably is the first report on the antimicrobial activity and biochemical profiling of *Haliclona permollis* from Ratnagiri coast, Maharashtra, India, to the best of our knowledge. However it required further investigation for isolation of pure compound.

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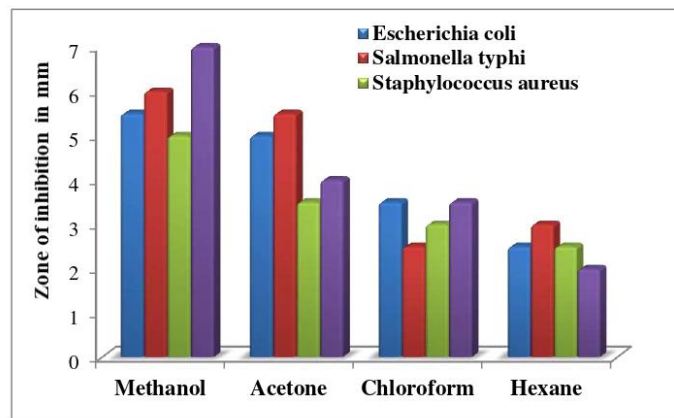


Figure 1: Antibacterial activity of crude extract of *Haliclona permollis*.

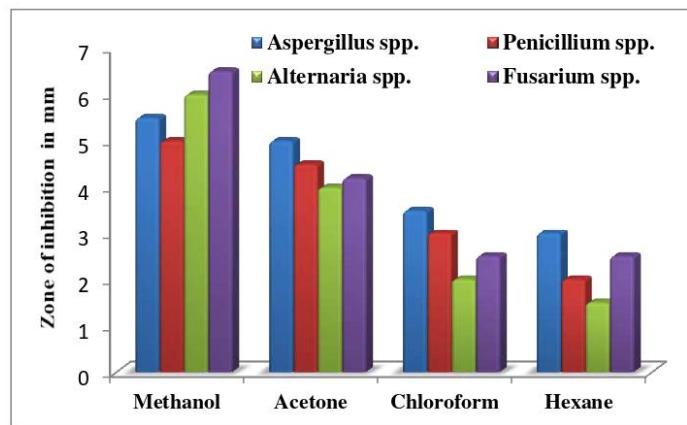


Figure 2: Antifungal activity of crude extract of *Haliclona permollis*.

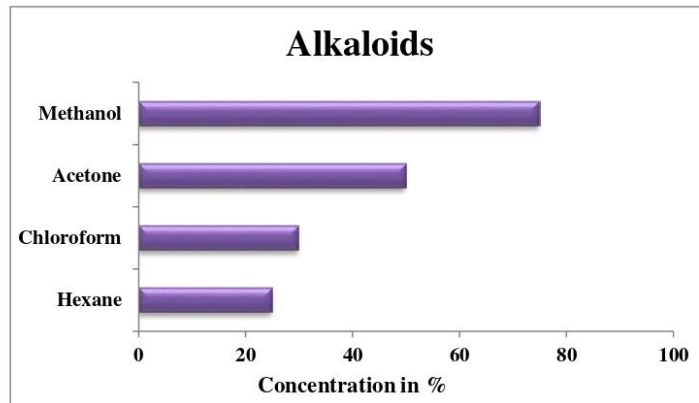


Figure 3: Alkaloid content in crude extracts of *Haliclona permollis*.

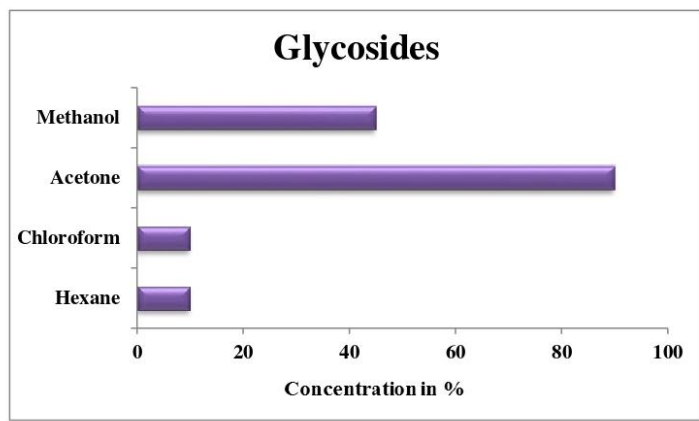


Figure 4: Glycoside content in crude extracts of *Haliclona permollis*.

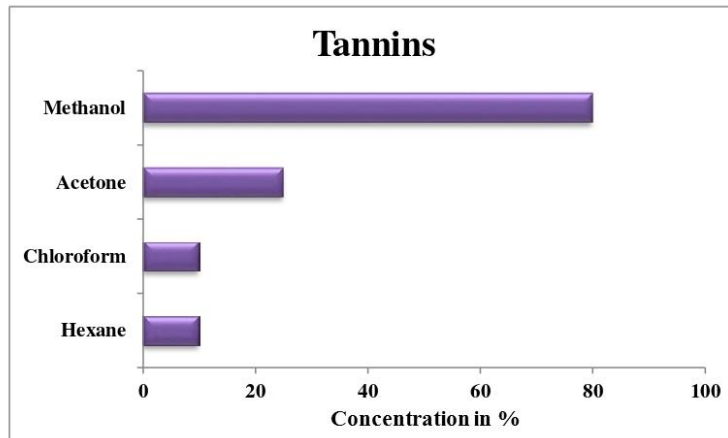


Figure 5: Tannin content in crude extracts of *Haliclona permollis*.

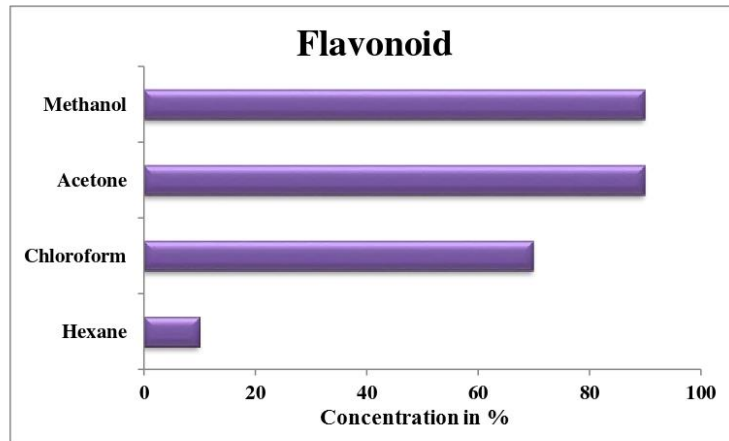


Figure 6: Flavonoid content in crude extracts of *Haliclona permollis*.

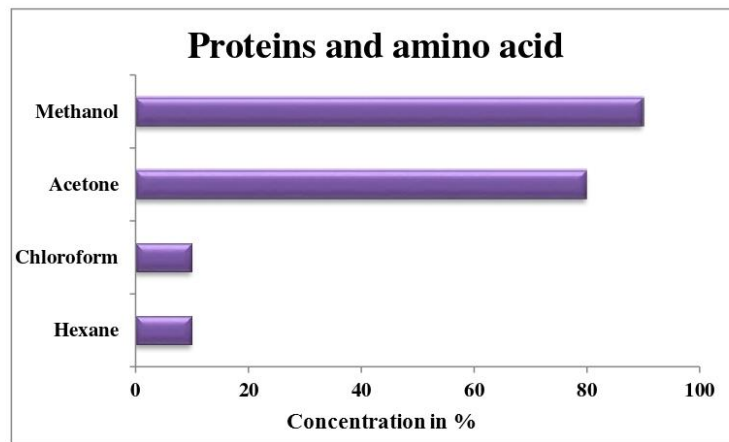


Figure 7: Proteins and amino acid content in crude extracts of *Haliclona permollis*.

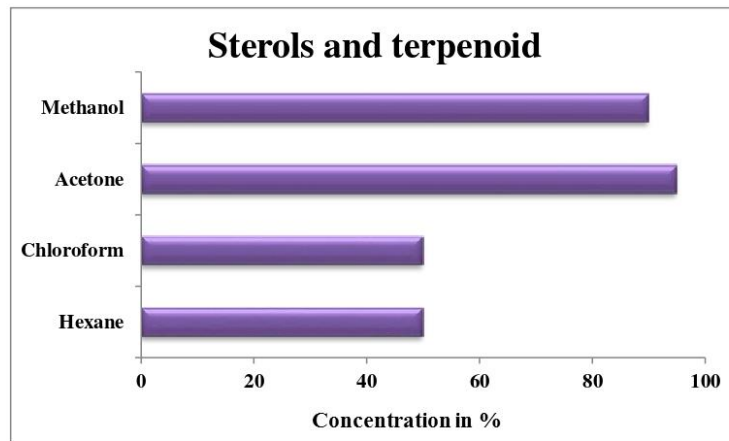


Figure 8: Sterols and terpenoid content in crude extracts of *Haliclona permollis*.

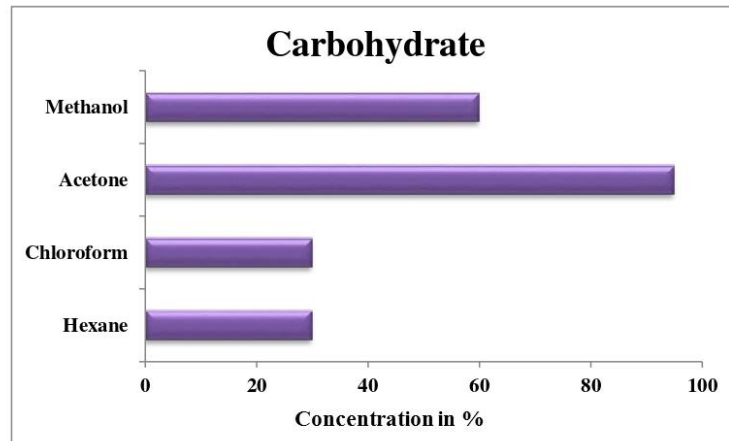


Figure 9: Carbohydrate content in crude extracts of *Haliclona permollis*.

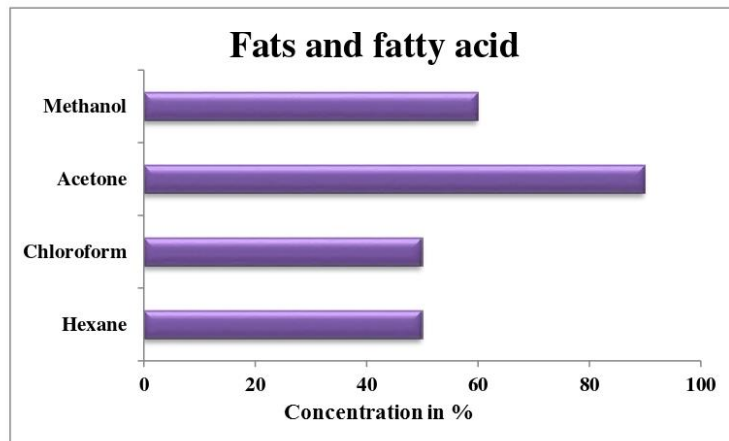


Figure 10: Fats and fatty acid content in crude extracts of *Haliclona permollis*.

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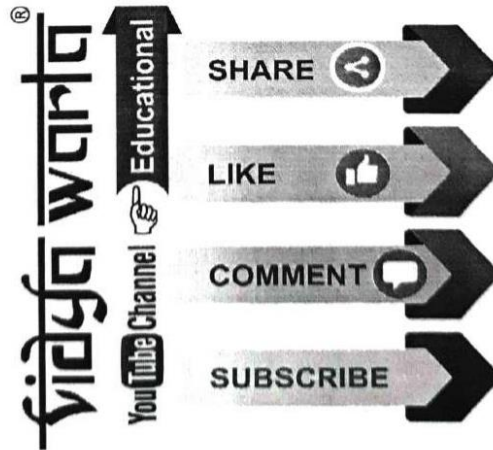
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बचत गट व महिला सक्षमीकरण

पुरुषोत्तम रंगराव चाटे
सहा प्राध्यापक, अर्थशास्त्र,
श्री शिवाजी महाविद्यालय, मोताळा

सारांश :-

महिला सक्षमीकरणाचा मुद्या अभ्यासतांना त्यांच्या असंख्य बाजू विचारत घेणे आवश्यक आहे. त्यामध्ये प्रामुख्याने सामाजिक, आर्थिक, शैक्षणिक, कौटुंबिक, आरोग्यविषयक, लोकसंख्या विषयक, सांस्कृतिक, विविध विकास निर्देशांक विषयक महिला सक्षमीकरण तपासून बघणे आवश्यक आहे. महिला सक्षमीकरणात सर्वात महत्त्वाचा मुद्या आर्थिक व शैक्षणिक आहे म्हणून शासनाच्या सहकार्याने विविध योजनांच्या माध्यमातून हे लक्ष्य साध्य होवू शकते. सुक्ष्म वित्त योजनेच्या माध्यमातून सक्षमीकरणाला नवसंजीवनी प्राप्त झाली आहे. बचत गटांच्या माध्यमातून महिला उद्योग व्यवसायात स्वबळावर उभ्या राहिल्या पाहिजेत म्हणून शासन अनेक विध प्रकारची मदत करत आहे. आज बचत गटांच्या माध्यमातून अर्ध शहरी, ग्रामीण भाग, वाडया वस्त्यावरील महिला बोलक्या झाल्या आहेत. आर्थिक परिस्थितीमधून सावरण्यासाठी त्यांना शक्ती मिळत आहे. जिटद, मेहनत, धाडस व प्रामाणिक कष्ट करण्याची क्षमता या बळावर उद्योग व्यवसायातून महिलांना यशस्वीपणे समृद्धी खेचून आणता येवू शकते. स्त्री सक्षमीकरणाच्या कार्याची सुरुवात आपल्या देशामध्ये खऱ्या अर्थाने नवव्या पंचवार्षिक योजनेच्या माध्यमातून झाली. स्वयंसहाय्यता गट संघटित करून उत्पादन कार्यात सहभागी स्त्रीयांचे संघटन हा महत्त्वपूर्ण टप्प्यांचा प्रारंभ होता. महिला बचत गट जगामधील प्रत्येक विकसनशील राष्ट्रांना एक संजीवनी म्हणून कार्य करत आहे. अनेकविध प्रकारच्या समस्या या माध्यमातून सुटत आहेत. भारत देशामध्ये वित्ताचा तुटवडा ही एक मोठी समस्या

आहे. त्यामधून मार्ग काढण्यासाठी छोट्या छोट्या बचतीचे एकत्रीकरण करणे गरजेचे आहे. देशातील एकूण लोकसंख्येपैकी पन्नास टक्के महिला वर्ग आर्थिक साक्षर करणे, विकास कार्यात त्यांचा सहभाग वाढविणे व देशाच्या उत्पन्नात भर टाकणे हा मूळ हेतू सूक्ष्म वित्ताचा आहे.

प्रस्तावना:

आज भारत देशामध्ये नव्हे तर संपूर्ण जगामध्ये मग ते खेडयापाडयांपासून तर शहरपर्यंत महिलांनी स्वाभिमानाने जगण्याचे बळ बचतगटांच्या माध्यमातून प्राप्त झालेले आहे. महिलांच्या कार्यक्षमतेची, जीवदटीची व चिवटपणाची ही एक झलक आहे. महिला सक्षमीकरणची क्रांती ही नव्या तंत्रयंत्र युगात तिचं आत्मिक बळ वाढविण्यासाठी महत्त्वपूर्ण ठरली आहे. सक्षमीकरणाची व्याख्याच करायची झाली तर, "महिला मधिल असलेल्या क्षमतांचा विस्तार व निवड करण्याचे स्वातंत्र्य. म्हणजे महिला सक्षमीकरण होय." आर्थिक पाठबळ मिळाल्यावर जिटद व आत्मविश्वासाच्या जोरावर महिला यशस्वी होवू शकतात. हे बचत गटांच्या क्रांतीवरून स्पष्टपणे अधोरेखित झाले आहे. भारतासारख्या सांस्कृतिक भिन्न, धार्मिक भिन्न आणि रितीरिवाज भिन्न देशात बचत गटांच्या माध्यमातून क्रांती घडत आहे, ही सर्वात जास्त आश्चर्याची गोष्ट आहे. कारण वर्तमानकाळात सुध्दा काही समाजातील स्त्रियांना आज सुध्दा निर्णय व आर्थिक प्रक्रियेत समान स्थान देण्यावाचून असंख्य मतमतांतरे आहेत. जगामध्ये जागतिकीकरणाच्या अगोदरपासून महिला सक्षमीकरणाची लाट उसळलेली होती. त्यासाठी कालौघात अनेक चर्चासत्र, सेमिनार, व्याख्याने, जाहिरात बाजी या ठिकाणी सक्षमीकरणाचा मुद्या चर्चेला गेला. कुटुंबाचा विचार करता महिलांना दुय्यम प्रकारचे स्थान, ७० टक्के पेक्षा अधिक महिलांना आज सुध्दा निर्णय प्रक्रियेत मत मांडण्याचा अधिकार नाही. कृशी व कृशीपुरक उद्योगामध्ये महिला वर्गाचा मोलाचा वाटा असतो. मात्र त्यावर त्यांच्या मालकीचा आभाव. भारत देशामध्ये पंचायतराज चा विचार केला तर असंख्य महिला ग्राम पंचायत पासून ते जिल्हा परिषदामध्ये सदस्य व अध्यक्ष पदावर केवळ नामधारी म्हणून विराजमान आहेत. महिलांचे कुटुंबाकरीता व

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समाजाकरीताचे श्रम प्रामुख्याने विचारत घेतले तर तुलनात्मक दृष्ट्या महिला अग्रस्थानी आहेत. परंतु त्यांच्या श्रमाला समाज मान्यता नाही. त्याचप्रमाणे वेतन भेदाचा विचार केला तर महिलांना पुरुषांच्या तुलनेत कमी मूल्य प्राप्त होते.

**बचत गट व सक्षमीकरणाच्या विविध बाजू :
निर्णय व आर्थिक प्रक्रियेतील स्थान उंचावत आहे.**

स्त्रियांविषयी पूर्वग्रह, चूकीच्या समजूती, धार्मिक पगडा, विवंचना, हेळसांड या कुप्रथांना मूठमाती देत माणूस म्हणून स्त्रीयांकडे पाहिले तर देशातील उत्पन्न, व्यवसाय व व्यवस्थेचा महिला प्रमुख आधार स्तंभ आहे. या वास्तवाची जाणीव बचत गटांच्या माध्यमातून झाली. ग्रामीण भागातील अधिकाधिक महिला बचत गटांच्या माध्यमातून आपला आर्थिक उन्नतीचा मार्ग निवडतांना दिसत आहेत. स्वयं सहाय्यता गट या संकल्पनेत महिलांच्या उन्नतीची, प्रगतीची, सन्मानाची निर्णयी व आर्थिक प्रक्रियेत सक्षम स्थान प्राप्त करून देण्याची कुंजी आहे. आज बचत गटांच्या माध्यमातून महिला आर्थिक दृष्टीने सक्षम बनत आहे.

कुटुंबातील उत्पन्नवाढीस हातभार :

कुटुंब, समाज, गाव, गृह जर आर्थिकदृष्ट्या सक्षम करायचे असेल तर सर्वांच्या श्रमाचे मोल करणे अनिवार्य आहे. केवळ महिला आहे म्हणून त्यांना उपेक्षित अथवा दुय्यम स्थान देवून चालणार नाही, म्हणून भारत देशात मागील तीन दशकात कौटुंबिक उत्पन्न वाढीस हातभार लावण्यासाठी महिलांनी बचत गट या आयुधाचा यशस्वीपणे वापर केलेला दिसत आहे. कारण आज स्पर्धेच्या युगात व वाढत्या महागाईत कौटुंबिक उत्पन्नास हातभार लावण्याचे सामर्थ्य महिलांना बचत गटांच्या माध्यमातून प्राप्त झाले आहे.

संघटन कौशल्य व सभाषटपणा वृद्धिंगत होत आहे

बचत गटांच्या माध्यमातून संघटन वाढते व काटकसरीची सवय लागते. अडचणींच्या वेळेस तातडीच्या गरजा भागविण्यासाठी सावकराकडून कर्ज घ्यावे लागत नाही. त्वरीत व सुलभ कर्जासाठी महिलांना बचतीची सवय लागते. शिवाय अधिकोषणविषय कारभाराची माहिती होते. महिलांना चूल व मूल या

परीघाबाहेर पडून नविन बाबी शिकण्याची संधी बचत गटांच्या माध्यमातून मिळत आहे. महिलांना बचत करणे, ती बचत उत्पादक कार्यात गुंतविणे, व्यावसाय उभारणी करणे, कर्ज घेणे, परतफेड करणे अशा आर्थिक व्यवहाराची माहिती होते व त्यामुळे त्यांचा आत्मविश्वास वाढतो. बचत गटामुळे महिलांमध्ये संघटन शक्ती निर्माण झाली आहे. ही चळवळ स्त्री शक्ती म्हणून समोर येत आहे.

जीवनमानात सुधारणा :

प्रत्येक गृष्ट्याच्या विकासामध्ये त्या गृष्ट्यातील सामाजिक स्वास्थ्य कसे आहे, यावर गुणवत्तापूर्ण विकास अवलंबून असतो. भारत देशामध्ये अनेकविध प्रथा व परंपरा होत्या आणि आहेत. परंतु वर्तमानकाळात साक्षरता आणि सुधारणा ह्या दोन्ही गोष्टीची सांगड बसलेली आहे. म्हणून सुधारणा करण्यासाठी वित्ताची जोड हवी आणि त्यासाठी सामूहिक कृती करण्याची आवश्यकता म्हणून स्वयं सहाय्यता गटाची निर्मिती विशेषतः महिला वर्गाच्या जीवनमानात या गटांच्या माध्यमातून अमूलाग्र बदल झालेले आहेत. महिला वर्गाला आर्थिक संपन्नता प्राप्त करून देण्यासाठी बचत गट नवसंजीवनी उरत आहे.

वित्तीय साक्षरता :

साक्षरतेचे आज अनेक उपप्रकार उदयास आले आहे किंबहुना साक्षरतेची परिभाषा बदलत आहे, असे म्हटले तरी वावगे ठरणार नाही. कारण केवळ लिहता वाचता येणे म्हणजे साक्षर इतका संकुचित अर्थ साक्षरतेचा नाही, त्याला सोबत आरोग्य, वित्त, तंत्रज्ञान इत्यादी असंख्य बाबी जोडलेल्या आहेत. बचत गटांच्या माध्यमातून पैसा अथवा वित्त यांचे महत्व समजण्यास मदत झाली विशेषतः महिला वर्गामध्ये या विषयी जास्त जाणीव जागृती निर्माण झाली. या प्रक्रियेमध्ये पैसा देवाण घेवाण, कर्ज प्राप्ती, परतफेड, व्यवसाय स्थापना, उत्पादन, विक्री, व्यवहार करण्याची पध्दती, अधिकोषणाची माहिती इत्यादी असंख्य बाबींची माहिती झाल्यामुळे बचत गट वित्तीय साक्षरतेचा एक भाग बनत असलेला दिसतो.

प्रघटाचाराच्या प्रमाणात घट :

महिला वर्गामध्ये सुरुवातीपासूनच प्रामाणिकपणा,

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कर्तव्यदक्षता, संयम, सचोटीने कार्य करण्याचे गुणधर्म जन्मजात असल्याचे सप्रमाण सिध्द झाले आहे. त्यामुळे स्वयं सहाय्यता गटाच्या माध्यमातून त्यांनी नविन क्रांती घडविण्याच्या दिशेने मार्गक्रमण केले आहे आणि ते म्हणजे भ्रष्टाचाराला पायबंद. कारण बहुतांश क्षेत्रामध्ये महिला ज्या – ज्या ठिकाणी उच्चपदस्थ क्षेत्रावर कार्यरत आहे, त्या ठिकाणी तुलनात्मकरित्या भ्रष्टाचाराचे प्रमाण कमी आहे. बचत गटामध्ये महिला वर्ग भ्रष्टाचार मुक्त या न्यायीक तत्वाचा तंतोतंत पालन करतांना दिसतात. कारण आज भारत देशामध्ये एकूण १,१७,७७७ इतके बचत गट २०१५ च्या आकडेवारीनुसार कार्यरत आहेत. त्यामध्ये गैरमार्गाचा अवलंब किंवा भ्रष्टाचार याबद्दल साशंकता अतिशय कमी आहे.

संदर्भग्रंथ:

१. बचत गटांच्या माध्यमातून गरीबीमुक्त विश्वाची निर्मिती, डॉ. मोहमंद युनूस अनुवाद गोविंद गोडबोले २००९
२. बचत गट आणि सूक्ष्मवित्त, एन. ललिथा, डोमीनंट पब्लिकेशन, नवी दिल्ली.
३. ग्रामीण भारताचा विकास, पी. गोपीनाथन, पॉईन्टर पब्लिकेशन जयपूर.
४. योजना ऑक्टोबर २००८
५. इंटरनेट, वर्तमानपत्र, लेख.

□□□

जालना जिल्ह्यातील स्वयंसहाय्यता बचत गट— एक दृष्टीक्षेप

डॉ. शिवाजी दत्त आसाबे

समुपदेशक, जिल्हा सामान्य रुग्णालय, जालना
सचिव, सेवार्थ सोशल वर्क मल्टीपर्पज फाउंडेशन,
चिखली, जिल्हा. बुलडाणा

गोषवारा:—

भारतातील ग्रामीण भागातील दारिद्र निर्मुलनासाठी केंद्र शासनाने राष्ट्रीय ग्रामीण उपजीविका अभियानाची सुरवात केली आहे. देशातील गरीब हा गरिबीतून बाहेर पडू शकतो त्यासाठी त्यास आवश्यक साहाय्य दिले गेले पाहिजे. या दृढ विश्वासातून गरिबांनी गरीबांसाठीच्या संस्था निर्माण करून त्या माध्यमातून ग्रामीण भागातील गरिबांच्या कौटुंबिक उत्पन्नात वाढ होण्याच्या दृष्टीने कुशल त्याचबरोबर प्रभावी व्यासपीठ देण्यात येते. यामध्ये उत्पन्न वाढीसाठी पायाभूत व शाश्वत उपजीविकेच्या पर्यायांचा अंतर्भाव आहे. तसेच वित्तीय आणि सार्वजनिक सेवेचा विस्तार ग्रामीण भागातील गरीब आणि दुर्लक्षित लोकांपर्यंत हा उपक्रम भर देतो.


प्रस्तावना:—

भारतीय समाजातील मध्यमवर्गीय, दुर्बल घटकांना एक आशेचा किरण म्हणून स्वयंसहाय्यता बचत गटाकडे पहिले जाते. देशातील लाखो महिलांच्या आर्थिकच नाही तर समग्र भवितव्याला व्यवस्थित आकार देण्याचे काम बचत गटाच्या रूपाने सुरु आहे. बचत गट म्हणजे महिला सक्षमीकरणाची दिशा असे सर्वसमावेशक सूत्र मान्य होत आहे. अशा महत्वाच्या टप्प्यावर बचत गटाच्या विकासाच्या सद्यस्थिती बरोबरच इतिहासाचा सुद्धा मागोवा घेणे या अध्ययनात गरजेचे आहे. भारताबरोबरच जगामध्ये स्वयंसहाय्यता बचत


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attended the One Day Interdisciplinary National Level Seminar on **"Role and Significance of Self Help Groups (SHGs) in Socio-economic Empowerment of Women: Opportunities, Issues and Approaches"** and participated in the deliberations on 27th September, 2019. He also presented a research paper entitled बचतगट व महिला सक्षमीकरण

Place : Deulgaon Raja
Date : 27th September, 2019


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(Dr. Dnyaneshwar Gore)


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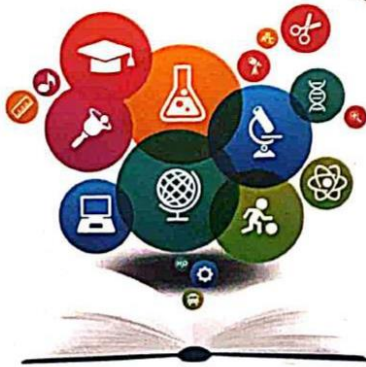


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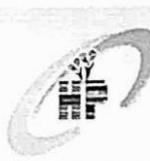
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ती आजच्या शिक्षण प्रणालीची गरज आहे. शिक्षकांचे महत्त्व इथे कुठेही कमी होत नाही तर डिजिटल बँक अप साठी याचे सहाय्य होईल.

देशातील शिक्षणाच्या सर्व क्षेत्रांमध्ये आकलन आणि शिक्षण वाढविण्यासाठी ई-सामग्रीचे प्रादेशिक भाषांमध्ये भाषांतर करणे आवश्यक आहे. आजच्या युगामध्ये विद्यार्थी व शिक्षक हे तंत्रज्ञानाने गुंफले आहेत. कारण आजची पीढी मजकूर पाठविणे, सोशल नेटवर्किंग, व्हिडीओ कॉन्फरेंसिंग यांचा उपयोग करत असतात. शिक्षक व भागधारकांनी त्यांना योग्य त्या तंत्रज्ञानाने गुंतविण्याचा मार्ग शोधणे महत्त्वाचे आहे. वर्गामधील तंत्रज्ञानाने संगणक आणि डिजिटल माध्यमातील नवीनतम शोध वापरून विद्यार्थ्यांना उत्तेजित ठेवले पाहिजे. भारत शालेय शिक्षण प्रणालीतील ICT च्या उपयोगाद्वारे शैक्षणिक प्रणालीत सुधारणा घडवून आणू शकतो.

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- एन.सी.ई.आर.टी. (२००५) नॅशनल करीक्युलम फ्रेमवर्क न्यू दिल्ली
- युनेस्को (२०१७) एज्युकेशन २०३० इंजेअॉन डिवसरेशन: टुवर्ड्स इन्क्लुसिव्ह क्वालिटी एज्युकेशन अँड लाईफ लॉग लर्निंग फॉर ऑल. युनेस्को इन्स्टिट्यूट फॉर लाइफलॉग लर्निंग.

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संशोधन पध्दती व संशोधन प्रक्रियेचे स्वरूप

प्रा. डि. एम. टगे

श्री. शिवाजी महाविद्यालय मोताळा, जि. बुलडाणा

संशोधन अर्थात नविन शोध घेणे म्हणजेच जुन्यातुन काही नविन ज्ञानाची प्राप्ती करणे ज्यामुळे सर्वसामान्यपणे ज्ञानासाठी शोध याच अर्थाने संशोधन हा शब्द प्रचलित आहे. संशोधनास ज्याप्रमाणे Research म्हणजेच पुन्हा-पुन्हा (Re) शोध घेणे (search) करणे. ज्याप्रमाणे बौद्धिक आणि व्यवहारामध्ये अनेक समस्यांची उत्तरे शोधून काढावी लागतात. त्याकरिता संशोधनाला महत्त्व आहे किंवा प्राप्त असणाऱ्या ज्ञानामध्ये अधिकची भर टाकण्याकरिता संशोधनाचा उपयोग होतो सजाजाचा विकास होण्यासाठी व अधिक प्रगती होण्यासाठी संशोधन आवश्यक आहे संशोधन ही ज्ञान प्राप्त करण्याची किंवा प्राप्त ज्ञानामध्ये अधिक भर टाकण्याची वैज्ञानिक पध्दती आहे. प्रत्येक शास्त्राच्या अभ्यासानुसार संशोधनाचे स्वरूप वेगवेगळे आहे. ज्याप्रमाणे एखाद्या विषयाचा व्यवस्थाबध्द पध्दतीने ज्ञान समुच्चय केला जातो. त्याला शास्त्र असे म्हटल्या जाते शास्त्र आणि कला यामध्ये फरक करण्यात येतो. एखादे अध्ययन शास्त्रीय आहे किंवा नाही हे अभ्यासणाऱ्या विषयांच्या स्वरूपावर अवलंबून नसते तर ते त्या विषयांचा अभ्यास करतांना उपयोगात आणलेल्या संशोधन पध्दतीवर ठरते.

संशोधन अर्थात कोणत्याही ज्ञानशाखेत नविन तत्त्वे अथवा तत्त्वे शोधण्यासाठी आणि जुनी तथ्ये आणि तत्त्वे यांचे पुन्हा पुन्हा परिक्षणासाठी केलेला चिकित्सक व पध्दतीशीर अभ्यास होय. झिज्ञासा किंवा ज्ञान संपादन करणे मानवाची एक उपयोग करित असतो. एखाद्या विषयांसंबंधी किंवा घटनेसंबंधी अधिकाधिक

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ज्ञान मिळविणे आणि त्याची अधिकाधिक वापरामांसा करणे म्हणजे संशोधन होय. बुद्धिनिष्ठ आणि व्यावहारिक प्रश्नांची आणि समस्यांची शास्त्रीय पध्दतीद्वारे समाधानकारक उत्तरे शोधून काढण्याचा संशोधन हा एक पध्दतशीर प्रयत्न असतो.

“एखाद्या समस्यांचे उत्तर शोधण्यासाठी, वैज्ञानिक पध्दती आणि तंत्राद्वारे संकलित केलेल्या माहितीचे आणि संमकाचे वस्तुनिष्ठ मुल्यमापन केल्यानंतर, नवीन तथ्यांचा शोध घेऊन विविध घटकातील कार्यकारण संबंधाच्या आधारे सर्वसामाय सिध्दांताचे आणि नियमांचे प्रतिपादन करणारी प्रक्रिया म्हणजे संशोधन होय.”

— डॉ. बोधनकर, प्रा. अलोणी
“खऱ्या अर्थाने संशोधन म्हणजे वैज्ञानिक पध्दती प्रत्यक्षात कार्यान्वित करण्याची आधिक नियमबध्द, आकारबध्द, सुव्यवस्थित आणि सरखोल अशी प्रक्रिया आहे.”

— जे. डब्लू. बेस्ट
संशोधन म्हणजेच ज्ञानाचा शोध घेणे, संशोधनामुळेच समस्यांची उकल होण्यास मदत मिळते, संशोधनासाठी वैज्ञानिक पध्दतीचा अवलंब करून वैज्ञानिक विश्लेषण केले जाते. संशोधन हि काळजीपूर्वक पध्दतशीरपणे केलेली चौकशीच असते. संशोधनामुळेच सत्य शोधून काढली जातात.

संशोधन अहवालाचे लेखन करण्यापूर्वी संशोधन पध्दतीचा प्रवास करावा लागतो कोणतेही संशोधन सुरू करण्यापूर्वी संशोधनाचा विषय निश्चित करणे आवश्यक असते. संशोधन विषयाच्या अनुषंगाने संशोधन कार्याचे उद्दिष्ट साध्य करण्यासाठी वैज्ञानिक संशोधन पध्दतीचा अवलंबून करावा लागतो. संशोधकास आपल्या संशोधन समस्येविषयी माहिती प्राप्त करण्यासाठी संशोधन पध्दतीमधील विविध प्रक्रियांचा अवलंब करावा लागतो.

१. समस्या सुत्रन :- संशोधनाचे कार्य सुरुवात करण्यापूर्वी सुरुवातीला संशोधनाचा विषय, उपविषय निश्चित करावा लागतो यालाच संशोधनाचे समस्या सुत्रन म्हणतात संशोधनाला योग्य दिशा देण्यासाठी संशोधनाचे कार्य योग्य पध्दतीने पार पाडण्यासाठी समस्या सुत्रन करण्यात येते समस्या सुत्रणाद्वारे संशोधनासाठी निवडलेल्या सामान्य

विषयक्षेत्राचे विशिष्ट समस्येमध्ये रूपांतर करण्यात येते. त्यानंतरच संशोधक संशोधना संदर्भातील साहित्यांचे वाचन, मनन तसेच अवलोकन करू शकतो. उदा. 'अमरावती विभागातील वाणिज्य व सहकारी बँकांचे तुलनात्मक अध्ययन.'

२. गृहितकृत्यांची निर्मिती :- संशोधकास संशोधनाचा विषय अर्थात समस्येचे संभाव्य उत्तर किंवा स्पष्टीकरण मांडणारे विधान करावे लागते ज्यास गृहितकृत्य असे म्हणतात. गृहितकृत्य निर्मिती म्हणजे संशोधन नव्हे. गृहितकृत्य हे सकारात्मक तसेच नकारात्मक स्वरूपाचे असू शकते. गृहितकृत्यामुळे संशोधकास संशोधन करण्यास मदत होत असून गृहितकृत्याची मांडणी करतांना संशोधकाला, आपल्या संशोधन समस्येची संबंधीत संज्ञाच्या व्याख्या स्पष्ट कराव्या लागतात.

३. संशोधन आराखडा :- गृहित कृत्यांच्या निर्मितीनंतर संशोधकात संशोधनासाठी कोणत्या प्रकारच्या माहितीची गरज आहे याची कल्पना येते त्यानुसार संशोधक आपल्या संशोधन कार्याचा आराखडा तयार करतो शास्त्रीय संशोधनाची रूपरेषा निश्चित करणे म्हणजे संशोधन आराखडा होय. संशोधन कार्याचे संशोधकाने जे उद्दिष्ट ठरविले असते त्यानुसार संशोधक परिचयात्मक संशोधन आराखडा, वर्णनात्मक संशोधन आराखडा, प्रयोगात्मक संशोधन आराखडा अशा आराखडांची संशोधनासाठी अमलबजावणी करतांना काही अडचणी येतात. त्यामुळे संशोधकास आदर्श संशोधन आराखडाचा अमलबजावणी करावी लागले. त्यानुसार एका व्यावहारिक संशोधन आराखडा तयार करावा त्यामध्ये पुढील घटकांचा समावेश करावा.

अ. नमुना निवड योजना ब. संख्याशास्त्रीय योजना क. अवलोकन योजना ड. कार्यान्वयी योजना तसेच संशोधनाची १. अन्वेषण २. वर्णन ३. निदान ४. प्रयोग ही चार उद्दिष्टे आहेत. यानुसार संशोधना संदर्भात तथ्ये संकलित करण्यासाठी कोणत्या पध्दतीचा उपयोग करावा, नमुना निवड कोणती असावी, संकलीत तथ्यांचे विश्लेषण कशाप्रकारी करावे इत्यादी घटकांचा समावेश संशोधन आराखड्यात होतो.

४. तथ्य संकलन, तथ्यांचे वर्गीकरण आणि नमुना निवड :- संशोधन आराखडा तयार झाल्यानंतर

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आराखडयानुसार प्रत्यक्षात संशोधन कार्यास सुरुवात करावी लागते त्यानुसार तथ्य संकलन करावे लागते त्याकरिता अनेक पध्दती किंवा तंत्रे आहेत. प्रश्नावली, अनुसुची, मुलाखत, निश्चिण या पध्दतीद्वारे तसेच लिखित ग्रंथ, पुर्वीचे संशोधन, शासकीय व गैरशासकीय अहवाल इत्यादीद्वारे सुध्दा तथ्ये संकलित केली जातात संशोधन कार्याच्या परिणामकारकतेसाठी तथ्य संकलनासाठी संशोधकास संशोधना संबंधीत साहित्याचे वाचन आणि मनन करावे लागते अशा साधनांचा उपयोग करण्यापुर्वी त्याची पुर्वचाचणी घ्यावी त्याद्वारे साधनातील दोष दुर होऊन ती निर्दोष बनविता येतात.

५. तथ्यांचे विश्लेषण आणि निष्कर्ष :-

संशोधन कार्याशी संबंधीत सर्व प्रकारची प्राथमिक तसेच दुय्यम, स्वरूपाची माहिती संकलीत झाल्यानंतर प्राप्त संशोधन विषयक तथ्यांचे विश्लेषण करणे महत्वाचे असते. तथ्यांच्या विश्लेषणात अनेक कार्यांचा समावेश होतो यामध्ये प्राप्त संशोधन विषयक माहितीचे परिक्षण करणे, माहितीचे वर्ग करणे, सारणी व कोष्टके तयार करणे, संख्याशास्त्रीय निष्कर्षांचे प्रतिपादन करणे या सर्व विश्लेषण प्रक्रियेच्या पायाच्या आहेत.

यानंतर संशोधकाने मांडलेल्या गृहीत कृत्यांची पडताळणी करावयाची असते. अनेक वेळा गृहीत कृत्य कसोटीला उतरत नाही अशा वेळी संशोधकाने मांडलेल्या निष्कर्षानुसार त्यात सुधारणा सुचविल्या जातात. संशोधन प्रक्रियेत विश्लेषण करण्याच्या अवस्थेला अतिशय महत्त्व आहे.

६. निष्कर्षांचे निर्वचन आणि अहवाल

लेखन :- संशोधनाचा अंतिम टप्पा म्हणजेच पुर्वी मांडलेल्या गृहितकृत्याद्वारे संपादित संशोधनासंदर्भातील माहितीच्या आधारे, पुराव्यांच्या आधारे संशोधक गृहितकृत्य सत्य आहे की असत्य आहे ते संशोधक तपासून पाहतो. संशोधन संदर्भातील माहितीच्या व पुराव्यांच्या आधारे गृहितकृत्य प्रमाणित झाल्यास तर सिध्दांत स्वीकृत किंवा प्रमाणित झाला असे म्हटले जाईल. तथ्य सामग्रीच्या व पुराव्यांच्या आधारे सिध्दांतात सुधारणा करता येतील त्याला म्हणजेच संशोधकास सिध्दांताची पुर्नबांधणी करता येईल.

संशोधक संशोधन संदर्भातील माहितीच्या व

पुराव्यांच्या आधारे संपुर्ण संशोधन कार्याचे स्पष्टीकरणकरिता संशोधन अहवाल लिहून काढतो. अहवाल लिहतांना अहवाल संदर्भातील सर्व नियमांचे व सुचनांचे पालन करून संशोधन अहवाल लेखनाचे कार्य पुर्ण करतो.

संशोधन पध्दतीमध्ये संशोधनाच्या प्रमुख पायऱ्यामध्ये संशोधनाचा विषय ठरविल्यानंतर संशोधनाच्या कार्यास सुरुवात करण्यात येते ज्याद्वारे संशोधकास संशोधनाची दिशा ठरविण्यास मदत होते समस्या सुत्रणा नंतर गृहितकृत्यांची मांडणी करून प्रत्यक्षात संशोधन करण्याकरिता संशोधन आराखडा तयार करण्यात येऊन प्रत्यक्ष आराखड्याद्वारे कार्य करण्यात येऊन तथ्य संकलन करण्यात येऊन संकलीत तथ्यांचे विश्लेषण आणि निष्कर्ष मांडण्यात येऊन प्राप्त संशोधन अहवाल तयार करण्यात येतो. अशा सहा संशोधनाच्या पायऱ्याद्वारे संशोधक संशोधनाचे कार्य पुर्ण करून सिध्दांताचे प्रतिपादन देऊ शकतो.

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४. News paper Lokstta and Lokmat

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या अंकाचे सर्व अधिकार प्रकाशकांनी राखून ठेवलेले आहेत. प्रकाशकांच्या पूर्वपरवानगीशिवाय या अंकातील लेखांचे पुनर्प्रकाशन करता येणार नाही. या अंकात व्यक्त झालेली मते व विचार हे त्या लेखाच्या लेखकांचे वैयक्तिक विचार आहेत त्याच्याशी संपादक किंवा प्रकाशक सहमत असतीलच असे नाही. लेखांच्या मूळ मालकी हक्कासंदर्भातील संपूर्ण जबाबदारी लेखाच्या लेखकांची असेल.
- मुख्य संपादक, रिसर्च जर्नी



पंडित जवाहरलाल नेहरू यांचे लोकशाही विषयक विचार

प्रा. जी. एस. किरोचे
श्री शिवाजी महाविद्यालय,
मोताळा.

पंडित जवाहरलाल नेहरू हे स्वतंत्र भारताचे पहिले पंतप्रधान होते. स्वतंत्र भारताचे पहिले पंतप्रधान असल्यामुळे भारताचा संवांगीन विकास कसा घडेल यावर पंडित नेहरू यांचा भर होता. त्याच प्रमाणे संपूर्ण भारतामध्ये लोकशाही कशी प्रस्थापीत होईल. यावर पंडित नेहरू यांनी लक्ष केंद्रीत केले होते. लोकशाहीच्या माध्यमातून तळागळ्यातल्या व्यक्तीचा विकास कसा करता येवू शकतो असे पंडित नेहरू यांचे मत होते.

पंडित नेहरू यांच्या मते लोकशाही हि एक जीवण पध्दती आहे. माणसाच्या व्यक्तिमत्त्वाचा विकास केवळ लोकशाहीतच शक्य आहे. सामाजिक आर्थिक राजकिय व समतेचे तत्व लोकशाहीमध्ये स्विकारलेले असते. विकासाचा लाभ समाजातील सर्व घटकांना कसा मिळेल यांचा विचार लोकशाहीमध्ये होतो. म्हणुनच लोकशाहीचा मार्ग हा सामाजिक कल्याणाचा मार्ग आहे असे पंडित नेहरू यांचे मत होते. पंडित नेहरू यांच्यामते ग्रामिण जनतेजवळ स्वताचा विकास साध्य करण्याची क्षमता आहे. आणि सरकार कडुन काही मार्गदर्शन मिळाल्यास जनता हा विकास स्वबळावर घडवुन आनु शकते.

पंडित जवाहरलाल नेहरू यांच्या लोकशाहीमध्ये मानव कल्याण हे रूजलेले आहे. त्यांच्या लोकशाही विचारात मानवता कल्याणाचा अथांग प्रवाह वाहताना आढळतो. त्यांच्यामते खऱ्या समस्या व्यक्ती आणि समाज यांच्यातील संबंधातुन उदभवलेल्या असतात. जनसामान्यांबद्दलचा आदर यामधुन लोकशाहीची निष्ठा स्थिरावली जाते. त्यांची लोकशाहीची व्याख्या अत्यंत समावेशक आहे. पंडित नेहरू यांच्या मते लोकशाही केवळ राजकिय नसते, केवळ आर्थिक ही नसते, ती एक मनोवस्था असते. सर्वांना राजकिय व आर्थिक क्षेत्रात शक्यतो समान संधी मिळणे त्यात अभिप्रेत असते. व्यक्तीला विकासाचे स्वतंत्र असुन आपल्या समतेचा व पात्रतेचा पुरेपूर फायदा घेण्याचे स्वातंत्र त्यांत असते.

पंडित जवाहरलाल नेहरू यांची सर्वात मोठी देणगी म्हणजे आजची भारतीय लोकशाही होय. शासन पध्दती म्हणुन लोकशाहीत स्वऱ्या अर्थाने लोकांच्या हाती सार्वभौम सत्ता असते. लोकशाहीमध्ये लोक सरकार निर्माती करतात. तर लोक हेच सरकारला पायउतार करू शकतात. म्हणुन लोकांच्या हाती खऱ्या अर्थाने लोकशाहीमध्ये सत्ता असते असे पंडित जवाहरलाल नेहरू यांचे मत होते. लोकशाहीच्या दृष्टीने पंडित नेहरू यांनी समाजातील समग्र घटकांना विचार, मुलभुत हक्क, सामाजिक समता, न्याय, बंधुत्व या भर दिला आहे. पंडित नेहरू यांच्या मते चांगले व प्रतिष्ठित जिवन जगण्यासाठी आवश्यक वातावरण फक्त लोकशाही निर्माण करू शकते. मानसाच्या व्यक्तीमत्त्वाच्या विकासाला पोषक परीस्थिती ही लोकशाहीच्या माध्यमातुन निर्माण होउ शकते म्हणुन लोकशाही हा एक समाज कल्याणाचा मार्ग आहे.

स्वातंत्र्योत्तर काळात पंडित जवाहरलाल नेहरू यांनी लोकशाही रूजवण्यासाठी अनेक महत्वपुर्ण कार्य केले. त्याच प्रमाणे पंडित नेहरू यांचे राजकीय व सामाजिक विचार अत्यंत व्यापक व मानव कल्याणवादी स्वरूपाचे होते. नेहरू यांचे अर्थिक, सामाजिक, राष्ट्रीय, आंतर राष्ट्रीय श्रेत्रामध्ये मोलाचे योगदान दिसुन येते.

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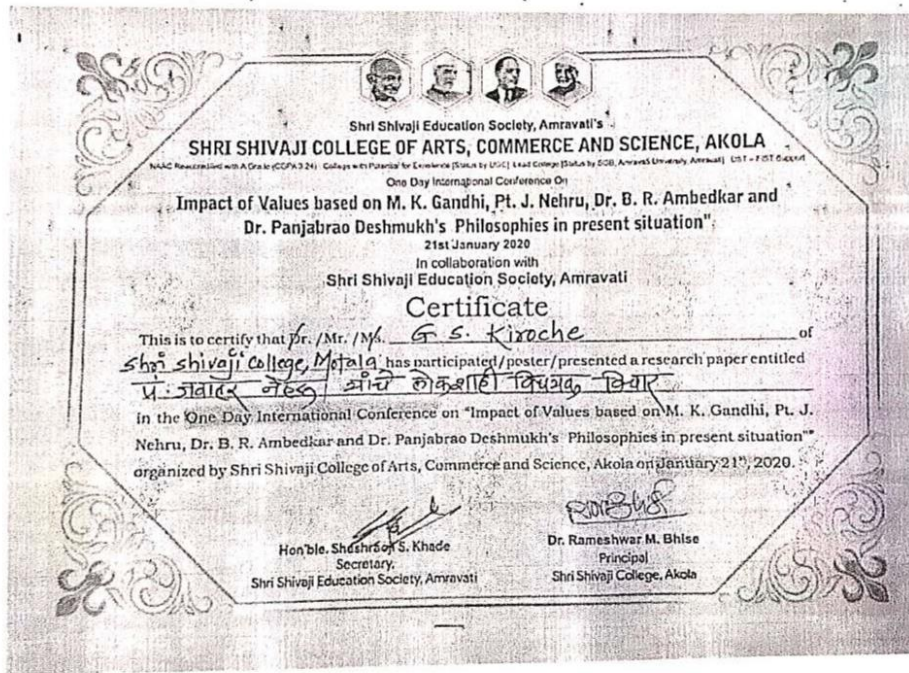
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Coupled Map Lattice on Diffusion Limited Aggregate: Dynamics on a Random Fractal

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Abstract. While the coupled map lattice has been studied on a d-dimensional Euclidean lattice as well as on arbitrary complex networks, there are very few studies on fractal and they are devoted to deterministic fractals such as Sierpinski Gasket. We introduce coupled map lattices on a random fractal namely DLA[1]. There are two possible definitions depending on whether or not the sum of weights is constant. We study various maps such as logistic map, circle map, and tent map, in this context. For a DLA cluster, the number of neighbors of a given site may range from 1-4. If the sum of weights of all coupled sites, i.e. neighbors and self, is not conserved, the bifurcation diagram depends on the number of neighbors of a given site. Thus the bifurcation diagram for a site with 2 neighbors is different from the bifurcation diagram for a site with 3 neighbors. We study coupled logistic maps, coupled circle maps and coupled tent maps in this context. For coupled logistic maps, we observe a band merging crisis in the case when the sum of weights is not conserved. We give a modified definition of local persistence to quantify this transition and observe continuously the changing persistence exponents for 2 and 3 neighbors.

INTRODUCTION

Dynamics of Coupled Map Lattices on Fractal Models

Coupled map lattices (CML) on Euclidean lattice in d-dimensions is a very well studied system. The studies are also conducted on mean-field models where the global coupling of the mean variable is assumed. Most investigated system is coupled logistic maps, followed by coupled circle maps. However, other maps are also studied. In 80's the fractals and fractal geometry of nature was in vogue. Surprisingly, there are very few investigations on dynamical systems on a fractal. The fractals have a form of connectivity which has interesting scaling with distance. CMLs on such systems show a transition from spatial disorder to spatially uniform, temporal chaos when the coupling is varied. We note that generic behavior in simulations of the neural network, coupled oscillators, and coupled maps suggests of separation of nodes into regions (domains) of fixed point, oscillating and chaotic regions (domains). On a non-uniform substrate, activity in all parts of the underlying lattice may not be uniform.

The network connectivity can have a profound influence on the segregation of activity in networks. We note that such partially arrested can be obtained even in low-dimensional coupled map lattices. These are known as chimera states. In this work, we consider a fractal model which has been very well investigated by the surface physics community. Most of the dendritic branching is fractal [3]. We study a model known as diffusion-limited aggregate (DLA) which models this phenomenon. We note that even neurons are fractally connected. Dynamics on fractally coupled networks can occur in a wide range of physical systems. It has been proposed that the fractal coupling in neurons may be essential for the greater efficiency to perform higher-order computations.

Coupled map lattices, that are spatially homogeneous structures, are simple, computationally amenable dynamical networks that have a behavior similar to more complex models. It is now quite well known that a variety of interesting physical processes can take place on objects with fractal structures. The discrete diffusion coupling on fractal lattices is a natural form of coupling in CMLs. The dynamics of coupled maps on the Sierpinski gasket has been studied for the spectrum of eigenvalues, eigenvectors, stability, and bifurcation of synchronized states[4].

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Chaotic maps like logistic map display some essential features of neuronal dynamics, such as fixed-point, oscillatory, or chaotic behavior. These dynamics depend on the applied stimulus that is used to study clustering and coding in neural networks [5]. Chaotic temporal states of systems can exhibit long-range spatial order with temporal chaos; provided the systems are probabilistic, have long-range interactions and are statistically symmetric [6]. The synchronization has been studied from the perspective of eigenvalue of the Laplacian matrix on underlying connectivity. Wigner-May theorem helps us to understand stability of randomly coupled elements. Eigenvalues of fractal show an interesting hierarchical structure and the instabilities to spatially uniform state are different[6].

Diffusion-Limited Aggregation (DLA)

A model for metal-particle aggregation process, having the correlations measured, was studied by simulation by Witten and Sander. They found that the density correlations within the model aggregates fall off with distance with a fractional power law similar to the metal aggregates. The radius of gyration of the metal aggregates shows power-law behavior.

This fractal model is based on the Eden model where particles are added one at a time at random to sites adjacent to the occupied sites. The so formed compact cluster has density correlations independent of the distance in the limit of large size [7]. But for the metal-particle aggregation process, Witten and Sander found that the metal aggregates had correlations that fell off as fractional power law of distance. The critical correlations here arise from the irreversible growth process. The DLA model can be said to be the discrete version of the Langer – Krumbhaar model of dendritic growth[8].

COUPLED MAPS ON DLA

The initial state is a seed particle at the origin of a lattice. A second particle is added at some random site at large distance from the origin. This particle walks randomly until it visits a site adjacent to the seed. Then the walking particle becomes part of the cluster. Another particle is now introduced at a random distant point, and it walks randomly until it joins the cluster, and so forth. If a particle touches the boundaries of the lattice in its random walk it is removed and another introduced [1]. Here, we simulate a DLA over 10^5 sites. We define variable value $x_{i,j}(t)$ to the site (i,j) at time t and the evolution is given by.

$$x_{i,j}(t + 1) = (1 - \epsilon)f(x_{i,j}(t)) + \frac{\epsilon}{4} \left(f(x_{i+1,j}(t)) + f(x_{i-1,j}(t)) + f(x_{i,j+1}(t)) + f(x_{i,j-1}(t)) \right) \tag{1}$$

where the contribution from sites which are not on DLA cluster is taken as zero and they are not evolved in time. Alternatively,

$$x_{i,j}(t + 1) = \left(1 - N(i,j)\frac{\epsilon}{4}\right) f(x_{i,j}(t)) + \frac{\epsilon}{4} \sum_{\eta(i,j)} f(x_{\eta(i,j)}(t)) \tag{2}$$

where $N(i,j)$ is number of neighbors of site (i,j) on DLA cluster. Again the contribution from sites which are not on DLA cluster is taken as zero and they are not evolved in time.

To make the difference clear, consider a case in which site (i,j) has only two neighbors, (i+1,j) and (i,j-1) on the cluster. The evolution according to rule (1) will be

$$x_{i,j}(t + 1) = (1 - \epsilon) f(x_{i,j}(t)) + \frac{\epsilon}{4} \left(f(x_{i+1,j}(t)) + f(x_{i,j-1}(t)) \right) \tag{3}$$

while according to (2) will be

$$x_{i,j}(t + 1) = \left(1 - \frac{\epsilon}{2}\right) f(x_{i,j}(t)) + \frac{\epsilon}{4} \left(f(x_{i+1,j}(t)) + f(x_{i,j-1}(t)) \right) \tag{4}$$

It is clear that the sum of weights is not conserved in rule (1) while it is conserved in rule (2). In rule (1) we certainly expect the evolution of a given site to depend on the number of neighbors while in rule (2) it may or may not be so. A typical DLA cluster generated using the above algorithm is shown in Fig. 1. We shall now have a look at the circle, logistic and tent maps on DLA clusters using dynamics in (1) and (2).

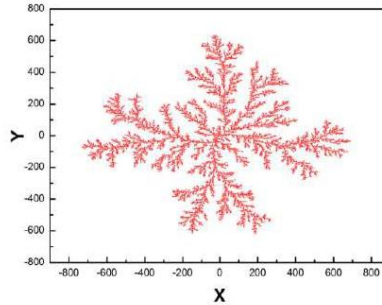


FIGURE. 1. A typical DLA cluster.

Circle Map, Logistic Map and Tent Map

The **circle map** is a one-dimensional map which maps a circle onto itself $\theta_{n+1} = \theta_n + \Omega - \frac{K}{2\pi} \sin(2\pi \theta_n)$ where θ_{n+1} is computed mod 1. Here, there are two parameters Ω (externally applied frequency) and K (the strength of non-linearity). We consider $K = 1$ and $\Omega = 0.065$. It is a prototypical map for studying phase dynamics [9]. The **logistic map** is defined as $x_{n+1} = \mu x_n (1 - x_n)$ where μ is a parameter and lies between 0 and 1. Study for a large value of μ is desirable. For the logistic map, period-doubling bifurcations start for $\mu \geq 3.3$. For $\mu \geq 3.56$, we have a chaotic regime [9]. A piecewise linear, one-dimensional map known as **tent map** on the interval $[0, 1]$ exhibiting chaotic dynamics is given by $x_{n+1} = r \min(x_n, (1 - x_n))$.

We now plot the bifurcation diagrams, where we couple the sites on the DLA with the circle, logistic and tent maps for one neighbor, two neighbors, three and four neighbors. We define a control parameter ϵ that lies between 0 and 1. The bifurcation graphs are plots of coupled two-dimensional sites versus the control parameter.

First, we study the non-conserved case. Here, the sum of weights is not conserved and the bifurcation diagram depends on the number of the neighboring site/s.

Bifurcation Diagrams for Circle Map

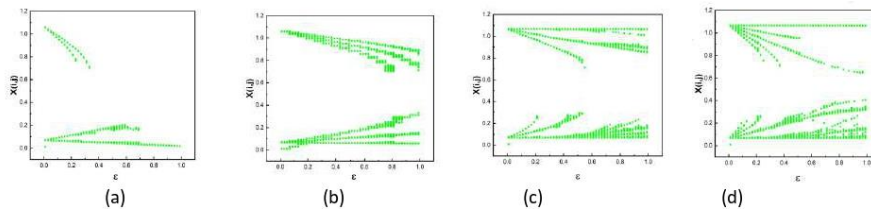


FIGURE. 2. The bifurcation diagram in the nonconserved case when the number of neighbors changes (a) sites with 1 neighbor (b) sites with 2 neighbors (c) sites with 3 neighbors (d) sites with 4 neighbors.

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The sites on the DLA are coupled with a circle map. For one neighbor, the fixed point is stabilized for a larger value of coupling. In all cases, periodic behavior is obtained and there is no chaos for coupled circle maps.

Bifurcation Diagrams for Logistic Map

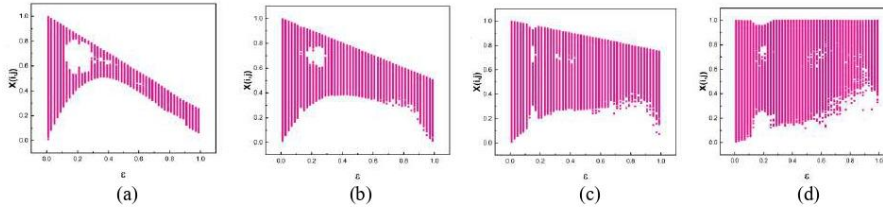


FIGURE.3. Bifurcation diagram for nonconserved case (a) sites with 1 neighbor (b) sites with 2 neighbors (c) sites with 3 neighbors (d) sites with 4 neighbors. There are no periodic windows. But there is band-periodicity in a region.

The band attractor in the case of the logistic map appears different for the case of one neighbor; two, three and four neighbors concerned. It can be seen that the range of the band attractor with one neighbor is wider than the other three cases. The range of x values is smaller for fewer neighbors. This is a common feature in all coupled nonconserved cases.

Bifurcation Diagrams for Tent Map

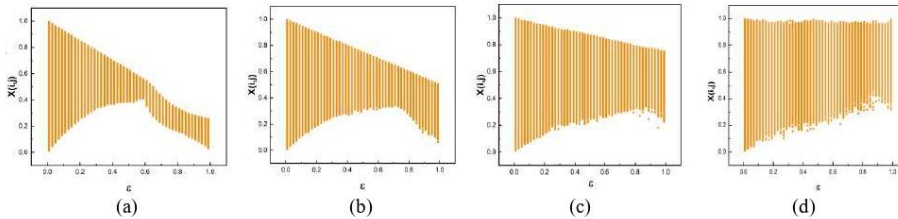


FIGURE. 4. Bifurcation diagram for (a) sites with 1 neighbor (b) sites with 2 neighbors (c) sites with 3 neighbors (d) sites with 4 neighbors. There are no periodic windows or even band-periodicity is absent.

For tent maps, we observe no periodic windows or even coarse-grained periodicity. The coarse-grained periodicity will lead a non-compact bifurcation diagram. For any number of neighbors certain range of variable values is obtained without any gap. The range of values taken as well as maximum possible value increases as we increase the number of neighbors which is expected.

Bifurcation Diagrams for Circle, Logistic and Tent Map for Conserved Case

Now we see the conserved case. The sum of weights is conserved here and the number of neighboring site/s do not affect the bifurcation diagrams. They are in fact very similar for any number of neighbors for above-mentioned cases of the coupled circle, coupled logistic and coupled tent maps. So only one bifurcation diagram representing each map has been shown below.

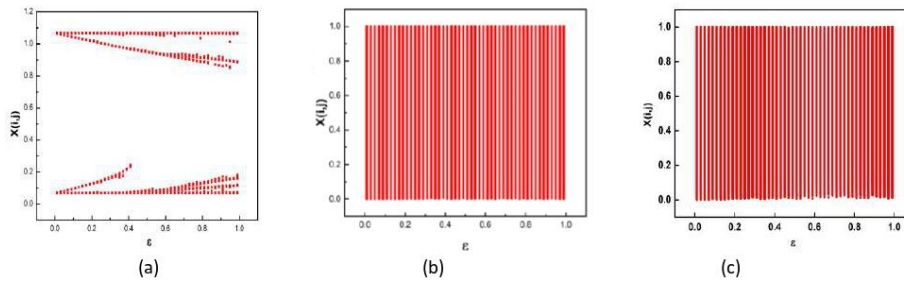


FIGURE 5. Bifurcation diagram is almost independent of the number of neighbors for the conserved case. The bifurcation diagram is shown for (a) coupled circle maps (b) coupled logistic maps (c) coupled tent maps.

PERSISTENCE AS AN ORDER PARAMETER FOR THE FROZEN BAND-PERIODIC STATE IN COUPLED LOGISTIC MAPS

Persistence, a non- Markovian quantity, a concept which is a generalization of first passage time has been introduced in the context of statistical physics. Thus non-zero persistence implies that the system retains the memory of the initial conditions indefinitely. At the critical point, the persistence may have power-law decay and the decay exponent is called the persistence exponent. Persistence exponents are found to be a new class of exponents, which are not related to the usual critical exponents [10]. In the context of stochastic processes, it is defined as the probability $P(t)$ that a stochastically fluctuating variable has not crossed a threshold value up to time t .

For spin systems, if the spin value does not change from its initial condition till time t , it is said to be persistent. The extension of this definition for map is usually carried out as follows. For a map, we map the variable values on spins by asserting that a site (i,j) has spin 'up' if variable value $x_{i,j}(t) > x^*$ where x^* is an unstable fixed point, and 'down' spin otherwise. A site i is persistent if the associated spin value does not change until time t . We modify this definition slightly for the logistic map. We find the spin value at only even times. The reason is that the function has a negative slope at x^* and one expects the spin value to be back at even times. However, since the medium is inhomogeneous, the definition needs to be changed even further, particularly for a nonconserved case.

We define persistence as follows in a fractal. If a site (i,j) has only one neighbor, and if the site as well as its neighbor have same initial value, the value after first iteration will be $(1 - \epsilon + (\frac{\epsilon}{4})) f(x_{i,j}(0)) = (1 - \frac{3\epsilon}{4}) \mu x_{i,j}(0) (1 - x_{i,j}(0))$. Thus it can be argued that effective value of parameter μ for a site with one neighbor is $\mu_1 = (1 - \frac{3\epsilon}{4})\mu$. Similarly $\mu_2 = (1 - \frac{\epsilon}{2})\mu$, $\mu_3 = (1 - \frac{\epsilon}{4})\mu$ and $\mu_4 = \mu$. The effective unstable fixed points for these maps are $x_1^* = 1 - \frac{1}{\mu_1}$, $x_2^* = 1 - \frac{1}{\mu_2}$, $x_3^* = 1 - \frac{1}{\mu_3}$ and $x_4^* = 1 - \frac{1}{\mu_4}$. We compare the evolution with the unstable fixed point of the effective map, i.e. for a site with one neighbor we find if $x_{i,j}(t) > x_1^*$ and so on. Let $P_n^+(t)$ be a fraction of sites $x_{i,j}$ which had a value greater than the effective fixed point at $t = 0$ and $x_{i,j}(2t') > x_n^*$ for all $t' \leq t$ where n is the number of neighbors of the site. We define $P_n^-(t)$ as the fraction of sites $x_{i,j}$ which had value less than the effective fixed point at $t = 0$ and $x_{i,j}(2t') < x_n^*$ for all $t' \leq t$ where n is the number of neighbors of the site. We define $P_n(t) = P_n^+(t) + P_n^-(t)$. We find persistence for sites with different neighbors independently.

For all values of neighbors, the persistence goes to zero for smaller values of ϵ and saturates for larger values of ϵ . For very small values of ϵ , the persistence goes to zero exponentially fast. In all cases, there is an intermediate range of coupling for which we obtain slow decay of persistence. In particular, we obtain clear power-laws for $n=2$ and $n=3$

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in the range $0.117 \leq \epsilon \leq 0.123$. We define neighbor-dependent persistence exponent θ_n as $P_n(t) \propto t^{-\theta_n}$. The quantities $P_2(t)$ and $P_3(t)$ are plotted as a function of t for various values of ϵ in Fig.6 (a) and Fig.6 (b). Clearly the exponents θ_2 and θ_3 keep changing with ϵ . The variation of the exponent θ_n (for $n=2$ and $n=3$) with ϵ is plotted in Fig.6 (c).

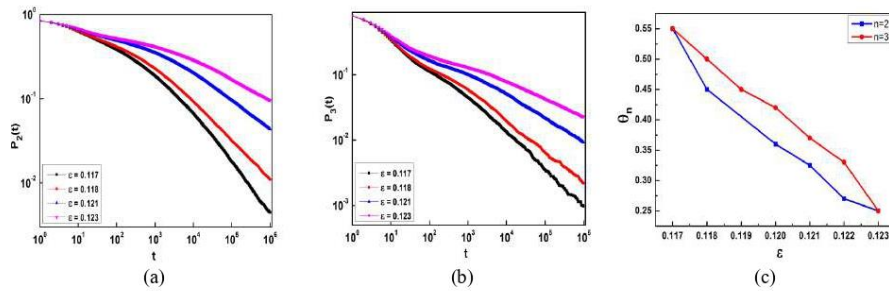


FIGURE. 6. Plot of (a) $P_2(t)$ vs time(t) and (b) $P_3(t)$ vs time(t). (c) Plot of exponent θ_n vs control parameter ϵ .

CONCLUSIONS

We study dynamics on DLA which is a well-studied model of a random fractal. We study coupled circle map, logistic map and tent map on this system. We find a two-band attractor in a range of values of coupling in non-conserved case. We carefully define persistence and persistence exponent by taking into account the number of neighbors. We find that sites with 2 neighbors as well as sites with 3 neighbors show a continuously changing persistence exponent in a range of values of coupling parameter ϵ .

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SPONTANEOUS BIOCHEMICAL CHANGES OF PESTICIDES ON FRESH WATER FISH *CATLA CATLA* IN BULDANA

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INTRODUCTION:

Industrialization of the world affects the faunal diversity of the water, as the waste water from these industries is directly dumped into the water bodies without any treatment. Water pollution is a global issue, as the rising population leads to a number of industries such as pesticides, paper, and fertilizers. These chemicals pollute the ponds, lakes, and river water. The chemicals from these industries directly affect the faunal diversity of our country and fish are mostly affected among them. Pesticides are used worldwide in agriculture and aquaculture to control the pest and insects (EnisYonar *et al.*, 2012). Organophosphate pesticides like ethion, dimethoate, monocrotophos and chlorpyrifos are widely used for paddy crops. The widespread use of synthetic organic pesticides over decades has led to their frequent exposure in the environment. Also acute and chronic exposures of humans to pesticides occur during their commercial production and their application. Fishes are a major source of proteinous food of our masses. Once the effluents are discharged into the water bodies, the toxins are incorporated in the bodies of fish resulting in bioaccumulation of the toxins and if these fish are consumed as food by the people, some of the toxins cause several health hazards in them due to biomagnifications. The pesticides, fertilizer chemicals can adversely affect the physiology, histopathology and biochemistry of fish fauna. These chemicals are sub-lethal for fish and their toxicity leads towards the mortality of fish. The aim of present study is to check out the sub lethal effects of pesticides and fertilizers chemicals on histopathology of fresh water fish *Catla catla*.

MATERIAL AND METHODS

Catla catla fish were caught from Sangam Talao. The fishes are nearly 45-50 gms.. Healthy fishes were carefully packed in a medium sized polythene bag with sufficient oxygen which would help them to carry on their normal processes of metabolic activities during their period of transportation. When arriving in Laboratory fishes were carefully transferred into large glass aquarium.

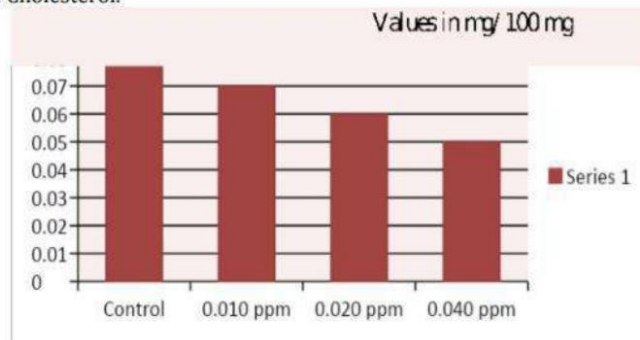
They were left for acclimatization in the normal laboratory conditions for a period of ten days. During this period standard formulated feed was given to all the fish as per the conditions suggested by Behunger (1973). Feeding was stopped one day before commencing of experiments in order to minimize the quantity of excretory products in the test tank. After acclimatization the fish were weighed totally and individually, and then transferred into the treatment tubs carefully. The physico chemical conditions of well water used in the present study has the following characteristics; Dissolved oxygen 7.8 - 8 ppm; Salinity 0.4 - 0.6 ppm; Alkalinity 250 mg/l as CaCO₃; Hardness 376mg/l; as CaCO₃ PH: 7.3 to 7.6; Temperature : 27 ± 2°C.

The fishes were exposed to different acute concentrations of Profenofos 50% Ec (0-4-bromo-2-chlorophenyl 0-ethyl S-propyl phosphorothioate) to arrive at LC₅₀. The LC₅₀ was determined following the procedure of Finney (1971). Based on the results of the acute toxicity study, with a LC₅₀ value of 0.6

ppm doses of sub acute value of Profenofos 50% E.C. were selected for subacute exposure following the procedure of Desi et al. (1985). Fishes were divided in three treated and one control. In each aquarium 2 fishes are released. In the experimental set up profenofos sub acute values of 0.015, 0.030 and 0.06 ppm were added to the glass aquarium. Muscle sample from the experimental fishes were dissected out by sacrificing the fishes after 48Hrs time intervals. Muscle is the edible portion of the fish energy yielding substances like protein (Lowry et al. (1951) with Folin-Phenol reagent), carbohydrate (Anthrone method Roe, 1955) and cholesterol (Allain, 1974). in the muscle were analysed using standard procedures .

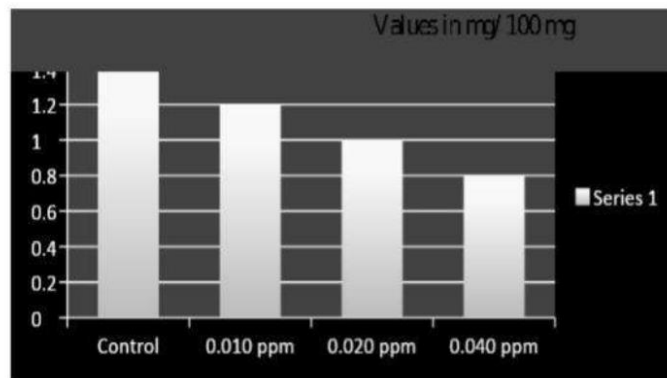
RESULTS

The LC50 value of Profenofos for *Catla catla* was 0.6 ppm. The subacute concentrations were 0.015 ppm, 0.030 ppm and 0.06 ppm were taken for concentrations. The concentration of Profenofos showed the spontaneous biochemical changes, and reduces the levels of biochemicals such as Protein, carbohydrate and Cholesterol.



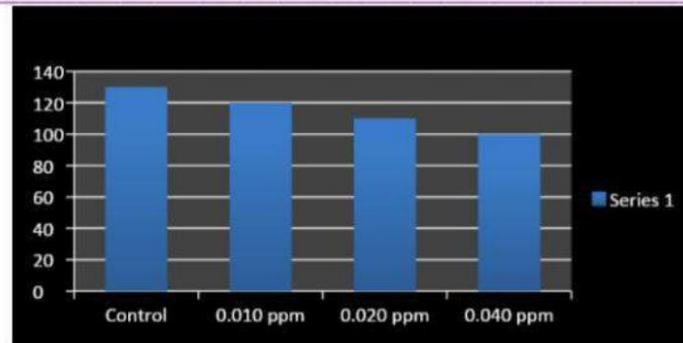
Conc. of profenofos

Estimation of Carbohydrate in the muscle sample of *Catla catla*



Conc. of profenofos

Estimation of Protein in the muscle sample of *Catla catla*



Conc. of profenofos

Estimation of Cholesterol in the muscle samples of *Catla catla*

DISCUSSION

The biochemical analysis of the present study reveals a significant decrease in all the biochemical parameters. The total protein concentration in the present study reveals a significant decrease in the level of proteins in the fishes treated with profenofos. Proteins are the most abundant carbon compound in all the living organisms (Parameswaran et al., 1987). It is the dominant biochemical constituent in the tissues of fishes (Pillay and Nair, 1973). Holbrook (1980) stated that the toxicant may directly cease protein synthesis.

There was a significant reduction in the levels of carbohydrate content. The oxidation requirements of the living organisms require carbohydrate and they are used as chemical energy through the breakdown of glucose by the citric acid cycle (Quastel, 1969). The metabolism of carbohydrate decreases when the fish are exposed to toxicants is due to the fact that carbohydrate forms the immediate source of energy that increases the stress caused by the toxicant.

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MORPHOLOGICAL AND MOLECULAR STUDY OF *STILESIA* SP. (CESTODA: ANAPLOCEPHALIDEA) A CESTODE PARASITE OF THE DOMESTIC GOAT *CAPRA HIRCUS* (L.) IN JALNA DISTRICT (M.S.), INDIA

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ABSTRACT

The genus *Stilesia* was erected by Railliet, 1893. *Stilesia hircusae* Sp. Nov. is collected in the intestine of *Capra hircus*, Linnaeus, 1758 (Family: Bovidae) from Jalna district (M.S.), India. The present Cestode i.e. *Stilesia hircusae* Sp. Nov. differs from other all known species is having scolex large, squarish, mature proglottids almost 25 to 28 times broader than long, testes small in size, oval to rounded, two lateral fields, 10-12 in each segments, cirrus pouch medium, oval, ovary small in size, compact, nut shaped, vitelline gland is absent. In molecular characterization of the parasites, the genomic DNA were amplified and sequenced. Based upon both morphological data and molecular analysis using bioinformatics tools, the Cestode is identified as confirmed to be representing *Stilesia* Sp. in mammalian host i.e. Goat.

KEYWORDS: - Anoplocephalidea, Cestode, *Capra hircus* and Jalna.

INTRODUCTION

The genus *Stilesia* was established by Railliet in 1893 from *Ovis aries* in Europe, Asia and Africa as *Stilesia globipunctata*. In 1896, Railliet also added *Stilesia vittata* and Wolffhugel, 1903 described *Stilesia hepatica*. Later on Leiper, 1936 added *Stilesia okapi*. In India Kadam et al, 1980 described *Stilesia leperi*. In 1981 Kalyankar, added *Stilesia caballeroi*. Shinde, et al, 1982 described *Stilesia southwellii*. Jadhav, et al, 1982 added *Stilesia aurangabadensis*. Malhotra and Capoor, 1983 added two species to this genus i.e. *Stilesia garhwalensis* and *S. kotwarensis*. *Stilesia marathwadensis* is added by Shinde, et al., 1985. In 1999 two species are added to this genus i.e. *Stilesia jadhavae* by Jadhav and *Stilesia yawalensis* by Kalse, et al. In 2001, Deshmukh and Shinde added *Stilesia dhondgae*. In 2004 four new species were added to this genus i.e. *S. pandeyi*, by Nanware and Jadhav, *Stilesia ambajogaiensis* by Pawar, et al. *Stilesia indapurensis* by Khadap, et al. and *Stilesia daulatabadensis* by Shelke and Shinde. In 2005, Nanware et al. added *Stilesia jadhavi* and Padwal and Jadhav described *Stilesia govindaein* 2006 and later on *Stilesia shrigondaensis*, added by Pokale, et al. 2008. Later on Humbe, et al. added *Stilesia bordeae*, 2013 and Shaikh Kalim, 2014 added *Stilesia kalamae*. In recent year Ravi Solunke, 2015 erected new species i.e. *Stilesia alii* from *Capra hircus* (L.), Nikam Priyanka 2015 added *Stilesia shindei* from *Capra hircus* (L.). Lastly Sanap N.P. 2016 reported new species *Stilesia gangakhedensis* from *Capra hircus* (L.) and *Stilesia Indiana* from *Capra hircus* (L.) by Pawar R.G. 2016.

Molecular phylogenetics is the analysis of hereditary molecular differences, mainly in DNA sequences, to gain information on an organism's evolutionary relationship. The result of a molecular phylogenetic analysis is expressed in a phylogenetic tree. Molecular phylogenetic is one aspect of

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molecular systematics, a broader term that also includes the use of molecular genetics markers have been developed into powerful tools to analyze genetic relationships and genetic diversity. Recent efforts based on comparative analysis of morphology and on molecule have advanced our understanding of tapeworm systematics considerably (Hoberg *et al.*, 1997 and Hoberg *et al.* 1999) and more generally of their position within the phylum platyhelminthes (Littlewood, D. T. J. *et al.*, 1999 and 2001).

The present communication, deals with the morphological and molecular identification of genus *Stilesia hircusae*, Sp. Nov. collected from *Capra hircus* (L).

MATERIAL AND METHODS:

Cestode parasites were collected from the intestine of *Capra hircus* at Jalna district (M.S.) India. These Cestodes preserved in hot 4% formalin and stained with Aceto-carmine or Harris haematoxylin, passed through various alcoholic grades, cleared in xylene, mounted in D.P.X. and drawings are made with the aid of camera lucida. All measurements are given in millimeters, otherwise mentioned. The identification is made with the help of Systema Helminthum.

Cestodes intended for molecular analysis were fixed with 95% ethyl alcohol. DNA Extraction was carried out using Genelute Mammalian Genomic DNA extraction kit (Sigma, G1N70-1KT). Concentration of DNA was determined using UV-1800 spectrophotometer (Schimadzu Corporation A11454806498). The Extracted DNA was stored at -20°C for further use. The DNA isolated was subjected to polymerase chain reaction (PCR) amplification using Biometra thermal cycler (T-Personal 48). Gel electrophoresis was performed using 1.0% agarose (Seakem, 50004L) to analyze the size of amplified PCR product. The band size obtained for amplification of Partial 18S rRNA region is ~1095bp and ~1084bp. The PCR product was purified using AxyPrep PCR Clean up kit (Axygen, AP-PCR-50). For sequencing of 18S rRNA PCR product 18s 5F- 5' (CTGGTTGATYCTGCCAGT 3') sequencing primer was used. The DNA sequences were analyzed using online BLASTn (nucleotide Basic Local Alignment Search Tool) facility of National Centre for Biotechnology Information (NCBI). The BLAST results were used to find out evolutionary relationship of Worms. Altogether ten sequences, including sample were used to generate phylogenetic tree. The tree was constructed by using Maximum Likelihood method MEGA 7 software.

RESULTS:

Morphological description:- Twenty specimens of Cestode parasites were collected from the intestine of *Capra hircus* (L.) at Jalna district (M.S.) India during the month of August 2015.

These cestodes preserved in 4% formalin and stained with Acetocarmine or Harris haematoxylin or Borax carmine, passed through various alcoholic grades, cleared in xylene, mounted in D.P.X. and drawings are made with the aid of camera Lucida. All measurements are given in millimeters, otherwise mentioned.

All the cestodes are long consisting scolex, neck and proglottids. Proglottids are immature and mature.

The scolex is large in size, muscular, Squarish in shape and measures, 3.719 (3.624-3.815) in length and 2.899 (2.670-3.128) in width.

Suckers are large in size, bulgy appearance of sucker, oval to rounded in shape, four in numbers, arranged in two pairs, one pair placed in each half region of the scolex and measures, 1.144 (0.953-1.335) in diameter.

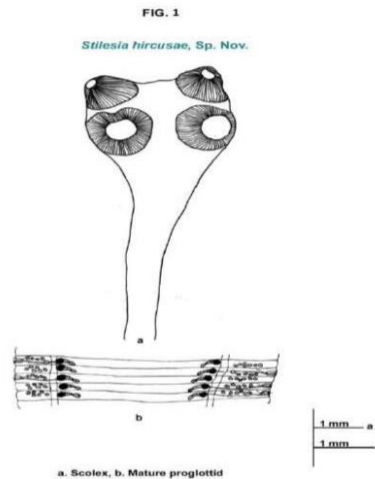
The neck is very long and measures, 3.515 (3.230-3.800) in length and 0.760 (0.570-0.950) in width.

The mature proglottids are broader than long, almost twenty five to twenty eight times broader than long, proglottids with a double set of reproductive organs and measures, 4.62 (4.455-4.785) in length and 0.165 (0.132-0.198) in width.

The testes are small in size, oval to rounded in shape, in two groups, 5-7 in each group, 10-12 in each segment and measures, 0.082 (0.066-0.099) in diameter.

The cirrus pouch is medium, elongated, oval in shape, irregular, marginal, pre-ovarian and measures, 0.231 (0.198-0.264) in length and 0.099 in width.

Cirrus is short, thin, slightly curved, contained within the cirrus pouch and measures, 0.297 (0.264-0.33) in length and 0.049 (0.033-0.066) in width.



The vas deferens is short, thin, straight or slightly curved, short as compare to cirrus and measures, 0.082 (0.066-0.099) in length and 0.049 (0.033- 0.066) in width.

The Ovary is small in size, compact, rounded, nut shaped and measures, 0.181 (0.165-0.198) in diameter.

The vagina is thin tube, arises from posterior to cirrus pouch, runs a long distance and open into the ootype and measures, 1.237 (1.15-1.320) in length and 0.033 (0.033-0.033) in width.

The uterine cap is large in size, elongated, narrow proximally, broad distally, situated and attached to one side of the ovary, towards aporal side and measures, 0.132 in length and 0.099 in width.

Ootype is small, rounded in shape and measures, 0.082 in diameter.

The par-uterian organ are elongated, cylindrical in shape, present two in numbers and measures, 0.363 (0.330-0.396) in length and 0.099 (0.066-0.132) in width.

The genital pores large in size, oval in shape, irregularly alternate, marginal, situated 1/3rd from anterior margin in the aporal side of the segments and measures, 0.0825 (0.066-0.099) in length and 0.082 (0.066-0.099) in width.

The longitudinal excretory canals are large in size, present on both the lateral sides of the segments along the body length and measures, 0.132 (0.099-0.165) in width.

DISCUSSION

The genus *Stilesia* was erected by Railliet, 1893. The worm under discussion is having scolex large, squarish, mature proglottids almost 25 to 28 times broader than long, testes small in size, oval to rounded, two lateral fields, 10-12 in each segments, cirrus pouch medium, oval, ovary small in size, compact, nut shaped, vitelline gland is absent.

1. The present parasite differs from *Stilesia globipunctata* (Rivolta, 1874) Railliet, 1893 in having scolex small in size, rounded, testes 4-7, cirrus pouch small, pyriform, ventral to vagina, ovary spherical, vagina dorsal to cirrus pouch and reported from *Ovis aries* in Europe .

2. The worm under discussion differs from *Stilesia vittata*, Railliet, 1896, in having testes 5-9 each in two lateral groups, vas deferens closely coiled, cirrus pouch elongated, cylindrical, ovary rounded compact, genital pore in anterior half of the segment and reported from *Camelus dromedarius* in Africa.
3. The present tapeworm differs from *Stilesia hepatica*, Wolfhugel, 1903, in having testes 6-7, in each side, pre ovarian, vas deferens not closely coiled, but extending up to excretory canal, ovary small, compact, oval, vagina anterior to cirrus pouch, genital pore in the middle of the segment and reported from the liver of *Ovis aries*.
4. The worm under discussion differs from *Stilesia okapi*, Leiper, 1936 in having testes 2-3 testes in each lateral side and reported from *Okapi* in Africa.
5. The present parasite differs from *Stilesia leiperi*, Kadam, *et al.* 1980, which is having testes 5-6, on each side, cirrus pouch cylindrical, vas deferens not closely coiled but extend beyond long excretory canals, ovary medium, almost circular, compact with small acini and genital pore in anterior half of the segment and reported from *Ovis bharal* (L.)
6. The present worm differs from *Stilesia caballeri*, Kalyankar, *et al.*, 1981 in having the scolex very small, testes 1 to 11 in number testes on each side, disposed in 2 to 3 rows.
7. The present form differs from *Stilesia southwelli*, Shinde, *et al.* 1982, which is having quadrangular scolex, mature proglottids 5 times broader than long, testes 4 in each two lateral groups, vas deferens very much coiled, reaching upto ovary, ovary small, round without acini, genital pore at 1/3rd from anterior margin of the proglottid, par uterine organs two in each proglottid, transversely elongated, containing eggs (10-15) in numbers.
8. The present worm differs from *Stilesia aurangabadensis*, Jadhav, *et al.*, 1982, in having the scolex spherical, testes rounded, in two lateral groups, 5 on each lateral side of the proglottid and lateral to ovary, vas deferens not coiled, reaches up to longitudinal excretory canal, cirrus pouch cylindrical, ovary medium in size, compact, circular in poral half and reported from *Ovis bharal* (L.) in India.
9. The present worm differs from *Stilesia garhwalensis*, Malhotra and Capor, 1983, in having the size of scolex 0.510-0.840 in diameter, testes 0-9 in numbers, size of cirrus pouch 0.011-0.101 in diameter, size of ovary 0.009-0.097 in diameter, genital pore situated at anterior 1/3rd level of lateral margin of proglottid.
10. The present cestode differs from *Stilesia kotwarensis*, Malhotra and Capoor, 1983 in having testes 1 to 12 in numbers, ovary small, spherical, situated inner to the longitudinal excretory canal on poral side, genital pore at anterior 1/3rd level of lateral margin of proglottid and reported from *Ovis bharal* (L.) in India.
11. The present form differs from *Stilesia marathwadensis*, Shinde, *et al.*, 1985, is having proglottids broader than long, testes 5-7 in number, rounded, in two groups and cirrus pouch cylindrical.
12. The present worm differs from *Stilesia jadhavae*, Jadhav, 1999 in having the mature proglottids 8 times broader than long, testes 5-7 in numbers, Ootype 0.045 in diameter, ovary 0.197 in diameter, vagina anterior to cirrus pouch and reported from *Ovis bharal* (L.) in India.
13. The present cestode differs from *Stilesia yawalensis*, Kalse, *et al.* 1999, in having scolex quadrangular, mature proglottids broader than long, testes rounded, in 2 groups (5-6 in number), vas-deference thin, curved, cirrus pouch oval, ovary medium, globular, a single mass, vagina thin and genital pore marginal.
14. The present parasite differs from *Stilesia dhondgae*, Deshmukh, *et al.*, 2001 in having scolex quadrangular, broad anteriorly, testes oval, 8-10 in numbers, arranged in 2 rows, vas deferens short, cirrus pouch small, oval, situated middle to posterior side, ovary bilobed and par uterine organ simple.
15. The present worm differs from *Stilesia capari*, Patil, *et al.*, 2002 in having scolex globular, testes 8-9 in numbers, vas deferens short, cirrus pouch small, ovary sac like and vagina anterior to cirrus pouch.

16. The present cestode differs from *Stilesia ambajogaensis*, Pawar, *et al.*, 2004 in having scolex quadrangular, testes 25-30 in numbers, cirrus pouch cylindrical, elongated, ovary small, oval, vagina anterior to cirrus pouch and reported from *Bos indicus*, in India.
17. The present tapeworm differs from *Stilesia pandeyi*, Nanware and Jadhav, 2004, in having scolex large, with four suckers, neck short and wide almost four times broader than long, mature proglottids almost 17 times broader than long, with convex lateral margins and slight projections at posterior corners of proglottid, testes are on two lateral fields, twenty in number, cirrus pouch small, elongated, at one third of anterior margins of proglottid, obliquely placed, cirrus thin, slightly curved, vas deferens short, medium, obliquely placed, ovary small, oval, with 3-4 short, blunt acini, vagina thin tube, runs obliquely, Ootype small and rounded, genital pores medium, oval.
18. The present cestode differs from *Stilesia indapurensis*, Khadap, *et al.*, 2004 in having scolex medium, quadrangular, broad anteriorly, mature proglottids squarish, testes oval, 8 to 9 in numbers, vas deferens curved, cirrus pouch large elongated, vagina thin, par uterine organs two in each mature segment.
19. The present parasite differs from *Stilesia daulatabadensis*, Shelke and Shinde, 2004 in having scolex globular, medium, squarish, testes acraspedote, eleven in number, 7 on poral and 4 on aporal side, vas deferens medium, slightly curved, cirrus pouch medium, oval, ovary medium, oval, single mass, vagina thin, long, anterior to cirrus pouch, slightly curved and par uterine organ 2 in number.
20. The present worm differs from *Stilesia jadhavii*, Nanware and Jadhav, 2005 in having scolex globular, testes 14 in numbers, ovary lobulated and vagina anterior to cirrus pouch.
21. The present cestode differs from *Stilesia govindae*, Padwal and Jadhav, 2006 in having scolex medium, elongated, mature proglottids 15 times broader than long, testes 12-14 in numbers, cirrus pouch cylindrical, sac like, vas deferens long, ovary lobulated and vagina postero-ventral to cirrus pouch.
22. The present cestode differs from *Stilesia shrigondaensis*, Pokale, *et al.*, 2008 in having scolex medium, rounded, mature proglottids broader than long, testes 10-12 in numbers, cirrus pouch oval, vas deferens short, ovary Medium in size, oval and vagina thin tube.
23. The present cestode differs from *Stilesia bordeae*, Humbe, *et al.*, 2013 in having scolex medium, globular, mature proglottids almost 6-7 times broader than long, testes 6 – 11 in each segment, cirrus pouch oval, sac like, vas deferens long coiled and ovary compact.
24. The present cestode differs from *Stilesia kalamae*, Shaikh Kalim, 2014 in having scolex globular, mature proglottids 7-8 times broader than long, testes 7-8 in each group, cirrus pouch oval, vas deferens short, thin tube, ovary compact, oval.
25. The present cestode differs from *Stilesia alii*, Ravi Solunke, 2015 in having scolex large, nearly quadrangular, mature proglottids 12-13 times broader than long, testes 9-10 in numbers, vas deferens short, thin, slightly curved, cirrus pouch medium, oval, ovary medium, oval, par uterine organ two in numbers and genital pore marginal.
26. The present cestode differs from *Stilesia shindei*, Nikam Priyanka, 2015 in having scolex squarish, mature proglottids 22-24 times broader than long, testes 9-12 in numbers, ovary medium, rounded and genital pore unilateral, irregularly alternate.
27. The present cestode differs from *Stilesia gangakhedensis*, Sanap N. P., 2016 in having scolex large, quadrangular, small, squarish, mature proglottids broader than long, acraspedote, testes 9 in numbers, vas deferens medium, thin, slightly curved, cirrus pouch small, cylindrical, ovary medium, oval, single mass, with uterine cap, vagina thin, posterior to cirrus pouch, Par utrine organ two in numbers and genital pore small, oval, anterior half of segment.
28. The present cestode differs from *Stilesia indiana*, Pawar R. G., 2016 in having scolex medium globular, quadrangular, mature proglottids broader than long, testes two lateral fields, oval, 4 to 5 in numbers, vas deferens short, medium in size, obliquely placed, curved, cirrus pouch small,

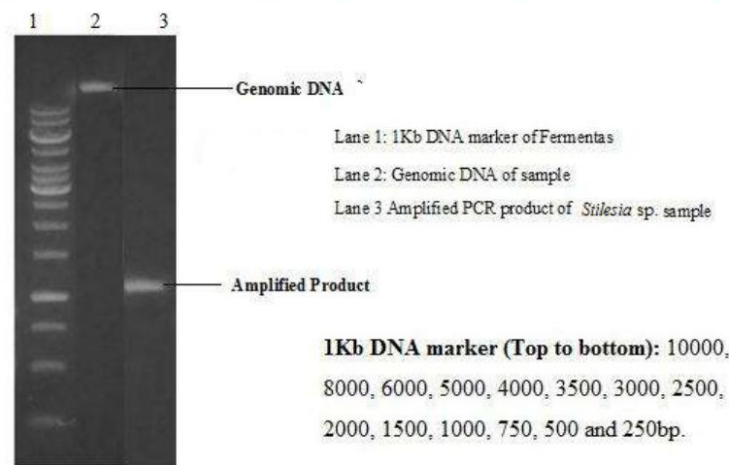
elongated, ovary small compact, 'U' shaped, vagina thin tube, posterior to cirrus pouch and genital pore small, oval, marginally placed, regularly alternate.

The above noted characters are valid enough to erect a new species hence the name *Stilesia hircusae*, Sp. Nov. is proposed, after the species name of host, *Capra hircus* (L).

MOLECULAR DATA:- A comparison of the partial sequences of the 18s rRNA gene of the present cestodes with those of other cestodes, in a phylogenetic context, provided further support for placing this species as a new one within *Stilesia* Sp. thus confirming taxonomic conclusion based on morphological data.

In the phylogenetic trees (Fig. 3) obtained by maximum parsimony analysis of the 18s rRNA sequence data set, a close to the species *Stilesia* sp. KD-2015 is clear with a maximum identity 100% (Table no.1). After partial 18s rRNA gene Sequence of *Stilesia* sample DNA sequences length is 767bp (Fig. 2)

Fig. 2: Genomic DNA and Amplified partial 18S rRNA gene for worm sample



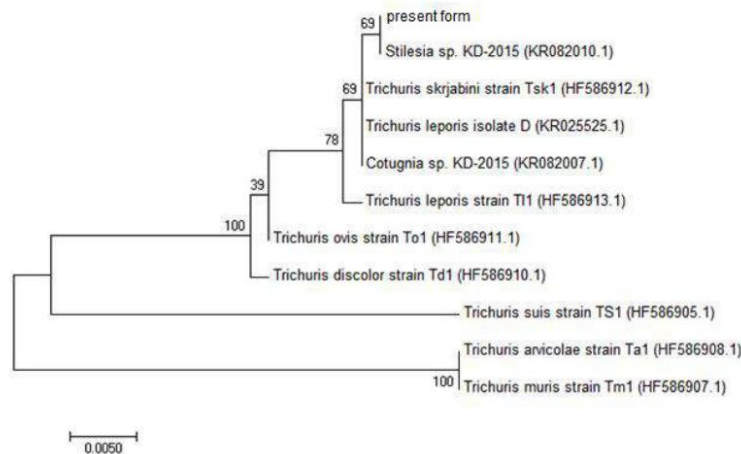
Partial 18s rRNA gene Sequence (767bp)

GCAAGAACTGATGTCCACTTGGATAACTGTGAAATTCTAGAGCTAATACATGCCTCGAAGCTTCGGCGCTAA
 TCGCGTCGGAGCGCATTTATTAGTACAAAACCAATCGGGCGTTGGCTCTTAGCCTTCGTCCGCCAAAGGTTGGT
 GAATCGGAATAACTATGCTGATCGCACGGTCCAGCACCGGCGACGAATCTTTGAAATGACTTGCTCATCAACTT
 TCGATGGTACGCTACGTGCTTACCATGGTGACAACGGTTAACGGAGAATCAGGGTTCGACTCCGGAGAGGGAG
 CCGAGAAAACGGCTACCACATCCAAGGAAGGCAGCAGGCACGCAAAATACCCACTCCCGGATCGGGGAGGTAGT
 GACGAAAAATAACGGAACGTATCTCCATGAGACCGGTTACCGGAACGACCGAGCCGTACATAAGCTCGGCTAA
 ATCTATTGGAGGGCAAGTCTGGTGCCAGCAGCCGCGTAAATCCAGCTCCAATAGCGTATATTTAAAGTTGCTGC
 GGTTAAACCGCTCGTAGTTGGATTGCGGTCGACGACGCGGTCGTCTAAGCAGGAGTCGTTCCGTCGCTCGTC
 ACCTGTTTATCAAGATCGTCTGGATGCTCTTCGGTGAGTGTCTTGGCGACTTGAACGTTTACTTTGAGAAA
 ATGGGAGCGCTCAAGGCAGGGCCGTAGAGCTTGAACAGTGGTGCATGAAATAATGAAAGATGGCCTCGGTGCT
 ATTTTGGTTGGTTT ACGGGCAATGGAGGCAATGG

Table 1: Phylogenetic neighbors of *Stilesia* sp. sample based on partial 18s rRNA gene sequence

Description	Max score	Total score	Query cover	E value	Ident	Accession
Stilesia sp. KD-2015 18S ribosomal RNA gene, partial sequence	1423	1423	100%	0.0	100%	KR082010.1
Trichuris skrjabini 18S rRNA gene, strain Tsk1	1389	1389	99%	0.0	99%	HF586912.1
Trichuris leporis 18S rRNA gene, strain Tl1	1373	1373	99%	0.0	99%	HF586913.1
Cotugnia sp. KD-2015 18S ribosomal RNA gene, partial sequence	1360	1360	96%	0.0	99%	KR082007.1
Trichuris leporis isolate D 18S ribosomal RNA gene, partial sequence	1358	1358	96%	0.0	99%	KR025525.1
Trichuris ovis 18S rRNA gene, strain To1	1352	1352	99%	0.0	98%	HF586911.1
Trichuris discolor 18S rRNA gene, strain Td1	1347	1347	99%	0.0	98%	HF586910.1
Trichuris arvicolae 18S rRNA gene, strain Ta1	1192	1192	97%	0.0	95%	HF586908.1
Trichuris muris 18S rRNA gene, strain Tm1	1192	1192	97%	0.0	95%	HF586907.1
Trichuris suis 18S rRNA gene, strain TS1	1190	1190	99%	0.0	95%	HF586905.1

Fig. 3: Phylogenetic tree for *Stilesia* sp. sample using partial 18s rRNA gene sequence.



CONCLUSION:

After discussion we conclude that the morphological and molecular observation (sequence of its 18S rRNA gene) is different in the present investigation. The present study clearly demonstrates that species should be considered to be a member of genus *Stilesia* (Cestoda: Anaplocephalidea).

In molecular analysis the phylogenetic neighbors of *Stilesia* Sp. based on partial 18S rRNA gene are shown in table no. 1 and fig. 3. On the basis of position of sequences of given *Stilesia* sample in

phylogenetic tree, the sample showed 100 % similarity with the *Stilesia* sp. i.e. KD-2015 having accession no. [KR082010.1](#).

After above discussion in both morphological and molecular observations the present worm is a member of genus *Stilesia* (Cestoda: Anaplocephalidea). In the molecular observation the sample in phylogenetic tree showed 100% similarity with the *Stilesia* Sp. i.e. KD-2015 having accession no. KR082010.1 studied by Thosar *et. al.* 2015, but in this study the identification only generic level there is no species identification. On the morphological observation the cestode parasites differs from other *Stilesia* Sp. with several characters and these characters are valid enough to erect a new species for the cestode hence the name *Stilesia hircusae*, Sp. Nov. is proposed after the species name of host.

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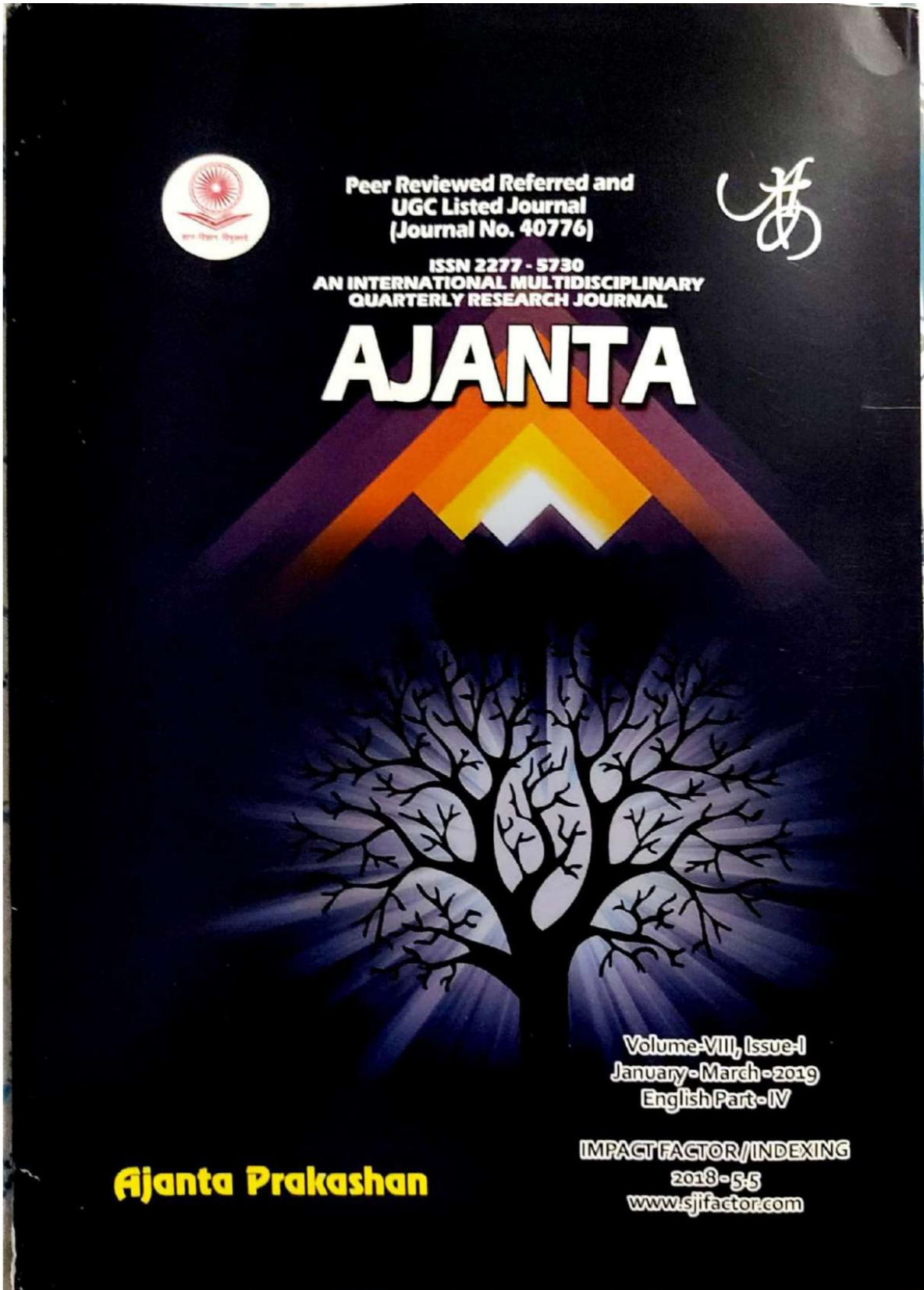
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34. Rabindranath Tagore a Social Reformer

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Dist. Buldana.

India is fortunate to have, in its long history, many extraordinary human beings who devoted all their lives for the betterment of the society and for the upliftment of the downtrodden. A few among them are Raja Ram Mohan Roy, Ishwar Chandra Vidyasagar, Vivekananda, Mahatma Gandhi, Dr Bhimrao Ambedkar, Jyotiba Phule, Anne Besant, Mother Teresa, Vinoba Behave and Rabindranath Tagore.

Rabindranath Tagore is one of the great revolutionary and served for the downtrodden people through his works. He is as a novelist, essayist, storywriter, composer and painter. But the author in Tagore has put his contribution to social reforms that Indian society needed at the beginning of the 19th century and still needs it.

Although Tagore was educated and brought up in an urban aristocratic and elite family environment in Kolkata, the moment he happened to come—even though as a zamindar (landlord)—into close contact with the fragments of Bengal's material village economy, society, and life, he got immediately struck and shocked by discovering the gulf of difference between these two segments of our society. Just a few months before his death in 1941, he mentioned lamentingly that our villages were left living still in the medieval age, while the towns have already reached the twentieth century. This difference obviously does not refer only to the material levels of living, but also to the spheres of perceptions, consciousness, worldview, education, and attitudes.

He remained, indeed, rather disturbed by the relative neglect and disrespect generally shown to the villages by the urbanite powerful and influential sections—an ugly fact which, he argued, can disappear only through introduction and expansion of enlightening education in villages just at par, in terms of standard and quality, with those in towns and cities. It is not that Tagore was not aware of the substantial financial burden involved in spreading good quality education in all villages, but unlike many of his times he consistently appeared uncompromising, emphatic, and resolute about its absolute urgency.

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Tagore, while functioning in his role of a zamindar of his large family estates in parts of East Bengal during some spells of his youth, was so shaken by witnessing 'the sorrow and poverty of the villages' that he, in his own words, 'became restless to do something about it', instead of spending his days 'as a landlord, concerned only with money-making' and with his 'own profit and loss'. Besides, Tagore continued writing essays and commentaries almost persistently on various social, economic, and political problems and their possible remedies. Tagore in his numerous writings, speeches, and lectures, published mostly in Bengali already touched upon several socio-economic and environmental problems.

In our present essay, we attempt at illustrating some of such major areas and issues where Tagore's concerns, visions, and thinking, though they have hitherto remained lamentably unutilised or perhaps even unheeded to, do still appear almost as a precursor to many of our contemporary thoughts and policy initiatives. This reflects how keenly practical Tagore's ideas and activism pertaining to the means and experiments for our rural socio-economic uplift have had been.

Santiniketan and Sriniketan

Tagore's conviction in the importance of reviving and reconstructing rural Bengal was amply matched by his intense urge to do something for the villagers, which eventually led him to set up two major experiments in rural transformation and education, namely, Santiniketan and Sriniketan. Unfortunately, these two experiments in Tagore's social activism neither received the appropriate amount of state support, patronage, and formal recognition by the time he died in 1941, nor did they receive serious academic, scholarly, and bureaucratic attention, appreciation, and recognition. Ironically, while Tagore's social activism and experiments at Santiniketan and Sriniketan have hardly ever been evaluated seriously in academic and bureaucratic circles for deeper insights and policy guidance, it has recently been somewhat popular among the social science community across the globe to examine selected successful local level economic and social experiments undertaken usually by NGOs or trusts, with a view to discovering insights, lessons, principles and policies of more general nature and applicability in the larger scale development and policies. But these two major rural experiments of Tagore—and their underlying ideas, practicalities, programmes have hardly ever been taken into account by social scientists in their research and output both before and after his death.

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Casteism

On his 157th birth anniversary which falls on May 7, poets, theatre artistes and academicians in the city remembered him as social reformer and his works which they said are as relevant today as they were years ago. "Most of the works of Tagore were against casteism. Besides, Tagore highlights religious contradictions in his works like Gora. His aim was to end the narrowness of caste and religion," said Hindi poet Rajesh Joshi to Free Press. Remembering Tagore's role as a social reformer, theatre director Alok Chatterjee said, "No doubt, his works like Visarjan, Mukta Dhara, Chandalika, Tasher Deshe and Kabuliwala talk against the caste, religion and orthodox mindset."

He was a poet of an era when such social evils as caste and untouchability dominated the society. He fought it out through his works. The most-important feature of Indian society is the caste system which has shaped every sphere of it. It was not surprising that Tagore who advocated for 'creative mind' of an individual was against the caste system and it is associated practices including those of untouchability and animal sacrifice. He ripped into the Brahmanical social order through a dance drama, In the Land of Playing Cards (Tasher Deshe), The Red Oleanders (Rakta Karobi), Chandalika (Untouchable Girl), Mukta Dhara (Free Rivulet). These plays are full of suggestions not only on modern politics but also on many other problems that unveil the modern world.

"Tagore's writing is a blend of the Indian tradition and the western philosophy, so it is difficult to understand Tagore's works," said Chatterjee. "Tagore has combined the Sufism, the Buddhism and the folk tradition, so his works cross all barriers of life and death; they are eternal,

Tagore was so intensely concerned and committed to serving the helpless, illiterate, ignorant people of village India that he did not hesitate even for a moment to take to an activist's role in reaching out to the rural common masses through many innovative schemes and experiments in rural development and educational improvements. Tagore once wrote plainly enough that 'my thoughts on motherland which permeated my mind ever since my boyhood days have not been expressed merely in the rhythm of metres. I always tried to translate them into practice.

Green Revolution

It seems amazing to see how keenly perceptive and practical a prolific poet like Tagore used to become when it came to the question of social, political, and economic uplift of our

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already hugely impoverished country. For example, one cannot but be struck by the fact that the ideas of agricultural extension services and sustained innovations for land productivity improvements that constituted the core of the Government of India's new agricultural strategy launched in the early 1960s the so-called 'package programme' or 'Green Revolution' were envisaged and sought to be implemented long ago—albeit on a much smaller scale in Tagore's Sriniketan project in the 1920s and 1930s. The latter included, inter alia, the introduction of chemical fertilisers, growing newer crops like fibre crops and fruits, trying out with new variety of seeds, emphasis on research and innovations for augmentation of land productivity, dairy and animal husbandry development and innovations, periodic socio-economic surveys of surrounding villages and dissemination of useful knowledge and innovations through,

Through his own personal-level efforts, Tagore had approached and brought many inspired and dedicated experts in various fields from within the country and abroad with a view to initiating rural transformation with new, scientific, and efficient methods in community health, agriculture, rural non-farm activities (handicrafts and cottage industries) and spreading out their training, among others, along with cooperative credit.

Tagore's ideas and efforts towards eradication of malaria in the villages surrounding Sriniketan chiefly through communication, information, diffusion, and distribution of preventive and curative medicines and other resources almost wholly on a charitable basis did succeed in reducing the number of malarial deaths by 27 per cent between 1928 and 1948.

Conclusion

To conclude somewhat rhetorically, our country has not so far adequately accepted Tagore as a social activist and social reformer probably on account of the common conviction. It is doubtful as to how many among us are aware of this achievement and I am doubtless certain that this historical fact deserves a lot more trumpeting and publicity even today not only among those who are involved in social work, but also among the entire social science community and government official and administration circles alike. This is important because we should care to avoid courting ourselves to a self-defeating repetition of such lament as the one voiced by one eminent historian in the context of Tagore's Sriniketan experiment:

As one of the chief architects of Sriniketan during its formative period wrote, it had sought in a unique way to combine 'Indian philosophy, British enterprise and American finance.

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In fact it is difficult to find a close resemblance of Tagore's such initiatives with what our contemporary governments have been doing under various cultural exchange programmes.

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भारतीय कृषिक्षेत्रासमोरील आव्हाने व संधी

संपादक
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निसर्गातून मिळालेल्या अमृताने जगात मानवजातीच्या विकासामात निसर्गाचे जडन व रक्षण करणे हा स्व-या अर्थाने आपल्या पंगतीचा गर्वित्व आहे. भारतातच मत्से तर आज संपूर्ण जगात हवामान बदलाची समस्या पसरतेने जाणवत आहे.

वातावरणाच्या या बदलाचा हवामानावर व पर्यायाने मानवी आरोग्यावर भातक परिणाम होण्याची भिती जागतिक आरोग्य संघटनेद्वारे गठीत एका कार्यपत्रकाने व्यक्त केली आहे. हा परिणाम कमी करण्यासाठी साधोच्या रोगावर नियंत्रण, रोगजंतुचा फैलाव करणा-या किटकांचा प्रसार रोखणे आवश्यक आहे. किंवा धुरांड्यांचा उंची वाढवून प्रदुषक उत्सर्जन वातावरणात उंचावर सोडल्यास जमिनीवरील प्रदुषण कमी करत येईल.

जागतिक तापमान वाढीचा हवामानात बदल झाल्यामुळे तापमान वातावरण, पर्जन्यमान या घटकांचा भारतीय कृषी क्षेत्रावर प्रभाव पडलेला असून महाराष्ट्र व विदर्भातील पिक रचना शोडया फार प्रमाणात प्रभावीत झालेली दिसून येते. मानवाचा निसर्गातील अतिहस्तक्षेप हवामान बदलास कारणीभूत ठरला आहे. औद्योगिक क्रांती, विज्ञान तंत्रज्ञानातील बदल हवामानातील बदलास कारणीभूत आहे.

संदर्भ :-

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□□□

कृषी विकास व दारिद्र्य निर्मूलन

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महाविद्यालय, मोताळा.

प्रस्तावना :-

तामिळनाडू येथील महान संत तिरुवळूर यांचे एक प्रसिध्द वचन आहे की, "जो अन्नधान्य पिकवून इतरांना जगवतो त्यापुढे सर्व नतमस्तक असतात" दोन हजार वर्षाअगोदरचे हे संत वचन भारतीय शेतीचे वास्तव वर्णन करते. मानवी जीवनात शेतीचे स्थान व त्यांचे समाजावर होणारे आर्थिक, सामाजिक परिणाम तितकेच महत्वपूर्ण आहेत. भारताचे राष्ट्रपीता महात्मा गांधी यांच्या विचारानुसार बुध्दी व श्रम यांच्यात फारकत झाल्यामुळे देशामधील शेती व्यवसाय विकलांग अथवा पंगू झाला आहे. भारतीय शेतीचा विकास शून्यातून वैभव निर्माण करणारा आहे. कारण १९६० पर्यंत भारत अन्नधान्याची आयात करणा-या देशांच्या पंक्तीमध्ये मोडायचा. परंतु आज अन्नधान्याच्या बाबतीत स्वयंपूर्णता साध्य करून जगामध्ये प्रमुख निर्यातदार देशांच्या बरोबरीने आपले स्थान बळकट करण्यात यशस्वी झाला आहे. भारत देशामध्ये जवळपास ६.०० लाख खेडी आहेत. त्याचप्रमाणे ६० ते ६५ टक्के जनता शेतीवर उदरनिर्वाहासाठी अवलंबून आहे. सकल राष्ट्रीय उत्पादनात शेती क्षेत्राचा २०१५-१६ नुसार वाटा १४.२ टक्के आहे. देशाच्या सर्वांगीण विकासासाठी कृषी क्षेत्रावर विशेष लक्ष केंद्रित करणे आवश्यक आहे. ग्रामीण भारताचा विकास, दारिद्र्य निर्मूलन, बेरोजगारी, भूकबळी, बालमजूरी समानतेसह विकासाचे तत्व साध्य करण्यासाठी कृषी विकास महत्वपूर्ण उपाय आहे. शेती व ग्रामीण विकासासाठी

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जागतिकीकरणानंतर झालेले प्रयत्न काही अंशी दुर्लक्षित व सापत्र असल्याचे प्रकर्षाने जाणवते. कारण आपल्या देशामधील ८० टक्के शेतकरी हा अल्पभूधारक व सिमांत भूधारक या प्रकारात मोडतो. सिंचन सुविधेचा अभाव केवळ ४० टक्के सिंचनाचे प्रमाण, सुलतानी व असमानी संकटाचा फेर, पायाभूत सोयी सुविधांची वानवा सार्वजनिक गुंतणूकीची कमतरता, बाजारभावाची साशंकता इत्यादी अनेक समस्यांनी भारतीय शेती क्षेत्र ग्रासलेले आहे.

भारतामधील शासनव्यवस्था जोपर्यंत शेती मध्ये प्रामाणिकपणे कायमस्वरूपी सुधारणा करणार नाही. तोपर्यंत भारताच्या बाबतीत राष्ट्रीय व अंतरराष्ट्रीय तज्ञ, संस्था, विचारवंत जो महासत्ता वा आर्थिक विकासाबद्दल अनुमान किंवा अंदाज बांधत आहेत त्यास कोणताही आधार नाही. कारण वास्तव परिस्थिती भीषण आहे. रोमन तत्ववेत्ता सेनेका यांच्या मतानुसार "भूकेली जनता सबबी ऐकत नाही. कायद्याची पर्वा करत नाही आणि प्रार्थनांना जुमानत नाही." देशातील दारिद्र्याबाबत अनेक आंतरराष्ट्रीय संघटना, भारतातील अर्थतज्ञ, शासकीय संस्थांच्या अहवालांमध्ये दारिद्र्याची आकडेवारी भिन्न-भिन्न आहे. जागतिक बँकेच्या मतानुसार भारतातील दारिद्र्याचे प्रमाण ६० टक्के च्या वर आहे. तसेच २००९ मध्ये सुरेश तेंडूलकर समितीने आपला अहवाल जाहिर केला. त्यामध्ये एकुण दारिद्र्याचे प्रमाण ३७.२ टक्के होते. तर २०११-१२ च्या शासन अहवालानुसार भारतातील दारिद्र्याचे प्रमाण २१.९ टक्के होते. या विविध आकडेवारीवरून दारिद्र्याची थड्या तर नाही मांडली जात अशी शंका निर्माण होते. भारतामधील या सर्व समस्यांची सोडवणूक करण्यासाठी एकमात्र उपाय आहे व तो म्हणजे शेतीसह ग्रामीण भागांचा सर्वांगीण विकास या करता केवळ योजना, घोषणा याचा वापर करण्यापेक्षा प्रत्यक्ष कृतीवर अधिक भर देणे अपेक्षित आहे. तेव्हा आपण चिरस्थायी विकास व भविष्यातील संकटे यांना समर्थपणे पेलण्यास तयार असू असे म्हणावे लागेल. अन्यथा ये रे माझ्या मागल्या या प्रमाणे देशातील जनतेची वाताहत झाल्याशिवाय राहणार नाही.

शेतीविकास व दारिद्र्य निर्मूलनासाठी उपाय

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१. शेतीच्या क्षेत्रीय व दरडोई उत्पादकतेत वाढ करणे:

शेती व दारिद्र्य यांचा परस्पर सहसंबंध आहे. भारत हा खंडप्राय देश आहे. त्यामुळे क्षेत्रीय शेती उत्पादन भिन्न-भिन्न आहे. त्याचप्रमाणे प्रत्येक राज्यातील दारिद्र्याचा प्रश्न भिन्न-भिन्न आहे. त्याकरिता प्रत्येक क्षेत्रासाठी छोटे-छोटे क्षेत्रीय विकास प्रकल्प राबवून उत्पादकतेत सुधारणा करता येवू शकते. ज्या प्रदेशामध्ये आवश्यक त्या वातावरणानुसार जे कृषी उत्पादन चांगले येते त्यास जास्त वाव देणे व त्याच ठिकाणी कृषी प्रक्रिया उद्योग उभे करण्यासाठी प्रोत्साहन व सोयी सुविधा उपलब्ध करून देणे त्यामुळे रोजगार निर्मिती व दारिद्र्य निर्मूलनासह शेती व्यवसायाला संपन्नता लाभेल. अनुत्पादक खर्चावर नियंत्रण आणण्यासाठी सर्वांगीण आर्थिक शिस्त व काटकसरीच्या तत्वाचा अवलंब करणे योग्य ठरते. त्याचबरोबर गरजेची तीव्रता व आवश्यकता ह्या बाबींचा विचार करून खर्च करणे महत्वाचे ठरते.

२. अनुत्पादक खर्चासह उत्पादन खर्चावर नियंत्रण:

केवळ शेतकरी वर्गच अनुत्पादक खर्च करतो असे नाही. तर त्यासह शेतमजूर, भूमीहीन व सोबतच अल्प उत्पन्न असणारा वर्ग असंख्य प्रकारच्या अनावश्यक रुढी, परंपरांवर खर्च करतात. त्याचा परिपाक अवास्तव खर्चात वाढ होवून दारिद्र्यात खिंतपत पडण्यासाठी या गोष्टीची हातभार लागतो. तसेच शेतकरी वर्ग अधिक-अधिक उत्पादनात वाढ घडून आणण्याच्या उद्देशाने गरज नसतांना अज्ञानापायी अनावश्यक खर्च करतो. त्यासाठी दारिद्र्याच्या दुष्टचक्रप्रमाणे "तो गरीब आहे कारण तो मुळातच गरीब आहे."

३. विकास कार्यक्रमांची कृतीपूर्ण अंमलबजावणी:

भारत स्वातंत्र्य झाल्यापासून आज ७० वर्षां मध्ये ग्रामीण भागाच्या उन्नतीसाठीच्या व शेती सुधारणेच्या योजनांची एक शिडी, बनवली तर स्वर्गापर्यंत पोहचू इतक्या योजनांच्या पाय-या तयार होतील. त्यासाठी कृतीशील व भ्रष्टाचारमुक्त योजनांची आवश्यकता आहे. कारण योजनेपेक्षा उपयुक्त अंमलबजावणी अधिक महत्वाची असते.

४. देशाचा व शेतीचा मागासलेपणा दूर करणे:


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भारतात आजसुध्दा निम्म्यापेक्षा अधिक लोकसंख्या प्रत्यक्ष व अप्रत्यक्षरित्या कृषीक्षेत्रावर अवलंबून असते. त्यामध्ये शेती उत्पादन, शेतमालांच्या किंमती तसेच नैसर्गिक लहरीपणा या सर्व समस्यांमुळे शेतकरी अधिक संकटात सापडतो. देशातील इतर क्षेत्राचा विकास झाला पण तो रोजगारविहिन झालेला आहे किंवा कुशल रोजगार देण्यासाठी देशाचे धोरण अपयशी ठरले असे म्हणावे लागेल. स्वातंत्र्याच्या ७० वर्षांच्या कालावधीत आजही ग्रामीण भागातील रस्ते, वीज, पाणी याच मुद्द्यांवर चर्चा होते.

५. सामाजिक रूढी, परंपरा व जाती व्यवस्थेला तिलांजली देणे:

भारतीय समाजव्यवस्था व जातीव्यवस्थेची पाळेमुळे आजही घट्ट रोवलेली दिसून येतात. यानुसार बाहेर निघण्याचा एकमेव मंत्र म्हणजे आर्थिक संपन्नता कारण तुमच्या आर्थिक संपन्नतेतून जातीव्यवस्थेला दूर सारता येते. विविध धार्मिक संस्कार, रूढी, परंपरा, हुंडा, श्राध्द अशा अनेक गोष्टींवर विनासायास पैशाचा अपव्यय होतो. त्यासाठी सावकाराकडून वेळप्रसंगी कर्ज घेतले जाते. या सर्व बाबीला छेद दिल्यास संपन्न व सुखी समाज निर्माण होवू शकतो.

६. दळणवळणाच्या व गोदाम व्यवस्थेच्या चांगल्या सोयी—सुविधा पुरविणे:

आज भारत देशामध्ये ग्रामीण भागात दळणवळणाच्या सुविधेबाबत कठीण परिस्थिती आहे. शेतमाल साठवणूकीची अपुरी सोय त्यामुळे शेतकऱ्यांना उत्पादनमाल कमी किंमतीला विकवा लागतो. मागील दोन वर्षांची स्थिती २०१५-१६ व २०१६-१७ ही विपूलतेत दाखविल्या असल्याची स्थिती दर्शविते. सर्व प्रकारातील दळणवळणाची असमाधानकारक स्थिती ही देशामधील शासनकर्त्यांचीच दुटप्पी भूमिका आहे हे स्पष्ट करते. दळणवळणाच्या चांगल्या सोयी सुविधा पुरवून शेती विकासाला व दाखिल्या उपशमन करण्याला एक प्रकारे हातभार लागू शकतो. त्याचप्रमाणे अनन्य नासाडी व उपासमारीचा प्रश्न दूर करण्यास मदत होईल.

७. अधिकोष व पतपुरवट्याची सोयी विकसीत करणे:

शेतकऱ्यांना वर्तमानकाळात कोरडवाहू व बागायतदार या वर्गीकरणातून पतपुरवटा होताना दिसतो. केवळ भारताने ४० टक्के सिंचन व्यवस्था असल्यामुळे उर्वरीत शेतकऱ्यांना पुरेशा प्रमाणात कर्जसुविधा उपलब्ध होत नाही. त्यासाठी शेतकऱ्यांना योग्य माहितीसह व विनासायास आवश्यक तेवढा कर्जपुरवटा होणे गरजेचे आहे. आज तरल तारणाशिवय पतसंस्था व अधिकोष यंत्रणा कर्जसुविधा देत नाही. याकरिता शासनाने पुढाकार घेवून योग्य तो मार्ग काढणे व शेतकऱ्यांमध्ये कर्ज सुविधा बाबत व परतफेडीबाबत जाणीव जागृती निर्माण करणे आवश्यक आहे. ग्रामीण भागात आजसुध्दा बँका व पतसंस्थांचा पुरेसा विकास झाला नाही. म्हणून कृषीपुरक उद्योग व शेतीविकासाला खिळ बसल्याचे दिसते.

८. लोकसंख्या नियंत्रण:

जगतिक पातळीवर आपल्या देशामधील लोकसंख्येच्या प्रश्नाबद्दल चिंता व्यक्त केली जात आहे. आपल्या देशात आज ज्या काही समस्या निर्माण झाल्या त्या सर्व समस्यांची जननी फक्त बेसुमार वाढलेली लोकसंख्या होय. प्रचंड लोकसंख्येचा विस्फोट झाला असताना सुध्दा या विषयी गंभीरपणे विचार करण्यास शासनव्यवस्था तत्पर दिसत नाही. जाणीवजागृती मध्ये पण आपण कमी पडतो. या देशात असंख्य जाती धर्मांचे लोक एकत्र नांदतात. घटना सर्वोच्च असून शासन निर्णय सर्वांना मान्य असतो. तरी सुध्दा लोकसंख्या नियंत्रणात ठेवण्यासाठी यशस्वी प्रयत्न करण्यासाठी आपण अपयशी ठरल्याचे जाणवते. आज ग्रामीण भागात इतर शहरी—निमशहरी भागात भरमसाट वाढलेल्या लोकसंख्येमुळे असंख्य समस्या निर्माण झाल्या आहेत. ग्रामीण भारताचा विकास व दाखिल्यानिर्मुलन करण्यासाठी सर्व पक्षांना, सर्व धर्मांना मान्य असेल असा सर्वसामान्य कार्यक्रम लागू करण्याची वेळ आली आहे. प्रौढ शिक्षण, लोकसंख्या शिक्षण, कौशल्याधारित शिक्षण व शंभर टक्के साक्षरता ह्या गोष्टींवर लक्ष केंद्रित केल्याने योग्य मार्ग मिळू शकतो.

९. रोजगार निर्मिती व बेकारी कमी करण्यासाठी विशेष प्रयत्न करण्यात यावे:

भारतात लोकसंख्येच्या मानाने आवश्यक तेवढा

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रोजगार उपलब्ध होत नाही. त्यामुळे प्रभावी मागणीत वाढ होत नाही. मागील १२ पंचवार्षिक योजनांच्या अभ्यासावरून हे लक्षात येते की मोठ्या व मध्यम उद्योगात उच्च व मध्यमवर्गीयांना उपयोगात असणा-या वस्तूंचेच उत्पादन करण्यात येते. त्यामुळे दारिद्र्याचा प्रश्न सुटणार नाही. त्यासाठी ग्रामीण भागाशी नाळ जोडून असणा-या लघु व कुटिर उद्योग, कृषी उद्योग, कृषी पुरक व्यवसाय, ग्राम उद्योग, बचत गटांच्या सहाय्याने चालणारे छोटे-मोठे उद्योग यांच्यावर जास्त लक्ष देणे आवश्यक आहे. कारण या सर्व गोष्टींमुळे ग्रामीण भागातील शेतीवरचा अतिरिक्त बोजा कमी होवून दारिद्र्य निर्मुलन होण्यास जास्त लाभ होईल.

भारताचा चिरस्थायी विकास करण्यासाठी ग्रामीण भागावर लक्ष ठेवणे आवश्यक आहे. म्हणून उत्पादकता वाढविणे, उत्पादन खर्चात घट, रोजगार सृजन, दळणवळण सोयी सुविधा, सामाजिक रुढी परंपरा या सर्वांवर डोळसपणे लक्ष देवून धोरणांची अंमलबजावणी करणे आवश्यक आहे. त्यावेळेस वास्तविक भारत देश महासत्ता म्हणून उदयाला येवू शकतो.

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८. कुरुक्षेत्र — ऑगस्ट २०१६ .

□□□

महाराष्ट्रातील जलसिंचनाचा अभ्यास

प्रा. पी. एस. मिसाळ,
सहाय्यक प्राध्यापक

मोरेश्वर कला, विज्ञान व वाणिज्य महाविद्यालय भोकरदन, जि. जालना.

प्रस्तावना:

महाराष्ट्राची अर्थव्यवस्था कृषी प्रधान असून आजही अर्धापेक्षा जास्त लोकसंख्येचा उदरनिर्वाह कृषी क्षेत्रावर अवलंबून आहे. कोणत्याही राज्याच्या किंबहुना देशाच्या विकासाच्या दृष्टीने कृषी क्षेत्राला खूप महत्वाचे स्थान असते कारण अर्थव्यवस्था जरी विकासाच्या कितीही उच्च पातळीवर पोहचली तरी त्या अर्थव्यवस्थेला अन्नधान्य आणि कच्चा माल यासाठी कृषी क्षेत्राशिवाय पर्याय नाही हे सत्य कोनालाही लपवता येणार नाही. कृषी क्षेत्राच्या विकासाशिवाय राज्याच्या किंबहुना देशाच्या विकासाची कल्पना करणे म्हणजे वाळवंटातील मृगजळ शोधण्यासारखे होईल. कृषी क्षेत्राचा विकास हा संस्थात्मक आणि तंत्रात्मक सुधारणांवर अवलंबून असतो. तंत्रात्मक सुधारणांतर्गत सिंचनासाठी पाणी, खते, सुधारित वि-बियाणे, आधुनिक कृषी अवजारे इ.मोठ्या प्रमाणात आणि रास्त किंमतीमध्ये उपलब्ध करून देणे अभिप्रेत आहे. कृषी क्षेत्रातील उत्पादन, उत्पन्न, उत्पादकता आणि रोजगार वाढीच्या दृष्टीने पाणी हा अतिशय महत्वाचा घटक आहे. अलिकडील काळात पर्जन्याची अनिश्चितता, वाढते तापमान, वाढती लोकसंख्या, वाढते औद्योगिककरण यामुळे पाण्याची उपलब्धता आणि वापर यातील तुट वाढत आहे. कृषीक्षेत्रासाठी उपलब्ध होणारे पाण्याचे प्रमाण कमी होत असल्यामुळे जलसिंचनासाठी पाण्याचा वापर काटकसरीने आणि आधुनिक तंत्रज्ञानाच्या साहय्याने करणे आवश्यक आहे. या पार्श्वभूमीवर कृषी जलसिंचनासाठी पाण्याची उपलब्धता वाढावी म्हणून पावसाच्या प्रत्येक थेंबाचा संचय, संवर्धन आणि नियोजन करणे तसेच जलसिंचनाच्या आधुनिक पद्धतीचा अवलंब करणे आवश्यक आहे.

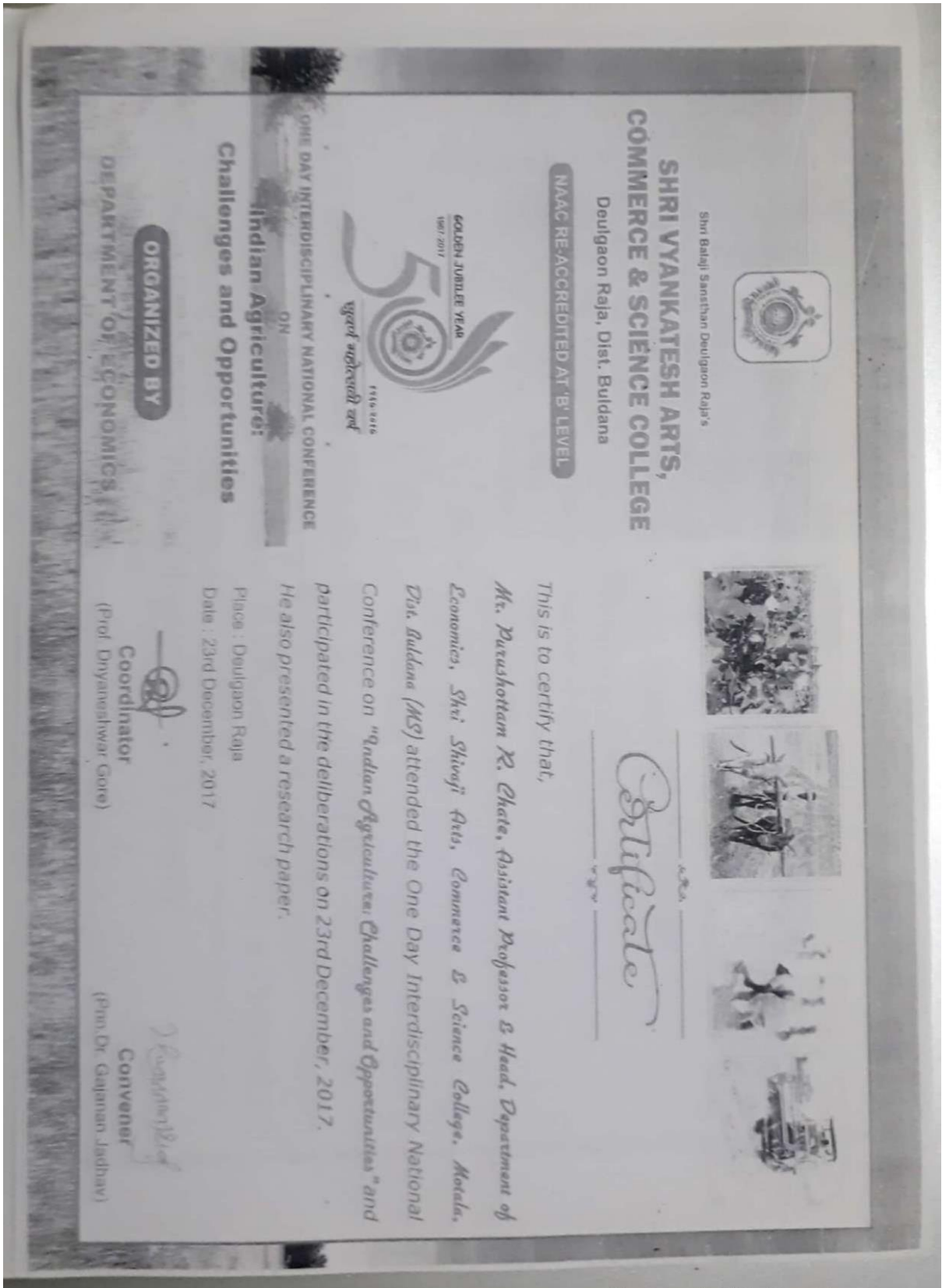
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(10)

प्रस्तावना :-

प्रत्येक अर्थव्यवस्था विकासाच्या प्राथमिक अवस्थेत कृषीवर अवलंबून असते. हळू-हळू अर्थव्यवस्थांचा विस्तार होतांना कृषी क्षेत्राचा सकल राष्ट्रीय उत्पन्नातील वाटा कमी-कमी होत जातो. शेती क्षेत्राचा विकास म्हणजे शेतीचा राष्ट्रीय उत्पन्नातील हिस्सा कमी होणे. आज जागतिकीकरणाचा स्विकार करून भारतीय अर्थव्यवस्थेला जवळ-जवळ 30 वर्षांचा कालावधी पूर्ण होत आहे. संपूर्ण जगाचा विचार केला तरी असे लक्षात येते की, कृषी हा अतिशय व्यापक विषय आहे. भारताच्या संदर्भात कृषी हा भारतीय अर्थव्यवस्थेचा कणा आहे. किंबहुना जागतिकीकरणाच्या स्विकारानंतर सर्वात जास्त चर्चेचा विषय आहे तो म्हणजे कृषी. भारत देशामध्ये 2011 च्या जनगणनेचा अभ्यास केल्यास 70% जनता ग्रामीण भागात वस्तव्याला असल्याचे दिसते. भारतीय शेतकऱ्यांच्या वर्गीकरणानुसार 80% शेतकरी अल्पभूधारक व सिमांत भूधारक या प्रकारात मोडतो. भारताच्या सकल घरगुती उत्पादनामध्ये 2015-16 नुसार शेती क्षेत्राचा वाटा 17.4% व 10.2% वाटा निर्यातीमध्ये आहे. जोपर्यंत कृषीचा विकास होणार नाही. तोपर्यंत देशाचा समातोल विकास साध्य होणार नाही. कारण जागतिकीकरणाच्या स्विकारानंतर जागतिक आर्थिक विषमता झपाट्याने वाढलेली दिसते. भारतात सुध्दा गिनी गुणांकाच्या सहाय्याने विचार करता प्रचंड प्रमाणात आर्थिक विषमता असल्याचे जाणवते. भारताचा विचार करता भारतातील काही महत्वपूर्ण उद्योगामध्ये शेतीतील उत्पादन कच्चा माल म्हणून वापरले जाते व त्याचप्रमाणे उद्योगातील तयार मालाला योग्य बाजारपेठ तेव्हाच मिळेल ज्या वेळी बहुसंख्येने असणारा कृषक वर्ग आर्थिक दृष्ट्या समृद्ध होईल. कारण एन.एस.एस.ओ. च्या सर्वेक्षणानुसार 48.6% शेतकरी कर्जबाजारी आहेत. त्याचप्रमाणे 40% शेतकरी पर्याय नसल्यामुळे शेतीत टिकून आहे. जागतिकीकरणानंतर शेतकरी आत्महत्येचे लोण आपल्या देशात वाढीस लागल्याचे दिसते. जागतिकीकरणाच्या स्विकारापासुन द्वितीयक व तृतीय क्षेत्रात भरमसाठ गुंतवणूक वाढत गेली, मात्र प्राथमिक क्षेत्रातील गुंतवणूक मंदावलेली प्रकर्षाने जाणवते. कारण भारतामध्ये जागतिकीकरण स्विकारल्यानंतर व पूर्वीचा सुध्दा विचार केला तर सिंचनाची परिस्थिती असमाधानकारकच आहे. कृषी बाजारपेठा, शेतीमधील अनुदाने, संशोधने कृषी तंत्रज्ञान याबाबत उदासिन धोरण असल्याचे दिसते. आर्थिक महासत्ता म्हणून उदयाला येणाऱ्या देशासमोर शेतीसारखा यक्ष प्रश्न असल्यामुळे केवळ देशातील वा जागतिक पातळीवरील विविध संघटनांनी दिलेल्या आश्वासक गोष्टींवर वा निष्कर्षांवर विश्वास ठेऊन आपण महासत्ता होणार नाही. कारण भारताचे माजी पंतप्रधान पंडीत नेहरु यांनी शेती संदर्भात असे म्हटले होते की, "बाकी सगळ्या बाबी थांबू शकतात, पण शेती अधिक काळ प्रतिकार करू शकत नाही." आज भारतीय शेतीला उत्पादन, उत्पादकता, तंत्रज्ञान या सोबतच हवामानबदल, नापिकी, तापमानवाढ, नैसर्गिक प्रकोप, नव-नविन धोरणे, करार व देश विदेशातील बदलती समीकरणे या सारख्या असंख्य पातळ्यांवर लढा द्यावा लागणार आहे.

गृहिते :-

- 1) जागतिकीकरणानंतर भारतीय कृषीमधील विविध स्थित्यंतरांचा अभ्यास करणे.
- 2) भारतीय कृषी मधील संघी व संकटांचा अभ्यास करणे.

माहिती संकलन :-

प्रस्तुत शोधनिबंधासाठी लागणारी माहिती विविध संदर्भ ग्रंथ, पुस्तके, वर्तमानपत्रे व सामाजिक आर्थिक सर्वे आणि शासनाची कृषी संबंधित विविध संकेतस्थळे यावरून घेण्यात आलेली आहे. भारतीय अर्थव्यवस्थेच्या दृष्टीकोनातून अजूनही शेती हा विषय महत्वपूर्ण आहे. शेतीचा राष्ट्रीय उत्पन्नातील वाटा, हरितक्रांतीमुळे देशा अन्नधान्याच्या बाबतीत स्वयंपूर्ण झाला. अकुशल लोकांना सामावून घेणारे क्षेत्र एवढाच शेतीचा संकुचित अर्थ नाही तर अजूनही भारतातील बहुसंख्या जनता शेतीच्या आघारेच जगत आहे. आज लोकसंख्या वाढत असतांना, संघटित क्षेत्रात रोजगार घटक असतांना, सेवा क्षेत्राच्या विस्ताराला मंदी आली असतांना, कृषी विचारवंतांच्या मताप्रमाणे शेतीमधील रोजगार संघी कमी झाल्या आहेत हे म्हणतांना देखील एक गोष्ट निर्विवाद सत्य आहे ती म्हणजे भारतीय शेतीचा संबंध भारतातील गरिबीशी आणि


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गरिबांशी थेट जुळलेला आहे. जागतिकीकरणाचे होणारे बरे-वाईट परिणाम केवळ भारतीय शेतकऱ्यांच्या दृष्टीने नव्हे, तर भारतीय अर्थव्यवस्थेच्या दृष्टीने महत्वाचे ठरतात.

भारतीय शेती क्षेत्राचा राष्ट्रीय उत्पन्नातील व रोजगारातील वाटा :-

वर्ष	राष्ट्रीय उत्पन्नात कृषीचा वाटा	रोजगारातील कृषीचा वाटा
1990-91	34.00%	--
1999-2000	25.00%	59.9%
2007-08	17.8%	---
2004-05	मधील किमतीवर आधारीत	56.7%
2008-09	15.7%	---
2009-10	14.7%	53.3%
2010-11	14.5%	---
2011-12	13.9%	48.8%
2012-13	13.6%	---

स्त्रोत :- डॉ.जी.एन.झामेर सुधारीत आवृत्ती 2016 व एन.एस.एस.ओ. अहवाल

जागतिकीकरणापूर्वी शेती क्षेत्राचा विकास दर जवळपास 3.5% च्या दरम्यान होता. जागतिकीकरणानंतर उत्तरोत्तर यामध्ये घट होत असल्याचे दिसते. वरील तक्त्यावरून भारताच्या राष्ट्रीय उत्पन्नात शेती क्षेत्राचा वाटा झपाट्याने कमी होताना दिसतो. मात्र शेतीवरील रोजगाराचे अवलंबित्व अतिशय धिमे गतीने कमी होताना जाणवते. कृषीचा राष्ट्रीय उत्पन्नातील वाटा कमी होत जाणे हे प्रगतशील राष्ट्रांचे लक्षण आहे. परंतु त्या तुलनेत इतर क्षेत्रात रोजगाराचे समायोजन होणे आवश्यक असते नाही तर हा विकास 'जांब लेस ग्रोथ' या संज्ञेमध्ये मोडतो.

जागतिकीकरणानंतर भारतीय विकास दर व गुंतवणूक :-

भारतीय अर्थव्यवस्था खाजगीकरण उदारीकरण आणि जागतिकीकरणाच्या दिशेने मार्गक्रमण होताना शेती क्षेत्रातील सार्वजनिक गुंतवणूकीवर नकारात्मक परिणाम झालेला दिसतो. कारण जागतिकीकरणानंतर कृषी विकासदराने झपाट्याने घट झालेली आहे. शिवाय काही वर्षे हा विकास दर उणेदेखील राहिलेला दिसतो. या संदर्भात तपशीलवार आकडेवारी पुढील प्रमाणे :-

वर्ष	कृषी विकास दर
1991-1995	2.4%
1998-2003	2.9%
2004-2007	3.8%
2005-2013	3.7%
2014-2017	1.9%

Source :- CSO Govt of India

सार्वजनिक व खाजगी गुंतवणूक एकूण GDP च्या

वर्ष	सार्वजनिक गुंतवणूक	खाजगी गुंतवणूक
1990-91	2.24%	5.12%
1994-95	2.12%	4.48%
1999-2000	1.66%	4.56%
2005-2006	1.94%	6.81%

Source :- CSO Govt of India

शेती क्षेत्र मागासलेले राहण्याचे मुख्य कारण म्हणजे सार्वजनिक गुंतवणूकीत झालेली घट होय. जागतिकीकरणानंतर कृषी क्षेत्राचा विकास दर कमी होत जाणे हे अर्थव्यवस्थेच्या सुदृढतेचे लक्षण नाही. तसेच कृषीच्या मागासलेपनाला या क्षेत्रामधील सार्वजनिक व खाजगी गुंतवणूकीत झालेली घट जबाबदार आहे. जागतिक स्पर्धेमध्ये उतरण्याअगोदर भारतीय शेती व्यवसायाची कवचकुंडले प्रगतशील राष्ट्रांच्या षडयंत्राद्वारे पध्दतशीरपणे कमी करण्यात आली.


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विविध देशातील प्रमुख पीकांचे क्षेत्र, उत्पादन व उत्पादकता यांचा भारतीय शेती क्षेत्रासोबत तुलना :-

देश	क्षेत्र लाख हेक्टरस	उत्पादन लाख टन	कि.ग्रॅ. प्रतिहेक्टर
तांदूळ			
जग	1543.24	6346.06	4112
भारत	437	135.1	3124
चीन	293.8	1840.7	6225
अमेरिका	11.4	87.87	7694
रशिया	1.5	6.8	4394
गहू			
जग	2161	6059.5	2804
भारत	264.8	693.5	2619
चीन	234.5	1044.7	4455
अमेरिका	202.8	573	2825
रशिया	230	450	1953
मका			
जग	1444	6952	4812
भारत	76	147	1938
चीन	271	1456	5365
ब्राझील	126	426	3383
ऊस			
जग	204	13924	68257
भारत	42	2812	67
चीन	12	1007	82.5
अमेरिका	3.6	268	74
तंबाखू			
जग	39	67	1724
भारत	3.7	5.5	1486
चीन	13.8	27.5	19.97
अमेरिका	1.3	3.4	2497

स्त्रोत :- योजना जानेवारी 2011 प्र.क्र.35, 36

जगातील प्रमुख देशांमधील खाद्यान्न व व्यापारी पीकांच्या उत्पादन व उत्पादकतेची तुलना भारतीय शेतीच्या उत्पादकतेबरोबर केली आहे. यामध्ये गहू, तांदूळ, मका, ऊस आणि तंबाखू या प्रमुख पाच पीकांचा समावेश करण्यात आला आहे. जागतिकीकरणानंतर भारतीय शेतीच्या उत्पादकतेत निश्चितपणे सुधारणा झाली, परंतु जागतिक उत्पादकता व जगातील विविध देशांमधील उत्पादकतेची तुलना केली असता भारताची शेती उत्पादकता कमी असल्याचे दिसून येते. यामध्ये भारत देशामध्ये कृषी निविष्टा, जमीनीचे अपखंडन, मांडवलाचा अभाव, सिंचन सुविधांची कमतरता इत्यादी समस्यांमुळे जागतिकीकरणानंतर देखील उत्पादकतेत समाधानकारक बदल करण्यात आपण कमी पडलो असे जाणवते.

जागतिकीकरणानंतर भारतीय शेती क्षेत्रात बदल होण्यास सुरुवात झाली. परंतु बदलांची ही कासव गती बदलणे आवश्यक आहे. जागतिकीरणाच्या स्पर्धेत गरज आहे "ती पिकतय ते विकण्यापेक्षा विकतय ते पिकवण्यावर भर देण्याची." त्या करीता शेतीला असणाऱ्या असंख्य बंधनातून मुक्त करणे गरजेचे आहे. शेतीमध्ये प्रगती साधावयाची असल्यास कृषी विपणनाचे घोरण, शेतमालांच्या किमतीबाबतचे घोरण, शेतमाल साठवणूकीच्या सुविधा, कृषी पुरक उद्योग, प्रक्रिया उद्योग यांना चालना देणे गरजेचे आहे. जगाच्या पाठीवर असंख्य देश आहेत त्यामध्ये कृषी मालाला उत्तम मागणी निर्माण होऊ शकते. फक्त त्या



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नविन बाजारपेठांचा शोध घेऊन तेथपर्यंत पोहचण्याची गरज आहे. यासाठी शासन यंत्रणेची भूमिका अत्यंत महत्वाची ठरते. आज केवळ शेतीला पारंपारिक आव्हाने किंवा संकटांना सामोरे जावे लागत नसून हवामान बदल, जागतिक तापमान वाढ, नैसर्गिक प्रकोप इत्यादी नविन संकटांचा सामना सुध्दा करावा लागणार आहे. जगामधील प्रमुख प्रगत राष्ट्रांमध्ये अतिप्रमाणात रासायनिक खतांचा वापर करून जमीनीची उत्पादकता व गुणवत्ता खालावली आहे व भारताजवळ पूर्वीपासून चालत आलेल्या सेंद्रिय शेतीच्या संकल्पनेला प्रोत्साहन देऊन जगात कृषी निर्यातीमध्ये अग्रस्थान प्राप्त करता येते.

ज्या प्रमाणे सिव्कीम या घटकराज्याने देशात सर्वात अगोदर संपूर्ण सेंद्रिय शेती करण्याचे धाडसी पाऊल उचलले आहे त्याप्रमाणे देशातील अन्य घटकराज्यांनी या बाबीचे अनुकरण करणे आवश्यक आहे. शेतीला आज व्यवसाय म्हणून पाहणे अधिक गरजेचे आहे. त्याचप्रमाणे महाराष्ट्राचे माजी मुख्यमंत्री कै. यशवंतराव चव्हाण यांचे शेती संदर्भात एक वाक्य आहे. त्यांच्या मते 'शेती हा शंभर तोंडाचा राक्षस आहे.' त्यामधून शेतीची सुटका करण्यासाठी भारतामधील सर्व कृषी पदवीधर, कृषी पदविकाधारक विद्यार्थ्यांना शेतीमध्ये रोजगार मिळणे गरजेचे आहे. कारण 2017 'असर' च्या अहवालानुसार 14 ते 18 वयोगटातील ग्रामीण भागातील 78% मुले शाळेत जात असोत अथवा नसोत त्यांना शेतीत जावेच लागते. मात्र यापैकी कोणालाच कृषी पदवीधर, पशू वैद्यकीय, जैवतंत्रज्ञान क्षेत्रात करीअर करण्याची आशा अथवा आकांक्षा नाही. त्याचबरोबर देशभरात पदवी पर्यंत शिक्षण घेत असलेल्या विद्यार्थ्यांमध्ये कृषी पदवीधर वा पशूवैद्यकीय क्षेत्रातील विद्यार्थ्यांचे प्रमाण केवळ अर्धा टक्का आहे. जागतिकीकरणातील संधीचा फायदा घ्यावयाचा असल्याने, कृषी क्षेत्रातील शिक्षणावर लक्ष केंद्रित करणे आवश्यक आहे. मुक्त अर्थव्यवस्थेचा 30 वर्षांचा लेखा-जोखा घेतल्यास वर्तमानकाळात सुध्दा आपण स्पर्धा करण्यास पुर्णपणे सुसज्ज नाही. आज जगात मुक्त अर्थव्यवस्थेचा डंका पिटला जातो. मात्र अजूनही अनेक छुपे प्रतिबंध प्रत्येक राष्ट्राने आप-आपल्यापरीने लावलेले दिसतात. आज प्रत्येक क्षेत्रात अनेक समस्या का आहेत त्या करिता ऑस्कर वॉल्ड यांच्या शब्दांत 'आजकाल प्रत्येक वस्तूची किंमत लोकांच्या लक्षात येते, परंतु कशाचेही मुल्य लक्षात येत नाही.'

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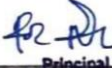
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(27)

INDIAN MALL CULTURE CONCEPT OF MALLS

PROF. GANESH S. KIROCHE

Shri Shivaji College Motala

In 21st century in all over the world mall culture acupy and indian also accepted mall culture. The concept of Retail as entertainment came to India with the advent of malls. Mall fever has touched every facet of Indian society. Whatever is the income stratum of consumers, malls make no distinction in proffering most-revered national and global brands, Shopping Mall refers to a set of homogenous and heterogeneous shops adjoining a pedestrian, or an exclusive pedestrian street, that make it easygoing for shopper to walk from store to store without interference from vehicular traffic.

Types of Malls

The malls basically are classified on the basis of their Merchandise orientation means types or Goods and Services sold and their size. Following are the different types of malls. (i) Regional Malls

- (ii) Super regional malls
- (iii) Outlet Malls
- (iv) Vertical Malls
- (v) Lifestyle Centers
- (vi) Dead Malls
- (vii) Strip Mall
- (viii) Outlet Mall
- (ix) Luxury Malls

Effect of Mall Culture in India

In India the mall boom in India began with Cross roads which was constructed in 1991 and was owned by Nichlos Piramal Pharmaceuticals. It is located near Haji Ali, Mumbai and is spread across 1, 50,000 square feet. The mall was a culmination of two offices which were: a. The office of Nicholas Piramal b. The office of a famous MNC pharmaceutical brand The initial mall in India was a huge failure. In the West malls are located on the outskirts of cities so as to offer entertainment with shopping. Malls in India are located in the heart of the cities,

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making parking a nightmare for shoppers. These malls however are mostly constructed by The malls in India are of box size.

Impact on retailers

In the face of deteriorating consumer sentiment, malls are finding it difficult to attract footfalls and occupancy rate is also slow. With dipping sales figures, retailers' profits have gone down by over 35 percent as compared to last year. Even during the festive season from October-December 2008, when consumers loosen their purse-strings, products usually in high demand have not seen enough takers. Cheaper items are selling more as compared to expensive items. Same-store sales have contracted. Retailers are scaling down expansion plans or shelving them temporarily to minimize immediate capital-intensive ventures

In this way mall cultures has been spread more effectively in India. and mall culture accepted indian people.

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INDIAN ECONOMY GROWING THROUGH E-COMMERCE

Prof. GANESH S. KIROCHE

Shri Shivaji College Motala

Indian economy is rapidly increase in all over the world and all Indian economy contains of various parts as like agree industry, banking etc. e-commerce is one of the most important parts to growing to help Indian economy. E-Commerce is a growing sector in India. Just like the growth of IT industry in India through the 1990s, the 2010s will be remembered for the growth in the E-Commerce industry. In its present state the contribution of E-Commerce to GDP is around 0.2% which is expected to grow 15 times to around 2.5% by 2030. The impact is so huge that the present wave of de-monetisation could have not been thought if E-Commerce did not exist. E-Commerce to a large extent helped absorb its shock as well as gained the maximum out of it as well.

By 2030 the contribution to GDP by E-Commerce is expected to reach to around 300 Billion Dollars which is around 20 Billion Dollars in its present state. After the initial wave of B2C E-Commerce, the B2B sector is gaining a lot of traction. 95% of the business in the B2B sector is still unorganized and E-Commerce will help organize by use of technology and other support functions. The impact of E-Commerce industry are still in very nascent stage but are visible. The impact at the moment can be seen in the following sectors:-

- **Technology-** One of the major drivers of technology will be E-Commerce industry and vice versa. We are seeing new age technological solutions being taken up to solve the business problems to bring commerce to everyone digitally. This is seen in both B2C and B2B sector. Investment into technology sector is happening to drive growth in the E-Commerce domain.
- **Logistics-** Logistics industry is both a bottleneck and a driver for e-commerce industry. For the same we see how last mile and inter-city logistics solutions have come up to digitally connect the different stakeholders across the country. The Uber model of moving passengers is implemented in some form or the other in the logistic

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sector. The growth of E-Commerce will drive innovation in the logistic sector to make the products available to the end user.

- **Travel-** At the moment 70% of the contribution to E-Commerce comes from the travel sector which includes the online ticket bookings to other travel arrangements. This has made the market competitive by bringing all players on the same platform and has also given consumer more options. Travel industry will be earliest adopters to become completely digitised and that is thanks to E-Commerce.
- **Education-** One of the industries to have the most profound impact of E-Commerce is the education. The ability of E-Commerce to provide quality education to everyone is immense. India will have one of the biggest set of youth population and hence the scope for education sector to be the biggest achievers because of E-Commerce is sure.
- **E-Retail -** The flag bearers of the E-commerce wave have been the various E-Retail commerce platforms. Etail sector is projected to contribute to around 3% of the total Retail sells by 2020 and is at present around 1%. This wave is seen in both B2C and C2C model and is bound to grow further. This is not only for goods but also has captured the food sector.
- **Other Industries-** The way of working in the Real Estate sector is already seeing the change because of the E-Commerce industry. This will change further with all property related transactions coming online and getting closed online as well. Banking sector is benefiting as well with reduced operations cost of online transactions. E-Commerce in health care has brought health related solutions to the urban India and will further penetrate deep into Tier I and Tier II cities.
- **Support Industries-** There are various support industries which have developed because of E-Commerce. These are digital advertising, analytics, payment gateways etc. These will become billion dollars sectors as E-Commerce grows exponentially.
- Besides the impact to these industries, E-Commerce is helping make the market more competitive, driving better customer experience and driving accessibility of goods to all. E-Commerce is also bringing transactions online which makes the system more transparent and to an extent may further drive technological adoption. This will also help in driving

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corruption levels down with everything coming online. The impact are profound and will evolve with time.

- Indian governments also lounced various e-commerce policies to improve e-commerce in all india eg. A digital india,e-banking,mobile banking, and naturally this effects of our economy and our economy increase more accuracy.

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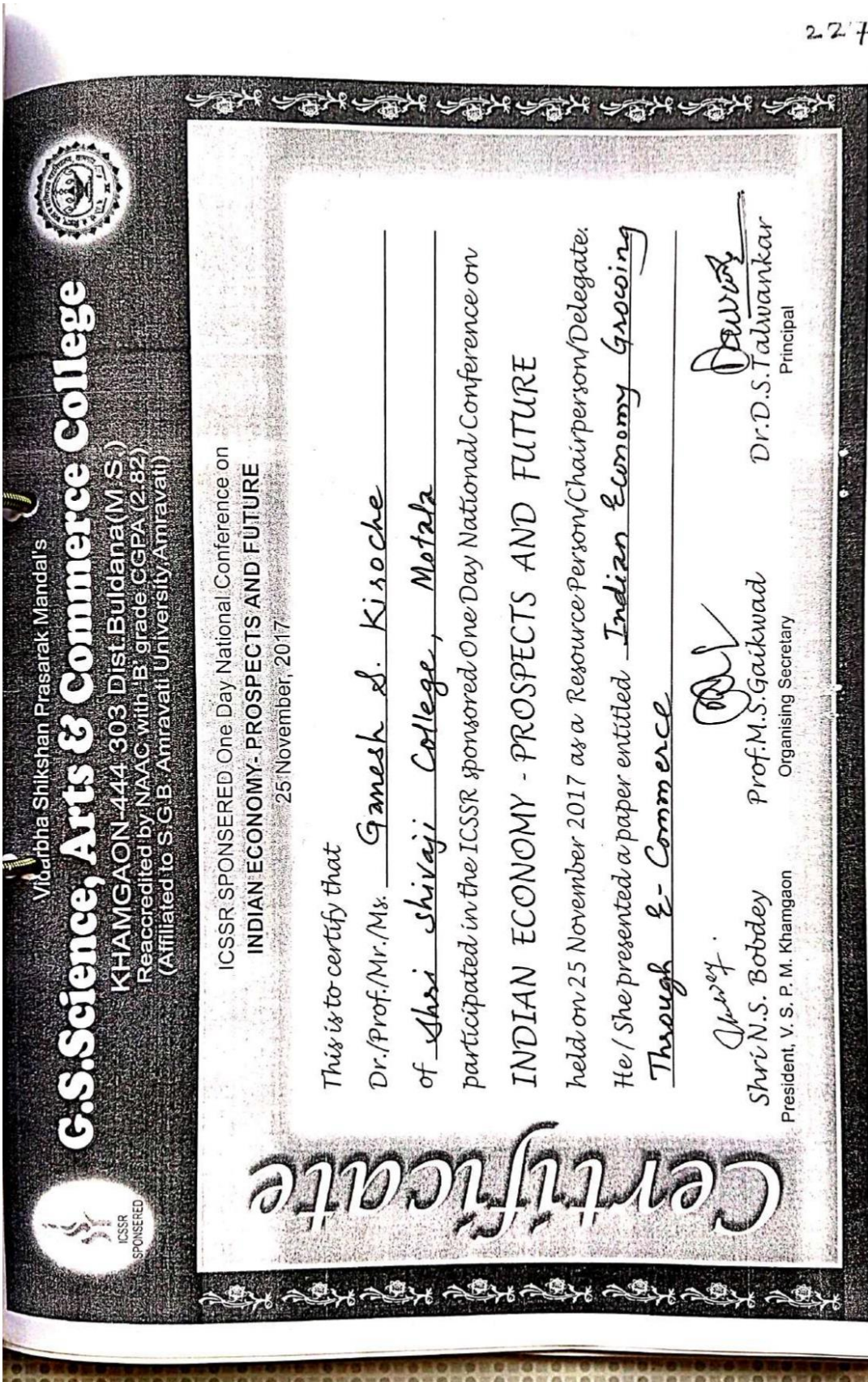
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ICSSR SPONSERED One Day National Conference on
INDIAN ECONOMY- PROSPECTS AND FUTURE
 25th November, 2017

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This is to certify that

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 participated in the ICSSR sponsored One Day National Conference on
INDIAN ECONOMY - PROSPECTS AND FUTURE
 held on 25 November 2017 as a Resource Person/Chairperson/Delegate.
 He/She presented a paper entitled Indian Economy Growing
Through E-Commerce

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Invitation Letter

To

Prof. Vijay Narayanrao Dhumal

Dept. of History,
Shri Shivaji Arts Commerce and Science
College, Motala, Dist. Buldana..

Email Id: - vijaykumardhml@gmail.com

Dear Madam/ Sir

The International Conclave on "Emerging Trends & Issues in Research & Development in Higher Education-2018": Transforming Higher Education (Quality, innovation) (ICETIRDHE-2018) which will be held at Hotel Ramada from 2nd May 2018-08th May 2018.

This conference will provide a unique opportunity and platform to discuss the research activities at international Level and explore avenues to collaborate with various organization and research institute & PIO experts. In the pursuit to provide a common platform, the major theme of the conference is to focus on "Make in India" programme designed to facilitate Emerging Trends & Issues in Research & Development in Higher Education-2018": Transforming Higher Education (Quality, innovation).

The cardinal point of importance of the conference aims at enriching and enhancing the quality of innovation research of the issues at the core of country growth through developments in the sectors of development of research by managing those applying modern scientific Management techniques and conveying them through effective and efficient communication skills.

Your Paper is accepted and we invite you to join us at this important International Event as an **Invited Speaker** to contribute your own expertise and present paper entitled "**Training as a part of Human Resource and Management**".

In order to register for the ICETIRDHE-2018, at Bangkok it is necessary to register by paying the registration fees as per our conference broacher as early possible and send the transaction details through email to convener which could be helpful for forwarding your paper to journal for publication. **(If Paid then please ignore)**

Conform your participation as early possible.

Note:- Status of your presentation style inform you shortly.

From

Convener

Training as a part of Human Resource and Management

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Introduction:

Human resource management (HRM) is the term used to describe the system devised for the management of people within an organization. The responsibilities of Human resource manager fall into three major areas: staffing, employee compensation and benefits, and defining or designing work.

Human resources are the vital asset of a nation. Human capabilities & behavior are the major factors in [the economic growth of the country. In the recent past many countries have noticed a change in GNP by implementing HRM policies of plans as the population grows. Human resource management of economic development are interrelated. If the population is educated & developed it can become the best human capital which in turn automatically makes the physical capital more productive of thus help in National economic growth. Today investment in Human resource is a wise step to obtain economic development.

- **Concept of HRM**

We often hear the term Human resource management, employee relations and personal management used in the popular press as well as by industry experts. What is HRM?

“Art and Science” of HRM is indeed a complex Art of managing people by resource to creative & innovative approaches. It is science as well because of the precision & rigorous application of theory that is required.

- **Definition:**

HRM is the process of managing people in organizations in a structured manner.

- **HRM is a must to:**

- a) Increase the competence of individual.
- b) Increase the dynamism of the group/team.
- c) Increase effectiveness in the organization.
- d) Develop organizational climate and work culture.
- e) Bring out industrial harmony.
- f) To prepare for future challenges.

- **Philosophy of HRM:**

1. To value human being irrespective of their contribution to corporate productivity and profit.
2. To trust in the potential of the employees.
3. To respect the dignity of the employees.

- **Some important concepts of Human resource management.**

- Importance of HRM
- Scope of HRM
- Processes in HRM
- Human Resource Planning
- The HRM Function.
- HRM of development
- Role of HRM in people empowerment
- Talent management in HRM
- Performance management as HRM

- **Various process in HRM:**

Each organization works towards the realization of one vision. The same is achieved by formation of certain strategies & execution of the same which is done by the Human resources department. There are various process involved in Human resource. The following are the various HRM processes.

- **Processes in HRM**

1. Performance management.
2. Employee remuneration benefiter Administration.
3. Employee Relations.
4. Human Resource Planning.
 - Recruitment s
 - Performance
 - Hiring
 - Training
 - Selection
 - Introduction
 - Orientation
 - Evaluation
 - Promotion
 - Lay off

1. Performance Management:

It is meant to help the organization train, motivate & reward workers. It is also meant to ensure that the organizational goals are met with efficiency. The process not only includes the employees but can also be for department product, Service.

Now a days there is an automated performance management system that carries all the information of the employees and assess them accordingly on their training & development needs.

2. Employee Remuneration & Benefits Administration:

This process involves deciding upon salaries & wages. Incentives, Fringe, Benefits and perquisites etc. Money is the prime motivator in any job & therefore the importance of this process performing employees seek raiser, better salaries & bonuses.

3. Employee Relations:

Employee relation is a nuisance with organizations especially in industries that are hugely competitive in nature. Though there are myriad factors that motivate an individual to stick to an organization, but certainly few are under our control.

Employee relation includes lab our Law and relations, working environment, employee health & safety. Employee- Employee conflict management, Quality of work life, workers compensation, Employee wellness' and assistance programs, counseling for occupational stress. All these are critical to employee relation apart from the money which is only a hygiene factor.

4. Human Resource Planning:

It is the process of people forecasting. It also involves the following processes.

- a) Recruitment- It aims at attracting applications that match a certain job criteria.
- b) Selection: The next level of filtration aims at short listing candidates who are the nearest match in term qualifications, experience and potential for a certain job.
- c) Hirin: Deciding upon the final candidate who gets the job.
- d) Training and Development: Those processes that work on an employee onboard for his skills & abilities up gradation.

All process are integral to the survival & success of HR strategies & no single process can work in isolation

• Employee Training as an HRM mechanism:

Employee training is one of the fundamental operative functions of human resource management. After an employee is selected, place and introduced he or she must be provided with training facilities. Training is an act of increasing the knowledge and skill or an employee for doing a particular job. Training is short term educational process and utilizing a systematic and organized procedure by which employee learn technical knowledge and skills for a definite purpose. Dale S. Beach defines Training as "The organized procedure by which people gain knowledge and/or skills for a definite purpose."

In other words training improves, changes moulds the employees knowledge, skills behavior, aptitude towards the requirement of the job carried on for to the primary purpose of helping members of an organization to

acquire and apply the knowledge, skills, abilities and attitudes needs by particular job and organization. Thus training bridges the different between job requirement and employees present specification.

Every organization big or small, productive or non-productive, economic or social, old or newly established should provide training to all employees irrespective of their qualification, skill, suitability for the job etc. Thus no organization can choose whether to train or not to train employees. Training is not something that is done once to new employees. It is used continuously in every well run established further technological changes, automation; require updating the skills and knowledge.

• **Training Methods:**

As a result in the field of training, a number of programmes are available. Some of these are new methods, while other are improvements over traditional methods. The training programmes commonly used to train operative and supervisory personnel are shown in the following figure.

Training Methods.

On the Job Method

1. Job Rotation
2. Coaching
3. Job Instruction
4. Training through Step by Step
5. Committee Assignments

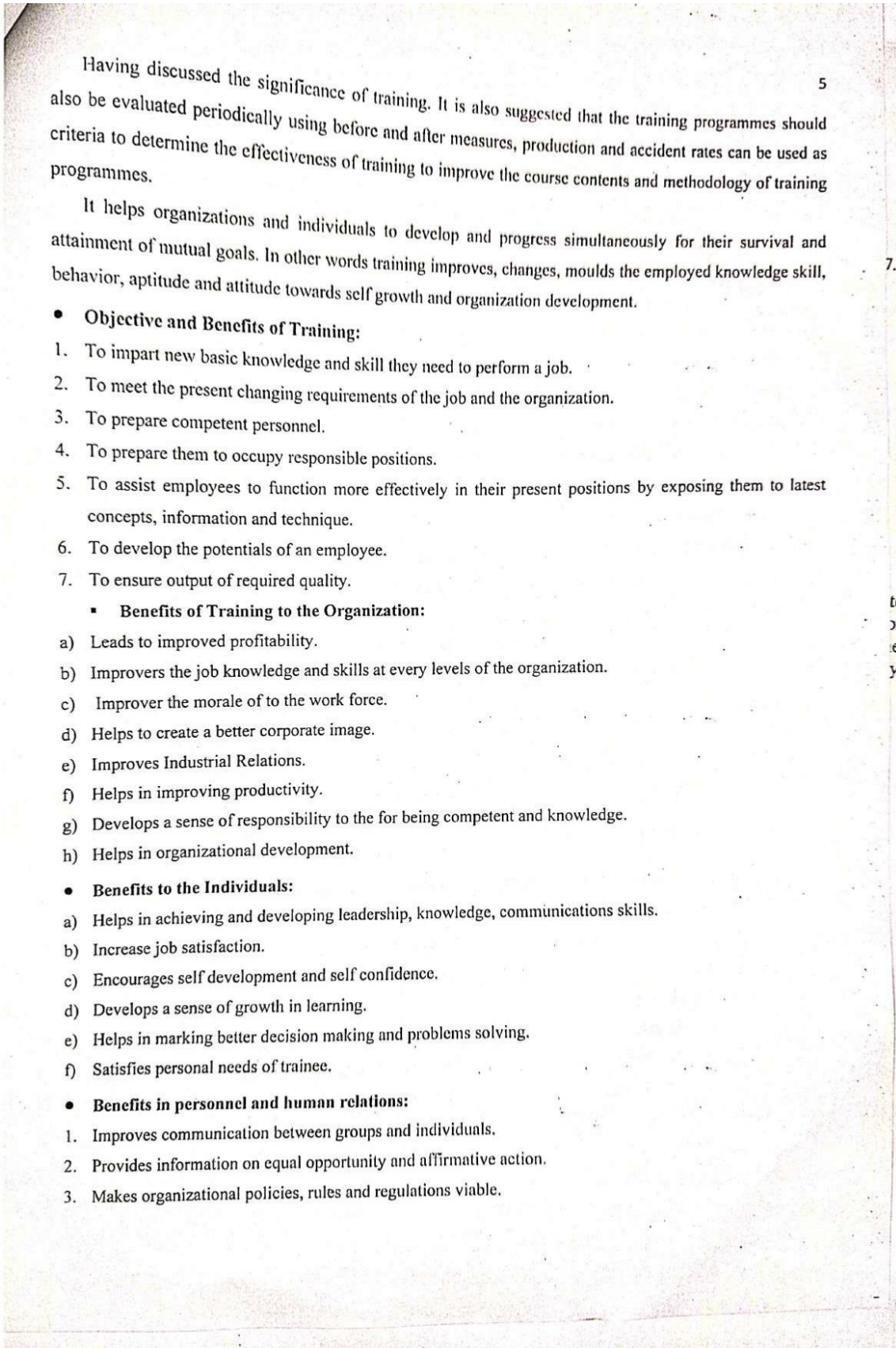
off the Job Method

1. Vestibule Training
2. Role Playing
3. Lecture Methods
4. Conference or Discussion
5. Programmed Instruction

6. Significance of Training:

Much has been discussed about training above, such as objectives of training, its importance, benefits to individuals and organization etc. It is merely acquisition of knowledge and skills which the trainee does not know where to use? Absolutely not! Training is to obtain effectiveness in action. It aims at a lasting improvement On-the-Job.

Training is far [the most frequently used HRM Mechanism. It is directly linked with another two important mechanisms, namely performance appraisal and career development of the employees. It gives an employee confidence in handling the job assigned to him and increase the quantity and quality of out-put through improved work methods and skills. With the trained personnel, the organization can afford to introduce latest techniques of cost reduction, resource allocation, material or quality control an so no! Further, several principles of training have been evolved as a measure to effectively provided skills, knowledge and attitudes. These include the principles of motivation, progress reports, reinforcement, practice, whole versus part and individual difference. The motivation enables trainees to learn effectively. This helps the organizations to relate the raining to a desired goal such as recognition. Promotion etc. To provide motivation to the trainees. Progress report or progress information enables the employee to learn rapidly and effectively. The third principle i.e. principle of reinforcement helps organizations in deciding policies of rewards such as praise, pay increase etc. The principle of practice high-lights the importance of active participation and practice for effectively acquiring is linked to HRM & OD interventions directly.



4. Improves morale.
5. Provides goods climate for learning growth and co-ordination.
6. Makes the organization a better place to work and live.

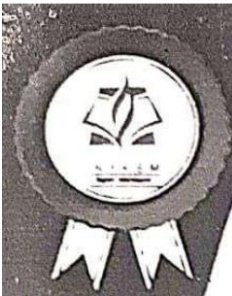
• **Conclusion:**

The study indicates good understanding regarding the importance and benefits of train employee. Finally management & development is a combination of natural abilities & the organizational nurturing of the employee with those skill . Hence this is a interplay between nature & nature is what determines the success. HRM functions and the senior management efforts to develop leadership in these companies. Due to training potentials of an employee develops. Personality development also takes place. It also helps to create a better corporate image. Due to training productivity & industrial relations improves.

Training enriches job satisfaction and results to encourage self development self confidence. It helps to improve communication skill, moral etc. which makes good climate for co-ordination.

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& Issues in Research & Development
in Higher Education (ICETIRDHE- 2018)
2nd May to 8th May 2018**

Organised by
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Gawande Science and Ashalata Gawande Commerce
College, Sakharkherda , Dist-Buldana,(M.S.)

CERTIFICATE OF APPRECIATION

This is to certify that Prof./Dr./Mr./Mrs./Ms. V.N. Dhumal
..... of Shri. Shivaji Arts, Comm. &
Sci. College, Motala..... has actively participated in the
“*International Conclave on Emerging Trends & Issues in Research
& Development in Higher Education (ICETIRDHE-2018)*” held at
Hotel Ramada, Bangkok (Thailand) on 2nd May to 8th may 2018. He
/She has chaired /Co-chaired a session/presented an Invited
Talk/Technical Talk/Oral/Poster entitled “Training as a
Part of Human Resource and Management” in the
conference.

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