International (Web) Conference on Recent Advances in Freshwater Aquaculture (RAFA-2021)

Organized by

Department of Zoology

M.S.P. Mandal's

Sunderrao Solanke Mahavidyalaya Majalgaon,

Dist. Beed (M.S.) India (Golden Jubilee Year, 2020-2021)

21-22 January, 2021

ABSTRACTS BOOKLET

In Joint Collaboration with

Nepal Aquaculture Society,
Kathmandu, Nepal (NEAQUAS)

Asian Biological Research Foundation (ABRF),
Prayagraj, (U.P.), India

Glocal Environment & Social Association (GESA),
New Delhi

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Dr. A. K. Verma
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Sunderrao Solanke Mahavidyalaya, Majalgaon is a branch of the huge tree of the Marathwada Shikshan Prasarak Mandal's having sprouted in 1971, under the tenure of *Shri. Sunderrao Solanke, Shri. Govindrao Dak, Narharrao Nirmal & Shri. Satyaprem Rudrawar* with its noble mission **"The Contentment of Soul with Knowledge and Science"**. The college runs 18 departments of the U.G. courses along with post-graduation in the subjects of Chemistry, Commerce, Mathematics and History. The college also runs effectively the courses viz. BCA, BCS, Diploma and Certificates. Research facilities are also available in the department of Zoology, Physics, Hindi, Marathi, and Economics respectively. The department of Botany of the college has rich heritage of Dr. M. A. Wadoodkhan's pioneering contribution towards research in *Cyperaceae* family.

Sunderrao Solanke Mahavidyalaya is affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad and is recognized under section 2 (f) & 12 (b) of the UGC Act 1956. National Assessment and Accreditation Council (NAAC), Banglore has re-accredited the college in IIIrd Cycle with "A" grade (CGPA 3.21) in November 2017.

Asian Biological Research Foundation (ABRF), Prayagraj (Uttar Pradesh):

The ABRF Prayagraj, India is a self-supporting, academic and research associated body. It is basically non-profit and Non-

Government Organization: (1) to provide a common platform for scientists associated with biological sciences to interact with one another for mutual benefit and to enhance the innovative knowledge on the subjects (2) to encourage, facilitate and perform the activities related to conservation of water, nature and biodiversity (3) to promote the new scientific knowledge that has emerged from recent advances and to felicitate the persons and organizations internationally for their outstanding services rendered in basic, applied and modern biological sciences including all branches of Botany, Zoology, Agriculture, Veterinary Science, Environmental Science, Molecular Biology, Biotechnology, Biochemistry, Bioinformatics, Microbiology, and so on. The ABRF confers following categories of awards and honors through search and nominations:

1. ABRF Lifetime Achievement Award (**above 57 years of age**)
2. Hon. Fellowship/Fellowship (**FABRF**)
3. ABRF Excellence Award for Environmental/Agricultural/Botanical/ Zoological Research
4. ABRF Global Recognition Award
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   Taxonomist/ Plant Pathologist/ Physiologist/Biotechnologist/ Anthropologist Award
8. Senior Botanist/ Zoologist/ Biochemist/ Scientist/ Environmentalist Award (**above 45 years of age**)
9. Innovative Botanist/Zoologist/Scientist/Environmentalist/Agriculture Scientist/Biotechnologist/ Extension
   Professional Award
10. Innovative Biologist Award for Wild Life/ Biodiversity Conservation
11. Vigyan RatnaPuraskar (**No age bar**)
12. Paryavaran Shri Samman (**No age bar**)

13. Young Botanist/Zoologist/Scientist Award (**below 30 years of age; mainly for research scholar**)

Note: Only ABRF Life Members are eligible for applying these awards. ABRF will confer only 10 awards during this ICES 2021. Each award will consist of a multicoloured award certificate and a high-quality memento. ABRF Award selection is strictly based on API and biodata both. (Those who have received ABRF awards in 2020 are not eligible to apply.)
For detailed guidelines, please log on to website: http://www.abrf.org.in [email id:secretary.abrf@gmail.com]

Glocal Environment & Social Association (GESA), New Delhi:

In order to serve a bit, the Nature and Society for better future, the Glocal Environment & Social Association (GESA) is constituted. Its headquarters is located in New Delhi. Its main aim is to develop and promote 'global thought and local action' ideology to save the nature. It organizes the seminars; workshops etc. to aware and educate the people on blazing environmental and social issues. The GESA felicitates the persons and organizations for their outstanding services rendered in various fields of agriculture, arts, biodiversity conservation, commerce, culture, education, environment, healthcare, humanities, literature, mass communication, music, patriotism, peace and harmony, science, sports, technological innovations and other social services. The GESA will confer following categories of awards and honors to its members during this second annual session:

1. Life Time Achievement Award (**Above 55 years of age**)
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3. Dr. APJ Abdul Kalam Green Environment Promotion Award
4. Dr. Sarvepalli Radhakrishnan Education Promotion Award
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8. Senior Scientist Award (**Above 40 years of age**)
9. Best Faculty Award for Teaching/Research/Innovations
10. Distinguished Service Award / Distinguished Teacher Award **(Crop, Plant Protection, Horticulture, Fisheries, Home Science, Social Science, Animal Science, Life Science etc.)**
11. Innovative Educationist Award/ Agriculture Extensionist Award
12. Teacher of the Year / Extension Professional of the Year / Doctor of the Year Award
13. Technological Innovations Award
14. ParyavaranRatnaPuraskar
15. Vigyan Bhushan Puraskar
16. Sahitya Shri Samman
17. Young Scientist/Young Researcher Award (**Below 35 years of age**)

Note: Life Membership of GESA is mandatory for above awards, which is Rs. 5000/-. Each awardees will receive a multicoloured award certificate and a high quality memento. GESA Award selection is mainly based on biodata. Those who have received GESA awards in 2020 are not eligible to apply. For detailed guidelines, please log on to website: http://www.gesa.org.in [Email id: president.gesa@gmail.com]

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Message from President

Hon. MLA/Shri. Prakash Sunderrao Solanke
President Marathwada
ShikshanPrasarakMandal,Aurangabad

Marathwada ShikshanPrasarak Mandal consistently works for enrichment of educational services for poor and needy people from rural background with the motto 'Tamso ma Jyotirgamay'. Sunderrao Solanke Mahavidyalaya, Majalgaon, Dist. Beed is one of the embodiments of the efforts of the institution through which such efforts are realized at a more systematic level. Such approaches are required in today's research world.

It is quite gratifying to note that the department of Zoology of our college is hosting the International Web Conference on Recent Advances in Freshwater Aquaculture (RAFA - 2021), in association with Nepal Aquaculture Society, Kathmandu, Nepal, Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India, and Glocal Environment & Social Association (GESA), New Delhi on January 21- 22, 2021. Organizing such an event at this point of time reinforces our objective of developing an aquatic environment for the exchange of ideas towards innovative techniques in freshwater aquaculture. I wish the conference would be able to focus on current issues of national and international relevance, particularly in the field of recent advances in freshwater aquaculture. I am sure that this occasion will provide an affable environment for the researchers and academicians to freely exchange the views and ideas with others. I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the success of the conference.

Message from Secretary

Hon. Shri. Satish Bhanudasrao Chavan (MLC & Secretary) Marathwada ShikshanPrasarak Mandal, Aurangabad

Marathwada Shikshan Prasarak Mandal has always been conscious regarding its contribution in the areas like social responsibilities, student centric activities, quality education and research promotion. It ensures achieving landmarks in the areas with constant efforts. It has been reflected in the NAAC accreditation results of the colleges under Marathwada Shikshan Prasarak Mandal. Seven colleges received A grade in the third cycle of accreditation, four colleges are recognized by UGC as College with Potential for Excellence. The journey of achieving excellence is never a sudden process. It takes years to reach at a goal of quality education in which every stakeholder has to contribute whole heartedly. Such are the positive efforts executed by the stakeholders. I am extremely delighted to note that the department of Zoology of our college is hosting the International Web Conference on Recent Advances in Freshwater Aquaculture (RAFA - 2021), in association with Nepal Aquaculture Society, Kathmandu, Nepal, Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India, and Glocal Environment & Social Association (GESA), New Delhi on January 21- 22, 2021. The present International Conference bringing out a “Book of Abstracts” to highlight the recent research outcomes in the related field. In this connection I convey my best wishes to the team for their laudable effort and also wish them grand success in conducting the event.

Message from the CDC, Member

Honorable Adv. B. R. Dak
Member, College Development Committee,
Sunderrao Solanke Mahavidyalaya, Majalgaon, Dist. Beed

Dear Participants, on behalf of Marathwada Shikshan Prasarak Mandal, Aurangabad it is my pleasure to invite all of the great scientists, academicians, young researchers, delegates and students from all over the globe to attend the department of Zoology of our college is hosting the International Web Conference on Recent Advances in Freshwater Aquaculture (RAFA - 2021), in association with Nepal Aquaculture Society, Kathmandu, Nepal, Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India, and Glocal Environment & Social Association (GESA), New Delhi on January 21- 22, 2021. This conference shares an insight into the recent research and cutting-edge technologies, which gains immense interest with the colossal and exuberant presence of adepts, young and brilliant researchers, delegates and talented student communities. It promotes top level research and to globalize the quality research in general, thus making discussions, presentations more internationally competitive and focusing attention on the recent outstanding achievements in the field of Fishery Science, and future trends and needs. Since this conference covers very global aspects on Recent Advances in Freshwater Aquaculture. We are looking forward to an excellent meeting with great scientists from globe and nationwide and sharing new and exciting results in freshwater Aquaculture.

Message from the Principal

Dr. V. P. Pawar
(Principal)
Sunderrao Solanke Mahavidhyalaya Majalgaon, Dist. Beed

Marathwada ShikshanPrasarak Mandal's Sunderrao Solanke Mahavidyalaya, Majalgaon, Dist. Beed has consistently kept its promises for quality education for the masses in the region addressing to the issues of social responsibility, student's development, progression and research. Research has been one of the most prominent activities undertaken by the faculties on the campus. College has 'A' grade with CGPA 3.21 in its third cycle of accreditation by NAAC.All Science departments of our college are involved in outstanding research and effective teaching-learning process. It has always been proactive in all student centric activities. The present International Web Conference on Recent Advances in Freshwater Aquaculture (RAFA - 2021), in association with Nepal Aquaculture Society, Kathmandu, Nepal, Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India, and Glocal Environment & Social Association (GESA), New Delhi on January 21- 22, 2021. It is with much delight that I pen down a few words for the conference souvenir which is a tremendous effort of the department of Zoology. The International conference is being organized by keeping in mind the latest innovations and developments in aquaculture and I am sure it would provide participants with minute details much relevant for present day survival. I congratulate the entire team for the hard work they have put forth to give this international conference its much-needed color and vigor. I wish them great success for the successful conduct of the entire event and hope this mission will be carried out with even more dynamism in the years ahead.

Message from the Convenor RAFA-2021

Dr. Rajkumar T. Pawar
Associate Professor & Head,
Department of Zoology,
Sunderrao Solanke Mahavidyalaya, Majalgaon Dist. Beed

On behalf of Sunderrao Solanke Mahavidyalaya, Majalgaon DIst. Beed. It is my honor to welcome the participants to our International Web Conference on Recent Advances in Freshwater Aquaculture (RAFA - 2021), in association with Nepal Aquaculture Society, Kathmandu, Nepal, Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India, and Glocal Environment & Social Association (GESA), New Delhi on January 21- 22, 2021. Our conference RAFA-2021 serves as an excellent forum to explore the role of innovative ideas in recent advances in aquaculture also global platform providing for various forms of knowledge sharing. We are grateful to our management for their support, motivation and encouragement without which this event could not have been organized.

Abstracts

Contents

Abstract No. 1

RECENT TRENDS IN FRESHWATER FISHERIES AND AQUACULTURE ACTIVITIES OF NEPAL: A SHORT OVERVIEW

Shyam Narayan Labh
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Institute of Science and Technology (IOST) Tribhuvan University, Kathmandu 44600, Nepal
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Abstract:

Aquaculture has been the world's fastest-growing food production system for decades and is now providing more fish than wild capture fisheries for human consumption. In many of the developing and developed regions of the world, the demand for fish has continued to grow. Nepal is a small country lying between two enormous giants, India in the east, west, and south and China in the North. Northern part has a long range of mountains from which perennial rivers originate and flow to the southern plain of Terai. There are over 6000 rivers and rivulets in Nepal even in a small territory of 147,181 km2. Also, the climatic condition of Nepal favors the commercial rearing of fishes. Fisheries and aquaculture are a dynamic sub-sector of agriculture sector having high growth potential but with low organizational stature in Nepal. The modern aquaculture is practiced by both some of the poorest farmers and by multinational companies and is expanded to 55 districts of the country and has generated direct employment for 584,839 people. Fish contributed to about 3.3 billion people with almost 20% of their average per capita intake of animal protein. However, the import and export data of fish seem to be fluctuated in different years. The total aquaculture production of Nepal in 1980 was just 1433 tonnes which increased to 59,000 tonnes in 2018 (FAO, 2020). However, problems in production systems and technologies, input supply, extension support services, credit service, environmental issues, marketing service, and institutional framework need to be rightly addressed in order to achieve long-term sustainable goals.

Keywords: Machha, fish, carp, Nepal, aquaculture, fisheries, rivers, ponds

Abstract No. 2

IMPACT OF MALATHION ON BEHAVIORAL RESPONSE OF A FRESHWATER FISH, *HETEROPNEUSTES FOSSILIS*

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Abstract:

Pesticides are common pollutants of freshwater ecosystems where they persuade antagonistic effects on the aquatic biota. Malathion, a widely used insecticide is reported to cause severe metabolic disturbances in non-target species. Behavior analysis provides a unique perspective link amid the physiology and environment of an organism.Fish are known as good biological indicator, and any alterations in fish behavior indicate the deterioration of water quality. Here an attempt is made to investigate any behavioral changes of fish *H. fossilis* following the doses of malathion (concentration 25 mg/L, 50 mg/L and 75 mg/L). Parameter such as resting period, opercular movement, gulping of air and S-jerk were recorded (Gupta and Dua 2010) for 30 days. Results of the study suggested the adverse impacts of malathion on studied parameter of behavior were in dose-dependent manner. Changes in behavioral responses of fish were started after 30mins of dosing. Fishes exposed to malathion showed speedy movements as compared to control and this resulted in a significant decrease in resting period ($p<0.01$). The opercular movement was also increased ($p<0.01$). Hypoxia caused by malathion exposure was reflected by the increased (>2-5 folds) number of air gulps. Fish movements' phenomena like S-jerking, threat and burst swimming were also increased in the experimental fish. Furthermore, sub lethal doses of malathion adversely affected the survival of the fish. In conclusion, results of the study indicate both acute and sub-chronic toxic nature of malathion.

Key words: Pesticides, Malathion, freshwater ecosystem, *H. fossilis*

Abstract No. 3

ICHTHYO-FAUNAL DIVERSITY OF KARMANASA RIVER, LALITPUR, NEPAL

Bikash Shrestha[1] and Prabha Chitrakar[2]
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Abstract

The ichthyofaunal diversity of Karmanasa river, Lalitpur, Nepal was studied to predict the fish diversity in Karmanasa river. The study was carried out to understand baseline information and to know the status of fish species of Karmanasa river along with the fishing implements used to collect the fish species. The study was carried out from September 2018 to March 2019 focusing on three different seasons- Autumn, Winter and Spring. Three sampling stations i.e., Site A, Site B and Site C were established at the Jharuwarashi, Godawari, Lalitpur. During the present study, a total of six species under two orders, two families and two genera were found. Order Cypriniformes comprises of family Nemacheilidae having *Schisturasikamaiensis, Schisturabeavani, Schisturamultifaciatus, Schisturarupecula*species while order Anabantiformes comprises of family Channidae having *Channaorientalis, Channa punctata* species. Among all these species *Schisturasikamaiensis*is a major species found in Karmanasa river.

Keywords: Karmanasa river, fish diversity, fishing implements, Nepal.

Abstract No. 4

BIODIVERSITY ASSESSMENT OF BALAPUR POND OF DISTRICT PRAYAGRAJ (U.P.) WITH SPECIAL REFERENCE TO VERTEBRATES AND ANGIOSPERMS

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Abstract:

The present study was undertaken to record the diversity of Balapur pond of the Prayagraj district of Uttar Pradesh with special reference tovertebrates and angiosperms. The Balapurpond was surveyed in detail once in a month for a period of one year from January 2018 to December 2018. The survey reflects a rich and flourishing biodiversity of the pond studied including 40 chordate species and 38 species of angiosperms. The notable chordate diversity includes 12 species of fishes, 2 species of amphibians, 7 species of reptiles, 11 species of birds and 8 species of mammals. Besides, several species of annelids, crabs, butterflies, moths, grasshoppers, ants, termites, lobsters, snails, other gastropods, planktons, algae, bryophytes and pteridophytes have also been observed. Considering the importance of rich biodiversity and highly productive ecosystem, the author suggests and strongly recommends for a complete study of the said pond both for diversity of plants and animals on large scale so as to offer a natural abode to the animals, a beautiful habitat to the plants and ecological gift to the environment.

Keywords: Angiosperms, Fishes, Amphibians, Reptiles, Birds, Mammals, Conservation, Balapur Pond, Wetland.

Abstract No. 5

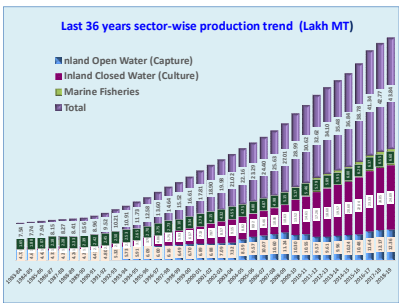
SUSTAINABLE AQUACULTURE AND MANAGEMENT PRACTICE OF BANGLADESH: CHALLENGES IN THE CURRENT PANDEMIC SITUATION

Binay Kumar Chakraborty
Consultant and Researcher
Former Director
Department of Fisheries, Bangladesh

Abstract:

According to report of FAO 2009, world population will be grown up from 6.9 bil. to 9.0 bil. and Global cereal demand to feed such population will grow from 2.1 bil.ton to 3.0 bil.ton in 2050. Accordingly, the population of Bangladesh will be risen up and would be a great challenge to secure the food security and quality food, safeguarding the environment and socioeconomic development of this increased population. Bangladesh has an inland water area of about 45,000 km^2 and about 710 km long coastal belt.Fish alone supply a per capita fish consumption of 62.58 g/day in the daily dietary requirement of total population. The total fish production was reached upto4.384 mill.mt in 2018-19. Overall growth rate of total fish production in 2018-19 was 2.52 percent. A sustainable aquaculture technology would be needed to grow more fish utilizing all resources available in the country. Important technologies like as polycultutre of Indian major carps and sustainable aquaculture of Pangas, Tilapia, Pabda, Gulsa, Tengra, Koi, Shing, Magur, mola etc. and Hilsa fisheries management,Beel nursery, Fish habitat rehabilitation, Fish centaury, breeding ground conservation and Pen culture in river has been practiced to increase the production of fish. A good aquaculture practice (GAD) is implemented to control using of potential impacts on public health risks chemical, biological and emerging agents. A major challenge would be faced by numerous natural and anthropogenic causes such as Challenges in the current pandemic situation, climate change, natural disasters, industrialization, over fishing and environmental pollution to overcome for a sustainable aquaculture development. According to different stakeholders (Fisher's, Fish farmer, Arotder, Paiker, Local social person, Department of Fisheries) about 30^{+}% of production would be affected by dropping of supply chain (seed, feed, medicine and other accessories to smallholder farmers) and others regular factors of environmental degradation.

Abstract Image:



Abstract No. 6

FISHERY BASED INTEGRATED FARMING SYSTEM

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Abstract:

Integrated fish farming has received considerable attention in recent years in many developing countries of Asia, Africa, America, Panama, Brazil, Hungry, Czechoslovakia and Poland. The sustained research efforts of the scientists in India would give optimum return to the farmers by judicious utilization of farm wastes which will result in the development of integrated farming systems. System is often referred to the mixed farming activities such as fish culture, livestock production and agricultural crop farming etc. System can promote the optional utilization of land, water, manpower and farm products and wastes produced on farm for the production of human food. The major contents of system consist of three aspects which include Integration of fish culture with the livestock/poultry and crop production, Multi-utilization of animal manure and waste produces on the farm and Polyculture system with an intensive culturing technology.

In integrated Fish Farming system, there are three types of integration based on the geographic features (a) Pond dike integrated farming system, including mulberry-dike pond fish farming, fruit-dike pond fish farming, bamboo-dike pond fish farming, Vegetable-dike pond fish farming and flower-dike pond fish farming etc. (b) Fish-cum-pig-cum-vegetable integration and fish-cum-crop integration, and (c) Complex integration of fish farming with livestock/poultry and crop production.

There are four principle species in polyculture system namely (a) Fish species selected are suitably cultured in local climate and they have a high economic value (b) Fish selected are not competing for food (c) The compatible relationship among different species can be maximized through polyculture and (d) Fish selected can fully utilize with a high conversion rate all types of food and waste produced in the integrated fish farm.

The species cultured include Indian major carps namely *Catlacatla*, *Labeorohita*, *Cirrhinusmrigala* and exotic carps namely *Ctenopharyngodonidella*, *Hypophthamichthyes molitrix* and *Cyprinus carpio*. The major advantages of the practicing integrated fish farming are (a) to form a beneficial circulation through optimal utilization of water, (b) to produce more varieties of the products (c) to create more employment opportunities and (d) to decrease the production cost and increase the economical return.

Key words: Integrated, Polyculture, Intensive, Livestock, Poultry, Dike.

Abstract No. 7

BIODIVERSITY AND CONSERVATION CHALLENGES FOR ENVIRONMENTAL HEALTH

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Abstract:

Habitats of freshwater existing in rivers, streams, springs and headwaters are heterogeneous due to variations in altitudes, flow rates, dissolved oxygen, physical substrate and the riparian zones that provide food, shade and cover**.** The biosphere constitutes a vital life support system for man. Its existence in a healthy and functional state is essential for existence of human race. It is complex collection of innumerable organisms the biodiversity which makes our life both pleasant and possible. No one knows exactly how many species occur on our planet. Scientist believe that the total number of species on earth in between 10 million to 80 million (Stock 1988, Wilson 1988). We have been able to enlist only 1.4 million species so far. Nature has taken more than 600 million years to develop this exceedingly complex spectrum of life. The existence of human race depends on health and well being of other life forms in the biosphere. However, we are losing this accumulated heritage of million years at a very fast rate. The onset of biological poverty or reduction in diversity of life forms is bound to have grave consequences for the entire living world. So, the biodiversity is basically species richness (plants, animals and microorganisms) occurring as an interacting system in a given habitat. The total number of races, varieties or species, i.e., the sum total of various types of microbes, plants and animals present in a system is referred to as biological diversity or simply biodiversity, which is significant as a valuable natural resource, instrument of maintaining a stable and healthy ecosystem, means of optimum utilization and conservation of abiotic resources in an ecosystem. The major causes of reduction in biological diversity are destruction of natural ecosystems (wetlands, mangroves, coral reefs ecosystems, tropical and subtropical regions etc), adverse changes in biotic or abiotic environment of an ecosystem (environmental pollution, overexploitation of selected species, habitat fragmentation, introduction of exotic species and natural calamities) and chain extinctions. The conservation of biodiversity are control of forest fires, avoiding of use slash and burn crop wastes, restrict use of bioenergy and biofuels, use of clean energies like solar and wind power for running industries and household lights, total ban on fuel woods (storage of wet carbon) for energy, use incinerators for burning dead bodies and capture of CO2 from air.

Key Words: Biodiversity; Species; Ecosystem; Environment

Abstract No. 8

SCOPE FOR ENTREPRENEURSHIP DEVELOPMENT IN FRESH WATER AQUACULTURE IN MARATHWADA REGION OF MAHARASHTRA STATE.

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Abstract

India is second largest aquaculture producer in the world and aquaculture is rapidly growing fisheries sector. Fresh water aquaculture contributes over 95% of the total aquaculture production. Fresh water aquaculture is mainly carp based. Marathwada region of Maharashtra state is endowed with vast aquatic fresh water resources which includes rivers, streams, lakes, reservoirs, ponds, farm ponds, barrages and tanks.

In Marathwada region, fisheries was mainly capture based. But in recent years, farmers have started adopting fish culture practices in various types of water bodies. The reservoir fisheries resources are available on large scale. But these resources are not fully tapped. These untapped resources can be utilized by applying modern technologies such as Cage culture and pen culture. In recent years large numbers of farm ponds are constructed under the various schemes of Government of Maharashtra. These farm ponds are basically made for water storage and used for agriculture and horticulture purposes. However, these farm ponds are found suitable for fish culture practices. This type of venture is proved as profitable venture especially for marginal farmers. Fishes like Catla, Rohu, Mrigal, Common carp are cultured in farm ponds. Other fishes like GIFT Tilapia, Monosex tilapia, Pangassius spp. are suitable for short duration. Many farmers and youth are attracted towards fish farming in farm ponds and have earned an additional income. Apart from this, there is tremendous scope of entrepreneurship development in composite fish farming, cage culture, integrated fish farming, etc. Modern technologies like biofloc fish farming and RAS are more profitable venture where fishes are reared at high stocking density. There are more opportunities in ornamental fisheries, value added fish products especially for rural as well as urban woman and youth.

This paper provides an insight into the scope of entrepreneurship development in fresh water aquaculture in Marathwada region of Maharashtra state with special emphasis on most possible ways for entrepreneurship development through fresh water aquaculture.

Abstract No. 9

"ICTHYO- PARASITIC DISEASES AND THEIR MANAGEMENT"

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Abstract:

The human population is tremendously increasing day by day all over the world and due to urbanization, industrialization the land resources are getting depleted. The production from agriculture is also under pressure or feeding to this population. Though there is development in agriculture sector and also in veterinary and fishery sector the increased production cannot fulfill the protein demands. In India there is very good scope for fishery development both in marine and freshwater sector. But the fishes are also prone to different diseases as like other animals and there are varied reasons and pathogens which gives impact on fish health and the quality and quantity production gets down. It will directly affects on the socio economic status of the communities which are dependent on fishery sector. It will also affects on the nutrition of the people by depleting the production of protein rich valuable commodity, fish.

There are different types of pathogens which causes different diseases in the fishes. They show very ill effects on their health and also the economic loss as a final result. There are varied causes of fish disease, which includes bad water quality, inappropriate diet, temperature (too high or too low), stress etc along with certain pathogens which belongs to Viral, Fungal, Bacterial, Parasites groups. In order to avoid and minimizing the impact of such diseases, proper care and management has to be undertaken. The details of the same are discussed in the text.

Key Words: Population growth, Fishery sector, Pathogens, Parasites, Diseases and Management

Abstract No. 10

RESTORATION OF VILLAGE POND - A STEP TOWARDS STRENGTHENING OF RURAL ECONOMY THROUGH INNOVATION IN AQUACULTURE

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Abstract:

Aquaculture also known as aquafarming is the farming of fish, Crustaceans, molluscs,aquatic plants, algae and other organisms. It represents the fastest growing food sector in the world.
It provides unmatched opportunities for employment generation, contribution to the food and nutrition security, upgradation of the lifestyle of aya farmers amd foreign exchange earning etc.
The Eastern part of Burdwan district is dominated by agriculture This part is abundantly equipped with natural resources in terms of land facilities and water reservoir etc.
A large number of ponds are found in the rural areas of this part which are not being used properly for aquaculture. There was no close relation between primary production and aquatic production in these rural ponds of eastern part of Burdwan district, West Bengal, India.
The common problems observed in these rural ponds are -

I) Deep green pond water is due to the presence of excessive algae which is the results of overabundance of nutrients like phosphorus, particularly when the water is warm and the weather is calm.
II) Muddy pond water
III) Red layer of pond water
IV) Oxygen depletion in pond and fish gasping for air
V) Excess ammonia
VI) Hydrogen Sulphide
VII) Black mud at the bottom of the pond
VIII) Larger aquatic plants in ponds

Sudden and considerable fluctuations in dissolved oxygen concentration, and pH, dumping of rubbish, open defecation, sewage discharge, throwing household debris, washing clothes, motor vehicles or bathing animals impair the poper functioning of other trophic communities, and enhances the decomposition process which ultimately lead to the improper functioning of whole ecosystem.
It is also observed that major constraints faced in the production and marketing of fishes and other aquaculture products are - violation and theft,non-availability of quality fish Seed, lack of government support both technically and financially, quarrel and litigation among owners of the ponds, poor adaptability of fish Seed in new environment, lack of preservation facilities, labour crisis, high degree of perishability of the product, cut -throat competition etc.
Use of transgenic technology, integrated farming and composite culture through proper training and support of all kinds are required to achieve rapid progress in rural areas.

We must focus on efficient use of all available resources with the intention of developing a self-sustained system which is highly economical and environment- friendly because ponds are one of the richest parts of biodiversity. A planned and long vision is necessary for the overall development of Aquaculture and rural economy.

Abstract No. 11

USE OF BIO-FLOC TECHNOLOGY IN AQUACULTURE

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Abstract

With the increasing human population, food production industries need to expand. With almost seven billion people on earth, the demand for aquatic food is increasing and hence, expansion and intensification of aquaculture production are highly required. In order to preserve the environment and the natural resources, this expansion will need to take place in a sustainable way. The main goal of aquaculture expansion must be to produce more aquaculture products without significantly increasing the usage of the basic natural resources of water and land. The second goal is to develop sustainable aquaculture systems that will not damage the environment. The third goal is to build up systems providing an equitable cost/benefit ratio to support economic and social sustainability. All these three prerequisites for sustainable aquaculture development can be met by biofloc technology.

Biofloc technology is a technique of enhancing water quality in aquaculture through balancing carbon and nitrogen in the system. The technology has recently gained attention as a sustainable method to control water quality, with the added value of producing proteinaceous feed in situ. The beneficial effects of this technology and some challenges for future research will be discussed in this lecture.

Abstract No. 12

STUDY OF *DIOPHRYS PECULIARIS* (FREE LIVING MARINE CILIATE) *FROM* GUHAGAR BEACH, RATNAGIRI, MAHARASHTRA STATE

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Abstract

The morphological features of a species of the genus *Diophryspeculiaris* are described with special reference to ciliature. These characteristics consist of an AZM,the frontal, ventral, left marginal, transverse, and caudal cirri. Comparisons were made with other speciesof the genus. The present paper defines the morphological characteristics of *D. peculiaris* by completing descriptions of certain structures, supplementing data of earlier studies by means of a morphometric survey andcollection of data that may be used to make taxonomic determinations withaccuracy.

Keywords: -Taxonomy, Morphology, Cirri,*Diophry*etc.

Abstract No. 13

STUDY OF SEASONAL VARIATIONS OF CLADOCERAPOPULATIONS IN SAVITRI RIVER AT POLADPUR TEHSIL DIST-RAIGAD, MAHARASHTRA.

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Abstract:

Cladocera are the most diversified group of Zooplanktons and play important role between the autotrophs and other heterotrophs. It forms an important links in food chain. Cladocera found abundantly river of Savitri. A total of 5 and 6 species of Cladocera were recorded in point I & II respectively. The first (52 U\L) and second 78U\L) peak was recorded in December 2018 and May 2019 respectively. The dominant Cladocera species was Daphiniaexcisum(20 U\L) and (22 U\L) was recorded in May 2018 and June 2019. DaphiniaPulex was the second dominant species. A total no. of 5 and 7 species was collected in first and second point during the study of diel variation. The data collected co-related to study the condition of river Savitri in the light of available literature.

Keywords: Cladocera, Diel variation, Zooplankton, Heterotrophs.

Abstract No. 14

EFFECT OF CLIMATE CHANGE ON FISHERIES SECTOR OF MAHARASHTRA: AN OVERVIEW

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Abstract:

Climate change has been attracting growing attention for its immediate and potential impacts upon the environment and human populations. Marine and coastal ecosystems are considered to be extremely vulnerable to climate-change processes such as ocean warming and sea-level rise, which have direct impact upon the lives and livelihoods of coastal fishing communities. Fish which is an important diet of people across the Maharashtra is under severe threat caused by climate change. In many coastal areas, fishing is both a primary source of income and a main source of protein. Changes in fish population and ecosystem from climate change are likely to in fact, in the fisheries sector, climate change is probably not a new problem at all; fishers have been experiencing its impacts since a long-ago affecting fisheries sector and national economics.The prevailing situation in fisheries, climate change will need to be understood as one major factor affecting fisheries and fishing communities. Based on the literature review and reports this paper is an attempt to identified a set of issues relating to climate change and climate variability as having significant impacts upon Maharashtra's fisheries sector and raise awareness at the fishing-community level about climate change and its possible impacts.

Key words: Climate, Fisheries, Maharashtra, Impact.

Abstract No. 15

WATER QUALITY ASSESSMENT WITH REFERENCE TO PHYSICO-CHEMICAL PARAMETERS OF BANSAGAR DAM DEOLOND, SHAHDOL (M.P.), INDIA

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Abstract:

Water is very essential elements for everyone's life. Fresh water is prime necessary for fit & healthy living. Drinking water, also known as potable water, is water that is safe to drink or to use for food preparation. Water in Rivers, Dams, Lakes, stream and underground may contain organisms that cause disease. It may also contain chemicals that might cause illness. Dam water is also used for drinking irrigation and for miscellaneous purposes. But these water bodies are going to polluted day by day with human civilization to and by human activities, like – washing clothes with soap & detergents, throwing plastics, polythene, Agricultural wastes, medical & paramedical wastes, effluents/many harmful chemical substances from industries, factories, Automobiles garage, paper mills and wastage from cities/towns sewage/drainage directly open to the rivers and Dams.

I am working in this field/Dam since last year and trying to know/tell to the society/Govt. that how much this water is safe to drink or polluted how much polluted and how many harmful biological and chemical agents/elements are present in this dam. In this regard, I'm doing experiments continue in universities Science lab./and in national lab at New Delhi which is recognized from the MoEF. I am monitoring continue the sampling water of this dam from each part and testing and analyzing its physical and chemical properties/parameters.

The purpose and objectives of the study (on the seasonally) and physic-chemical parameters of Bansagar Dam (at Son River) at Bansagar (Devlond) site in Shahdol District, M.P., India. Seasonally samples are collected in prescribed limits – according to world Health organization, Indian standard institute and other standard Indian agencies. Variation (seasonally) in physical and chemical parameters like pH, D.O. (Dissolved Oxygen), COD (Chemical Oxygen Demand), BOD (Biochemical Oxygen Demand), EC (Electrical Conductivity, Turbidity), D.O.M. (Dissolved Organic Matter), TH (Total Hardness), T.A. (Total Alkalinity), Chlorides, Sulphate (SO_4), Fluoride (F), Calcium ©, Magnesium (Mg), Sodium (Na), Potassium (K), Dissolved Phosphate (P), Iron (Fe), Mercury (Hg), Lead (Pb), Nitrate (NO_3), Free Carbon Dioxide (CO_2) etc. The analysis of the water quality parameters of the Dam (Bansagar Dam at Sone River) clearly indicated high pollution load on the Dam/River water. To maintain the sound environment and healthy ecosystem of the Dam (Bansagar Dam at Sone River) and the surrounding areas, proper management and monitoring of water quality of the Dam is needed.

Abstract No. 16

HABITAT FRAGMENTATION AND ITS EFFECT ON AQUATIC BIODIVERSITY

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Abstract:

Habitats are dynamic places where organisms live, eat and breed. Aquatic organisms are adapted to their specific habitat for survival whereas fragmentation is a leading threat, causing loss of biodiversity. It results due to anthropogenic activities like construction of Dams, bridges, roads, housing developments, etc. Habitat fragmentation is often a cause of species becoming threatened or endangered due to habitat degradation. Thus, there is an immediate need to conserve the natural ecosystems that will augment aquatic diversity and reduce the extinction rates.

Keywords: Habitat fragmentation, aquatic biodiversity, threatened, endangered, extinct.

Abstract No. 17

A NEW SPECIES OF AZYGIA ACETABULATA FROM FRESHWATER FISH *CHANNA PUNCTATUS*

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Abstract:

The present investigation deals with the systematic observation of a new species of *Azygiaacetabulata* from fresh water fish *Channa punctatus*. The worm is close to all species of genus *Azygia* in general short, cylindrical, non-spinous, dorsoventrally flattened middle broad end and narrow anterior and posterior end. Oral sucker is small and present surround the tip portion of the body. The ventral sucker or acetabulum is larger than oral sucker which oval in shape, placed at anterior end of body after oral sucker. Bladder 'y' shaped extends up to a little posterior to hind testis. Cirrus pouch elongated. The oviduct originated from the ovary and opens at oocyte. Vitellaria are follicular and arranged on two sides from ventral sucker to hind end of body. Eggs are oval, operculated, numerous.

Abstract No. 18

A STUDY OF POPULATION AND BEHAVIOUR OF MIGRATORY WATER BIRDS IN DIFFERENT FREESHWATER BODY OF WESTERN MAHARASHTRA

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Abstract:

Bird migration is the regular seasonal movement due to breeding, foraging, and feeding purpose. The pattern of bird migration has been long debated and there are many contending theories. South Western Maharashtra, especially Sangli district has different accessible tanks, river Krishna and their tributaries. These are the prime location for monitoring the water birds. I utilized the Morna, Chinchni, Kadegaon tanks, and river Krishna in Bhahe area, to count the number of each species present and record their behaviour. This information was used to elucidate which species are migrating through Northfield during November and gives a glimpse into their behaviour and which are resident migratory. I speculate that there would be difference in the populations present on each freshwater body, but there would not be a significant difference in the behaviour presented. However, results suggested no freshwater body preference, but behavioural difference between type of freshwater body present.

Key Words: Behavior, Freshwater body, water birds, Western Maharashtra

Abstract No. 19

SEASONAL VARIATION IN ZOOPLANKTON COMMUNITY FROM FRESH WATER PONDS AT KORIGAD, NORTH WESTERN GHATS, MAHARASHTRA.

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Abstract:

Korigad is known for fort Korigad, located at Ambavne village, Mulshi Taluka, Pune. It is a part of North Western Ghats of Maharashtra, situated 2950 ft. above sea level. Zooplankton variation was studied from two ponds present on top of Korigad hill, from February 2013 to January 2014. These exhibited hydro periods extending up to ten months. Anthropogenic activities like bathing and cattle grazing were recorded from low to medium level at these ponds.

Zooplankton community included copepod, cladocera, ostracoda, crustacean larvae and rotifers. Higher abundance of zooplankton was recorded during summer, whereas lower density was observed during monsoon. Copepod and cladoceran were dominant in K1 and K2 ponds respectively. Percentage contribution of cladoceransrangeed between 36% and 40%, whereas for copepods varied from 32% to 52%.

Zooplankton diversity was positively influenced by chlorides, calcium, total hardness, total alkalinity and conductance. Suspended solids showed negative influence on it. Ratio of N_{ca}/N_{cycl} showed higher value (1.05) in the month of March at K1 and higher value (20) in month of February at K2. Ratio of Rotifers:Cladocerans:Copepods varied from 0.04:0.40:0.52 to 0.30:0.36:0.32, K1 pond showed enriched conditions as compared to K2.

Key words-Western Ghats, Korigad, Zooplankton, Copepods, Cladocerans

Abstract No. 20

PHYSICOCHEMICAL ANALYSIS OF THANE CREEK WATER

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Abstract:

Physicochemical analysis of creek water from three stations at Thane i.e.,1) Ganapati Ghat, Retibundar Road, Mumbra Thane west, 2) GanapatiGhat, Kopri, Thane East and 3) Saket, Thane west, was carried out to determine the water quality of creek of Thane. Earlier studies have shown that the creek waters are highly found to be polluted through various sources. Hence it was felt necessary to conduct physicochemical analysis to know the status of today's pollution load, on the creek water of Thane. The results so obtained through this work will help us to know the pollution load on the creek, for which majority of life existing on the creek, may come under being destroyed forever of this rich biodiversity and rich ecosystem, if precautions and remedial measures are not taken to conserve and preserve this rich ecosystem and biodiversity, which nature has bestowed on Thane, at this stage to stop illegal activities from different sources polluting the creek water, which may finally affect man and ecosystem and disturbed the biodiversity of the creek in the long run.

Abstract No. 21

AQUATIC ECOSYSTEM AND AQUA-FARMING

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Abstract:

Aqua-farming plays an important role in providing foods and healthy diets, there are concerns regarding sustainability of prevailing practices. In the world aquaculture remained as the fastest-growing food production sector in the last decade. Asia has been the center of aquaculture production for decades and currently, more than 90 percent of the total aquaculture production comes from Asian countries. Aquaculture continues to maintain its position as a major provider of protein-rich sea-food. Capture fisheries cannot meet the demand. Small-scale fisheries and aquaculture make critical contributions to development in the areas of employment, with over 41 million people world-wide, the vast majority of whom live in developing countries, working in fish production. So aqua-farming constitutes an important source for mankind. Aquaculture must grow rapidly to make for the shortfall in seafood supply by addressing the mounting challenges that constrain its expansion (Holmer*et al.*, 2007). The present study is a review of literature and conducted to bring together information available on the aquaculture ecosystem and aqua-farming, trends and changes in fisheries. Google search methodology was acquired.

Keywords: *aquaculture, trends, ecosystem, production*

Abstract No. 22

RECORD OF MONOGENETIC TREMATODE: PARASITES OF CATFISHES FROM YIELDARI RESERVOIR, PARBHANI DISTRICT

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Abstract:

The present paper deals with the record of monogenetic trematode of the genus *Dactylogyrus*which was collected for the first time in Parbhani District from fresh water catfishes *(Clariusbatrachus)* of Yieldari Reservoir. The specimen of *Dactylogyrus* was collected from gills of *Clariusbatrachus*. The present study was carried out from June to the end of May 2019. The gills of 12 out of 45 fishes were found to be infected.Only four fishes show the abundance of *Dactylogyrus* parasite.

The collected parasite was identified and morphological characters were briefly described.

Keywords: Monogenean parasites, *DactylogyrusmolnariErgens et Dulma, 1969. (Redescribed), Clariusbatrachus,*Parbhani District, Yeldari Reservoir.

Abstract No. 23

LEGAL FRAMEWORK FOR CONSERVETION OF FORESTS IN INDIA

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Abstract:-

Of all our natural resources, forests are, in fact, the most suffered victims of our ruthless activities. For their protection, management and conservation we have important central legislations, namely, the Indian Forest Act, 1927 and the Indian Forest (Conservation) Act, 1980 in addition to various state Acts on forest.

The Indian Forest Act. 1927 was enacted to consolidate the law relating to forest, the transit of forest produces and the duty livable on timber and other produce. Prior to this Act the law relating to the administration of forest was enacted for the first time in the form of Forest Act, 1865 and late was codified in the Indian Forest Act, 1878 and its amending acts. The Act, therefore, embodies the colonial policies of per-independence era. After the independence, forests were placed on the state list of the Constitution and the forest departments of individual states continue to regulate forests in accordance with the Indian Forest Act of 1927, as implemented by state regulations.

The Forest (Conservation) Act of 1980 as amended in 1988 prohibits state governments from declaring any reserved forest or any portion thereof, as non-reserved without the prior approval of the central government. It also prohibits the state governments from allotting any forest land, or any portion thereof, for any non-forest purposes. The state governments cannot, without the previous sanction of the Central Government, assign by way of lease or otherwise any forest land or any portion thereof to any private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by the government,

Keywords:- Forest, Protection, Conservation, Legal Mechanism, Pollution.

Abstract No. 24

ANTHROPOCENE TO TESTIMONY VANISHING FRESHWATER BIODIVERSITY

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Abstract:

On Earth, freshwater ecosystem is the most varied vibrant ecosystem. Fresh water makes up only 0.01% of the World's water and approximately 0.8 % of the Earth's surface, yet this tiny fraction of global water supports and sustains more than 126,000 species in its ecosystems. Due to its maximum share of planets biodiversity, they are global hotspots of biological richness with high rate of dwindle too. Fresh water is the basic need of ever-growing population and its scarcity has created rivalry among its users especially in the densely populated parts of the world. Freshwater biodiversity is a priceless natural resource in terms of scientific, economic, educational, and cultural aesthetics. At present, this precious ecosystem is in very critical crisis and its conservation is vital. Overexploitation of freshwater resources, pollution of water through various anthropogenic ventures, water flow modification through construction of dams and canals, habitat loss, exotic speciesinvasion and theircombined and interacting influences are the prime causes of vanishing freshwater biodiversity in Anthropocene. Apart from these direct threats to freshwater ecosystem, the climate change poses a greatest risk. The supplies of freshwater ecosystem in terms of food captures to meet the demands of protein requirements will sustain only when fresh water ecosystems remain healthy. The rate of decline of vertebrate populations is far greater in freshwater ecosystem than in terrestrial or marine ecosystems. Recently scientists have identified contemporary pressures on freshwater ecosystems and documented twelvemajor emerging threats to freshwater biodiversity. In this review, an effort done to highlight the key forces declining the freshwater biodiversity and probable means to inverse the global trends in freshwater biodiversity depletion.

Keywords: Biodiversity; Climate change; Ecosystem; Freshwater; Habitat loss; Pollution.

Abstract No. 25

IMPACT OF CADMIUM TOXICITY ON THE BEHAVIOUR AND OXYGEN CONSUMPTION IN AN AIR BREATHING FISH *CHANNA GACHUA*

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ABSTRACT

Discharge of heavy metals into aquatic environment from various sources even below permissible levels creates health hazards in aquatic organisms. The persistence and ubiquitous nature of these pollutants coupled with their tendency to accumulate in organisms ultimately produce toxic reactions in aquatic biota especially fishes. This gives an overview of the heavy metal cadmium which is considered as one of the most toxic heavy metals. It deals among issues of the toxic effects of cadmium on the aquatic biota with emphasis on *Channagachua* and the public health implication. Toxic metal are usually present in industrial municipal and urban runoff which can be harmful to human being and biotic life. Increased urbanization and industrialization are to be blamed for an increased level of trace metal especially heavy metals. There are more than 50 elements in periodic table that can be classified as heavy metals including 17 out of 50 are to be considered as a more toxic since cadmium is one of the most common heavy metal found in water bodies. Cadmium is extremely toxic even in low concentration and will bio-accumulate in organism and ecosystem and it has long biological impact in the human body ranging from 10-30 years. Cadmium in high doses induces structural and function alterations in various vital organs including liver kidney and gills of *Channagachua.*Cadmium unlike synthetic compounds is a naturally occurring element and its presence has been detected in more than thousand species of aquatic and terrestrial flora and fauna. It is released to the biosphere from both natural and anthropogenic sources. Cadmium is considered as one of the top pollutants in most countries and international organization. Static bioassay tests were carried out in order to evaluate LC 50 values of Cadmium chloride in fresh water air breathing fish *Channagachua*as well as to observe behavioural alterations posed by Cadmium. The LC 50 values for 24, 48, 72 and 96 hours were found 434.73, 409.87, 401.32 and 392.93 mg/L respectively. The major behavioural alterations observed during the experiments where erratic swimming restlessness muscle spasm profuse mucous secretion dis-colouration of the integument and cutaneous ulcerations in exposed fish*Channagachua*. The overall increase in opercular beats in exposed fishes was also recorded throughout the experiments. Cadmium is toxic to animals which enters surface water from various sources. Being reactive it imparts acute and chronic poisoning. Fishes survive in close interaction with the water through their gills and thus susceptible to heavy metals drained from various sources.

KEY WORDS: Cadmium Toxicity, Behaviour, LC 50, *Channagachua.*

Abstract No. 26

FRESHWATER PELECYPOD *LAMELLIDENS CORRIANUS*IN THE CONTEXT OF SEASONAL EXCRETORY CHANGES

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ABSTRACT

Freshwater ecosystem is most vulnerable and the freshwater biota is at continuous risk due to increased anthropogenic activities. Specially the freshwater pelecypode like *Lamellidenscorrianus* which are bottom dweller cannot migrate such a long distance in water are mostly affected due to human intervention. As freshwater is essential for us, we are not only consuming it but polluting it which causing severe threat to all the freshwater ecosystem. The distribution and biology of these freshwater bivalve like *Lamellidenscorrianus*is influenced by local ecological factors (like temperature, pH, inorganic salts, type of soil etc.), water flow system and presence of micro-organisms, teleost fishes and seasonal variations in these parameters. Nitrogenous excretory changes which include ammonia in these molluscs is also influenced by these local ecological factors in which temperature is playing the very crucial role. It is well known fact that the high stress conditions during drought or severe winter conditions have been conquered by several lineage of gastropods and sand bivalves, and their ability to enter the resistant or dormant stages (low food) protein catabolism increased.Present investigation deals with the ammonia excretion in the freshwater pelecypode*Lamellidenscorrianus* which show significant changes in summer, monsoon and winter.

Key words: Excretion, Freshwater, Pelecypode

Abstract No. 27

A SURVEY OF FRESHWATER FISHES FROM DEOLA MARKET

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ABSTRACT

The objective of the present work was to study the ichthyofaunal diversity of fishes ofChankapur dam, Nashik district, Maharashtra state. The present work was carried from 2018 to 2019 from the reservoir and fish diversity is represented by 38 fish species belonging to 25 genera,14 families and 8 orders. Besides identification, the economic importance of fish species is also discussed.

Key words: fish diversity, economic importance, Chankapur

Abstract No. 28

SURVEY OF LEPIDOPTERIAN DIVERSITY FROM OSMANABAD REGION MS (INDIA)

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Abstracts

Moths constitute the larger division of the order Lepidoptera. The samples were collected from Osmanabad region four different habitats as Desert area, vegetation, landscapes, crop fields and grassy lawns. Specimens were captured by direct hand picking and with the help of hand nets. They were preserved later by mean of dry preservation. The taxonomic status was determined with the help of available identification keys and online web sites. A study on moth fauna was conducted at Osmanabad region from October 2020 to December 2020. The aims of the study were to acquire information of moth diversity and to access the composition of the species at this area. It is concluded that these findings seemed to be helpful in ecological management of the ecosystem.

Key words: Moths, Diversity, Identification and Osmanabad

Abstract No. 29

EFFECT OF *RHIZOBIUM* ON HEIGHT AND NITROGEN CONTENT OF PLANTS

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Abstract:

Rhizobium species are group of bacteria that fixes atmospheric nitrogen symbiotically in leguminous plants such as soybean and urid beans. The present paper gives an idea of the of the height and nitrogen content of the selected plants. The study is important as Marathwada region is an area with uncertain range and drought. The study includes identification of nitrogen fixing Bacteria.*Rhizobium* strains only, further investigation of identification of species is under way.

Key words: Rhizobium, Nitrogen content, Plants, Marathwada

Abstract No. 30

IMPACT OF CLIMATIC CHANGES ON FRESHWATER FISH AND FISHERIES

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Abstract:

In this paper, the author discussed climate change impact on aquatic environment, especially freshwater ecosystem i.e. ponds, lakes, rivers and negative effects on freshwater fisheries. The climate changes from air and water surface temperature, rainfall, drought, changing water level and flood events. The effects of climate change on fishes and their vital activities such as, physiology, behavior, growth, metabolism, food consumption, habitat, reproduction etc. resulting loss in fish production, decline fish farming as well as disturbed food chain in aquatic ecosystem and also will impact on cost of fish and great difference in income of fisherman.

Key words: Freshwater, climate change, fish, fisheries

Abstract No. 31

SEASONAL VARIATION IN WATER QUALITY PARAMETERS OF BENDSURA RESERVOIR MAHARASHTRA

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Abstract:

The present study shows the seasonal changes of physicochemical parameters of Bendsura water reservoir namely Water temperature, PH, DO, Cl, CO2, BOD, Alkalinity, PO4, TS, TDS. All parameters were recorded in every months of July to December-2018.It was found that no more significant differences in the variability of physicochemical factors. The water of Bendsura reservoir is suitable for drinking purpose before proper treatment. Bendsura reservoir is also suited for agricultural and aquaculture potential. Hence, present work has to be undertaken.

Keywords: Physicochemical Factors, Bendsura reservoir, Water quality.

Abstract No. 32

EFFECT OF FORTIFICATION WITH PLANT EXTRACTS OF *FICUS RACEMOSA* L. ON REARING PERFORMANCE OF *BOMBYX MORI* L.

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Abstract:

The Mulberry Silkworm, *Bombyx mori* L. fifth instar larvae were fed on mulberry leaves fortified with plant extracts of *Ficus racemose*. with concentration (1:2, 1:4 and 1:8) on the biological parameters of silkworm *Bombyx mori* L., its impact on the larval weight, mortality, cocoon weight, shell weight, pupal weight, shell ratio, filament length, filament weight, denier and Number of filament breakages was investigated. The result was shows very interesting and positive for all biological character of *Bombyx mori* L. under study. The present study plays very important role in improvement of silk quality and quantity which is in turn helping to farmer to improve their economic status.

Keywords: Mulberry leaves, *Bombyx mori*,*Ficus racemose* L., Rearing performance.

Abstract No. 33

THE IMPACT OF GLOBAL CLIMATE CHANGES ON THE AQUATIC ENVIRONMENT

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Abstract-

Change in the global environment which alter the capacity of the Earth to sustain life called as global climatic changes which includes climate alterations, land productivity, water resources including oceans, atmospheric chemistry etc.

Climatic changes are most drastic variables interacting with all live aspects of the world's developments equations. This definition defined in the 1990 by Global change Research Act (GCRA), U.S. Some Interactivity variables are the melting glaciers sea level rise, coastal erosions, increase in ocean acidity, g global warming, increased biological invasions and deteriorated biodiversity. The climatic changes are the transcontinental issue. Consequences of climatic changes was primarily originated from the hydrologic changes in global water that slowly moved forward towards the land this continuous process ongoing of coastal land erosions. Such climatic changes ultimately leads to great impact on the aquatic biodiversity are the inland aquaculture, eutrophication.

Therefore, without creatine international initiative to save the ecosystem from climatic changes there will be possible endangering effects on all living creatures on the earth plane.

Key words- global warming, climatic changes, biodiversity, aquatic plants.

Abstract No. 34

STUDIES ON FISH DIVERSITY OF KHANDALA AND BORI RESERVIORS IN OSMANABAD DISTRICT, MAHARASHTRA.

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ABSTRACT

Paper deals with the stud of fish diversity of Khandala and Bori reservoirs in Osmanabad District. Maharashtra. The work was carried out during the year 2019 (January to December) The water of these two the present reservoirs are mainly used for Drinking, Agriculture, Fish-culture and Domestic use.

The result of Khandala and Bori Reservoirs of the Osmanabad District revealed the occurrenceof 24 species belonging to 5 orders and 11 families. The order cypriniformes was dominant followed by order siluriformes order perciformes order osteoglossiformes and synbrarichiformes.

Key-words: Fish biodiversity – Economic Khandala and Bori Reservoirs Osmanabad District.

Abstract No. 35

EVALUATION OF GROUND WATER QUALITY OF NALDURG, DISTRICT OSMANABAD (M. S.) INDIA.

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ABSTRACT

The present communication deals with the study of Evaluation of ground water quality of NaldurgDist-Osmanabad (M.S.) India. The was carried out during the year 2019 (Jan. to Dec.). for are valuation of ground water quality to analyze some physico-chemical parameters such as pH, Conductivity, Dissolved oxygen, Free CO_2, Total hardness, Total alkalinity, Chloride, Salinity and Total Dissolved Solids etc. All the values of samples found higher than the normal value.

Key-words – Ground water quality – Naldurg– Osmanabad.

Abstract No. 36

SPATIO-TEMPORAL ABUNDANCE OF THE ZOOPLANKTON, *Paramecium caudatum* IN BAGMATI RIVER, KATHMANDU, NEPAL

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ABSTRACT

The present investigation was carried out in Bagmatiriver, a lotic water body, situated in Kathmandu, Nepal, in three different sampling stations from November, 2018 to May, 2019. Monthly samples were collected from those sites and analyzed for six months period. The longitudinal distribution and seasonal fluctuation of the zooplankton, *Paramecium caudatum* Ehrenberg, 1834 was studied along the higher elevated to lower slanting part of the river. When the abundance of *P.caudatum* was observed, a maximum population of 3500 no. L^{-1} of riverine water to minimum 150 no. L^{-1} of *P.caudatum* was noted. The Site 2 Pinglasthan showed high abundance, Site 1 Sundarijal low abundance and Site 3 Chobhar lowest abundance of the population of *P.caudatum* due to highest infusion of organic materials, low infusion of organic materials, and highly pollution, respectively.

Keywords: Bagmati River, zooplankton, *Paramecium caudatum,* Nepal

Abstract No. 37

STATUSOF FISHES IN THE MAJALGAON DAMRESERVOIR ON SINDPHANA RIVER, GODAVARI BASIN IN MAHARASHTRA STATE, INDIA.

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ABSTRACT

Water covers more than 70% of the earth's surface. The high specific heat of fusion, latent heat of evaporation, high surface tension, high density and powerful solvent nature of water plays a significant role in regulation of different activities in organism.

The present investigation was carried out to study the aquatic vertebrate animals with special reference to fish fauna of Majalgaon dam reservoir water during the year 2018-2019 (June to May). The Majalgaon dam water is mainly used for drinking, irrigation and fishing purposes and also establishes Hydroelectric Project on left canal from this 2.5 Mega/Hz power production.

During the study period 11 species observed on different order and family. Order Cypriniformes, Ophiocephaliformes, cyprinsformes, Osteoglossiform, Mastacembeliforms, Cypriniformes, family. Cyprinidae belong to five species observed i.e.*Labeorohita, Cyprinuscarpeo, Catlacatla, silver carp. Cirrihinusmrigal* and other species belong to families Siluridae, *Mastacembelidae, Notopteridae, Channidae and Bagridae*. In the reservoir culture of the fish and production of Catlacatla.

Key Words:Majalgaon Dam*, Catlacatla, Cyprinuscarpio, Notopterus chital.*

Abstract No. 38

"EFFECT OF TRIBUTYLTIN OXIDE (TBTO) ON HISTOLOGICAL STRUCTURE OF MANTLE OF THE FRESH WATER BIVALVE, *LAMELLIDENSMARGINALIS*" FROM GODAVARI RIVER AT MAHARASHTRA, INDIA.

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ABSTRACT:-

The aim of the present study is to study the significant Histological changes seen due to Organotin Compound TBTO on mantle of fresh water bivalve species *L. marginalis*. Organotin compound is generally used on large scale as biocide in Aquatic ecosystems. The bivalves are bio-indicators to determine aquatic pollution on large scale in Riverine Ecosystem. Histological study of these reflects the health of an entire aquatic ecosystem in the bio-monitoring process. Histological responses may also serve as Eco-toxicologically meaningful biomarkers since they form an important link between effects at the biochemical level and those measured in whole organism. The adverse effect of Tributyltin Oxide has been studied on mantle of freshwater bivalve. To study the acute lethal dose of Tributyltin Oxide the acute toxicity of TBTO is calculated under controlled laboratory conditions at 24 hrs , 48 hrs , 72 hrs and 96 hrs respectively. *L. marginalis* exposed to Tributyltin Oxide to 4.2 ppm, 3.6ppm, 2.8 ppm and 1.6 ppm for 24, 48, 72 and 96 hours respectively and studied its effect on the mantle. Results were compared with control group and illustrated histological changes in mantle. The results show gradual degenerative changes in its mantle. The severe damage was observed in the tissue of 72 & 96 hrs exposure to TBTO than compared to 24 & 48 hrs. Results showed damage to mantle tissue as exposure period increases and this was noted for all three observations.

Keywords:*Lamellidensmarginalis*, Bis (tributyltin) oxide, TBTO, Mantle etc.

Abstract No. 39

LOTUS LAKE ODONATES THEIR ABUNDANCE, DIVERSITY AND HABITAT CHARACTERISTICS

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Abstract

Lotus Lake is a shallow perennial water body, located on Toranmal Plateau at 21° 53′ 20′′ N latitude, 24° 28′ 01′′ E longitude and 900 mAMSL with 1.17 Km perimeter, it spreads in 3.5 hectare. The vegetation around the lake includes few tall trees as well as dominated by herbaceous vegetation and shrubs. Line transect (500 m length) method was used for study of odonates in Lotus Lake area. Seasonal variation of odonates density and species richness was studied of Lotus Lake area. Mean, Standard Error of Mean (SEM) were calculated for each season and One-Way ANOVA for four seasons was performed. Significant seasonal variations were recorded in total odonate density with maximum density recorded in post-monsoon and minimum in summer. Maximum species richness of total odonates was recorded in post-monsoon and minimum in summer. When two groups are considered separately, the richness of dragonflies and damselflies were maximum in post monsoon, while minimum in summer. Though, the current limited basic information restricts the use of odonata as biological indicator in Lotus Lake area at this stage the results of present study provide insight into some critical elements of habitat integrity for conservation of lacustrine odonates associated with littoral zone habitat.

Keywords: Lotus Lake, Toranmal, odonates, Seasonal variation, species richness, habitat

Abstract No. 40

STUDY OF SEASONAL VARIATION OF ROTIFER AND THEIR CORRELATION WITH PHYSICOCHEMICAL PARAMETERS OF BALDANE RESERVOIR, DIST-NANDURBAR (M.S.) INDIA.

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Abstract:

Seasonal variation of rotifers density and species richness was studied of Baldane reservoir, Dist-Nandurbar. The two-year data so obtained were analyzed for seasonal variation. The data subjected to one way ANOVA. The Pearson Correlation was calculated by keeping rotifer as dependent variable and other abiotic factors as independent variables. The results given in the form of Mean and standard error of mean. This revealed that the density of rotifers was maximum in summer, while it was minimum in winter. Total twenty-five species of rotifers were recorded. Maximum species richness of rotifers was recorded in summer while minimum species richness was recorded in winter. The rotifer community structure depends on a variety of environmental factors that include biological parameters, such as predation or competition, as well as various physico-chemical factors.

Key Words: Baldane reservoir, rotifers,Pearson correlation, Seasonal variation.

Abstract No. 41

STUDY ON BIRD DIVERSITY OF MAJAL WATER RESERVOIR OF TAL. – LANJA, DIST. – RATNAGIRI, MAHARASHTRA

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Abstract:

The present research article deals with the study of bird diversity of Majal Water reservoir which is located in Lanja taluka of Ratnagiri district with unique geographical conditions. The water reservoir was constructed under minor irrigation project by the Government of Maharashtra with the intension to fulfill the need of water during the summer season for irrigation to agriculture. Biodiversity point of view, the importance of this reservoir is increased due to observation of frequent visits of wild animals.

In the present research we have visited this water reservoir and adjoining area frequently to study the importance of it from bird diversity point of view. We have prepared checklist of them. Along with the diversity we have also focused on the abundance of birds in study area and compared the checklist with the IUCN status.

Key words: Birds, Diversity, Majal.

Abstract No. 42

MORPHOLOGICAL VARIATIONS IN THE SCALES HAVE SIGNIFICANT ROLE IN FISH IDENTIFICATION AND ITS CONSERVATION THOUGH OTHER BIOMOLECULES NOT AVAILABLE.

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Abstract

Fishes are one of the widely diverse groups of animals in the world. Due to overfishing and habitat destruction this diversity is decreasing. Taxonomic identification of fishes is essential in conservation study and to understand their role in the aquatic ecosystem. The study of scalesMorphology of scales on fish body provides new and useful information in the field of taxonomy of fish and paleontological analysis. The main purpose of this study was to determine the scales morphology and the surface structural details and specialties like circulii, radii and focus. Otherstructures like tubercles, denticles, radial, canals, chromatophores, ctinii were also noted with specifications, arrangement and numbers on the scales. The teleost species *Notopteruskapirat, Tilapia mosambica*and*Etroplussuratensis* were selected in this study from Godavari river basin. Other than morphological characters Using phase contrast microscopy, the microphotography of selected characters of the scales were noted. From the result, it was concluded that fish scales have a numerous hidden detail in their structures and they are new advanced tool in fish systematics even after not getting the whole fish sample or other biomolecules but availability of scales only.

Key Words:teleosts, scale morphology,species conservation, Godavari river.

Abstract No. 43

DIVERSITY OF AQUATIC AND WETLAND ANGIOSPERMIC MACROPHYTES IN THE DHAR DISTRICT OF MADHYA PRADESH, INDIA

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Abstract

During the study of the diversity of angiospermic macrophytes flora of aquatic and wetlandVegetation in Dhar district of Madhya Pradesh 60 species, belonging to 53 genera and 35families were recorded. Besides correct botanical names, their flowering and fruiting period, local name if any are also provided in the article.

Key words: Angiospermic macrophytes, Dhar district.

Abstract No. 44

NUTRIENT COMPOSITION OF *XENENTODONCANCILA* (HAMILTON, 1822) FROM BHIMA RIVER OF MAHARASHTRA, INDIA

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Abstract:

As per Fish Base Indian freshwater support about 1030 species of freshwater fish hence it classifies as a freshwater eco-region. Fishes provides nutritional and financial security to the marginalized communities. Few of fishes consider as trash fish because of low market demand, such common trash fish species *Xenentodoncancila* (Hamilton, 1822) which inhabits across the Indian freshwater were studied for proximate analysis. Estimation of the nutritional profile of fish which are fit for human consumption is essential and thus a bio-monitoring study was carried out to find out the proximate composition of freshwater needlefish *Xenentodoncancila* (Hamilton, 1822) in Bhima river of Maharashtra. Bhima river is the major tributary of Krishna river system, flows for 681km before entering Krishna.Carbohydrate,protein, lipid (fat), ash and moisture composition in the muscle of fish species were studied. Proximate analysis revealed that the percent of protein is15.86±0.23, lipid (i.e., fat) 0.71±0.01, Ash 3.57 ±0.06 and moisture 78.11±0.09. the result fine near similar to the previously literature. Hence fishes of Ujani reservoir of Bhima river are recommended for consumption. The results can be used as a baseline data for comparing the various nutritional profiles of fishes in future.

Abstract No. 45

"AQUATIC MACROPHYTES OF HARDA DISTRICT OF MADHYA PRADESH, INDIA"

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Abstract

Aquatic macrophytes are predominantly grown in water. These are considered as important constituents of aquatic ecosystem. Harda lies between parallel of latitude 21^0 54' - $22^0$36' N and between parallel of longitudes $76^0$46' – $77^0$30' E. It is bounded by Satpura ranges and extension of Malwa plateau in the south. Narmada River is flowing in the north along its tributaries. The survey has been carried out to investigate the marshy and aquatic macrophytes of Harda district of Madhya Pradesh, India. 117 species belonging to different genera of aquatic plant life were recorded. Aquatic macrophytes of Harda district are observed during extensive survey of the district during 2011-2016. Dicotyledons have 67 species and Monocotyledons have 50 species found of aquatic macrophytes in Harda district of Madhya Pradesh. The name of the species, family and habitat of the marshy and aquatic macrophytes has also been noted in the present paper.

Keywords: Harda, Satpura ranges, Malwa plateau, aquatic macrophytes, Narmada River.

Abstract No. 46

THE GLOBAL CLIMATE CHANGES AND ITS IMPACT ON AQUATIC ENVIRONMENT

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Abstract

Aquatic ecosystem is one of the critical components of the Environment. In addition, it is an essential contributor to biodiversity and ecological productivity and also provides variety of services to the human being. The Climatic changes are the most desperate variables interacting with all live aspects of the world's development equation. Global climatic change, as defined by the U.S. Global Change Research Act of 1990 (GCRA), "means changes in the global environment (including alterations in climate, land productivity, oceans or other water resources, atmospheric chemistry, and ecological systems) that may alter the capacity of the Earth to sustain life". One of the very clear fact is that climatic change is not a country made product, however, it is a trans-continental issue. The effects of increased atmospheric CO2 concentration or the change in ocean chemistry will definitely affect the biological and the physical features of the coastal system. Thus, resulting in the loss of marine biodiversity, shorelines and fisheries while combined impacts of wildfires insect outbreaks decrease the forest productivity. The release of CO2 and methane released from aquatic lands and permafrost soil enhance the rate of climatic change. The impacts are experienced globally however some regions will be more acutely affected than the others.

Keywords: Global warming, climatic changes, biodiversity, aquatic animals, ecological productivity,permafrost soil.

Abstract No. 47

ANALYSIS OF DRINKING WATER OF DIFFERENT PLACES A REVIEW

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Abstract:

Water is one of the most important compounds that profoundly influence life.The quality of water usually described according to its physical, chemical and biological characteristics. The Study is based on the analysis of drinking water parameters in an educational institute situated in Singoli Industrial area in Osmanabad city. In this paper different authors papers summarized on water analysis and their treatment processes in different region which is helpful to know the treatment processes and parameters used in the study. The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life.

Drinking water samples were collected from different area. After collection of samples different parameters like, PH, Total alkalinity, Total hardness, Chloride, Sulphate, Fluoride, TDS, Conductivity, carbon dioxide, Calcium hardness, Dissolved oxygen, were studied. Result showed that seasonal variation in water parameters at different area. The chemical analysis of water was carried out in the light of APHA (1985) and compared with the WHO, ICMR and ISI standard.

In this paper, different authors' papers are summarized on water analysis and their treatment processes in different region, which is helpful to know the different treatment processes and parameters used in the study.

Key Words: Drinking water, Water quality, Different parameters, WHO.

Abstract No. 48

ANTI-INFLAMMATORY EFFECTS OF EXTRACT FROM *PLUMBAGO ZEYLANICA*

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ABSTRACT

Plumbago genus (Family-Plumbaginaceae) be one of the most significant medical vegetation which are used for anti-inflammatory, antimicrobial disease. Our work involves the instruction of anti-inflammatory and cytotoxic property of *Plumbago zeylanica.* The root of *P. zeylanica*extract with methanol was use for formative anti-inflammatory effects. The methanol extracts at 350 and 500 mg/kg produced 32.05 and 61.2% inhibition of acute inflammation, in that order, in Carrageenin induce raw paw oedema confirm that *P. zeylanica*roots are well-organized against acute inflammation. For the assessment of cytotoxicity, the crude dichloromethane remove was subjected to silica gel column chromatography and120 fractions becomposed. The lethal concentration (LC50) price was experiential for crude remove,betasitosterol, gugultetrol-18-ferrulate and it was originate to be 90, 75 and 65 ppm, in that order. The use of *Plumbago* species as ansuccessfulanti inflammatory agent and its cytotoxic belongings have been ascertained and proved. Their structures were elucidated with the help of spectroscopic technique. High presentation fluid chromatography (HPLC) was performed to decide the purity of gugultetrol-17-ferrulate in crude remove and the structure of betasitosterol and gugultetrol-18-ferrulate be identified by means of nuclear compelling character spectroscopy investigation (1H and 13C NMR), Infra-red and mass spectroscopy.

Key words: *Plumbago zeylanica,*highpresentation fluid chromatography,anti-provocative, cytotoxicity, betasitosterol, gugultetrol-18-ferrulate,.

Abstract No. 49

ANTIBACTERIAL PROPERTY OF PERIPHYTIC CAROTENOID EXTRACT

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ABSTRACT:

Isolation of bioactive compounds relies greatly upon proper extraction strategy. Sustainable aquatic resources periphyton was exploited to extract carotenoid by means of acetone-petroleum ether and ethanol. The identification of carotenoid has been through paper chromatographic approach. Carotenoid extracts were studied for antibacterial activity. This provides new option in production of novel drug in pharmaceutical industries. For this study the periphyton was collected from canal of kalamnoori district Hingoli, Maharashtra. In the study it was noted that the ethanolic extract showed the highest antibacterial activity than acetone-petroleum ether extract. In present study, the extract and extract residues showed the antibacterial activities against *S. aureus, P. aeruginosa* and *E. coli* by diffusion method. The result showed that the extract showed highest zone of inhibition against *E. coli* (18mm) and extract residues showed highest zone of inhibition against *S. aureus* (17mm). The concluded that, periphyton collected from canal of kalamnoori, showed promising antibacterial activity against *S. aureus, P. aeruginosa* and *E. coli.*

Keywords: Carotenoid, Periphyton, Antibacterial, *S. aureus*

Abstract No. 50

IMPACT OF PHYSICAL PARAMETERS ON UPPER MORNA RESERVOIR, MEDSHI, MAHARASHSTRA

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Abstract:

Water in Upper Morna reservoir is used by local people not only drinking purposes but also for washing of clothes and utensils, bathing purpose, cleaning animals therefore, it requires maintaining the water quality. Mostly the reservoir water uses for irrigation purposes because all the area surrounded the dam is field area, so during runoff water in monsoon the chemical fertilizers, pesticides are coming inside reservoir and affects the flora and fauna of water body, so it need to conserve the water properly from it. Anthropogenic activities increase the pollution in reservoir so, it is important to analyze the quality of water by using different parameter, physical parameter like color, pH, Temperature, Conductivity, Turbidity and TDS indicate how water quality fluctuate by surrounding climate change. These parameters show water quality variation according to seasonal variation during study years.

Abstract No. 51

CONTROL OF *E. SERVUS* WITH PLANT PRODUCTS.

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ABSTRACT

The *Euschistusservus* (brown stink bug), an insect not previously seen has recently become a serious pest of soybean crop. Presently, there are no viable strategies for control of the brown stink bugs. Chemical control of brown stink bug can be challenging. Adults are harder to kill than nymphs but both life stages present challenges because, unless they are hit directly with the spray, bugs will only be exposed to insecticides via their feet and feeding stylet, their narrow straw-like beak. The use of insecticides has very short-lived effect and there is evidence of resistance development. Even where insecticide is effective, repopulation occurs through migration from non-treated areas. Thus, residual activity of insecticides against brown stink bugs tends to be weak and adult bug populations may reinvade fields following treatment. Plant-derived materials are more readily biodegradable. They are less toxic, may be more selective in action and may retard the development of resistance. So, present investigation has been taken to study the effect of essential oils extracted from *Cassia fistula* and *Lantana camara* to control the progeny of *Euschistusservus*. In the present investigation the experimental findings proved the efficacy of *Cassia fistula* leaf, flower essential oils and *Lantana camara* leaf, flower and fruit essential oils in controlling the insect population while control groups showed the high viability rate in 1^{st} -5^{th} instar nymphal stages of*Euschistusservus*. In the present investigation toxicity levels of essential oils is as follows: *Lantana camara* fruit >*Lantana camara* leaf >*Cassia fistula*leaf >*Lantana camara* flower >*Cassia fistula* flower.

Key Words:*Euschistusservus*, Life cycle, Essential oil.

Abstract No. 52

AVIAN INFLUENZA ERA AND FISH FARMING

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Abstract:

Avian influenza is a highly infectious disease for domestic poultry, characterized by a severe course of illness particularly in chickens and turkeys. Bird flu is triggered by various flu virus strains. However, it is very difficult for the bird flu virus to spread to human beings. The virus is extremely sensitive to high temperatures, thoroughly heated foods are considered to be safe. However, little is known up to now about the virus being transmitted through the consumption of raw poultry meat products from infected animals.

There are many types of integration between fish and poultry farming, which may present opportunities for the dissemination of Avian influenza viruses through poultry faces. In fish ponds, poultry manures perform several functions such as fertilizer for algal production as well as some components are eaten directly by fish.

Viruses can be transmitted to man through the consumption of raw or insufficiently heated mussels and trigger gastro-intestinal infections. The main ones are calici or hepatitis A viruses which are extremely resistant to environmental influences; by contrast, influenza viruses are more sensitive. Hence, it is recommended to heat mussels and fish for at least 10 minutes at 70°C or more during preparations.

Key words: Avian influenza, fish farming, poultry manure

Abstract No. 53

BIOCHEMICAL ALTERATION IN PROTEINS IN *CHANNAPUNCTATUS* IN RESPONSES TO MALATHION TREATMENT

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Abstract:

Malathion is commonly used insecticide for agricultural and non-agricultural purpose in India. In present study the toxic effect of insecticide malathion on biochemical characteristics (protein) of fresh water fish Channa punctatus were estimated Fish was exposed to 1 / 5th LC50 (0.6ppm) of pesticidemalathion up to 96 hours. The biochemical results revealed decline in protein content in muscle,kidney, gill and stomach of *Channa punctatus* undersublethal treatment of malathion.

Keywords: Malathion, *Channapucntatus*,sublethal

Abstract No. 54

BIOCHEMICAL ESTIMATION OF *SENGA*, SP. IN FRESH WATER FISH *MASTACEMBALUSARMATUS* (L.) FROM PAITHAN, AURANGABAD DISTRICT (M.S.), INDIA

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ABSTRACT

Biochemistry is the study of structure, composition and chemical reactions of substances in living systems. Parasitology has developed into a multi-dimensional approach in helminth research. They serve as valuable models for the study of fundamental biological phenomena. Parasitic biochemistry is a field growing in parallel with the new surge of interest in tropical diseases. Whereas previously parasitologists have been required to adopt biochemical methodology in order to stay abreast of development. Bio-molecules such as protein, glycogen and lipids are determined in parasites and also infected and non-infected intestine of host. Results, after comparison between cestode parasites and host intestine, the protein and glycogen concentration are lower in *Senga Sp.* as compare to host intestine i.e.infected and non-infected intestine of *Mastacembalusarmatus* (L.) and lipid concentration is higher than *Senga Sp.* as compare to host intestine i.e. infected and non-infected intestine of *Mastacembalusarmatus* (L.). But the protein, glycogen, lipid concentration is higher in non-infected intestine of *Mastacembalusarmatus* (L.) as compare to infected intestine of *Mastacembalusarmatus* (L.).

Key words: - Aurangabad, cestode,*Mastacembalusarmatus, Senga*.

Abstract No. 55

AQUA POTENTIAL OF DOMARI DAM DIST. BEED

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Abstract

Many aquatic animals complete their lives in water body and their survival helps to maintain the ecosystem. There is need to to have conservation of these reservoirs, dams. As the change in region and states the ecology also shows the minor or major changes and these changes are showing their impact on aquatic diversity. The conservation and restoration of rivers are vital for harnessing the direct and indirect benefits from such an ecosystem on a sustainable basis. The ecological status of such reservoir is different as the change in the region. The present investigation reports the aqua potential of the dam and environmental status of the Domari dam. Dams are one the important water resources for irrigation, watersupply (Adarsh Kumar et.al 2006). These also provides a habitat for invertebrates, fishes and aquatic birds. The metropolitan,industries and city waste degrades the pollution impacts the many aquatic animals. This also impact on the productivity of dam. The Physico chemical properties were studied from June 2019to May 2020 (For one year). The details of study and results discussed in the text.

Keywords: *Aqua potential, Domari*

Abstract No. 56

VARIATION IN THE FAT AND WATER CONTENT OF LIVER OF *GOBIUSBIOCELLATUS* (MALE).

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Abstract:

Gobiusbiocellatus is a teleost fish, one of the species of the genus gobius and it is distributed in fresh waters throughout the plains of India (Day, F**.** 1878). The variation in the fat and water content of livertissue of male*G.biocellatus*was studied over a period of twelve months from January 2003-December 2003. The percentage of water in liver has comparatively higher during September to December and in January and June and that of peak spawning season. The fat values in liver were seen slightly higher during peak spawning season as compared to other months of the year. The present study is the first to describe the variation in the fat and water content of liver of *G. biocellatus*from Kayadhu river near Hingoli.

Keywords: *G.biocellatus* (Male),fat and water variations and liver tissue.

Abstract No. 57

DETERMINATION OF POSTMORTEM INTERVAL (PMI) BY STUDY OF LIFE CYCLE OF *LUCILIASERICATA* IN RAINY SEASON

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ABSTRACT

Life cycles of blow flies are commonly used for PMI estimation. In rainy season very few of calliphorid fly species are active. In Rainy season *Calliphoravicina* and scuttle flies are active. In Dhadgaon region *Luciliasericata*(Calliphoridae) is thecommonly found fly in rainy season. Posterior spiracles are used as identification marks of this fly. Its life cycle is completed in fourteen days. So it becomes possible to determine the time of death even in case of long PMIs. Length, width, weight and photograph of each stage are useful for the determination of PMI. Colour change in pupal stage is also useful.

Key words: Postmortem interval, life cycle, blows flies, *Luciliasericata.*

Abstract No. 58

GENERAL METHODS & PRACTICES OF AQUACULTURE: A REVIEW

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Abstract

Aquaculture has a tradition of 4000 years. It has begun in China, due to the desires to have a constant supply of fish as food. The techniques of fish keeping in ponds are also originated in China. The fisherman who kept their surplus catch alive temporarily in baskets submerged in rivers or small water bodies. The aquaculture developed from ancient practices for trapping fish, which is improved from trapping-holding to trapping-holding-growing and finally into complete husbandry practices (Ling, 1977). Worldwide a number of practices of aquaculture are used in three different types of environment (fresh water, marine water & brackish water) for variety of culture organisms. The fresh water aquaculture is carried out either in fish ponds, fish pens, fish cages or in rice paddies. The marine culture involves either fish cages or substrates for mollusks and seaweeds. The brackish water aquaculture is done mainly in fish ponds located in coastal areas. The government of different countries having priority towards increased fish production from aquaculture to meet the domestic demand. The common aquaculture practices are 1) Fresh water pond culture 2) Brackish water finfish culture 3) Rice-fish culture or integrated fish farming 4) Marine culture producing fish/shell fish (eg. oysters, mussels, cookies). This paper deals with details of fresh water pond culture mentioned in the text.

Keywords: Aquaculture, fresh water, marine water, brackish water.

Abstract No. 59

EXTENSION OF SHELF LIFE OF FISHES USING NATURAL PRESERVATIVES AND THEIR ORGANOLEPTIC EVALUATION BY HEDONIC SCALE

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Abstract

In the present study the experiment ware carried to find out the shelf life of some fresh water fishes such as *Catlacatla*,*Cirrhinamrigala*,*Mystussenghala* and *Oreochromis mosambicus*. These fishes ware treated with methanolic herbal extract of Curcuma longa to determine its preservative potential up to 8 days of experiment under laboratory conditions. The hedonic scale is applied to determine the shelf life and overall acceptability of both control and experimental sets of fishes. The organoleptic evaluation ware carried out by studying various parameters such as Texture of body, colour,Taste,Flavour and acceptability. The obtained results of control and experimental sets ware also statistically analysed for Standard error mean (SEM), Critical difference (CD), Co-efficient of variance (CV) and level of significance. All the result ware found significant at 1% and 5% level of significance. Thus, the obtained results show the preservative potential of methanolic extract of Curcuma longa due the presence of certain phytochemical metabolite content.

Key words- Shelf life, Preservatives, Organoleptic and Hedonic scale.

Abstract No. 60

ICHTHYO-FAUNAL DIVERSITY AND STUDY ON HILL STREAM FISHES AVAILABLE IN ROSHI RIVER, PANAUTI, KAVREPALANCHOK, NEPAL

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Abstract

The Roshi river flows in mid hill region of Kavrepalanchok district of Bagmati Province (Province No.3), Nepal. The present investigation was carried out to understand baseline information of hill-stream fishes and fishing implements of Roshi river. The study was conducted from January to June 2016. The sampling station was visited three time during the March, April and May 2016. Various fishing gears such as home made net, mosquito net, thunche, etc. were used for fish collection. Hill stream fishes comprising two orders, three families and five genera were recorded from an altitude of 2000m. Altogether five species two from Cyprinidae, two from Cobitidae and one from Siluridae were collected consisting of *Schizothoraichthyslabiatus, Schizothoraxplagiostomus, Schisturabeavani, Schisturarupecula*and *Glyptosternum maculatum.* It was found that the local community and government are not enough caring for the conservation of hill stream fishes in the Roshi river. So, conservation and management principles of hill stream fishes need to be encouraged.

Keywords: Roshi river, hill-stream fishes, *Schizothorax*, fishing gears, Nepal

Abstract No. 61

ICHTHYO-FAUNAL DIVERSITY OF KARMANASARIVER, LALITPUR, NEPAL

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Abstract

The ichthyofaunal diversity of Karmanasa river, Lalitpur, Nepal was studied to predict the fish diversity in Karmanasa river. The study was carried out to understand baseline information and to know the status of fish species of Karmanasa river along with the fishing implements used to collect the fish species. The study was carried out from September 2018 to March 2019 focusing on three different seasons- Autumn, Winter and Spring. Three sampling stations i.e. Site A, Site B and Site C were established at the Jharuwarashi, Godawari, Lalitpur. During the present study, a total of six species under two orders, two families and two genera were found. Order Cypriniformes comprises of family Nemacheilidae having *Schisturasikamaiensis, Schisturabeavani, Schisturamultifaciatus, Schisturarupecula*species while order Anabantiformes comprises of family Channidae having*Channaorientalis, Channa punctata* species. Among all these species *Schisturasikamaiensis*is a major species found in Karmanasa river.

Keywords: Karmanasa river, fish diversity, fishing implements, Nepal.

Abstract No. 62

SPATIO-TEMPORAL ABUNDANCE OF THE ZOOPLANKTON, PARAMECIUM CAUDATUM IN BAGMATI RIVER, KATHMANDU, NEPAL

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Abstract

The present investigation was carried out in Bagmati river, a lotic water body, situated in Kathmandu, Nepal, in three different sampling stations from November, 2018 to May, 2019. Monthly samples were collected from those sites and analyzed for six months period. The longitudinal distribution and seasonal fluctuation of the zooplankton, *Paramecium caudatum* Ehrenberg, 1834 was studied along the higher elevated to lower slanting part of the river. When the abundance of *P.caudatum* was observed, a maximum population of 3500 no. L^{-1} of riverine water to minimum 150 no. L^{-1} of *P.caudatum* was noted. The Site 2 Pinglasthan showed high abundance, Site 1 Sundarijal low abundance and Site 3 Chobhar lowest abundance of the population of *P.caudatum* due to highest infusion of organic materials, low infusion of organic materials, and highly pollution, respectively.

Keywords: Bagmati river, zooplankton, *Paramecium caudatum,* Nepal

Abstract No. 63

EFFECT OF DIAZEPAM ON THE DEVELOPMENT OF *CHRYSOMYA MEGACEPHALA* (DIPTERA: CALLIPHORIDAE)

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Abstract:

Chrysomyamegacephala species of the calliphorid flies were collected on the decaying meat in the Aurangabad region. The life cycle includes egg, three instars, pre-pupa, pupa and adult stages. Alterations in the life cycle of *Chrysomyamegacephala* species was studied after exposure to diazepam. Diazepam, a sedative drug lowered the rate of growth at higher concentrations. The pupation last longer in *C. megacephala*. The adult emerged out after nine days in control while at 12 ppm and 16 ppm diazepam containing food, the adults emerged out after 10 and 11 days respectively.

Key Words: Calliphorid,*Chrysomyamegacephala,* diazepam, life cycle.

Abstract No. 64

STUDY OF TEMPERATURE TOLERANCE ON THE PRAWN MACROBRACHIUM KISTNENSIS AFTER TREATMENT WITH CADMIUM CHLORIDE

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Abstract: -

Temperature is among the most important environmental parameters affecting the survival of the animal. Thermal tolerance has most frequently been measured as either the temperature that proves the effects on the physiology of animals. Temperature generally determines the geographical distribution of the different aquatic organisms. The thermal limits of animals and the tolerance limits are mainly controlled genetically thus constituting the genetic resistance adaptation of animals. The present study deals with the temperature tolerance study on the fresh water prawn *Macrobrachiumkistnensis* after treatment with the heavy metal Cadmium Chloride. The mature male and mature female prawns were treated with the lowest i.e. 15°C and highest i.e. 35°C. The changes were note3d for 24 hrs and 96 hrs.

A control group of *M. kistnensis* was also maintained with similar number of animals which were taken for experiment. The mortality data for the exposed animals were collected for natural mortality by using Abotts formula. The corrected percentage mortality values were converted to probit values, which are then plotted in the graphs against the respective concentrations. From the graph required concentrations of the pollutant was obtained. The obtained results were expressed in terms of lethal concentrations.

Key words:- Temperature, Environment, Parameter, Fresh water, Tolerance, Concentration, Prawn, Mature male, Mature Female, Mortality.

Abstract No. 65

AQUACULTURE: AN ALTERNATIVE CROPPING SYSTEM FOR INLAND SALINE AFFECTED SOILS OF WESTERN MAHARASHTRA

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ABSTRACT

In Maharashtra, prolonged sugar cultivation in certain districts like Sangli, Kolhapur, Satara etc. has led to salinization of large agricultural land rendering them unfit for any agricultural activities. About 30,000 ha of such land is presently lying ideal since last 20-30 years which needs to be reclaimed through suitable interventions. The reason of salinization has been attributed to excessive use of water and fertilizers. Sub-surface drainage is one such viable agricultural intervention, however the same needs to be undertaken with cluster approach since the infrastructure cost involving common drainage outlet is considerable and viability would work out only when such cost are shared by all landholders in the given areas. Therefore, the most viable alternative in the present situation is aquacultural activities involving freshwater prawn (*Macrobrachiumrosenbergii*) which is tolerant to such salinity conditions and brackishwarervannamei shrimp (*Litopenaeusvannamei*) which are very high value exportable commodity, most sought after by the seafood industry.

Keyword: Inland saline soils, reclamation, freshwater prawn, vannamei shrimpfreshwater prawn, vannamei shrimp

Abstract No. 66

STATUS OF ORNAMENTAL FISH ENTREPRENEURS IN SINDHUDURG DISTRICT OF MAHARASHTRA

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ABSTRACT

The present study was carried out to assess status of ornamental fish entrepreneur which are trained at Fisheries Research & Culture Project, College of Horticulture, Mulde, Dr. Balasaheb Sawant KokanKrishiVidyapeethDapoli. A total 55 number of ornamental fish entrepreneur were surveyed through the well-structured interview schedule of which 29 number of ornamental fish entrepreneur were selected randomly for interviews. The study revealed that 79 % were male& 21% were female entrepreneurs. All are involved in ornamental fish culture activity, which is primary source of their livelihood. Most of the units were established in three Grades viz. I, II & III with Government Assistance Scheme. The major non- recurring inputs are Building unit, Cement and Glass tanks, Racks, Water supply pumps, Blower, Invertor and Freeze etc. While Recurring inputs are Artemia, feed, ornamental fish broodstock and packaging material. Live food such as cladocerans and dry food (Pellets) are commonly used in day to day work.

Key words – Status, ornamental fish, entrepreneur,sindhudurg.

Abstract No. 67

FISH DIVERSITY AND PHYSICAL FACTORS OF NARAYANI RIVER OF NAWALPARASI DISTRICT, NEPAL

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Abstract

Fish species were collected from three sampling stations of Narayani river of Nawalparasi district from August 2018 to January 2019 by using Cast net and Gill net. Altogether 21 fish species belonging to four orders, seven families and 18 genera were recorded. Out of which 12 fish species of order Cypriniformes belonged to two families: Cyprinidae with 11 species and Balitoridae with one species. While order Siluriformes with two families: Sisoridae with five species and Bagridae with one species. Beloniformes got single family Belonidae with single species, order Mugiliformes with family Mugilidae one species and order Gobiiformes with family Gobiidae one species. The correlation between water temperature and fish diversity was positively correlated in all the sampling sites (i.e. 0.118, 0.486, and 0.1999). The association between sampling sites and abundance of species were obtaining by using statistical tool chi-square test. The p-value of chi-square test was $p>0.05$, for 10 Degree of Freedom showed that there was no significance association between sampling sites and species composition. The common species of Narayani river of Nawalparasi district were *Aspidoparia morar, Chagunius chagunio*, *Eutropiichthyus myrius*, *Mystus tengra.*

Keywords: Fish diversity, Physical factors, Narayani river, Nawalparasi, Nepal.

Abstract No. 68

PHYSICO-CHEMICAL ASSESMENT AND DIVERSITY OF FISH SPECIES OF DEJLA DEWDA RESERVIOR KHARGONE (M.P.)

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Abstract:

The aim of this work is relayed to the seasonal variations of physico-chemical properties of the Dejla Dewda reservoir. The physico-chemical characteristics of this reservoir have been studied and analysed during Nov 2016 to Dec 2017.Water samples were collected from 3 sample stations and the changes in physico-chemical parameters of water such as Water temperature, transparency, TDS, pH, BOD, COD, DO, chloride, alkalinity, sulphate, phosphate, Nitrate were analysed. The result was compared with the water quality standard of WHO (1997 and 1984). Between various physicochemical parameters systematic calculation of average and standard deviation was done to compare the water quality level at different stations. During the investigation of one year 26 species of fishes belonging to 03order and 06 families were also recorded. The above study shows that Dejla Dewda reservoir comes under the mesotrophic water body.

Index Terms: Physico-chemical, fish species, Dejla reservoir, mesotrophic

Abstract No. 69

HOW ARTIFICIAL INTELLIGENCE CAN BOOST AQUACULTURE

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ABSTRACT

Aquaculture, also known as aqua farming, is believed to have first begun around 4,000 years ago in China with the production of carp and is now the fastest-growing sector in the world. Artificial Intelligence (AI) by definition means 'the future made from the pieces of past'. These are system that learn new solutions through experience. AI has been implemented in a variety of fields starting from agriculture to complete automation in industries. Through AI, aquaculture can develop rapidly and production can be quadrupled within a short period as it makes aquaculture a less labour intensive field. It can take form of any labourers at work for example feeders, water quality control, harvesting, processing etc. AI can even be used in conserving endangered species of aquatic life forms. AI helps in tracking global fishing activity and helps maintain sustainability in open sea fishery. AI helps greatly in preventing IUU fishing. In aquaculture, wastage of inputs can be managed through AI and cost can be reduced up to 30%. Thus, AI provides complete control over the fish producing systems with less maintenance and reduced input cost

By taking new technologies, such as artificial intelligence, and applying their unique power to this sector, we will advance understanding of how aquatic ecosystems respond to stress—everything from changing climate to pollution. This will inspire new technologies and strategies for protecting our freshwater ecosystems also.

Keywords: Artificial Intelligence, Aquaculture, freshwater ecosystem.

Abstract No. 70

VEGETABLE DISEASES AND ECO-FRIENDLY CONTROL MEASURES AT PINGLI TA. DIST. PARBHANI

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Abstract

Agriculture plays very important role in the Indian economy. About 70% of population depends on agriculture for food and money. Vegetables are one of the most important components of human diet, since they provide proteins, vitamins, carbohydrates and some other essential macro and micronutrients required by the human body. When fertilizers and pesticides are used in agricultural fields, they are transmitted directly and indirectly in to the corns and vegetables that affects the human health. In vegetable crops many chemical fertilizers, chemical pesticides are applied and spraying the vegetable crops that hazardous chemicals are enter in to the human body and creates many health problems. Depending on the amount of fertilizers consumed, it may cause disturbances of kidney, lung and liver and cause cancer. In view of this, an attempt has been made to assess the working of vegetable practices in Pingli Ta Dist Parbhani and to suggest some eco-friendly methods, to minimize use of chemical fertilizers and pesticides to improve human health. The study was carried out in the Rabbi season of 2020. During the study period, vegetable crops, their diseases, pests and the regularly used chemicals by farmers were recorded, in order to suggest eco-friendly control measures.

Key words:- Vegetable crops, chemicals used, diseases, human health, eco-friendly control measures, Pingli, Parbhani.

Abstract No. 71

STUDY ON FISH CULTURE IN RAJASTHAN: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

Fish culture is a fast emerging field in Rajasthan on a wide scale to fulfill the dietary requirements of increasing human population. Various new techniques are applying for this purpose. The present paper is based on an analytical study of fish culture in Rajasthan along with water resources available in the state. The paper also shows the challenges and opportunities in this field.

Key words: Fish culture, Rajasthan, Water resources, challenges, opportunities.

Abstract No. 72

COMPARATIVE STUDY OF CRUSTACEAN & ROTIFERS COMMUNITY OF WATER BODIES BASED ON VARIEY INDEX

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ABTRACT

Diversity or variety is generally described as a compound property that reflects both the number of species in biological community and the evenness with which the species are distributed in the community. Pollution disturbs species diversity and their evenness. Variety Indices are the best way to represent this type of relationship. Diversity are Mathematical expression of species importance relationship, Presently, these indices were used to analyze the different water bodies of Aurangabad vicinity.

Keywords: Variety Indices, biological community, Zooplankton.

Abstract No. 73

SEASONAL CHANGES IN LEVELS OF ZINC AND MERCURY IN TISSUES OF *LAMELLIDENS MARGINALIS* COLLECTED FROM SUKHANA DAM

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Abstract:

Freshwater reservoirs maintain ecological balance of flora and fauna interrelationship, regulate surrounding climate and recharge ground water. Dams are the major part of freshwater resources. Globally more than 3 times the freshwater in rivers is available in the dams, which have multiple uses, such source of water for drinking, fishing, agriculture and aquaculture, conservation areas of biodiversity, recreation and tourism.Sukhana dam is constructed on the river Sukhna, is the oldest dam in Aurangabad district. From the last 20 years the dam was subjected to many destructive influences like illegal encroachments, unauthorized reclamation, heavy siltation and industrial effluent. These factors had their impact on morphometry, water quality, biodiversity and recreational potential of the dam. In the present investigation, *Lamellidens marginalis* was used as an experimental animal.Zinc and Mercury metal levels in different body parts of *L. Marginalis* were determined in summer, monsoon and winter. The metal levels were determined by using Atomic Absorption Spectrophotometer, model Chemito-200 using different hallow cathode lamps. Three replicates of the samples were performed every time on each body parts and the mean values were subjected to statistical analysis using Students‘t’ test. Percentage differences were also calculated and concluded results.

Key Words:*Zinc, Mercury,Lamellidens marginalis, Sukhna Dam*

Abstract No. 74

A STUDY OF FISH DIVERSITY IN PURNA RIVER NEAR JAFRABAD DIST. JALNA (M.S.) INDIA

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Abstract

Biodiversity indicates the potential of any aquatic system and also depicts its trophic status. It is important to have an adequate knowledge of the constituent biota especially for the purpose of conservation and management of the inland water resources such as rivers, reservoirs and ponds. In present investigation of Ichthyofauna diversity fishes have been studied from Purna river in month of June 2018 to May 2019. The study revealed the presence of 28 species of fish belonging to six orders (Cypriniformes, Siluriformes, Perciformes, Osteoglossiformes, Synbranchiformes, and Clupeiformes) and nine family. The highest number of twelve species was recorded in the order Cypriniformes. The fishes recorded were found to be widely distributed and were present in good numbers in the river. The aim of the paper was to assess the variety and abundance of the important fish fauna inhabiting this region and describes the detailed species composition their relative contribution and also some important points that may help to better understand the current scenario of ichthyofaunal diversity.

Keywords: Freshwater fish fauna, Purna river, Jafrabad, Cypriniformes.

Abstract No. 75

NEED OF VALUE ADDITION IN FISH AND FISH PRODUCT DEVELOPMENT: A VIEW POINT

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Abstract

Fish is a good source of high quality proteins and fats as well as vitamins and minerals. It is healthy food, easy to digest, and cheaper to buy. Adding value means employing processing methods, specialized ingredients or novel packaging to enhance the nutrition, sensory characteristics, shelf life and convenience of food products.There is a great demand for fish and fish based products especially value added products. Products processed in ‘convenience' form such as ‘Ready-to-eat', 'Ready-to-cook', 'Ready-to-fry', ‘Thaw & eat', 'Heat & serve' have high unit value in domestic and international marketand are considered as value added products. Keeping in view, improved methods of fish curing and processing, different types fish based value added products, different types packaging, use of fish waste in production of series of by-products, bioactive and pharmaceutical compounds, etc are discussed in the paper.

Key words: Fish products, value added products, by-products, convenience products.

Abstract No. 76

STUDIES ON FISH DIVERSITY OF PIMPALWANDI RESERVOIR TAL. PATODA DIST. BEED (M.S.)

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ABSTRACT

The present investigation was carried to study the aquatic vertebrates animal specially reference to fishes. The present study of bio-diversity of Ichthyofauna Pimpalwandi reservoir during Dec 2017 to Nov 2018, Pimpalwandi reservoir is mainly used for irrigation drinking water and fish production. In this study 15 different species of fishes were observed under 12 genus belongs to 09 families with 06 orders.

Key words- Biodiversity, Ichthyofauna, Pimpalwandi reservoir.

Abstract No. 77

AQUATIC BIODIVERSITY: THREATS AND CONSERVATION

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ABSTRACT

Aquatic biodiversity in both freshwater and marine environments are under continuous decline because of overexploitation of species, introduced exotic plant or animal, pollution sources from cities, industries and agricultural zones, loss and changes in ecological niche. Their conservation and management in the form of bio reserve points and bioregional management and worldwide monitoring are needed for the protection of the aquatic biodiversity. This paper is presenting information on biodiversity in aquatic habitats and their importance, conservation and restoration mechanisms.

Keywords : Aquatic Ecosystem, Biodiversity, thermal pollution, conservation

Abstract No. 78

AN INVESTIGATION OF ZOOPLANKTON DIVERSITY IN ANJANERI DAM, NASHIK (M. S.), INDIA

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ABSTRACT

Zooplanktons are very sensitive group of organisms because they respond even at a small environmental changes. They acts as indicator for pollutions and plays a key role in aquatic food webs because they are primary consumers and are food for other invertebrates, vertebrate including fishes. Most of the zooplankton species are cosmopolitan in nature. In the present investigation, authors studied diversity of different zooplanktons in the water of Anjaneri dam during February 2015 to January 2017. In the study period, total 54 species of different zooplanktons were recorded and are categorized into four major groups viz. Rotifera>Cladocera>Copepoda>Ostracoda. Rotifera was the major group comprising 48 % of total number of zooplanktons recorded with respect to diversity.

Key Words- Investigation, Zooplankton, Diversity, Anjaneri, Dam, Nashik

Abstract No. 79

DIVERSITY OF FISH FAUNA IN YELGAON LAKE DISTRICT BULDANA (M.S.) INDIA

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Abstract

The Biodiversity is essential for balancing ecosystem and facing various problems to environment. Fish diversity may be considered as health indicator of any aquatic habitat as it reflects the water chemistry and plankton abundance. Yelgaon lake is 5 km away from Buldana District. Yelgaon lake's water is used for irrigation, drinking and fish production. The present investigation deals with the study of diversity of fish fauna from Yelgaon lake. The work was undertaken for one year ie.from feb 2019 to Janvary 2020 Fish species were collected on fortnightly basis from the fishermen of the respective water body. It exhibits diversity of fish fauna. It represents 18 species of fish fauna of this lake considered of 06 order and 05 families. Out of 18 species 14 species are commercially important.

Keywords: fish diversity, fauna, environment, Yelgaon Lake, Buldana.

Abstract No. 80

BREEDING PERFORMANCE OF TRANSPORTED LIVE BROODERS FROM RESERVOIRS

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Abstract :

In present study, breeding performance of transported live brooders, common carp (*Cyprinuscarpio*) from reservoirs was assessed. Breeding was carried out in circular cement and plastic tanks at fish breeding and seed production unit. Ripe brooders with minimal physically injuries were collected from nearby reservoirs and transported in aerated containers. The brooders were acclimatized to laboratory conditions and treated with disinfectant such as KMnO4 as well as Oxytetracycline. Brooders were induced for breeding using *Ovatide*hormones at the rate of 0.5-0.6 ml/kg for female and 0.3-0.4 ml/kg for male.The brooders were then placed in circular breeding tanks by maintaining male: female ratio of 2:1 by numbers and 1:1 by weight in the evening time. The breeding tanks were provided with substrates for attachments of fertilized eggs. Dry stripping was also carried out for un-ovulated brooders following morning. The spent brooders were removed from breeding tanks and kept in separate tank. The fertilized eggs were incubated with proper aeration and water exchange. The average estimated fecundity of test animal was around 1.433±0.132 lakh eggs per kg of body weight and rate of ovulation was 91.63±4.30%. The rate of fertilization achieved during the work was 80.52±2.32% while rate of hatching was found to be 80.31±2.32%. The average survival of brooders was found to be 90.37±3.27% during transportation and average survival duringlaboratory operations till sell was found to be 81.5±2.16%.

The study revealed that, transportation of brooders for breeding can be economical as it reduces the cost of brood stock maintenance and also provide genetic variation for progeny if brooders are collected from different sources.

Abstract No. 81

DIVERSITY OF ZOOPLANKTON AND SEASONAL VARIATION OF DENSITY IN SUKHANA DAM, GARKHEDADIST AURANGABAD (M.S.) INDIA

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Abstract:

The present study was to understand the diversity of zooplankton during July 2008 to June 2009 in the Sukhana dam, Garkheda Dist. Aurangabad India. During the present study total 29 species of Zooplankton belonging to four groups i.e. Cladocera (10 species), Copepoda (05species), Rotifera (12 species) and Ostracoda (02 species). Total number of 15,058 zooplanktons was noticed in Sukhana dam, consisting of 23.83% of Rotifera; 28.52% of Cladocera; 44.48% of Copepoda and 3.17% of Ostracoda during present study period. It was noticed that Zooplankton population density of Sukhana dam was maximum in summer and minimum in rainy season.

Keywords: Zooplankton, Seasonal variation, Sukhana dam and Garkheda.

Abstract No. 82

ICHTHYOFAUNAL DIVERSITY OF HARSOOL DAM DIST. AURANGABAD (M.S.) INDIA

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Abstract:

Ichthyofaunal studies were carried out during the period, January to December 2013. The present study deals with the ichthyofaunal diversity of Harsool dam Dist. Aurangabad, Maharashtra. The results of present study reveal the occurrence of ichthyofauna belong to 5 orders 07 families, different and 15 species. The Cypriniformes Order was dominated by 11 species followed by Perciformes 3 species, Siluriformes 2 species, Saccobranchidae and Angulidae with one species.

KEYWORDS: Icthoyofaunaldiversity, Cypriniformes, Harsool dam.

Abstract No. 83

STUDIES ONICHTHYOFAUNAL DIVERSITY OF MANAYAD RESERVOIR, CHALISGAON, DIST: JALGAON KHANDESH REGION(M.S.) INDIA

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Abstract

The present biodiversity survey was carried to study the freshwater fish fauna of Manayad reservoir it is located at Nandre village in rural area of the Chalisgaon Tehsil, latitudinal 20.4796447^0N, and longitudinal 74.7922526^0 E in district Jalgaon at Khandesh region of the Maharashtra state. The present survey was carried out during the period of August 2018 to November 2019. The aim of the study was to explore the fish fauna of Manayad dam, reservoir fish faunal study reveal that 33 fish species belong to 5 Orders and 11 Family were recorded. *Cyprinid* family was dominant with 17 (51.5%) fish species. *Bagaridae*and *Chainidae* contribute 3 (9%), *Siliurdae*and *Hetropridae*family represents 2 (6.0%), *Claridae, Schilbeidae, Neopteridae, Platycephadae and Nandidae* indicated 1(3%) of the total fish species.

Key words:*Fish diversity, scientific names, Manayad reservoir.*

Abstract No. 84

BIOBEDS: AN EFFECTIVE AND ECO-FRIENDLY METHOD FOR DISPOSAL OF PESTICIDE WASTE

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Abstract:

The pesticides are one of the tools for achieving the goal of the green revolution and play an important role in improving yield of various crops. Though the pesticides play a vital role in controlling crop pests, it results in to pollution of environment especially land and water bodies. Pollution occurred mainly due to large amount of pesticides and chemicals used in the farm, and now a day the use of pesticides and chemicals in farm is very common. Generally soil gets polluted by improper disposal of pesticides and chemicals. Therefore there is need to degrade the pesticide by using a bio bed technique. This technique is most effective method to degrade the pesticide.

Key words: Bio bed, Pesticide, Chemicals, Pollution.

Abstract No. 85

OCCURRENCE OF TRICLADID AND CLADOCERANS FROM LENTIC WATER BODIES OF PUNE DISTRICT, MAHARASHTRA(INDIA)

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ABSTRACT

Limnology is the study of the structural and functional interrelationships of organisms of inland waters as they are affected by their dynamic physical, chemical, and biotic environments.Lakes and ponds (also known as lentic systems) are a diverse set of inland freshwater habitats that exist across the world and provide essential resources and habitats for both aquatic andterrestrial organisms. The present study was conducted to record the diversity and density of freshwaterTricladiaand cladocerans during the year 2019-20. Water samples were collected from different types of water lentic water bodies. Identification of cladocerans was done based on morphological features. Out of the recorded 6 species of cladocerans, three were found to belong to family Daphnidae, and one to family Chydoridae. The recordedTricladid (Planarian)sp.was about 5mm in lengthand 1.5mm width, with short auricle, prominent eye, and brownish rod-shaped radiating internal bodies and shows high power ofregeneration.

Keywords: Tricadid, Cladocerans, lentic water body.

Abstract No. 86

CULTURE OF GIFT TILAPIA USING BIOFLOC TECHNIQUES

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ABSTRACT:

Aquaculture plays a key role in promoting health by providing animal protein as well as generating employment and economic growth. As the human population continues to grow, food production industries such as aquaculture will need to expand as well. In order to preserve the environment and the natural resources, this expansion need to take place in a sustainable way. In Biofloc Technique nutrients can be continuously recycled and reused in the culture medium. The principle of the technique is to maintain the higher C-N ratio by adding carbon source and the water quality is improved through the production of high quality single cell microbial protein. In biofloc system, there are three main processes that control ammonia algal uptake, bacterial assimilation, and nitrification. The transformations and dynamics of ammonia in biofloc system is complex, involving interplay among the algae and bacteria that compete for ammonia. The relative importance of each process depends on many factors, among them the daily feeding rate, suspended solids (biofloc) concentration, ammonia concentration, light intensity and input carbon-to-nitrogen ratio. In the present study *Oreochromis niloticus* (Gift Tilapia) species is cultured using this technique. Culture tank size 4 metre diameter and 1.5 metre height (1.20 m water depth) Water holding capacity of the tank 15,000L . Water quality parameters Dissolved Oxygen-5mg/L, Temparature-26-34°C, pH-7.5 to 8, TDS-600ppm, Floc density-25-40 mg/l, Ammonia-0.5 ppm, Nitrite-0.3 ppm, Nitrate-150 ppm, Alkalinity-120-280 ppm, Tanks are made-up of Tarpaulin. Stocking density 100 nos/m3 (1200 no.s per tank Survival rate 84%, floating pellet feed(CP feed), Feeding frequency 4 times early stage, later 2 times per day FCR 1:1.2 average weight of the fish 400 gm in6 months 403kg per tank. Biofloc techinque is one of the most suitable freshwater Aquaculture.

Key words: Biofloc,Gift Tilapia,Aquaculture.

Abstract No. 87

BIODIVERSITY OF FISHES FROM PATALGANGA RIVER, DIST. RAIGAD (MS)

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ABSTRACT

Fishes are the valuable source of high grade protein and other organic and inorganic products and certain vitamins. They occupy significant position in socioeconomic fabric South Asian countries by providing the population not only the nutritious food, by-products and also as employment opportunity. India is endowed with a vast expanse of open fresh or inland water in the form of rivers, ponds, lakes, reservoirs, canals and back water bodies. The present investigation an attempt has been made to highlight the biodiversity of freshwater fishes in Patalganga River of Dist. Raigad (MS). The fish biodiversity of Patalganga River confirmed the occurrence of 24 fish species of 15 genera belonging to 10 family under 7 orders has been prepared in January 2007 to December 2008. The study of fish fauna of an equatic body is useful for planning of fisheries development.

Keywords : *Biodiversity, fishes, Patalganga, Raigad*.

Abstract No. 88

STUDIES ON COMPOSITION OF ZOOPLANKTON IN BINDUSARA RIVER WATER AT BEED, DIST BEED, MAHARASTRA, India.

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Abstract:

The present study deals with the zooplankton composition of Bindusara river water. Physico - chemical parameters. Bindusara river water were favourable foe growth of zooplankton. Fresh water zooplankton is an important component of aquatic ecosystem. They play very important role in Fresh water ecosystem the zooplankton community was maximum in summer season & minimum in monsoon due to high temperature and low turbidity in summer season & vice-versa. The zooplankton composition is reported by all groups viz. Rotifera, cladocera, copepoda & ostracoda. The dominant trend of zooplankton in the present investigation Rotitera > cladocera > copepoda > ostracoda.

Key Words : Bindusara river, zooplankton , physico-chemical parameters.

Abstract No. 89

STUDIES ON PHYTOPLANKTON OF BINDUSARA DAM WATER, AT PALI, DISTRICT BEED, MAHARASHTRA, INDIA.

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ABSRTACT:

This research was taken to study the phytoplankton composition of the Bindusara Reservoir of the Pali dam. Physico-chemical parameters were favourable for growth of phytoplankton. The Phytoplankton Community was maximum in summer season and minimum in monsoon. It is because of high temperature turbidity in summer season and vice versa. The Dominant trend of phytoplankton in the present investigation is Chlorophyceae > Bacillariophyceae > Cynophyceae > Euglenophyceae.

Key words Phytoplankton, Physico-chemical parameters, Bindusara, Pali Dam.

Abstract No. 90

INFLUENCE OF PH ON THE LETHAL TOXICITY OF PARA CHLOROPHENOL, PARA CHLOROANILINE AND PARA NITROPHENOL TO RESHWATER FISH *LEPIDOCEPHALICHTHYS GUNTEA*

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ABSTRACT

Phenolic compounds has several sources including industrial wastes, coal , wood distillation, road tars, petroleum refining, chemical and plastics manufacture, domestic sewage discharges, natural sources such as plant material decay and leaching from coal and oil deposits enter natural water system and affect the fish and other aquatic organisms , So the static renewal bioassays were done to study the influence of pH on the lethal toxicity of Para chlorophenol, Para chloroaniline and para nitrophenol to the freshwater fish *Lepidocephalichthys guntea.* The studies shows that Para chlorophenol, Para chloroaniline and Para nitrophenol decreased their toxicity as the pH increased to the said fish .The 24,48,72 and 96 hours LC_{50} values were found to be 12.0, 10.0, 8.0 and 5.0 mg/l at pH 6.0 and at pH 7.5 the 24,48,72 and 96 hours LC_{50} values were 16.0, 14.0, 11.0 and 8.0 mg/l respectively for the fish exposed to Para chlorophenol, And at pH 6.0 the 24,48,72 and 96 hours LC_{50} values were 61.0, 59.0, 57.0 and 55.0 mg/l and at pH 7.5 the 24, 48, 72 and 96 hours LC_{50} were 51.0, 48.0, 47.0 and 45.0 respectively for the fish exposed to Para chloroaniline. The LC_{50} values at 24,48,72 and 96 hours at pH 6.0 were 26.0, 24.0, 22.0 and 20.0 mg/l and at pH 7.5 the LC_{50} were 31.0, 29.0,27.0 and 25.0 mg/l for the fish exposed to Para nitrophenol for the fish *Lepidocephalichthys guntea* respectively.

Key words: Toxicity, *Lepidocephalichthys guntea,* Para chlorophenol, Para chloroaniline, Para nitrophenol.

Abstract No. 91

PHYSICO-CHEMICAL STATUS OF WATER IN BHIMA RIVER NEAR SOLAPUR DIST. SOLAPUR (MH)

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ABSTRACT

The water quality parameters in Bhima river near Solapur have been studied from Jan to Dec 2019- 2020 present paper deals with physico-chemical aspects of bhima river.The parameters studied included temperature, pH, dissolved oxygen (DO), free carbon dioxide, hardness, calcium, magnesium, chloride,solinity& sulphate monthly analysis over the periodof one year suggest that the river water is not badly polluted.

Keywords- Physico chemical parameters, Bheema river, water

Abstract No. 92

CHANGES IN DNA CONTENT OF SOME BODY PARTS FROM *LAMELLIDENS MARGINALIS* DUE TO NEURO ENDOCRINE MANIPULATION DURING POST MONSOON SEASON

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Abstract

Considering the paucity of information on such neuro endocrine manipulation on general physiology, breeding and reproduction in Indian freshwater bivalve molluscs, the present study has been undertaken on freshwater bivalve *Lamellidens Marginalis* to understand the effect of cerebral ganglia in changes in DNA content and the organic constituents from different body parts development and maturation of gonad, spawning and neuro endocrine center during post monsoon season.

Key-Words: - Neuro-endocrine manipulation, ganglia, Fluctuation, *Lamellidens, marginalis*.

Abstract No. 93

ANTIOXIDANT ROLE OF CAFFEINE ON ARSENIC INDUCED ALTERATIONS IN THE COLLAGEN OF FRESHWATER BIVALVE, *LAMELLIDENS CORRIANUS* (LEA)

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Abstract:

Antioxidant role of caffeine on arsenic induced alterations in the collagen of freshwater bivalve, *Lamellidens corrianus* (LEA). Study was conducted under five groups of freshwater bivalves. Group A was control; B group was exposed to acute dose ($LC_{50/2}$) of sodium arsenate. Group C was exposed to acute dose ($LC_{50/2}$) of sodium arsenate with caffeine (1, 3, 7-Trimethylxanthine) (5 mg/l.). After 4 days bivalves from group B were divided into D and E. D group bivalves pre exposed to acute dose ($LC_{50/2}$) of sodium arsenate were allowed to cure in normal water. E group bivalves pre exposed to acute dose ($LC_{50/2}$) of sodium arsenate were exposed to caffeine (5 mg./l) for recovery. Collagen content was estimated from each of five groups in selected tissues of bivalves. The collagen level was significantly decreased due to arsenic while the decrease in presence of caffeine was less. During recovery collagen contents faster recovered in caffeine-exposed bivalves as compared to those recovered in normal water. Present study concluded that caffeine has antioxidant role in the repair of collagen tissue damage caused due to the exposure to arsenic.

Key Words: Caffeine; arsenic; collagen; *Lamellidens corrianus*

Abstract No. 94

LIPID CONTENTS IN THE FRESHWATER BIVALVE, *LAMELLIDENS CORRIANUS* FROM DIFFERENT HABITATS

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Abstract*:*

The Freshwater bivalve, *Lamellidens corrianus* was collected from different localities and habitats of Marathwada region. Their gonads were screened for the determination of the sex by taking the smear from different regions and the data was prepared to study the sex composition. *Lamellidens corrianus* after screening for the sex showed males, females and few hermaphrodites. Variations in the food value with respect to lipid contents among various sexes from lentic and lotic environment were studied from dry powders of gonads and whole body by estimating lipid contents using the method of Barnes and Blackstock (1973). The results are given and discussed in the full length paper.

Key Words: Lipid, *Lamellidens corrianus,* lentic, lotic.

Abstract No. 95

FISH FAUNAL BIODIVERSITY IN ACHLER LAKE OF OSMANABAD DISTRICT (M.S.) INDIA

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Abstract

The present investigation to study fish faunal biodiversity in Achler lake of Osmanabad district. The study were carried out for one year June 2016 to May 2017 It is manmade water tank constructed on local nala Achler in lohara taluka. Water tank is having maximum height 14.20 M., Area 14.71 Sq. Kms, Capacity of Storage0.9mm^3 and full tank level 11.20 M. This dam has been completed in1979.Achler lake is most important for irrigation, Domestics activity, Drinking & fish culture purpose. The result of present occurrence of 16 fish species belonging of to 06 order, 06 families. The member of order cypriniformes were dominant09 species followed by siluriformes 03 species, channiformes 01 species, perciformes 01 species, osteoglossiformes 01 species and mugiliformes 01 species in Achler lake. Respectively which were suitable of growth of flora and stocking of fish faunal biodiversity in Achler lake.

Keyword: fish faunal biodiversity, Achler Lake

Abstract No. 96

DISTRIBUTION OF FLOWERING PLANTS AND CYNOBACTERIA IN RELATION TO SOIL CHARACTERS IN MINING SITE AREAS IN ALIRAJPUR DISTRICT OF MADHYA PRADESH, INDIA

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Abstract

Mining for dolomite, its transportation and crushing releases dust. Soil pollution due to different mining dust has become problem in Alirajpur district of Madhya Pradesh, India beside that dust deposition on the surface of vegetation affects photosynthesis and growth of common plants nearby the mining areas. Effect of dust on growth and physiological parameters was studied in five blocks within 1 km and 1 km + of mining area. The study deals with the distribution of flowering plants and cynobacteria in the mining site areas in Alirajpur district of Madhya Pradesh, India in relation to each other and physicochemical characters of soil. An extensive and intensive survey was carried out in the year 2018-2020 in Alirajpur district of Madhya Pradesh, India. Preliminary study of Alirajpur block of Madhya Pradesh, India shows rich plant diversity in respect to 25 families and 100 genera and 150 species and 29 cynobacteria species were identified in five different sites. The result showed that the flowering plants and algal taxa were controlled by the edaphic factors and Physico-chemical characters between flowering plants and cynobacteria taxa were obtained conferring the controversial effect of cynobacteria crust on vascular plants. Plants growing on this atmosphere show a reduction in growth performance and yield. Visible injury symptoms and decreased in productivity on vegetation is well noticed.

Key words: Mining, dolomite, plant community, Alirajpur, Physico-chemical characters.

Abstract No. 97

Themes: Aquatic environment and climate change

CLIMATE CHANGE EFECT ON MICROPHYTES IN ALIRAJPUR DISTRICT OF MADHYA PRADESH, INDIA

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Abstract

The Alirajpur region is situated in the south western part of Madhya Pradesh. Alirajpur forest rages are an important corridor between Gujarat and Maharashtra forest areas. Topographically it is fairly flat area. Atmospheric Co_2 concentration is increased due to human activity and its effects is seeing on macrophytes which resulted that aquatic ecosystem and marine life as well as structure and function is disturbed .coral reefs, which are among the most biodiversity ecosystem on earth.deu to increase of temperature coral reefs destroy and these impacts will add to the stress resulting from local anthropogenic effects. During field plant survey near 54 plants specimens collected and indentified. These plants consist of 23 families, 39 genera and 54 species of flowering plants. Leguminosae is the most dominant family of the study area having 17 species.

Key words: Malwa plateau, Narmada River, timbers, Bhagoriya.

Abstract No. 98

A BRIEF STUDY OF ECOLOGICAL AND ECONOMICAL IMPORTANCE OF FRESH WATER BIVALVE.

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Abstract:-

In Aquatic ecosystem mollusks play a key role as primary consumer as well as nutrient recycler.the freshwater bivalves also called as musels or calms are basically bottom feeders and have high nutritional value .bivalves are mainly used as fish bait as well as high protein food for human from ancient times and most importantly for pearl culture.But now a days due to isolationofnatural habitat and due to heavy water pollution the species diversity of bivalves is vary much reduced and iti be taken care by some methods like restoration of natural habitat as well as artificial rearing and culture of important species .In the present study the importance of fresh water bivalves and present status of ecological status is discussed in short.

Key Words:- Bivalve, Fresh water ,aquaculture.

Abstract No. 99

HISTOLOGICAL DETAILS OF OVOTESTIS OF FRESHWATER PULMONATE SNAIL *INDOPLANORBIS EXUSTUS*

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ABSTRACT:

The present paper provides detail histological study of ovotestis of pulmonate snail indoplanorbis exustus. Histological observations revealed that ovotestis is made up of a single layer of flattened cells and rounded germ cells. A large lumen is present at the centre of each lobule. Majority of the follicles produce only spermatozoa, while a few produce both spermatozoa and ova. The sperms are generally situated towards the inner side of the follicle whereas the ova are restricted to the peripheral region. We hope that the histological study of snail *Indoplanorbis exustus* will be helpful for the study of other freshwater gastropod snails.

KEYWORDS: - *Indoplanorbis exustus, Ovotestis, Histology, Reproductive system.*

Abstract No. 100

SEASONAL CHLOROPHYCEAN DIVERSITY IN VIJASAN LAKE OF BHADRAWATI, DISTRICT CHANDRAPUR (M.S.), INDIA.

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ABSTRACT

Chlorophyceae the free living phytoplankton, is mostly limited to shallow waters and attached to the submerged plants or found in moist soil. The chlorophyceae is a group of algae having their photosynthetic pigments localized in chromatophores which are grass-green because of the predominance of chlorophyll a and b over the carotene and xanthophylls. Diversity of Chlorophyceae in the Vijasan Lake of Bhadrawati was studied from October 2013 to September 2015. A total of 24 species of Chlorophyceae were identified in this lake and seasonally maximum value ofChlorophyceae wasrecorded in monsoon season and minimum in winter season due to the heavy influx of water from the catchment areas.

Abstract No. 101

FISH AND ITS NUTRITIONAL AND MEDICINAL OF IMPORTANCE OF FISH IN HUMAN DIET.

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Abstract

Fish and fishery products play an important rolein food and nutritional security around the world. It is healthiest food and cheapest source of animal protein in this universe compared to all animals meat. Consumption offish offers unique nutritional and health benefits and is considered a key element in a healthy diet. Increased attention is given to fish as a source of essential nutrients in our diets, not only high value proteins, but more importantly also as a unique source of micronutrients and long chain omega-3 fatty acids. Recent research revealed that highly unsaturated omega-3 fatty acids present in fish oil helps to reduce the chances of heart attack, atherosclerosis and high blood pressure. These acids affect immune response, cell division, membrane structure and function, prostaglandin production etc., thereby reducing of chance of cancer. These acids also help in the cure of bronchial asthma, multiple sclerosis, blood vessel and kidney diseases, which appear to have an immune system component. It is also helps in reducing the chances of arthritis and other inflammatory diseases. As a structural component of brain, retina, testis and sperm, docosahexaenoic acid appears to be linked to proper tissue function. This paper gives comprehensive review of nutritional importance of fish in human diet.

Abstract No. 102

ESTIMATE THE CHANGES IN PROTEIN CONTENT IN KIDNEY TISSUE OF FRESHWATER FISH *RASBORA DANICONIUS* (HAMILTON 1822) BY THE INFLUENCE OF IMIDACLOPRID.

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ABSTRACT:

Freshwater fish *Rasbora daniconius* was used for the present experiment to validate the toxic effect of Imidacloprid insecticide. Freshwater fish *Rasbora daniconius* is, like fish, mostly eaten by the people. The toxic effect of Imidacloprid on biochemical changes in Kidney tissue must be understood. When subjected to increasing concentration of Imidacloprid (Nicotine insecticide) acute exposure to different doses of lethal concentrations respectively i.e. 24 hrs, 48 hrs, 72 hrs and 96 hrs with Imidacloprid at 5.6 mg, 4.5 mg, 2.9 mg and 1.8 mg respectively. A drop in protein level in the kidney tissue of the test fish has been noted, suggesting the potential impact of insecticide toxicity. The purpose of this research is to investigate the effects of insecticide on the content of protein in the Kidney tissue of *Rasbora daniconius*. When treated with Imidacloprid, *Rasbora daniconius* exhibits significant decreases in protein content in the liver. Degradation in the protein content of kidney tissue can be caused by increased proteolysis for the intake of metabolites.

KEYWORDS: Imidacloprid, *Rasbora daniconius,* Protein, Kidney, Toxicity.

Abstract No. 103

NANOTECHNOLOGY AND FISHERY: A COMPREHENSIVE RESEARCH REVIEW NANOTECHNOLOGY

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Abstract:

Emerged a tremendous potential to improve fishery with novel nano-tools. The importance of eco-friendly, non-toxic, natural strategies to promote sustainable fishery. Practically, fishery sector encounters serious challenges causing numerous drawbacks at multiple levels such as fishinfection,chronic/acute diseases, water contamination, biofouling, nutrition, and post-harvest preservation. Researchers and overseers in the fishery sector have continually adopted new technologies to overcome most of these serious challenges.Nanotechnology is among the prominent technologies to be applied in fisherysector.

Key words: nanotechnology, researchers, fishery,

Abstract No. 104

TREATMENT OF WASTEWATER FROM FISH POND USING TRICKLING BIOFILTER

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ABSTRACT

Trickling biofilters consist of a packed bed of filter media. Wastewater to be treated trickles down across the height of filter media. As wastewater flows downwards, it forms a biofilm on the surface of the media. Dissolved organic matter and oxygen from atmospheric air diffuse into biofilm. Microorganisms present in the biofilm consumes organic matter as food and produces more microorganisms. Dissolved oxygen is utilized by microorganisms and carbon dioxide is moved out with atmospheric air. Trickling biofilters are used for treatment of wastewater generated from fish ponds due to presence of uneaten food material, fish fecal matter, growth of algae and other microorganisms. Trickling filters are easy to construct, operate, low cost and it utilizes oxygen directly from atmospheric air. It is observed that changes in various water quality parameters such as dissolved oxygen, suspended solids, organic loading, salinity, pH and other parameters in used water from fish ponds. This paper reviews use of trickling biofilters for treatment of wastewater produced by fish ponds.

Keywords: Aquaculture, biofiltration, dissolved nutrients, fish production, pond, trickling biofilters, water treatment.

Abstract No. 105

SENSORS AS A TOOL FOR SUSTAINABLE AQUACULTURE

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ABSTRACT

Artificial intelligence (AI) is used controlling the environmental conditions. It makes huge improvements to the efficiency and sustainability of global aquaculture. The environmental conditions such as inputs of system (e.g. temperature, oxygen, feeding rate, stocking density) and outputs of system (e.g. ammonia, pH and growth) can be regulated with the help of sensors. Drones and robots with sensors navigating underwater can collect data such as pH, salinity, turbidity and uses ultraviolet transmission to disinfect water of pathogens and clean aquaculture production facilities. There are sensors fitted on automative feeding technology that can even detect hunger level of fish and feed them accordingly, heart rate and metabolic activity can be measured. The increased demand for fish has put a strain on resources and sustainable practices among fisheries, requiring the innovative use of existing and new technologies. Like other agricultural industries, the new innovative technologies comprising artificial intelligence should be introduced within aquaculture in interest for the farming community.

Key words: sensors, ultraviolet, sustainable

Abstract No. 106

TAXONOMIC INVESTIGATION OF COMMERCIALLY IMPORTANT FRESHWATER FISHES IN AUSTRALIA

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Abstract

Taxonomic investigation of commercially important freshwater fishes in Australia was carried out to identify importance of aquaculture through freshwater fishes.Australia is one of the largest countries in Oceania and smallest continent, divided in to six states and several external territories with very dry continent. Study was carried out from July 2019 to December 2020 through secondary resources. Dry environment is the main reason for freshwater fishes which are limited to only 280 species throughout the Australia. Maritime and freshwater are the two-commercial way of aquaculture in Australia. Australian highly preferred to consume Salmon, Tuna and Trout with some freshwater fishes for example; Murray Cod, Barramundi, Golden Perch, Silver Perch, Brook Trout, etc.

Key words: Taxonomic investigation, Freshwater fishes, Australia

Abstract No. 107

"CHARACTERIZATION FISH FOOD PREPARED FROM CHICKEN INTESTINE"

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Abstract

Today, aquaculture is the fast growing sector which supply one fourth of the fish consumed by man (World Reasource Institute, 2008). The total world aquaculture production in 2016 was 171million tones.Animal by-products such as meat, bone meal and poultry by-product meal have considerable potential as feed ingredients in fish production systems and comparatively less expensive than other such fish meal, artificial food.Chicken intestine is rich in protein but unfortunately not being utilized as protein source in fish feed. The experiment was done fish *Cyprinus carpio*Feed ingredients were procured from ingredient store. The major feed ingredients used were as follows: along with Chicken intestine we used, Corn, Wheat flour, Sayabean, rice bran, groundnut cake. Five experimental diets were formulated: Diet 1 contained 0% of chicken intestine (control), Diet 2 (10% CIM), Diet 3 (20% CIM) replacement level for fishmeal. Feeding was done twice daily. It was observed during study that the fish gain weight by using chicken intestine that the normal fish diet.

Abstract No. 108

STUDY ON ZOOPLANKTON COMMUNITY IN WATER BODIES ON LATERITIC PLATEAUS OF RATNAGIRI DISTRICT OF MAHARASHTRA

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Abstract:

Ratnagiri is one of the coastal district of Maharashtra and forms part of Konkan region. It is situated in between the Western Ghats and the Arabian sea and lies between north latitudes 160 30' and 180 04' and east longitudes 730 20' and 730 52'. Lateritic plateaus also known as Sadas in local language. These plateaus are globally becoming endangered habitats, due to unique ecosystem with high endemism in animal and plant species. They are originated through natural geological processes on the top of the northern Western Ghats ranges and in the Konkan-Malabar region of Maharashtra, Goa, Karnataka and Kerala. The water bodies on these plateaus are also very special ecosystems due to their changing water parameters throughout the year. Five water bodies located on lateritic plateaus of Ratnagiri district of Maharashtra were studied for zooplankton communities. Planktons were studied in relation to physical and chemical properties of water. A total of 73 zooplankton species were recorded from these water bodies. Different species of crustaceans, which include- Copepods, Cladocerans and Ostracods were recorded along with highly abundant rotifer communities.

Key words: Zooplanktons, Crustaceans, Lateritic plateaus, Physico-chemical properties

Abstract No. 109

BREEDING PERFORMANCE OF TRANSPORTED BROODERS OF COMMON CARP, *CYPRINUS CARPIO* IN INDOOR SEED PRODUCTION UNIT

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Abstract

In present study, breeding performance of transported live brooders, common carp (*Cyprinus carpio*) from reservoirs was assessed. Breeding was carried out in circular cement and plastic tanks at fish breeding and seed production unit. Ripe brooders with minimal physically injuries were collected from nearby reservoirs and transported in aerated containers. The brooders were acclimatized to laboratory conditions and treated with disinfectant such as KMnO4 as well as Oxytetracycline. Brooders were induced for breeding using *Ovatide* hormones at the rate of 0.5-0.6 ml/kg for female and 0.3-0.4 ml/kg for male.The brooders were then placed in circular breeding tanks by maintaining male: female ratio of 2:1 by numbers and 1:1 by weight in the evening time. The breeding tanks were provided with substrates for attachments of fertilized eggs. Dry stripping was also carried out for un-ovulated brooders following morning. The spent brooders were removed from breeding tanks and kept in separate tank. The fertilized eggs were incubated with proper aeration and water exchange. The average estimated fecundity of test animal was around 1.433±0.132 lakh eggs per kg of body weight and rate of ovulation was 91.63±4.30%. The rate of fertilization achieved during the work was 80.52±2.32% while rate of hatching was found to be 80.31±2.32%. The average survival of brooders was found to be 90.37±3.27% during transportation and average survival duringlaboratory operations till sell was found to be 81.5±2.16%.
The study revealed that, transportation of brooders for breeding can be economical as it reduces the cost of brood stock maintenance and also provide genetic variation for progeny if brooders are collected from different sources.

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Abstract No. 110

EFFECTIVE UTILIZATION OF *AZOTOBACTER CHROOCOCCUM*, *PSEUDOMONAS* AND *GLUCONACETOBACTER DIAZOTROPHICUS*, ON FISH GROWTH STATUS IN FRESH WATER AND INLAND SALINE WATER

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ABSTRACT

In present investigation we had been go through with Two experiments to evaluate the effect of *Azotobacter chroococcum* (nitrogen fixer strain, Mac-27 and high temperature tolerant strain, HT-51), *Pseudomonas* (Phosphate solubliser strain PS-21) and *Gluconacetobacter diazotrophicus* (high salinity tolerant strain 35-47) on nutrient status, plankton production and fish biomass in inland saline water fish ponds.

Hydrobiological parameters of pond waters, net primary productivity (NPP) and fish growth were studied. Significantly ($P<0.05$) high values for alkalinity, kjeldahl's nitrogen, NO_3-N, turbidity, pigment concentration and fish growth were observed in ponds inoculated with co-culture, followed by ponds inoculated with Mac- 27 and PS-21. o-PO_4 concentration was significantly ($P<0.05$) higher both in PS-21 and in co- culture inoculated ponds.

In Experiment 2, high temperature tolerant (HT- 51) strain of *Azotobacter chroococcum* and high salinity tolerant (*Gluconacetobacter diazotrophicus* 35-47) strain were used. Alkalinity, hardness, TDS and chlorophyll *a* concentration were significantly ($P<0.05$) higher in ponds inoculated with high temperature tolerant mutant of *A. chroococcum*.

Similar experiment was carried out in fresh water fishes on *Catla catla* Two experiments were conducted to evaluate the effect of *Azotobacter chroococcum* (nitrogen fixer strain, Mac-27 and high temperature tolerant strain, HT-51), *Pseudomonas* (Phosphate solubliser strain PS-21) and *Gluconacetobacter diazotrophicus* (high salinity tolerant strain 35-47) on nutrient status, plankton production and fish biomass in fresh water fish ponds.

Ponds were stocked with *Catla catla* at 100 fish per ponds. Irrespective of the treatment, ponds were fertilized using cow dung at 75 kg per annum. In Experiment 1, ponds were inoculated with nitrogen fixing *Azotobacter chroococcum,* Mac 27 (Treatment 1), phosphate solubilizing *Pseudomonas*, PS-21 (Treatment 2) and also with a co- culture of Mac-27 and PS-21 (Treatment 3).

Hydrobiological parameters of pond waters, net primary productivity (NPP) and fish growth were studied. Significantly ($P<0.05$) high values for alkalinity, kjeldahl's nitrogen, NO_3-N, turbidity, pigment concentration and fish growth were observed in ponds inoculated with co-culture.

In Experiment 2, high temperature tolerant (HT- 51) strain of *Azotobacter chroococcum* and high salinity tolerant (*Gluconacetobacter diazotrophicus* 35-47) strain were used. Alkalinity, hardness, TDS and chlorophyll *a* concentration were significantly ($P<0.05$) higher in ponds inoculated with high temperature tolerant mutant of *A. chroococcum*.

Keywords: Fish Growth, *G.diazotrophicus*, *A. chroococcum*,

In Joint Collaboration with
Nepal Aquaculture Society, Kathmandu, Nepal (NEAQUAS)
Asian Biological Research Foundation (ABRF), Prayagraj, (U.P.), India
Glocal Environment & Social Association (GESA), New Delhi

Abstract No. 111

IMPORTANCE OF FRESHWATER CRAB RESOURCES TO HUMAN POPULATION

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Abstract

Freshwater crabs are important freshwater fishery resources belong to the infraorderBrachyura of the order Decapoda. They are found in freshwater, semi terrestrialand terrestrial habitat. They are found in streams, pools, ponds, rivers, swamps, rice fields, rock holes/pits, tree trunk holes, leaf axils, etc.Globally, 1564 species in five families of freshwater crabs are so far known. Among these, 125 species belonging to two families (Gecarcinucidae and Potamidae) are found in India. Estimates of freshwater crab diversity suggest that a number of crab species are yet to be discovered in India and Maharashtra in particular. They are economically and ecologically, important to the freshwater fishery.Freshwater crabs are highly endemic due to their limited dispersal ability, low fecundity,and selected habitat preference. They forman important source of animal protein to human population. This isimportant protein rich food resource for tribal, landless labours, and the poor sections of the society. In rainy season of Maharashtra, they form an important part of protein requirement of the inland people. Some of the freshwater crab species are commercially viable as aquarium or aquaculture species besides having some medical importance. Importance of freshwater crab resources to human population is discussed here.

Keywords: Freshwater crabs, importance,human population, Maharashtra

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Abstract No. 112

IMPORTANCE OF MICROALGAE IN AQUACULTURE

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Abstract

Microalgae or microphytes are microscopic algae, typically found in freshwater and marine systems.They are unique due to their valuable biochemical compounds for aquaculture, human health food, biofuels and other applications. Recently studies on microalgae like *Chlorella* have proved their use as promising nutritional feedstock in aquaculture. The present paper deals with the study of outstanding nutritional features of some microalgae and their use as feedstock in aquaculture to increase the yield in aquaculture and thus economic condition of farmers in the region.

Key words: Microalgae, Feedstock, *Chlorella*, Aquaculture.

Abstract No. 113

MORPHOMETRIC ANALYSIS OF WATERSHED AREA OF KALAMKONDARESERVOIR, HINGOLI DISTRICT USING GEOGRAPHIC INFORMATION SYSTEM (GIS)

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Abstract

The present study was carried out for analysis of different morphometric characters of watershed area of Kalamkonda Reservoir and its drainage channelusing Geographic information system. The Study watershed is spread across 19°44'16" N to 19°36'04" N Latitudes and 77°14'55" E to 77°20'50" E Longitudes. For the study, Toposheetof Survey of India with 1:50000 scale were used for delineation of drainage streams. The drainage stream orders were assigned by Strahler method. Different morphometric parameters were analyzed by using standard methods. The study revealed that Kalmkonda reservoir drainage basin is of 5th order mainly with dendriticpattern. The watershed has 286 total streams having total length of 203.94 km.The watershed area ofKalmkonda reservoir drainagebasin is spread across 80.88 sq.km with perimeter of 46.21 km. The Kalamkonda dam covers total area of 1.96 sq km area with 10 m of embankment height. The morphometric analysis of drainage showed that the drainage density of the study area was 2.52 km/sq.km with mean stream frequency of 3.54 streams per sq. km and mean bifurcation ration of 3.89. The relief ratio of the basin was found to be 5.35 while texture ratio was 4.52 with ruggedness number of 239.55. The constant channel maintenance of the study area was found to be 0.397 km with circulation ratio of 0.475 and form factor of 0.256. the study revealed that the watershed area of the Kalamkonda reservoir and its drainage has good water prospectus,

Abstract No. 114

ANTISPERMATOGENIC ACTIVITIES OF AZADIRACHTA INDIACA AQUEOUS LEAF EXTRACT IN MALE ALBINO MICE (MUS MUSCULUS)

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Abstract:

***Azadirachta indica*,** commonly known as neem, neem tree. It is belonging to family Meliaceae. Its fruits and seeds are used to extract neem oil. Dried leaves burnt to keep from mosquitoes. In present work studied effect of aqueous leaf extract on sperm morphology, sperm count and sperm motility. Matured mice administered aqueous leaf extract at dose level 40 mg, 80 mgKg/Bw for 10 days intravenously and vehicle treated control with equal volume of saline. All the sperms were studied from cauda epididymis and showed 11th different types of sperm abnormalities with major head, middle piece and tail defects. Sperm count significantly decreased (**$p<0.01$**) as compared to control with 40mg and 80 mgkg/Bw. Sperm motility also showed variation as compare to vehicle treated control and it was significantly decreased (**$p<0.5$**). The above observations are due to an anti-androgenic effect of aqueous neem extract.

***Keywords*:** Antifertility, anti-androgenic, sperm count, sperm motility.

Abstract No. 115

SOCIO-ECONOMIC STATUS OF FISHERMEN CO-OPERATIVE SOCIETIES OF HINGOLI DISTRICT, MAHARASHTRA

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Abstract:

The aquaculture production has been grown very steadily worldwide because it is one of the widely expanding protein producing sector. The fishes have great importance in the human society as they provide the nutritional requirement and employment to the society. In many countries fishermen cooperative societies useful for solving problems socioeconomic problems. In cooperatives, members with limited mean pool their resources and efforts to achieve much, which otherwise they would not have achieved. Agriculture alone is not sufficient to mankind for more than one reason. Fisheries' industry supplements it to a large extent the food and medicinal requirement. Growth and development of economy accelerates, if the country having such natural resources utilize these resources effectively and efficiently. The fisheries industry gets strengthened by way of mutual cooperation of individual fishermen. There are about twenty Fishermen Co-operative Societies established in the Hingoli district from last decade, which covers about 4229 hectors area. Most of the societies are from private Sector. Government lends money to the cooperative's societies in the form of contract or loan and subsidies. Likewise, they also assist economically backward people in rural area for the purpose of fishery and fishery business, so as to increase their standard of living. This function is carried out through co-operative societies. Hingoli district is underdeveloped area. In this area, the working contribution and socio-impact of this sector has never been studied earlier. For the present study a survey-based questionnaire was prepared and interview was taken from different stakeholders. The same was statistically analyzed. This research paper intends to highlight the contribution of the fishery co-operative Societies in Hingoli District Maharashtra.

Key word: Socioeconomics, Cooperative Society, Fish Production, Employment.

Abstract No. 116

IMPORTANCE OF MEDICINAL PLANTS IN AQUACULTURE

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Abstract

Diseases are recognized as one of the mainconstraints to sustainable animal production, which can cause significant economic loss mainly in aquaculture. Disease outbreaks increase proportionally with increases in intensive aquaculture. In order to prevent large economic losses due to fish illnesses, various medications are used for prevention and treatment. Different chemicals (antibiotics, hormones, chemotherapeutics and vitamins) have been used in fish farming for several years to prevent diseases or reduce their effects on aquaculture. However, these chemical caused the damage to the environment, fish and humanity is very high.Due to this in the recent years, natural environment friendly alternatives are being sought over the last few years to replace harmful chemical and antibiotics for this purpose. The plants are rich in secondary metabolites and phytochemical compounds, which have an effect against viral, bacterial, and parasitic diseases in fish. Plants have been reported to produce various effects such as antistress, growth promotion, appetite stimulation, immunostimulation, aphrodisiac and to have antipathogen properties in fishes and shrimp aquaculture asthe plants are rich in the alkaloids, terpenoids, tannins, saponins and flavonoids.The number of medicinal plantsis often used as additives in fish feeds to promote growth, and sometimes, in the form of baths or injections. The use of natural products from the medicinal plants are cheaper source of growth is making waves in the aquacultural industry as opposed to the expensive synthetic antibiotics and other growth promoters.

Keyword: -Medicinal plants, Aquaculture

Abstract No. 117

PRELIMINARY SURVEY OF BIRDS IN TERNA RESERVOIR OF OSMANABAD IN MAHARASHTRA

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Abstract

The present study was environmental change are now a day to day increase in temperature shortage of rainfall to explore species diversity birds seasonal abundance of birds & global warming has set in motion & is affection the time of migration of birds the fied survey was made –to assess the recovers for the avian fauna by conducting daily observation during ield survey the a bout 41 species of ther birds record 7 11 family found 24 species of common residence out of some they are 15 species of migrant & hence the residence occasionally seen 6 species migrant occasionally are 2 species the study was carried out for 2 years from may 2018 to April2020 the changes occurring in climate like air temp rainfall were binocular taken in to facts seen observation with the help of camera photography ere taken to study the effect on migrating birds hence in the present study data an biodiversity bird have been collected to understand how climate change tease are more frequently observation in winter in starting of rain season the area is havening rich diversity of avian fauna from this point of view the present study is carried out

key : - biodiversity of bird common residence migration etc.

Abstract No. 118

AN IMPACT OF TILAPIA ON NATIVE ECOLOGY: PROBLEMS AND PROSPECTS IN INDIA

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Abstract

The fish tilapia actually refers to several species of mostly freshwater fish that belong to the family cichlidae which are primarily freshwater fishes and are found in tropical America, mainland Africa and Madagascar, and southern Asia, the fish has been introduced throughout the world and is now farmed and spread in over 135 countries. Mozambique tilapia (*Oreochromis mossambicus*), blue tilapia (*O. aureus*), Nile tilapia (*O. niloticus*), Zanzibar tilapia (*O. hornorum*), and the red belly tilapia (*O. zilli*) are some of the commercially important species of Tilapia. In India, nearly all of the introduced tilapias produced are consumed domestically; tilapias have contributed to basic food security for such societies. Many people prefer tilapia because it is relatively affordable and doesn't taste very fishy and hence, popularly known as 'aquatic chicken' and have provided socio-economic benefits for a vast number of poor people in the region. In many ways, the threat of invasive alien species is analogous to new emerging viruses that threaten our lives. Both are, in a way, the negative fallout of the hyper-global world we live in. If these invasive species become economically valuable, people may introduce these in previously uninvaded regions. This constitutes a huge threat to local biodiversity as well as food security in the region. These include irreversible degradation of ecosystems, the silent extinction of native species and, ultimately, the homogenization of our ecosystems and diets. There is no accurate information on their propagation and adverse ecological impacts as few studies have been conducted to evaluate these impacts. There is an urgent need to undertake a well-planned research program to assess its impacts. Farming of Tilapia was banned in India since 1959, the government lifted the ban for the culture of Nile tilapia in 2012, albeit with strict guidelines that address issues pertaining to biosecurity, among many others. However, actually enforcing these guidelines is far from an easy feat and therefore the remarkable catch of tipalia is still being spotted in ponds, rivers and reservoirs in India.

Keywords: *Tilapia, cichlids, native fish, invasive species, threat*

Abstract No. 119

STUDY OF FISH FAUNAL DIVERSITY OF KHELNAWATER RESERVOIR NEAR SILLOD TOWN IN AURANGABAD DISTRICT (M.S.) INDIA.

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Abstract:

The present study deals with the fish faunal diversity of khelna water reservoir near Palod town from Sillod tehsil in Aurangabad district, Maharashtra, India. Khelna water reservoir is a medium project built across the khelna river basin.It is used for the purpose of irrigation, drinking and for fish production. During the study period it was found and observed that it having the diversity of fish fauna. It included seven species of fishes belonging to different families. It includes major carps and some common or local species. All the species were found in this water reservoir and recorded throughout the year. During the investigation it was also revealed that these species are having economic importance. Conservation of these species is also necessary for the balancing of the freshwater ecosystem.

Keywords: Fish diversity,Khelna reservoir, Sillod, Aurangabad, Maharashtra.

Abstract No. 120

SEASONAL INFECTION OF TAPEWORMS IN SOME FRESHWATER FISHES

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Abstract:

Tapeworms are the Gastro-intestinal parasites and affect fishes, domestic and wild animal, birds and human beings. They modify morphological and physiologically to live successfully in a specific host. Parasite diversity of a host species varies widely from a host to host and species to species and also season to season.

The present investigation deals with the seasonal variation of some tapeworms of fresh water fishes during months of April 2016 to March 2017. Infection of Caryophyllidean parasites from major carps i.e.*Catla, Mastacembalus, Labeo* and *Clarius*were observed. The infected parasite are examined were *Lytocestus, Senga, Circamonchobothrium* were observed. The incident of infection, intensity, density, index of infection was studied seasonally per year.

Keywords: Tapeworms, Mastacembahus, Catla, Caryophyllidean, Lytocestus, Senga.

Abstract No. 121

ANALYSIS OF THE MAJOR BIOCHEMICAL CONSTITUENTS (PROTEIN AND LIPID) IN PISCEAN CESTODE *POLYONCOBOTHRIUM* SP. PARASITIC IN *MASTASCEMBELUS ARMATUS*

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ABSTRACT

The present study was carried out to examine the relationship between cestodal infections and nutrient reserves (Protein and lipid content) in freshwater fish *Mastacembelus armatus* in relation to infection with *Polyoncobothrium* spp. Result obtained an amount of protein and Lipid in Cestode *Senga* in the present study is Total protein (0.42gm), Albumin (0.24gm)and Globulin (0.21gm). While Cholesterol(51%), triglycerides(14.5%), H.D.L. cholesterol (72%), V.L.D.L(2.96%), L.D.L(28.3), Chol./HDL ratio(0.71%) and LDL/HDL ratio (0.39%). The present study indicates that the parasites were capable of extracting nutritious material from their hosts and thus represented a higher level in protein and lipids contents in their body.

Key Words: *Mastacembelus armatus,* Protein and Lipid contents, *Polyoncobothrium* sp.

Abstract No. 122

IMPACT OF WASTEWATER ON URBAN LAKES: A CASE STUDY OF AURANGABAD CITY (MH) INDIA

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ABSTRACT

One of the most critical problems of developing countries is improper management of vast amount of wastes generated by various anthropogenic activities. More challenging is the unsafe disposal of these wastes into the ambient environment. Water bodies especially freshwater reservoirs are the most affected. This has often rendered these natural resources unsuitable for both primary and/or secondary usage.

Aurangabad is a fastest growing city in Asia, which is the district of Maharashtra State .In Aurangabad Industrialization and urbanization has taken place very rapidly. The present study is focused on impact of wastewater on water quality of four different lakes of Aurangabad city, Gajgaon lake, , Harsul Lake, Salim Ali Lake and Nehru Lake.

In present research work the water quality of all the lakes were analyzed and results were compared with the standards provided by different organizations. It is observed that all the lakes were polluted due to religious customs, the lake water was getting polluted by depositing of domestic waste material, by the run off in the catchment area and during monsoon large amount of organic matter is brought through the runoff and the lakes itself subjected to human activity, like bathing, cloths washing, vehicle and other utensil washing and also the disposal of Nirmalya and idol immersion. Waste is also thrown into water by garden visitors like paper, polythenes and these are found floating on water of lakes. Gajgaon lake is highly polluted as compared to the other three lakes.

Key words: wastewater, urbanization, organic matter, water quality, lake.

Abstract No. 123

ON A NEW SPECIES OF GENUS *TETRAGONOCEPHALUM* (SHIPLEY & HORNELL, 1905) (CESTODA: LECANICEPHALIDEA) FROM *DASYATIS WALGA*FROM DIST. RAIGAD (M.S) INDIA

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Abstract

In the present study a new species of cestode parasite *Tetragonocephalum shriwardhanensis n. sp.* from *Dasyatis bleekeri* was described at Shriwardhan, Dist. Raigad West coast of (M.S) India, in the period of March 2018 to May 2019. The scolex consisting of anterior rounded knob and a posterior collar like cushion, its quadrangular in shape,mature segments are almost squarish in shape broader than long, slightly broader, with convex lateral margins, testes are preovarian and upper side of the proglottids. The cirrus pouch is large in size oval in shape, cirrus is coiled like long structure broad at the anterior end, narrow at the posterior end, ovary is compact, dumb-bell shaped; each lobe is large placed at posterior end of the segments,uterus is zigzag tube like structure spread to the posterior end of the proglottid,

Key Words:*Tylocephalum, Dasyatis Walga,* Raigad

Abstract No. 124

NATURAL RESOUCE MANAGMENT: A REVIEW ON SUSTAINABLE ENVIRONMENT

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Abstract:

Natural resource management (NRM) is the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affect the quality of life for both present and future generations. Natural resource management deals with managing the way in which people and natural landscapes interact. It brings together natural heritage management, land use planning, water management, bio-diversity conservation, and the future sustainability of industries like agriculture, mining, tourism, fisheries and forestry. It recognizes that people and their livelihoods rely on the health and productivity of our landscapes, and their actions as stewards of the land play a critical role in maintaining this health and productivity. Natural resource management specifically focuses on a scientific and technical understanding of resources and ecology and the life-supporting capacity of those resources. Environmental management is similar to natural resource management. In academic contexts, the sociology of natural resources is closely related to, but distinct from, natural resource management.

Key Words; Natural resource; Land; Water; Soil; Environment

Abstract No. 125

ASPECTS OF THE ECOLOGY OF METAZOAN ECTOPARASITES IN FRESHWATER FISHES OF RIVER PENNA, YSR KADAPA DISTRICT, ANDHRA PRADESH, INDIA

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Abstract:

A total of 18 freshwater fish species (n= 859) belonging to 10 families from River Penna, Andhra Pradesh were examined for metazoan ectoparasites from July 2017 to June 2019, of which only 12 fish species were infected with at least one parasitic species. The mean prevalence of infection was 63.9%, the average abundance was 13.9 parasites per fish due to very heavy infestation of some parasites. Ectoparasitic fauna of this geographical area is less diverse with only 19 species of ectoparasites belonging to 3 major taxa: 16 species of monogeneans, 02 species of copepods and 1 Isopod. Prevalence of infection in these 12 infected fishes ranged from 98.9% (*Wallago attu*) to 30% (*Salmostoma bacaila*) and mean intensity from 44.3 (*Oreochromis niloticus*) to 1.0 (*Glossogobius giurus*). The infra and component communities of parasites were somewhat characterstic/ peculiar. The dominance pattern of the major taxa was in the order Monogenea > Copepoda > Isopod. Siluridae (*W. attu*) showed the richest parasite fauna (n=5) followed by Bagridae (*M. vittatus,* n= 3) and Cichlidae (*O. niloticus*, n= 3) whereas the nine infected fish species showed very poor fauna. The parasite fauna of *W. attu* was the most heterogenous with all the three ectoparasitic groups while the remaining fish species were the most homogenous with only two or one parasitic groups. Only, Mastacembelidae and Siluridae showed infestation with ergasilid copepod while Bagridae showed infection with *Lamproglena* copepod whereas the remaining families showed parasitisation with monogeneans only. Three parasitic species, *D. fotedari*, *D. catlaius* and *E. malnadensis* were observed in more than one host species. *Labeo catla* and *L. calbasu* shared only *D. fotedari* in common; *Labeo catla* and *C. ariza* shared *D. catlaius* in common and *Mastacembelus armatus* and *Wallago attu* shared only one species, *E. malnadensis* in common. However, in spite of taxonomic nearness and the similarity of habits and habitats of 8 species of cyprinids (*Cirrhinus ariza, Labeo calbasu, L. catla*, *L. rohita, L. dyocheilus, Salmostoma bacaila, Puntius sarana* and *Cirrhinus cirrhosus*), their parasite fauna were qualitatively dissimilar of the 7 species of ectoparasites encountered in them only 2 species was shared by the 3 host species. The richest parasite fauna was that of the family siluridae followed by Bagridae and Cichlidae and the poorest in rest of the fish families examined. The results specify that the freshwater fishes of River Penna harbour a poor and less diverse species. The results also put forward the fact that the lesser scales on the body of carnivorous fishes enable the ectoparasites to penetrate the skin and gills more easily.

Keywords: Dominance index, Ectoparasites, Evenness index, Jaccard index, Parasite community ecology, Penna River, Richness index, Shannon diversity index.

Abstract No. 126

EVALUATION OF THE TOXIC IMPACT OF MENADIONE ON THE RNA CONTENT IN GONADS OF *DYSDERCUS CINGULATUS*

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Abstract:

The impact of sublethal concentrations of Menadione was evaluated on RNA content of gonads, in *Dysdercus cingulatus*. Three sublethal concentrations viz. 0.5µg, 0.75 µg and 1.0 µg were used to treat *Dysdercus cingulatus* topically using Hamilton syringe. The test insects were dissected after the intervals of post treatment day 2, 4 and 6. Organs of the treated insects were evaluated and compared for the RNA content with control insects. The biochemical results revealed a decline of upto 18% in RNA content of gonads. Hence it was concluded that Menadione not only hampers the protein and DNA metabolism but it roots back to the RNA level to induce histopathological changes in organs to finally act as a reproductive inhibitor.

Key words: *Dysdercus cingulatus*, gonads, RNA nucleic acids

Abstract No. 127

CHRONIC EFFECT OF DISTILLERY EFFLUENT ON FOOD CONSUMPTION AND GROWTH OF FRESH WATER FISH, *LABEO ROHITA*

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Abstract:

The effect of Chronic (sublethal) Concentration 1.5% (1/5) and 0.75% (1/10) of distillery effluent on food consumption and growth of the fresh water fish *Labeo rohita* were investigated in the laboratory for a month. It was observed that the he controls fishes showed normal food intake and growth. Whereas the food intake and growth reduced in the fishes exposed to sublethal concentration of distillery effluent. The study shows that distillery effluent brings out various physiological disorders in the fish *Labeo rohita*. Thus, the release of this effluent into surrounding water bodies should be monitored and controlled.

Abstract No. 128

STUDY ON SAPROLEGNIASIS, A FUNGAL DISEASE CAUSED BY SAPROLEGNIA IN SOME COMMON EDIBLE FISHES OF LAKHIMPUR-KHERI DISTRICT (U.P.) INDIA

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Abstract

Fishes are prone to hundreds of parasitic and non-parasitic diseases, particularly in controlled farming conditions. Fresh water fishes are more at risk for diseases. In fresh water, fish crop can be destructed either through disease or by pollution of the water. Fungal infections are very common and prevalent and leading to number of diseases causing fish destruction. Widespread losses due to mycotic diseases are on record (Kulbe, 1997 and Srivastava, 1979). Fungal pathogens attack eggs, fries, fingerlings and adult fishes. Saprolegniasis is one of the most common mycotic disease of fishes. In India, the incidence of fungal diseases has been observed in major carps, catfishes, murrells, and several other common species. (Gopal Krishnan, 1963, 1964and 1966: Srivastava and Srivastava, 1976, 1977a, 1977b, Prabhuji and Srivastava, 1977). Present work is carried out on six species of fresh water fishes *viz. Clarius batrachus*, Labeo rohita, Channa striatus, Channa punctatus, Cyprinus mola, Catla catla* & eggs of *Labeo* & *Catla sps.*to study Saprolegniasis, a fungal disease of fishes of District Lakhimpur-Kheri, Uttar Pradesh. Out of 235 fishes examined, a total nineteen isolates of the genus *Saprolegnia* were obtained from different species of fish and fish eggs collected from different localities. It was found to be pathogenic and causing saprolegniasis. The virulence nature of the fungus was studied by conducting experimental infections under laboratory conditions and found to be severely pathogenic resulting in high mortality rate.

* Non edible

Key words: Saprolegniasis, Fresh water fishes

Abstract No. 129

PRESENT STATUS OF AQUACULTURE IN PARBHANI DISTRICT, MARATHWADA REGION, MAHARASHTRA, INDIA

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Abstract:

Parbhani is a city in Maharashtra state of India. It is the administrative headquarters of Parbhani District. Is one of the largest city in Marathwada region of Maharashtra after Aurangabad and Nanded. Nine talukas in District. Parbhani district lies between 18.45 and 20.10 North Latitudes and 76.13 and 77.39 East Longitude. Climate is classified as tropical. Ddistrict covers an area of about 6511 square km. Average rainfall in the district is 804.4 mm. Major rivers and their length (km) in Parbhani district Godavari River (200.68); Purna River (103.65); Dudhna River (58); Palam River (37) and Kapra River (38). Various dams and their capacity, Yeldari Dam (0.934 km3) the second largest dam in Marathwada an earth fill type, Karpara Dam (27,320.00 km3) and Masoli Dam (27,390 km3). Approximately suitable area for fishing (ponds, lakes. etc) 8518 (Hectares). Production of Inland Fish - 1792 (MT); Co-operative fishery societies – 30 and number of members in the societies – 1427. Common cultarable species Catla, Rohu, Mrigal, Common carp, prawn. Wild varieties Murrel, bam, tilapia, Notopterus, singhada etc.

Key words: Marathwada, *Dam*, masoli, inland, Catla, climate etc.

Abstract No. 130

SUSTAINABLE MANAGEMENT FOR BIODIVERSITY: A REVIEW

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Abstract:

To use biodiversity in a sustainable manner means to use natural resources at a rate that the Earth can renew them. By adopting the CBD, governments commit themselves to integrate conservation and sustainable use into their policies at the national level. To use biodiversity in a sustainable manner means to use natural resources at a rate that the Earth can renew them. It's a way to ensure that we meet the needs of both present and future generations. As the human population increases, so does the pressure on ecosystems, since we draw ever more resources from them. Our ecological footprint on the planet is unsustainable and will become unbearable unless we change our consumption patterns and our behavior in general. In the past, humans have adapted to changing conditions by increasing productivity, but now we have reached the limits of the Earth's capacity. Today our only option is to manage productivity and resources in a sustainable manner, reducing waste wherever possible, using the principles of adaptive management, and taking into account traditional knowledge which contributes to the maintenance of ecosystem services. Within the Convention on Biological Diversity (CBD), sustainable use principles are applied to the sectors that most affect biodiversity, such as agriculture, forestry, fisheries, tourism, and water management. In 2004, CBD Parties adopted the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, a set of 14 principles that apply to all activities and areas. In 2010 these principles were reaffirmed and their implementation assessed through an in-depth review. By adopting the CBD, governments commit themselves to integrate conservation and sustainable use into their policies at the national level. By minimizing biodiversity loss and helping local populations restore degraded areas, together we can make this a new era of environmentally-sound economic development for the Sustainable Use of Biodiversity, a set of 14 principles that apply to all activities and areas. In 2010 these principles were reaffirmed and their implementation assessed through an in-depth review. By adopting the CBD, governments commit themselves to integrate conservation and sustainable use into their policies at the national level. By minimizing biodiversity loss and helping local populations restore degraded areas, together we can make this a new era of environmentally-sound economic development.

Key Words; Natural resource; Ecological foot prints; Biodiversity

Abstract No. 131

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.

Keywords: Physico - chemical parameters, Wrinkler's method, Gulbheli River, and Nalganga reservoir.

Abstract No. 132

RECENT TECHNIQUES USED IN FISH SEED PRODUCTION IN MARATHWADA REGION (MH) INDIA

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Abstract:

Freshwater fishes are very economical, medicinal important as well as delicious food in India. fish is as important food for human consumption, fish is protein rich animal. Till today adequate aquaculture done in Indian region but in Marathwada it is very rare. Fish seed production has biggest problem in Marathwada region, that's why the Aquaculture has facing big problems in Marathwada region of Maharashtra India. In India natural fish production is mostly occurs at coastal regions, rivers, reservoirs, Dams and where abundant water available. Fish aquaculture mostly used induced breeding technology and recent technology fish seed production has good and easy handle. In Marathwada region (Maharashtra) farmers demanding massive Fish seeds for aquaculture. Fish seed production in India especially in Marathwada region in Maharashtra occurs unsatisfied. It requires expanding fish seed production in Marathwada region.

We were used some advanced recent techniques for more fish seed production from smallest fish breeding center of Marathwada region. We were use advanced techniques four year continuously we got more seed production as well as progressively increase annual income and also reduced mortality rate. We were largely producing *Cyprinus carpio* species fish seed as compare to others major carps and also fulfil demand of fish seeds for local fish farmer from Marathwada region of Maharashtra India.

Key words: fish seed production, Eco hatchery, Management, Maintenance, Marathwada region.

Abstract No. 133

PANGASIUS FISH (*Pangasianodon hypophthalmus*) – AN EXCELLENT CANDIDATE SPECIES FOR AQUACULTURE: A REVIEW

N. D. Chogale, P. E. Shingare, A. U. Pagarkar, S. Y. Metar, S. B. Satam, V. R. Sadawarte and K. M. Shinde

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Abstract

Aquaculture is currently playing good role for global fish production and in meeting the rising demand of fishery products. Culture of carp fisheries production has not feasible and is no longer considered capable of sustaining the supply of fisheries products needed to meet the growing global demand. Pangasius fish can be farmed under monoculture or polyculture with carp species. The species can grow to 1 to 1.5 kg in one year, and annual yields are 10 to 15 tons per hectare. Global aquaculture production of Pangasius catfish is about 4.20 lakh tons and one of the world's fastest growing fresh water species in aquaculture. More than 100 countries worldwide consume pangasius fish as skinless and boneless fillets, steaks and different value-added products. Because of very high nutritive values as well as excellent sensory properties of Pangasius fish meat, the acceptance of people towards Pangasius fish is increasing day by day and the absence of intra-muscular pin bones, the fish can be easily filleted. Development of different value-added products from Pangasius has good global acceptance and commercial potential. There is great scope to increase the fish consumption due to social and cultural changes in recent years.

Key words: *Pangasianodon hypophthalmus,* Aquaculture, fish production, value added product

Abstract No. 134

Modern Techniques in Aquaculture: Probiotics in Aquaculture

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Abstract

Ecofriendly demand of aquaculture so the use of probiotics in aquaculture is widely accepted probiotics are the live micro-organism that are intended to have health benefits when consumed. There is clearly need in increasing our knowledge of intestinal microbiology and of effective preparation and evaluation of probiotics. This provides summary of the status and challenges of probiotics application in aquaculture. Review in perspective of digestive tract. The probiotics are made up of good bacteria that helps to keep body healthy with well working. They are any alimentary disorders probiotics are helpful. A better understanding of rationale preparation and safety of probiotics in aquaculture may be of interest for commercial aquaculture.

Abstract No. 135

PROTEIN PROFILE OF *ASCARDIA GALLI* AND HOST *GALLUS GALLUS DOMESTICUS*

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Abstract:

The present investigation deals with the protein content in nematode parasite *Ascardia galli* and its host tissue i.e., normal and infected intestinal tissue of *Gallus gallus domesticus*. The result obtained an amount of protein content in the present study indicates that the number of proteins present in nematode parasites is low as compared to protein present in infected intestine as well as in normal intestine.

Keywords: *Ascardia galli, Gallus gallus domesticus*, Protein Content.

Abstract No. 136

RECENT ADVANCEMENT IN FISHERIES AND AQUACULTURE.

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Abstract:

World population is going to cross the 8 billion landmarks very soon (present 7.8 billion). So, it is obvious that the demand of food is increasing regularly. To cope up with the situation, researches are going on the advancement of various foods producing sectors. Fishes are one of the most important sources of protein to the whole world which is the products of fisheries and aquaculture sectors. The sector also contributes portion of the total GDP of many countries like India, Bangladesh, Sri Lanka, Brazil, etc. Thus, incorporation of improve technologies and advancement in culture practice can only enhance the production of the sector. Researchers are going on in various aspects i.e., from seed culture to captive breeding to obtain more production from fisheries sectors ensuring sustainable development and betterment in economic condition of the dependents. In this presentation we would focus on the recent advancements in fisheries and agriculture.

Abstract No. 137

MACROPHYTES BIODIVERSITY OF KOKEWADA TUKUM LAKE OF CHANDRAPUR DISTRICT (M.S.), INDIA

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Abstract:

Macrophytes is an important factor for helping in maintaining ecological balance. Aquatic macrophytes play a pivotal role in maintaining primary productivity of water ecosystem. Aquatic macrophytes includes a vast majority of aquatic vascular plants. They are found mainly in the shallow regions of ponds, lakes, rivers, swamps and streams etc. They are of considerable ecological and economical importance. The present paper describes the macrophytes biodiversity of Kokewada Tukum lake near Bhadrawati of Chandrapur district of Maharashtra State from January 2015 to December 2017 in which 26 species representing 17 families belonging to 08 groups such as 03 Submerged floating weeds, 03 Rooted floating leaves weeds, 01 Rooted emergent with heterophile weeds, 06 Free floating suspended submerged, 03 Rooted submerged hydrophytes, 07 Emergent weeds, 02 Submerged weeds and 01 Anchored floating weeds.

Abstract No. 138

BIODIVERSITY OF THE YAWAL – PAL WILDLIFE SANCTUARY AND ITS ADJACENT AREAS FROM JALGAON DISTRICT (M.S.)

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Abstract

This area is occupied by three talukas namely, Chopda, Yawal & Raver and the Yawal-Pal wildlife sanctuary is situated in these three talukas. This area lies between 75^0 .41'and 76^0 9.73' E longitudes and $21^0$3.42' and 21^0.25 N latitudes . The area is about 120 km in length and width of 45 km. and having height of 721 meters which varies between 700-1150 meters. The present work is based on the results of Four Years study and recorded 637 (studied subspecies and varieties) species. There are 411 genera and spread over the 112 families. The study area i.e., Southern Satpuda ranges support ample source of Plant Biodiversity along with fauna. In order to the conservation of biodiversity certain measures need to be adopted.

Key words: Wild life Sanctuary, Satpuda ranges, Biodiversity Conservation, Fauna, Plant Varieties.

Abstract No. 139

DEVELOPMENT OF CHITOSAN ENCAPSULATED POLYMERIC NANOPARTICLES: A PROFOUND ANTHELMINTIC DRUG TO PARASITIC HELMINTHES OF FRESHWATER FISHES

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Abstract:

The strongylid parasitic nemic micro fauna are the principal causative agents of numerous adverse effect and deadly diseases in the fresh water vertebrates dealing to commercial aquaculture system like fishes of all regions in India. The chitosan as constituent of secreted exoskeleton of arthropods principally in aquatic crustacean has profound anthelmintic or antinomic potential. During the *in vitro* investigation, its application was limited to certain extent because of its shorter half-life and diffused toxicity to target infra community. Based on the poor solubility behavior the oral administration of the same has very low efficacy. To overcome the toxic effect, lower oral viability, shorter half-life, the chitosan encapsulated polymeric nanoparticles were formulated to deliver in host against the target nemic micro fauna. It was observed that that polymeric nano-encapsulation of chitosan showed higher activity than the crude. Hence it was proven as a profound anthelmintic drug in the management of healthy and sustainable aquaculture system.

Keywords: Parasitic nematodes, Freshwater fish, Aquaculture system, Polymeric nanoparticles, Anthelmintic drugs

Abstract No. 140

STUDY ON POPULATION DENSITY OF ZOOPLANKTON IN TRIDHARA RIVER FROM PARBHANI (M.S) INDIA

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Abstract:

The paper deals with the study of zooplanktons of Tridhara River in Parbhani district of Maharashtra, India. Seasonal count of the zooplanktons is investigated for the period of one year from June 2015 to May 2016. The species of zooplanktons investigated are rotifers, cladocera, copepods and ostracoda representing the forms that are found in tridhara river. Among the zooplanktons copepods are the most abundant, followed by rotifers, while cladocera, are less in number as compared to ostracoda . In our study Zooplankton composition is generally higher in the summer months, moderate in winter and lower in the monsoon months.

Keywords: Zooplanktons, Tridhara river, Parbhani district.

Abstract No. 141

STUDY OF BUCCAL CAVITY *PANGASIUS PANGASIUS*

Gaikwad D.M., and Phulwade Durgesh N.
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Shri Sant Savta Mali Gramin Mahavidaylya, Phulmabri, Aurangabad.

Abstract:

The Study of Buccal Cavity of *Pangasius pangasius* shows interesting modifications of feeding habit with several morphological characters such as, head is dorso-ventrally depressed, mouth is broad. The upper lip is larger than lower lip, mouth is surrounded by strong upper and lower jaw.

Keywords: *Pangasius pangasius,* buccal cavity, Tongue, Teeth.

Abstract No. 142

STUDY OF AQUATIC BIODIVERSITY OF GOVINDWADI LAKE GEORAI (MS)

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Abstract:

The Govindwadi Lake is near Georai Dist: Beed. The lake is having 19.2606° N, 75.7546° E. The farmers taking benefit of lake for agriculture, and pisciculture activities. The present planktonic study results applicable for support and increase of agriculture and pisciculture. The details of biodiversity of plankton were not known hence preset work has undertaken for the study.

Key Words: Aquatic Biodiversity, Georai

Abstract No. 143

GREEN ALGAE OF DOKEWADA RESERVOIR IN BEED DISTRICT MAHARASHTRA

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Head and Guide P.G. Department of Botany, Mrs. K.S.K. College, Beed.Dist. Beed- 431122.*

Abstract

The present communication deals with the study of green algae of Dokewada reservoir of Beed. A total 63 taxa belong to 27 genera of Chlorophyceae was identified and recorded. These dominant Genera were Scenedesmus (7), Pediastrum (5), Spirogyra (6), Oedogonium (5) during the winter and summer season Chlorophyceae were most abundant. The Dokewada reservoir Dist. Beed was found to be harboring rich algal diversity especially the Chlorophyceae. This is the first-time study of Dokewada reservoir.

Keywords: Communication, Dominant and Harboring.

M.S.P. Mandal's

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