International Web Conference

Safe Water, Sanitation and Hygiene for Health (IWC 2020)

November 9th, 10th & 11th, 2020

ABSTRACTS BOOKLET

Jointly organized by

Dr. Rafiq Zakaria College for Women
Aurangabad (MH), India

Government Degree (PG) College
Bhaderwah, Doda (J & K), India

Glocal Environment &
Social Association (GESA), New Delhi

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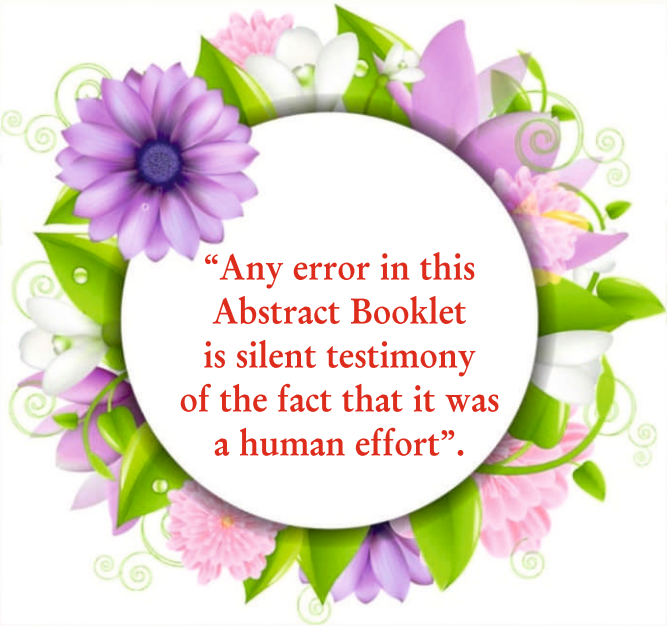
Prayagraj (U.P.), India

Nepal Aquaculture Society (NEAQUAS)
Kathmandu, Nepal



Dr. A. K. Verma
Conference Director ICW 2020

ABOUT THE ORGANIZERS

Dr Rafiq Zakaria College for Women, Aurangabad (Maharashtra)

Dr. Rafiq Zakaria College is located in the mid of the Aurangabad City, Navkhanda Palace, Campus with secure and safe, pleasing environment, free from noise pollution and ideal to be a women's college, fully equipped with modern infrastructure and equipments.

Besides, traditional undergraduate curriculum of Arts and Science, college has expanded its teaching span to the professional courses like Computer Science & Information Technologies, post graduation in linguistic proficiency, chemical science, and leading to PhD research students of national and international origin.

Presently, 2500 plus students achieving their knowledge thirst, many more in the past presented themselves as a able competitor to the male dominated socio- economic, political and legal strength of the society.

Govt. Post Graduate College Bhaderwah, Doda (J & K), India

This college was established in the year 1955. It is well known for imparting education in the subjects like science, arts, commerce, BCA streams at undergraduate level and at postgraduate level in chemistry and Urdu subjects in addition to various certificate and skill courses. the mission of college is to develop competitive spirit among students, to train our students in various aspects of life and to prepare them for challenging jobs, to provide effective and modern teaching learning facilities keeping pace with the latest educational techniques and to inculcate moral and ethical values, humanism and spirit of tolerance among the students.

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Glocal Environment & Social Association (GESA), New Delhi
http://www.gesa.org.in

In order to serve a bit the Nature and Society for better future, the Glocal Environment & Social Association (GESA) is constituted. Its headquarter is located in New Delhi. Its main aim is to develop and promote 'International 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 confers following categories of awards and honours through search and nominations:

1. Life Time Achievement Award (Above 55 years of age)
2. Hon. Fellowship/ Fellowship (FGESA)
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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
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14. Paryavaran Ratna Puraskar
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. Each awardee will receive a potted plant, an angvastram, multicoloured award certificate and a high quality memento. GESA Award selection is mainly based on biodata. For details, visit the website: http://www.gesa.org.in or write to : **Email :president.gesa@gmail.com**]

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www.abrf.org.in

Asian Biological Research Foundation (ABRF), Prayagraj (Uttar Pradesh)
http://www.abrf.org.in

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.

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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
5. Outstanding Extension Professional/Agriculture Scientist/ Social Services Award
6. Best Teacher Award for Agricultural/ Botanical/ Environmental/ Zoological Innovations
7. Eminent Ichthyologist/ Environmentalist/ Ecologist/ Entomologist/ Geneticist/ Parasitologist/ Cytologist/ 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 Ratna Puraskar (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 to apply for these awards. Each award will consist of a multicoloured award certificate, a high quality memento, a potted plant and an angvastram. ABRF Award selection is strictly based on API and biodata both. For detailed guidelines, please log on to the website: **http://www.abrf.org.in** You may also contact to : **secretary.abrf@gmail.com**

Nepal Aquaculture Society (NEAQUAS), Kathmandu

Nepal Aquaculture Society (NEAQUAS) was legally registered under the NGO Act of Government of Nepal (Registration No : 955) on Friday, April 8, 2011 in CDO office, Kathmandu by the Founder President Prof. Dr. Shyam Narayan Labh, Senior Vice president: Mrs. Prabha Chitrakar and General Secretary : Mr. Raghubar Shrestha along with other 21 Research Scholars of the Country. Since then, this organization is actively promoting the training and learning of Fisheries and Aquaculture activities in the country. NEAQUAS is now associated with the World Aquaculture Society (WAS) and expanded its work on Research and Publications Activities within the country and at Asia Pacific Level.

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Appeal to Delegates and Participants by

ORGANIZERS

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STAY SAFE STAY HEALTHY


कोरोना से बचें
सही से मास्क पहनें
हाथ धोएं बार बार
निभाएं दो गज की दूरी
जब तक दवाई नहीं, तब तक ढिलाई नहीं


हमारी धरती हम ही बचाएँ, बिन पटाखे दिवाली मनाएँ।
Shubh Diwali

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Abstract No. 1

WATER QUALITY MONITORING AND MANAGEMENT: INNOVATIONS AND SAFETY ASPECTS

V. P. Sharma

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Regulatory Toxicology Group
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ABSTRACT

Water is the most precious natural resource for human existence and day to day functioning. The water-related exposome is a vital determinant of health and quality of life. The disease burden may results from water-associated diseases and is directly impacted by pollutants. The pollutants may be chemicals, biologicals waste, pathogens and other new chemical entities or endocrine disrupting chemicals. The state of art technologies may be used for water conservation, treatment, remediation from toxicants etc.

The fast changing climatic, socio-economic inclusive and extrinsic factors pose new challenges to water management decisions and the achievement of policy goals. We need safe and potable water for all stakeholders for preventing and protecting human health during pandemics or other natural calamities. We need effective, sustainable, cost effective water quality monitoring and management as per regulatory norms (BIS, FSSAI, OECD, WHO) to safeguard human health as well as biodiversity. Several prestigious institutions have the competent manpower and infrastructure but it need continual improvements and enrichment to meet the vast and varied population requirements. The collective efforts are the need of the hour for attaining goals of Sustainable Development Goals [SDGs].

Abstract No. 2

WATER, SANITATION AND HYGIENE PRACTICES IN FISH PONDS FOR BETTER AQUACULTURE

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ABSTRACT

Disinfection is employed as a common disease management tool in aquaculture establishments. It may be used as a routine practice in biosecurity programmes designed to exclude specific diseases, as well as a routine sanitary measure employed to reduce disease incidence within farms, or it may be used in disease eradication (stamping out) efforts. The specific reason for disinfection will determine the disinfection strategy used and how it is applied. Pond-reared fish can be raised in a system of continuous production, involves replacing the fish that are harvested, with an equal number of fingerlings. For example, if 50,000 market-size catfish are harvested from a pond, 50,000 catfish fingerlings would be stocked back into the pond. In this system, ponds are rarely drained (perhaps every 5-10 years). When these ponds are drained, it is best to allow the bottom soils, which contain accumulations of organic matter, such as fish feces and uneaten feed, to air dry for several months. The soil should then be tilled (to a depth of about 15 cm) to accelerate aerobic decomposition of organic material. Ponds that are harvested in an all-in-all-out manner are drained at the end of each production cycle. However, verysmall ponds (+/- 30,000 gallons) may be washed between groups of fish to facilitate removal of debris. Washing the pond with a high-pressure hose and pumping or draining water removes the organic debris in the pond can then be "treated" with hydrated lime, applied to damp mud at 1000-2000 kg/ha (181-363 lb/surface acre) as a sterilant. Hydrated lime will rapidly cause the pH in treated areas to rise above ten, which will be lethal to parasites and bacteria and aid in the elimination of ammonia tied up in the muds. Ponds treated with quicklime at the recommended rate can be refilled after 10-14 days and prepared for another production cycle. Check the pH in the water in treated ponds before stocking fish. In addition to decreasing the amount of organic matter and potential infectious particles by treatment of pond sediments, it is important to prevent the spread of pathogens by disinfecting the equipment between uses in different ponds. Any equipment used in a fish pond should be thoroughly dried or chemically disinfected before being used in another pond. This will greatly decrease the potential for disease transmission between ponds.

Abstract No. 3

HYGIENE, CLEAN ENVIRONMENT AND BIODIVERSITY

Ashok Kumar Verma

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ABSTRACT

Clean water, sanitation, and hygiene (WASH) education are basic necessities for a healthy environment, society and a productive life. The WASH is the subject of dedicated targets within the sustainable development goal and access to safe water and sanitation are human rights. The safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, leading to improved health, poverty reduction, and socio-economic development. WASH services are an essential part to protect human health during infectious disease outbreaks. It has been proved fruitful during the current COVID-19 pandemic. One of the most cost effective strategies for increasing pandemic awareness, especially in resource controlled settings, is investing in core public health infrastructure, including water and sanitation systems. By providing these basic necessities to the human populations, risk for water, sanitation and hygiene related diseases can be minimized.

Nature always favours and promotes the diversity and coexistence among all the organisms by providing suitable environment to all. Human is since highly evolved product of evolution hence tried always to control the environment and its own society in order to get conducive ambience. But due to overexploitation of natural resources, increased anthropogenic activities and human centric environmental approach, we are facing global warming and COVID-19 like unprecedented threats. Such global threats are compelling the academicians, policy makers and other stakeholders to introspect their visions and actions.

Today, the World is a 'global village' due to the use of Information and Communication Technology and we are living there and deriving all the benefits from Nature. When we are deriving the benefits, we must have to bear some responsibilities. We have to develop environment centric approach to utilize the natural resources in such a manner so that we can achieve the inclusive and sustainable development with coexistence of all other species of organisms of the globe. The clean and green environment reduces the global warming and always favours to flourish rich biodiversity. When humans will get clean water, avail the facilities of sanitation and hygiene then environment will automatically remain in clean state due to reduced anthropogenic activities that promotes the biodiversity with the coexistence of all the organisms.

Abstract No. 4

WATER, SANITATION AND HYGIENE IN PRESENT SCENARIO

Sadguru Prakash

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ABSTRACT

Clean water, sanitation, and hygiene (WASH) are the primary requirements for a civilized society of humans. Global access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, leading to improved health, poverty reduction, and socio-economic development. Clean water, basic toilets and good hygiene practices are essential for the survival and development of children. Without these basic needs, the lives of millions of children are at risk. For children under five, water- and sanitation-related diseases are one of the leading causes of death. Every day, over 800 children die from preventable diseases caused by poor water, and a lack of sanitation and hygiene.

Inadequate water, sanitation and hygiene (WASH) services in India's health facilities, contributes to the high neonatal mortality rate, which is currently 24 deaths per 1000 live births. India has made rapid progress in ending open defecation across the Country which is having a huge impact on improving water, sanitation and hygiene (WASH). Just a few years ago, nearly half of India's population defecating in open places due to lack toilets in houses. Since 2000, 2.1 billion people have gained access to basic sanitation, such as flush toilets or latrine with a slab which are not shared with other households. In 2017, 2 billion people still lack a basic sanitation service and among them almost 673 million people still practiced open defecation. By 2019, according to the latest estimates, the number of people without access to toilets has reduced significantly by an estimated 450 million people. Moreover, two-thirds of India's 718 districts are affected by extreme water depletion, and the current lack of planning for water safety and security is a major concern. The benefits of having access to an improved drinking water source can only be fully realized when there is also access to improved sanitation and adherence to good hygiene practices. A tremendous achievement, only possible because of the Swacch Bharat Mission (SBM) (Clean India Campaign), led by the Prime Minister. UNICEF has been a proud partner of the Swacch Bharat Mission. UNICEF's water, sanitation and hygiene (WASH) team works in over 100 countries worldwide to improve water and sanitation services, as well as basic hygiene practices. The impact of universal access to WASH on global health would be profound. There is the potential to save the lives of the 829,000 people who currently die every year from diseases directly caused by unsafe water, inadequate sanitation and poor hygiene practices. Thus safely managed water, sanitation, and hygiene (WASH) services are an essential part of preventing and protecting human health during infectious disease outbreaks, including the current COVID-19 pandemic. One of the most cost effective strategies for increasing pandemic awareness, especially in resource controlled settings, is investing in core public health infrastructure, including water and sanitation systems. Good WASH and waste management practices, that are consistently applied, serve as barriers to human-to-human transmission of the COVID-19 virus in homes, communities, health care facilities, schools, and other public places.

Abstract No. 5

POLLUTION OF AQUATIC ECOSYSTEMS AND ITS EFFECT ON BIODIVERSITY

Sunita Arya

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ABSTRACT

India is not yet water stressed country, but it faces the challenge of managing its water, abundant in monsoon and scarce in dry seasons. The water table is going down in many parts of the country. The per capita availability of water in country is 1/3 compared to two decades before. More than a decade back World Water Expert Meeting in Japan concluded that water is 90% of lakes and reservoirs is by and large polluted varying degree. The UN declaration of "Water for Life" decade 2005 – 2015 may have brought some desired effects, which are yet to be known. UN–Water dedicated World Water DAY 2010 to water quality. World water day 2010 stressed a policy dialog for global commitment to address water quality, ecosystem, and human wellbeing, yet, day in and day out millions of tuns of untreated sewage, industrial and agricultural waste are drained down in the world's water system. coastal eco-system is highly stressed. Study show the presence of cadmium, magnesium, nickel, copper, zinc, chromium, and lead in almost all estuarine water of the country. Arsenic has become threatening contaminant in fresh water where as mercury in fish is posing serious problem. It is reported recently that after USA, India is a major consumer of Mercury.

Explosive growth of blue, green algae and water hyacinth is seen in aquatic system everywhere, which would damage terrestrial, fresh water and near – shore marine ecosystem through eutrophication, resulting in degrading the biodiversity it is extremely concerning that most of the nuclear power plants have bean build near the aquatic ecosystem. Any leakage, seepage or accident occur in these plants will dangerously disrupt the ecosystem due to the radioactive materials. Intensive aquaculture has also done damage to aquatic resources and biodiversity.

With 83 million more people on Earth each year, the present human population of 6.3 billion will become 9.7 billion and 50 billion animals will be over 100 billion by 2050, one can well imagine its ef fects on aquatic ecosystems. It is estimated that presently about 2.5 billion pigs and cattle void more than 80 million tuns of waste nitrogen annually compared to 30 million tuns by the total human population.

Abstract No. 6

IMPACT OF COVID-19 PANDEMIC ON SOCIO-ECONOMIC STATUS OF INDIAN FARMERS

Harshavardhan M.[1] and Raviprasad Sajjan M.[2]

[1]College of Horticulture, Sirsi, Karnataka.
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ABSTRACT

Everything in the world can wait, but not agriculture. Agriculture is not something we can stop temporarily. No matter what happens to the entire world, agriculture has to move on. World Health Organisation (WHO) had declared the COVID-19 outbreak as a global emergency on January 30, 2020. In 2020, Coronavirus pandemic started spreading globally . In spite of all the measures taken up by the government and in view of continuing restrictions on movements of people and vehicular traffic, concerns have been raised regarding negative implications of Covid-19 on the agriculture economy. The Coronavirus lockdown had adversely affected the agriculture sector and farmers in India. Agriculture is the backbone of Indian economy. It is the primary sector which generates employment so that the entire circle of economic circulation goes on. According to Food and Agriculture Organisation of United Nations, “In India, agriculture, with its allied sectors, is the largest source of livelihoods”. Agriculture contributes around 16% to the country's GDP. The socio-economic status has played an important role in addressing and mitigating the short and long-term impacts of the COVID-19 crisis on Indian economy. While the impact of the pandemic will vary from country to country, it will most likely increase poverty and inequalities at a global scale. India is one of the world's largest producers of crops like rice, wheat, sugarcane, cotton, vegetables and milk. Losses for 40 per cent of the farmers who experienced a yield loss, occurred from a lack of labour, storage or transport options. Farmers faced issues such as, labour shortage and unavailability or high cost of seeds and fertilizers.

Abstract No. 7

WATER, SANITATION AND HYGIENE IN SCHOOLS OF NORTH-EAST INDIA: A REVIEW

Suraj Kumar Dey

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ABSTRACT

Many schools in North-East India have insufficient access to water facilities, sanitation and hygiene. A critical review carried out to observe the water, sanitation and hygiene in schools of North- East India. Improved water, sanitation and hygiene facilities may leads to reduction of various diseases like diarrhoea and other hygiene-related diseases in school students. Improved WASH knowledge, attitudes and hygiene behaviors among students may leads to reduced disease burden and improved hygiene behaviors in students. Proper access to safe and sufficient, water, sanitation and hygiene facilities, in schools has great potential to improve health. Through this paper, I want to make people socio-politically aware and appeal the government to take potential steps by ensuring the proper basic facilities of water, sanitation and hygiene in schools of North-East India.

Abstract No. 8

COVID-19 : INFECTIOUS DISEASES

Naina Srivstava

D.A.V. P. G. College, Dehradun, UK

ABSTRACT

Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus. WASH services should enable more frequent and regular hand hygiene by improving facilities and using proven behavior change techniques. Safely managed services are also critical during the recovery phase of a disease outbreak to mitigate secondary impacts on community livelihoods and wellbeing. These secondary impacts which could include disruptions to supply chains, inability to pay bills, or panic-buying have negative impacts on the continuity and quality of water and sanitation services, the ability of affected households to access and pay for services and products (for instance, soap, point of use water treatment or menstrual hygiene products) and the ability of schools, workplaces and other public spaces to maintain effective hygiene protocols when they re-open. If not managed, secondary impacts can increase the risk of further spreading water borne diseases, including potential disease outbreaks such as cholera, particularly where the disease is endemic.

Abstract No. 9

PREVENT HEALTH BY USE OF CLEAN WATER, SANITATION AND HYGIENE

Kapil Kumar Yadav, Arun Alfred Davi, Mohd Noman, Iska Srinath Reddy, Manjul Kumar and Tarence Thomas

Department of Soil Science and Agri. Chemistry
Nai, Shuats, Prayagraj, U.P.

ABSTRACT

Safe water, sanitation and hygiene are one of the prime concerns around the globe. This study aimed at assessing water and sanitation hygiene-related attitude and practices, and quality of water. Rural Population in developing Countries face water, sanitation and hygiene health issues. Today, 2.5 billion people lack access to safely managed drinking water services and 5.2 billion people lack safely managed sanitation services. Unsafe hygiene practices are widespread, compounding the effects on people's health. Well-constructed toilets help prevent the contamination of water supplies. Regular hand washing after defecation and before handling water minimizes the risk that dirty hands contaminate used water. Safe Water, Sanitation and Hygiene is the collective term for their interdependent nature, these three core issues are grouped together to represent a growing sector. While each a separate field of work, each is dependent on the presence of the other. For example, without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible. Safely managed water, sanitation, and hygiene are an essential part of preventing and protecting human health during infectious disease outbreaks including the current COVID-19 pandemic.

Abstract No. 10

A RELATION BETWEEN SANITATION AND GROUNDWATER POLLUTION

R.K. Singh

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ABSTRACT

Septic tank and pit latrine modes of on-site sanitation systems are commonly used in India. Septic tank has problems like periodic cleaning and disposal of sludge. In urban areas where household and communal toilets are more prevalent, 2.1 billion people use toilets connected to septic tanks that are not safely emptied or use other systems that discharges raw sewage into open drains or surface water bodies.

Groundwater pollution occurs when pollutants are released to the ground and make their way down into groundwater. Leachate from onsite sanitation system is the one the source of ground water pollution. The chemical contaminants and pathogenic bacteria released from these onsite sanitation systems are in filtered into the surrounding groundwater sources through soil and causing the threat. This threat is more severe in those areas where onsite sanitation and ground water resources are located very closely. There is shortage of drinking water in almost all urban areas of the developing countries like India; hence water has to be conserved. Contamination of drinking water by pathogens and nitrate are two major public health issues commonly related to on-site sanitation systems.

The groundwater pollution due to on-site sanitation system relates primarily to unconfined and, to a lesser degree, to semi-confined aquifers. If groundwater supplies are drawn from deep and confined aquifers, on-site sanitation does not pose a significant hazard. Hence the hydro geological characteristics plays a role in groundwater contamination due to on-site sanitation systems. The contamination of Groundwater wells is poorly recognized in many developing countries because of lack of monitoring. Hence, monitoring of groundwater water quality is essential.

Abstract No. 11

IMPACT OF WATER, SANITATION, AND HYGIENE INTERVENTIONS ON IMPROVING HEALTH OUTCOMES AMONG SCHOOL CHILDREN

Sherwin Camillas

Kalasalingam Academy of Research and Education

ABSTRACT

This review was done to explore the impact of water treatment, hygiene, and sanitary interventions on improving child health outcomes such as absenteeism, infections, knowledge, attitudes, and practices and adoption of point-of-use water treatment. A literature search was conducted using the databases PubMed and Google scholar for studies published between 2009 and 2012 and focusing on the effects of access to safe water, hand washing facilities, and hygiene education among school-age children. Studies included were those that documented the provision of water and sanitation in schools for children less than 18 years of age, interventions which assessed WASH practices, and English-language, full-text peer reviewed papers. Fifteen studies were included in the final analysis. 73% () of the studies were conducted in developing countries and were rural based (53%,). The child's age, gender, grade level, socioeconomic index, access to hygiene and sanitary facilities, and prior knowledge of hygiene practices were significantly associated with the outcomes. Nutrition practices which are key factors associated with the outcomes was rarely assessed. Further research is required to assess the long-term impact of such interventions in different settings.

Abstract No. 12

COVID 19 IMPACT ON AQUACULTURE

Ashok Kumar

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ABSTRACT

On percapita basis, more "foodfish" is consumed globally than any other type of meat or animal protein.Globally, 53 percent of the total food fish supply is obtained from marine and inland capture fisheries; theremaining (47percent) supply is being derived from aquaculture. Its contribution to percapita food availability is growing. Asia continues to dominate the aquaculture sector and will be responsible for more than 89percent share in production by 2030.Fish provides atleast 50percent of the essential animal protein and mineral intake to 400million people from the poorest African and South Asian countries. In 2018-19 total fish production was 13.34 million tones , it contribute 1.07% of the GDP.16 million people are involve in fish related activities. It plays important role in Indian economy by generating employment, ensuring food and nutritional and ensuring nutritional . Covid 19 pandemic situation leads to loss of production and disrupt marketing . Economic loss and social insecurities developed. Due to covid there is a daily loss of 224 crore to Indian fishery sector, monthly loss is 6838crores. On shrimp culture due to lockdown a loss of $1500 million. India is the third largest producer of farmed shrimps. Lock down in landing centers and harbors severely affected the fisher folks in all the nine coastal states and four union territories of country. Fishing activity decreased, starting 24.3.2020 fishers have not ventured into the sea. Fish demand and supply chain affected due to lockdown. There is dumping of catch in the sea due to no provision of marketing and low prices. Unavailability of fish seed on time for stocking due to transportation restriction resulted in lower stocking in cultured area. Storage and marketing problem greatly affected the livelihood of fishing community. Export-oriented fisheries business have faced a vast reduction in demand. Market prices due to reduced demand from local restaurants and hotels have drastically reduced fishing activity, and factories are closed or operating at reduced capacity. Reduction in entry of new fish farmers in fishery sector has greatly affected. Shortages /poor quality of fish seeds, feeds and related aquaculture items (e.g. supplements) have also been reported, due to restrictions on transportation and travel of personnel. The impact of the COVID-19 lockdown on the world of research is also inevitably heavy. Direct consequences of the lockdown measures are the slowdown of all research activities (in particular non-COVID-19-related)and the cancellation /postponing of national and international conferences. Research institutions are often left autonomous in deciding how to face the lockdown, deciding whether to shutdown completely or continuing their research activities while ensuring the safety of their employees. Number of employees simultaneously allowed in each facility was reduced and controlled to ensure the preservation of the safety distance. It was forbidden to start any new bench experiments in favor of the adoption of protocols of maintenance; Working from home encouraged to guide students and online teaching continued Shut down of research centres, Universities, Academic centres and other research oriented institutions duringcovid-1 9pandemic greatly hampered on going projects, research, dissertations, due to unavailability of researchers, skilled persons, supporting staffs and other required resources. Advantages of lockdown drop in demand, and resulting in price drop. Canned and other preserved seafood products with a longer shelf life have profited from panic buying at the beginning of the crisis. T remendous decrease in water pollution. Living conditions for aquatic organisms improved. Online trades services and communication has been boosted.

Abstract No. 13

WATER, SANITATION AND HYGIENE HEALTH IN SCHOOLS IN LOW-INCOME COUNTRIES

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ABSTRACT

Many schools in low-income countries have inadequate access to water facilities, sanitation and hygiene promotion. A systematic review was carried out that aimed to identify and analyze the impact of water, sanitation and hygiene interventions (WASH) in schools in low-income countries The papers were analyzed in groups, based on four categories of reported outcomes: (i) reduction of diarrhoeal disease and other hygiene-related diseases in school students (ii) improved WASH knowledge, attitudes and hygiene behaviors among students (iii) reduced disease burden and improved hygiene behaviors in students households and communities; (iv) improved student enrolment and attendance. The typically unmeasured and unreported 'output' or 'exposure'of program fidelity and adherence was also examined. Several studies provide evidence of positive disease-related outcomes among students, yet other assessments did not find statistically significant differences in health or indicated that outcomes are dependent on the nature and context of interventions. Thirteen studies provide evidence of changes in WASH knowledge, attitudes and behaviors such as hand-washing with soap. Further research is required to understand whether and how school-based WASH interventions might improve hygiene habits and health among wider family and community members. Evidence of the impact of school-based WASH programs in reducing student absence from school was mixed. Ensuring access to safe and sufficient water and sanitation and hygiene promotion in schools has great potential to improve health and education and to contribute to inclusion and equity, yet delivering school-based WASH intervention does not guarantee good outcomes. While further rigorous research will be of value, political will andeffective interventions with high program fidelity are also key.

Abstract No. 14

PHARMACEUTICALLY IMPORTANT COMPOUNDS FROM BLUE GREEN ALGAE

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ABSTRACT

Blue-green algae are a group of extraordinary diverse gram-negative prokaryotes and the oldest phototrophic organisms originated before 3.5 billion years ago. Different strains of freshwater and marine Blue-green algae are found all over the world, shows remarkable ecological diversity. Capability to grow in adverse conditions and their autotrophic nature makes them an eligible candidate to grow in low nutrient-deficient lakes, ponds, and oceans which pose a serious threat for water and result in eutrophication. This may cause unpleasant tastes and odors of water through the secretion of volatile compounds. They are well known for different biological activities and being used for the production of various value-added products throughout the world. In pharmaceutical companies especially in the new drug discovery research division, the last 40 years research is going on the extraction of new compounds or drugs from Blue-green algae. Their development without supplement of the organic substrate can be a practical advantage over the microorganisms. The less accessibility and high cost of new generation antibiotics enable us to search for new substances for biological activity. The first time before 1500 BC, medicinal and nutritional properties have been investigated for Nostoc algal species to treat gout, fistula, and cancer. In the current scenario, less accessibility of life-saving drugs, high cost of antibiotics, and development of resistivity towards existing antibiotics., made it necessary to look forward to new research activities based on Blue-Green Algae and other plants for the betterment of society and mankind. The screening of extracts or to isolate compounds from different natural sources is a common way to discover biologically active compounds. Most of the valuable cyanobacterial metabolites are concentrated in their biomass. For existence in nature, Blue-Green algae secrete and contain various organic compounds. Compounds like proteins, fatty acids, vitamins, pigments, primary and secondary metabolites extracted from Blue-Green algae are well known for different biological activities such as antifungal, antiviral, antibacterial, anticancer , antioxidant etc. Pharmaceutical companies have been shown commercial interest in the Blue green algal group due to the presence of vast and diverse active compounds.

Abstract No. 15

BETTER HEALTH THROUGH WATER, SANITATION AND HYGIENE (WASH)

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ABSTRACT

Health is wealth is not just philosophical observation but it is in fact, emphasizes that health is one of the important component of living life meaningfully. Health is a state of complete physical, mental, social and spiritual well-being and not merely absence of disease (WHO). Health means normal functioning of an individual i.e., normal functioning of body of human being. Health is a result of multiple factors some within our control such as sanitation and some beyond control of human being such as climatic changes. Health is fundamental to human rights and an essence of productive human life. Achieving health does not mean treatment of disease. And at the same time better health through sanitation is a cornerstone of human life. Disease is a condition of the body or some part or organ of the body in which the functions are disturbed or deranged. Disease is a discomfort, a condition in which bodily health is seriously attacked, deranged or impaired, a departure from a state of health, an alteration of the human body interrupting the performance of vital function. Sanitation is the science of safe guarding health. Sanitation is a way of life expressed in the clean home, clean farm, the clean neighbourhood and the clean surroundings of the community. Sanitation connotes a comprehensive concept which includes safe drinking water, safe excreta disposal, safe garbage disposal, waste water disposal, personal hygiene, home and village sanitation and food hygiene. Billions of people, most of whom live in developing countries, lack access to clean, safe drinking water and adequate sanitation facilities, and the health consequences are dire. The two leading causes of death globally for children under 5 years of age namely diarrheal disease and acute respiratory infections along with other health problems like childhood stunting are linked to poor WASH (Water, Sanitation and Hygiene) practices. Contaminated drinking water and poor household hygiene behaviors sicken millions of children and adults, contributing to debilitating illnesses and premature mortality. The economic impacts are also significant. Children, girls especially, may miss school because they lack private sanitation facilities or must fetch water for their families. Adults miss cultivating food for their families because they are sick. Safely managed water, sanitation, and hygiene (WASH) services are an essential part of preventing and protecting human health during infectious disease outbreaks, including the current COVID-19 pandemic.

Abstract No. 16

CLEAN ENVIRONMENT, CLIMATIC CHANGES AND NATURAL DISASTER

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ABSTRACT

Clean environment is necessary for each and every organism. Greenhouse gases are already changing our climate. Climate change may not be responsible for natural disasters, but it is very likely that it will impact future catastrophes too. A little increase in global temperature leads to increased risk of drought and increased intensity of storms, including tropical cyclones with higher wind speeds, a changed Asian monsoon, and possibly, more intense mid-latitude storm. Climate change does not just cause changes in known hazard risks, but also raises the level of uncertainty, and will generate surprises. Hence, the additional risk due to climate change should not be analysed or treated in isolation, but instead integrated into broader efforts to reduce the risk of natural disasters. This paper provides an overview of current knowledge of climate change and its effects on climate variability and extreme weather that could lead to natural disasters, paying particular attention to the potential to apply the information to disaster risk reduction. Clean environment maintains the biodiversity and natural climate. It minimizes the bad climate change and in turn minimizes the natural disaster.

Abstract No. 17

STUDIES IN WATER QUALITY OF MUMBAI LAKES AND EFFECTIVE REMEDIAL MEASURES

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ABSTRACT

The water bodies' rivers, lakes and estuaries are continuously subjected to a dynamic state of change with respect to their geological and geochemical characteristics. The Powai lake is located in the heart of the suburban area of Mumbai surrounded by Vihar lake and Powai Garden. The study along the Powai and Vihar Lakes has been performed to investigate the concentration levels of pollution in water. The sampling has been done along selected seven sites of both the lakes water samples has been drawn for 2 years for three seasons i.e. Summer, Monsoon (Pre-monsoon and Post- monsoon) and winter. Water samples have been analyzed for their physico-chemical parameters. The water sample collected has been analysed for Temperature, pH, Conductivity and total dissolved solids, D.O, C.O.D, and B.O.D. The study identified that Powai lake is badly affected by the effluent and untreated sewage from nearby area. However, it is found that the water quality of both lakes deteriorates slightly from winter to summer season on account of the increase in pollutants concentration due to water evaporation. The finding will serve as baseline information to understand the environmental fate of different pollutants and for detailed studies in near future. It will also help to evaluate effectiveness of remedial measures and to prevent and control the deterioration of health of Lake Ecosystem.

Abstract No. 18

SANITATION AND HEALTH IMPACT OF *PARTHENIUM HYSTEROPHORUS*

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ABSTRACT

Parthenium hysterophorus (Carrot grass) is a highly prolific and one of the world's most dangerous weeds. This aggressive weed is responsible for huge losses to the agriculture, human health, health of livestock, economy and biodiversity. Due to high competitive success rate and adaptability it has invaded almost all parts of the world. It's rapid and highly spread can be attributed to human health and activities. In human beings, Parthenium weed cause many health problems such as asthma, dermatitis, bronchitis, hay fever and allergies on skin, eyes, nose and mouth. This weed is unpalatable and allergic to grazers but if cattle consumed this weed results in losses due to serious concerns of health hazards and bitter milk. P. hysterophorus is found in road sides, railway track, residential areas, along irrigation canals, waste lands and agricultural fields. There are many control methods are being used to manage this noxious weed. The first method is physical control which is totally unsafe and risky method second is chemical method to control this weed relay on the uses of chemical herbicides which lead to the harmful impact on the environmental pollution and affect to other organisms. Among all known strategies, the third method which is biological control method is preferred because of their eco-friendly nature and inexpensiveness. Mexican beetle Zygogramma bicolorata is a effective bio-agent to control the Parthenium weed. These beetles feeds on the leaves of Parthenium and defoliate the plant. Hence, Zygogramma will assist to ultimately reduce the Parthenium weed. This review briefly discusses the harmful impact of Parthenium weed on human health and management of this violent weed.

Abstract No. 19

DETERMINATION OF CHROMIUM ACCUMULATION IN *LABEO ROHITA* IN YAMUNA RIVER ECOSYSTEM IN MATHURA-AGRA REGION, UTTAR PRADESH, INDIA

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ABSTRACT

The present study revealed the chromium toxicity with its health measures in L. rohita from Yamuna River at Mathura- Agra region. The samples were taken in triplet from both sites. The different organs of L. rohita gills, muscles, liver and kidney were taken for further processing. The sampling was carried out from Oct 2019 to January 2020. Chromium in different organs of fish were analysed by Atomic absorption Spectrophotometer (AAS). The average Cr concentration in fish gills sample is found to be the highest (6.23 mg/l) at the Mathura site followed by 5.96 mg/l at the Agra sites for the month of Jan 2020. On the other hand, the highest Cr concentration was observed for Jan 20, as compared to Oct 19. The significant high Cr concentration values can be observed for Mathura region than the Agra region for both the seasons. In all sample's Cr concentration was higher than the permissible limit stated by WHO except in Kidney. The BCF in the present study showed that the concentration of the Cr in the tissues followed the order of gill > liver > muscle > kidney. HPI, MQI and Pearson's correlation coefficient analysis was also done in which HPI was observed very high and there was a positive correlation between all the samples.

Abstract No. 20

A STUDY OF HYDROBIOLOGICAL PARAMETERS FROM RIVER YAMUNA AT YAMUNA NAGAR, HARYANA, INDIA.

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ABSTRACT

The current study communicates with hydrobiological parameters of river Yamuna at YamunaNagar, Haryana, India from January, 2019 to September, 2019. River Yamuna is the largest tributary river of Ganga. Water of Yamuna river get polluted due to discharge of agricultural pesticides, domestic waste, industrial waste and sewage outlets. This waste discharges not only affect aquatic flora and fauna but also affect human beings. Three sampling site of river Yamuna were selected namely; Y1: Dadupur dam site (upstream); Y2: Kalanour Yamuna bridge site (downstream); Y3: Dadwa- Fatehpur bridge site. Hydrobiological parameters include dissolved oxygen, alkalinity, turbidity, free carbon dioxide, acidity, hardness, calcium ion. The mean range of temperature, pH, DO, hardness, alkalinity and acidity were observed as 13- 28˚C; 6.3-7.4; 3.5- 10.8 mg/L; 130-160 mg/L; 70- 115mg/L and 0.1- 0.4mg/L respectively.

Abstract No. 21

WATERBORNE DISEASES

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ABSTRACT

Even today, only 85% of India's population is covered by water infrastructure. Due to lack of personal and home hygiene 4 lac to 5 lac children under five years of age die each year from diarrhea. It is said that poor water quality and the lack of adequate disposal of human, animal, and household wastes are the major source of waterborne diseases. It is very unfortunate that only 30% of waste water from India's cities is treated before disposal and the rest flows into rivers, lakes, and groundwater. Fluoride contamination of fresh water also affects large parts of rural India. More than 25 million people of 17 states have to drink water with fluoride concentrations higher than the maximum permissible limit of 1.5 parts per million. Excess fluoride can cause a condition called skeletal fluorosis. Many diseases are caused by microscopic organism like viruses and bacteria that are ingested through contaminated water or by coming in contact with feces. Some important water borne diseases are as follows: Diarrhea. This is the most common water-borne diseases. It mainly affects children below five years of age. The symptoms include dizziness, dehydration, pale skin, and loss of consciousness in severe cases. It usually lasts for a couple of weeks and can turn out to be fatal if it goes untreated. Cholera It is mainly caused by bacteria named Vibrio cholerae via consumption of contaminated food or drinking water. The symptoms include diarrhea, vomiting, fever, and abdominal cramps. Cholera occurs predominantly in not only children, but also affect adults. It possesses a mortality rate that is alarmingly high among the water-borne diseases.Typhoid fever is caused by Salmonella typhi bacteria transmitted via contaminated water. The common symptoms of a patient suffering from typhoid are prolonged fever, loss of appetite, nausea, headache, constipation, and loss of body weight. Proper attention is needed to cure typhoid in the patient as this is very contagious disease. Amoebiasis, It is caused by a parasite named Entamoeba histolytica. This protozoan is transmitted by unknowingly consuming cysts in food and water, and it affects the intestine. The parasite thrive son contaminated soil and fecal matter. The common symptoms of amoebiasis include abdominal cramp and watery stools.

Abstract No. 22

HISTORICAL INSIGHTS INTO THE TRADITIONAL KNOWLEDGE OF WATER MANAGEMENT IN INDIA

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ABSTRACT

The word 'India', which is Greek in origin, comes from the Sanskrit root word 'Sindhu' which is the name for the river Indus. This fact represents the eternal and essential aspect of centrality of water in Indian history and culture. The agrarian society of India has always depended heavily on water for its livelihood and sustenance. This is reflected in ancient literature, religion, art and folk culture of India which have accorded a special place to its rivers. This veneration for rivers developed with time and grew into a cult of river, which still exists today. This also necessitated a level of understanding of water and its efficient management. We have evidences from archaeological and literary sources to gauge into the practices of ancient Indians and see the patterns of continuity and change in it. Ancient Sanskrit texts such as Vedas, Upanishads and Samhitas etc. have numerous references to the activities concerning water availability and its use. These showcase the level of knowledge of ancient Indians in the field of hydrology. There are discussions on predictions for rainfall, causes of rainfall, phases of hydrological cycle, different types of winds, and methods of measuring precipitation and so on. Further , other texts talk about water quality, nature-based solutions for obtaining portable water, methods for identifying potential groundwater resources using soil and biotic markers. Archaeological sources such as Indus Valley sites present a picture of mastery over advanced hydrological principles and their applications. Structures like extensive canal network, elaborate sewage and waste water treatment system, sophisticated network of wells, underground drains and presence of flush toilets, stand testimony to their superior standards of sustainable living. There are several records of different water management techniques existing in different agroclimatic zones of the country. This is an attempt to shed light on these water management methods and techniques used by Indians since antiquity.

Abstract No. 23

THE EXPERIENCE OF WATER, SANITATION AND HYGIENE PROGRAM IN JAUNPUR

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ABSTRACT

The earth has large amount of water nearly three –fourth but unfortunately only a 0.3% is usable by humans. Remaining 99.7% is in the oceans, soils, icecaps, and floating the atmosphere. But it is important that 0.3% useable water is unattainable. Supply of safe drinking water is a basic necessity. water is under the state subject .The rural water supply has been included in 11th schedule of the constitution among the subjects that may be entrusted to panchayats by the state. Different mission are worked like State Water and Sanitation Mission (SWSM) Uttar Pradesh ,The National Rural Drinking Water Program (NRDWP) ,Swajaldhara Program ,Accelerated Rural Water Supply Program (ARWSP) etc. So supply of safe water, sanitation and hygiene (WaSH) in our house and community places are globally recognized as a key to promote health and goodness of environment . WaSH has been established to improve health, gender justice which is good for the society. Although most public schools and community places are not enough in basic water supply and sanitation facilities and hygiene education program. The aim of this study to know the state of WaSH program in jaunpur.

Abstract No. 24

WATER AND PLANTS HEALTH

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ABSTRACT

Out of the many basic needs, water is very essential for a healthy environment. Water is indispensable for all living beings including plants. Water is the limiting resource for crop productivity in sustainable agriculture. It plays several pivotal roles in the physiology of plants. It is also essential for the germination of seeds and growth of plants. There is close relationship between plants and every forms of life. Water may become polluted by a number of sources. Generally, water contaminates due to various anthropogenic activities. Contaminated water has a wide variety of harmful effects on plant life and living beings. Water may affect the entire food chain. If drinking water contains unsafe levels of contaminants, it can cause health issues by producing numerous chronic diseases. Almost one tenth of the global disease burden could be prevented by increasing access to safe drinking water, improving sanitation and hygiene. Thus, it is the need of the hour that the quality of drinking-water should be improved by applying cost-effective management approaches.

Abstract No. 25

WASH AND COVID-19

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ABSTRACT

COVID-19 or Corona Virus Disease-2019 emerged firstly in December 2019 and infected more than rores of people almost throughout the world. The virus mostly spread through respiratory droplets which is invisible and remain in the air. A healthy person gets infected by inhalation of these droplets. The infected person shows symptoms such as fever, difficulty in breathing, dry cough, tiredness, headache, loss of taste or smell. The virus has a tendency of rapid mutation and accordingly the symptoms of the diseases also varies like in addition to above symptoms, now-a-days it showing the symptoms of diarrhea. There is no specific treatment of COVID-19 infected patient. So prevention is the best way to control the infection and till now, there is no vaccination to prevent COVID-19. The ward WASH, means Water, Sanitation and Hygiene- have great role to prevent, spread and control of the infection. As per prevention of the infection by sanitization is concerned, use of hand sanitizer containing more than 80 percent ethanol has the virucidal efficacy on corona virus, means, it kills the virus. If we see the characters of corona viruses, then we could find that they belong to a large family of RNA viruses which are enveloped viruses with a fat layer that protects it. Most probably, by destroying the fatty envelop of the virus by more than 80% ethanol of a sanitizer kills the virus.Besides, sanitizers contains ethanol and acid (hydrogen peroxide) have synergistic effect to kill the virus. Maintaining personal hygiene by frequent washing of hands with water for 20 seconds(specifically before taking food), washed the virus and kills the virus. Maintaining personal hygiene by not touching mouth, nose, eyes, self quarantine when ill, disposing of used mask in proper place, cleaning and disinfection of houses and premises will prevent and spread of infection Water, particularly running water mixed with soap, kills and washed the viruses from our hands and help to prevent the infection. Besides, drinking of hot water with a regular interval may kill the virus in our body. Not only that, inhalation of water vapour through nasal passage, can reach the nasopharyngeal space and kills the virus. It can be concluded that water, sanitation and hygiene are very much important to prevent COVID-19.

Abstract No. 26

ROLE OF WATER, SANITATION AND HYGIENE IN HEALTH

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ABSTRACT

Water is the most important substances for life. All living things must have water to survive. If there is no water there would be no life on planet earth. As per global population predication is expected to increase by 2 billion persons in the next 30 years [UN]. As the global population grows, there is an increasing need to balance all of the competing commercial demands on water resources. 785 million people remain without having basic drinking water. 2 out of 5 people worldwide do not have facility with water at home. Globally, 2.2 billion people lack access to safely managed drinking water facility [WHO/UNICEF 2019]. 9.054 % [2017] of global population still practising open defecation.75% of water report risk exposure. Unclean water and poor sanitation are a leading cause of child mortality. Contaminated water can transmit diseases such diarrhea, cholera, dysentery, typhoid, and polio. 50% of child malnutrition and more than 3 million die from diseases associated by UNSAFE WATER. Childhood diarrhea is closely associated with insufficient water supply and inadequate sanitation. Due to diarrhea cause 1 million child deaths per year were estimated. Adequate water, sanitation and hygiene are essential components to provide basic health services. Awareness of good hygiene practices will reduce the spread of diseases. Sewage sludge treatment techniques should fallow. Improve sanitation facilities by providing toilets and latrines. Promote hygiene habits through education.

Abstract No. 27

IMPACT OF WATER, SANITATION AND HYGIENE ON KEY HEALTH AND SOCIAL OUTCOMES

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ABSTRACT

Access to safe drinking water and good sanitation are vital for family wellbeing. Thus, sanitation contributes to the social and economic development of the society. Clean drinking water and good sanitation would not prevent infections without practising good hygiene. Maintaining personal hygiene and sanitation is also important for several reasons such as personal, social, psychological, health etc. If every individual on this planet maintains good hygiene for himself and the things around him, diseases will eradicate to a great level. There are myriad of ways in which we can keep our surroundings in check and keep them neat and clean. Swacch Bharat Abhiyaan has been a success as it has already improved the condition of the country a lot. However, the movement can only succeed if the public partakes in this program on an individual level. In the end, it is up to the individual how clean they keep their environment. This responsibility includes not only adopting practices which improve sanitation and hygienic practices but also holding other people accountable for the same.

Abstract No. 28

FOOD HYGIENE AND HEALTH

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ABSTRACT

Health is wealth. Good health requires balanced diet, yoga, clean food, air, water, environment and personal & community hygiene. Since safe food is one of the basic requirement for a healthy body proper hygiene must be practised. Food hygiene is the action taken to ensure the safety and suitability of food to reduce the risk of consumers from becoming sick. It includes all the practices involved in protecting food from the risk of contamination, poisons or foreign bodies. Food contamination occurs by such hazardous substances that are not intentionally added to food and are harmful for health. Such substances may be chemical, physical or biological. Food borne illnesses may be avoided by good personal hygiene, proper food handling, clean utensils & equipments, safe holding temperature that prevent microbial growth, washing fruits and vegetables before use, keeping insects and pests away from food areas, using clean water, etc. As there is no immediate way of telling if the food is contaminated, food borne diseases, like gastroenteritis, dehydration, botulism, diarrhoea, typhoid or more serious health issues can be avoided by following the principles of food hygiene. It also reduces the additional cost of buying medications and medical check-ups. This paper reviews some food, personal and kitchen hygiene practices.

Abstract No. 29

STUDY ON WATER SANITATION AND HYGIENE STATUS IN GOVERNMENT SCHOOLS AND IMPACT DUE TO EARTHQUAKE

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ABSTRACT

Clean, accessible water and adequate sanitation for everyone is important for better livelihood. Despite of sufficient fresh water, millions of people loss their life from disease associated with inadequate water supply and poor status of sanitation and hygiene, children to be mostly affected. According to UN, each day, 1000 children die due to preventable water and sanitation related diarrheal diseases. Beside health, poor water quality and inadequate sanitation might negativity affect educational opportunity of a child. A universal and equitable access to safe and affordable drinking water adequate sanitation and hygiene can be gained if the sustainable development goals (SDGs) related to water and sanitation are achieved. Providing school with safe drinking water and adequate sanitation and hygiene facility would help to complement this goal. Water sanitation and hygiene in school provides access to primary education, reduces child mortality, improves water and sanitation and promotes gender quality. The study was conducted in 25 government schools of LSMC in December 2015. This study presents the wash facility and their status in the school. Mixed qualitative methods were used in the study. Field visit was conducted in every school followed by questionnaire survey and interview. Water samples from each school were collected tested in laboratory. The data shows that the building blocks of 60% school and compound wall and gate of 12% school were affected by earthquake. Further, water purification system in 8%schools having drinking water facility and 88% schools having purification system. Drinking water of 88% schools were contaminated with coliforms. Based on analyses the ratio of children per toilet is 1:55. 84% schools have hand washing station with soap. 76% schools have the facility of menstrual hygiene in schools

Abstract No. 30

STUDY ON WATER SANITATION AND HYGIENE ON KNOWLEDGE AND PRACTICES OF WATER SANITATION AND HYGIENE AMONG SECONDARY STUDENTS

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ABSTRACT

Human existence on the planet earth is bedeviled with a lot of health related problems caused by mans living environmental conditions these are the surrounding conditions of man living environment which have been observed by researchers to be consequentially determined to the health social and economic well being of the individual and his family or society where they alive. Knowledge attitude and practices (KAP) survey is a quantitative method that provides access to quantitative and qualitative information and revels misconceptions or misunderstanding that may represent obstacles to the activities to be implemented and potential barriers to behavior change poor hygiene practices and inadequate sanitary conditions play major roles in the increased burden of communicable diseases with in developing countries provision of adequate water supply sanitation hygiene and waste management in schools have a number of positive effects children who have access to adequate water sanitation and hygiene (WASH) conditions at school are more able to integrate hygiene education into daily lives and can be effective messengers and agents for change in their families and community good hygiene sanitation and water handling practices among students should be encouraged to transfer hygiene knowledge to their families and communities. Nepal has proposed sustainable a development goals SDG targets for the year 2030 which includes achieving universal and equitable access to safe and affordable drinking water ,sanitation and hygiene services for all national water supply coverage of Nepal is 83.59% and sanitation coverage is 70.28% of the total population improved public health and living standard of people of Nepal through safe sufficient accessible acceptable and affordable water sanitation and hygiene services anytime everyone and everywhere is the major development goal of the government of Nepal and hence has shown commitment towards achieving basic water and sanitation for all by 2017 . The study focuses an WASH inadequate and poor wash and is leading cause of morality and morbidity among children the objective of the school going childerns knowledge and their practice on water sanitation and hygine in rural and urban area.

Abstract No. 31

IMPACT OF DUMPING GROUND AREA ON HEALTH AND HYGIENE AT HADAPSAR, PUNE: A CASE STUDY

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ABSTRACT

Present Research article represent the study undertaken on dumping sites effect on health and hygiene of people living around such areas. In Hadapsar there are two locations namely Uruli Devachi and Fursungi Dumping ground. It has been seen that seasonal variation in ground water quality in such areas reflected through the health related cases. Physiochemical analysis of water in these areas shows high concentration of Cu, Fe, Zn, Mn. The continues addition of garbage waste in such area would result into exponential problems. Periodic news reports are mentioning the hazards of such dumping sites with respect to the respiratory problems, it has been seen that increased chromatid exchange rate due to such high contaminated zones in addition to this in many cases children of age below 10 years have died. Potential threats are unavoidable and estimate of municipal solid waste average energy content can be determined. Sustainable solutions for these dumping sites are advised such as 65% of municipal waste can be managed by open dumping, 5% incineration, 5% Landfill, and most importantly the 25% composting practices should be enhanced for conversion of waste in to useful energy rich compost, because Mycorrizal fungi are naturally occurred in such area and performs the decomposition process, if we augment this process with proper technology it can be the key solution for such dumping ground areas related issues.

Abstract No. 32

INDIGENOUS AIR BREATHING FISH SPECIES AS AGENTS FOR BIOLOGICAL CONTROL OF AQUATIC VECTOR FOR SPREAD OF HUMAN DISEASES

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ABSTRACT

Air breathing fishes are those fish species that have special capacity to survive out of water for considerable period of time by taking atmospheric oxygen for respiration with the help of extra branchial organ or some specially modified organ or part of body. A variety of indigenous fish species belonging to different genera, family and order have been included in this special category. The air-breathing fish have substantial advantages for aquaculture, because they can survive in harsh environment with low level of dissolved oxygen and high ammonia content and can be marketed in live condition because of their unique air breathing capacity. Majority of them have very high consumer preference as food fish for their unique taste, nutritional and therapeutic value, some are highly valued as ornamental fishes for their adaptability to captivity, beautiful color, exceptional body shape and movement, while some has the unique ability to fight or play as the sport fish. However, their ability to act as biological agent for control of certain diseases spread through organisms that complete their lifecycle in water has not been given due importance. This paper discusses about the potential role of 13 indigenous air breathing fish species viz. *Clarias magur*, *Heteropneustes fossilis*, *Channa punctatus*, *Channa gachua*, *Channa striatus*, *Channa marulius*, *Channa stewartii*, *Anabas testudineus*, *Notopterus notopterus*, *Chitala chitala*, *Trichogaster fasciata*, *Trichogaster lalius* and *Monopterus cuchia* in controlling spread of common diseases like Malaria, Yellow fever, Dengue fever, Chikungunya, Filarisis, Zika etc. (through mosquito) as well as Fluke infection and Bilharziasis (through freshwater snail).

Abstract No. 33

ENVIRONMENTAL IMPACTS OF MINING ON LAND RESOURCES IN BUNDELKHAND REGION

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ABSTRACT

This study evaluated potential groundwater with toxic metals in and around an abundant granite mines in Jhansi. The pH values for ground waters were neutral, with a slight increase of the values in the mining areas. Higher values of electrical conductivity were observed in the mine areas. In these areas, groundwater contamination by Cd, Fe, and Pb were observed. Most of the toxic metals were decreased with distance from mines; some have decreased gradually near the adjoining residential areas which may due to mixing with metal-free waters parameters like EC, TDS, Turbidity, DO, TH were found more in mining sites comparison to non-mining sites. Key Words: Mining; Heavy metals; Groundwater and Bundelkhand region

Abstract No. 34

IMPACT OF CHANGING LIFESTYLES IN INFECTIOUS DISEASES

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ABSTRACT

Life style of human population is changing with the technological development, geographical, economical, cultural and religious context. Today the infections are very common problem in the world. More than one billion people are suffering from different types of infections. The aim of the present works to aware the people about the infectious diseases and their unhealthy life styles. WHO estimated that 60% of human health and quality of life are correlated to life style. The life style of an individual affects human relationship between human- human, human-animals, human-plants, & human-infectious materials. It affects the survival of infectious agents in the body and environment. The major life styles affecting the infectious diseases are diet, poor nutrition, overeating, obesity , cultural, religious beliefs, family size, sleeping pattern, physical activities, travel, smoking, drug addiction and alcohol etc. The significant role of life style was found on development, transmission, frequency, and incidence of infections. The infection rate depends on individual, environmental, economic, cultural and social factors as well as pathogens involved.

Abstract No. 35

SAFE WATER

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ABSTRACT

Water safety and quality are fundamental to human development and well-being. The provision of safe and acceptable drinking - water of sufficient quantity frequently represents a challenge to small water supply systems in both developed and developing countries. People on the earth are under tremendous threat due to undesired changes in the air, water and soil. Due to increased human population, industrialization, use of fertilizers etc, water is highly polluted with different harmful contaminants. The methods used include physical processes such as filtration, sedimentation and distillation .Biological processes such as ,colour, acidity, hardness, pH, chloride, DO, BOD, COD alkalinity used for testing of water quality. We can consider De-mineralized water as “dead” water, While mineral-rich water is referred to as “living” water. If your health is a priority your best drinking water will have six qualities, Contaminant free Mineral rich, Alkaline pH, Antioxidant Good taste, and Super hydration. \

Abstract No. 36

DESIGN AND DEVELOPMENT OF GADGETS AND SYSTEMS IN PLASTIC FOR FRESHWATER AQUACULTURE

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ABSTRACT

The use of plastics has transformed the agricultural production system and has great impact in improving the overall scenario in all production systems including fisheries and aquaculture. Nylon fishnets, components of RAS and biofloc (BF) systems, plastic pipe framed nylon net cages, pen culture in water locked areas, etc. are some of the important uses of plastics in aquaculture. The AICRP on PET, CIFA, Bhubaneswar Centre is working since its inception in 1988 and contributed several plasticulture technologies for mechanization in aquaculture. Over three decades of research in the application of plastics in aquaculture have gone through time tested process of innovations, experimentation and refinements to develop many gadgets and systems. These technologies are fully or partially adopted and accepted by the farmers.

Portable FRP Carp Hatchery: The carp hatchery made up of fiberglass reinforced plastics (FRP) has been suitably designed and developed for small and marginal fish farmers. The unit can produce 1.0-1.2 million fish seed in a single operation. Within a short span of 13 years, the technology has gone to 26 states of the country and installed in diverse agro-climatic zones. The performance of this technology across these diverse settings is quite remarkable. It is being seen as a major intervention to produce sufficient seed to sustain aquaculture growth in the country.

Silos for Fish Rearing: These are high-tech re-circulatory fish rearing systems specially designed and fabricated for holding live fishes in high densities in limited space. The silos have diameter of 2.15 m and varying heights ranging from 0.9-2.7 m. The system is incorporated with bio-filtration, demand feeders, water recirculation and aeration facilities, etc. These units are suitable for holding live fishes in hotels, restaurants and fish spots for attracting customers for the products prepared from live fishes.

Fish Feeders: Different types of feeders (demand and automatic) with 30 liter holding capacity have been designed and developed for different stages of fishes. These feeders economize the feed application in aquaculture.

Polyhouse Ponds: These are designed and developed to maintain water temperature in aquaculture ponds and tanks in cold season. This is helpful for fish health and primary productivity in ponds.

FRP made NFT Aquaponics System: A Nutrient Film Technique (NFT) aquaponics system has been designed and developed in FRP with circular fish culture tank (Ø 2.15×0.9 m, operational capacity of 2800 liter), trickling biofiltration unit utilizing 85 liter volume filled with 10-25 mm gravels and seashell (S:V=12.77), hydroponics tanks (4×0.9×0.35 m) with an optimum water column of 0.25m containing trays with 72 perforations (Ø2.5") to hold the plastic mesh pots and a 200 liter sump made of HDPE with three conductive water level sensors and a 0.3 HP submersible water pump for the recirculation. Using this system, various plants along with different fish species have been grown for biomass production.

Seed Transportation System: The designs of carp seed transportation system have been made using FRP having a dimension of the holding tank (600 mm x 300 mm x 300 mm), which can hold 54 litre of water for seed storing during transportation. Splash breakers are placed in the tank to minimize the water slushing which help in avoiding injuries to the fish seeds during transportation. The tank bottom (inner side) is provided with oxygen supply lines and diffusers.

Portable FRP Pabda Hatchery: Fishes of genus *Ompok*, widely called as 'butter catfish', and in India and neighboring countries commonly known as 'Pabda' having high consumer preferences. This species is most popular and gaining importance as a promising aquaculture candidate in recent time. But, insufficiency of seed is the major bottlenecks, which hindering it's wide and mass scale culture. Portable FRP pabda hatchery has been designed, developed and tested for its field use. The system consisted of two major parts *i.e.*, Hatching/ incubation unit; and Brood acclimation – cum - Latency stage nurture – cum - Hatchling rearing tanks with water supply lines. The system is so designed that, it reduces the use of space and in one operation 25000-30000 nos. of early fry of pabda can be produced.

Abstract No. 37

PROTECTING CONSERVATION BIOLOGY AND BIOLOGISTS DURING AND AFTER THE COVID-19 PANDEMIC

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ABSTRACT

The COVID-19 pandemic is impacting all parts of human society. Like everyone else, conservation biologists are concerned first with how the pandemic will affect their families, friends, and people around the world. But we also have a duty to think about how it will impact the world's biodiversity and our ability to protect it, as well as how it might affect the training and careers of conservation researchers and practitioners. As editors of Biological Conservation, we have heard first-hand from colleagues, authors, and reviewers around the world about the problems they are facing, and their concerns for their students, their staff, and their research projects. Some of our colleagues have become infected with the virus. Field and lab work have largely shut down, while teaching and other communications have moved online, with consequences for training, data collection, and networking that are still unclear. Our colleagues and the media report some examples of reduced human pressures on natural ecosystems, cleaner air and water, and wildlife reclaiming contested habitats. Beyond the direct and immediate consequences of this particular virus, some have also started to think about emerging infectious diseases and their links with biodiversity loss, human activities, and issues of sustainability. It is too early to evaluate the overall impacts of the coronavirus pandemic on biodiversity and our ability to protect it, but some preliminary conclusions are possible. At this point, protected areas appear to be safe and, in many places, biodiversity is benefitting from reduced human activities. However, this may not be true everywhere, especially where enforcement has weakened but threats have not. Research has been disrupted, but only time will tell if this will have long-term consequences. We are concerned for the training and careers of young conservation scientists, but the lasting effects of the pandemic on these will depend, in part, on how we and our institutions respond to these concerns. Finally , although we focus here on conservation, this is first and foremost a human tragedy, disrupting lives and killing far too many people. Society's priorities must be human health and the containment of the pandemic, but we also need to be thinking ahead to the resumption of conservation practice and education. There is an opportunity here to remind people of the links between healthy, resilient ecosystems and human well-being.

Abstract No. 38

AN ILLUSTRATED STUDY ON PHYTO-PHARMACOLOGICAL ACTIVITIES OF *FICUS CARICA* (MORACEAE): A HOLISTIC REVIEW

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ABSTRACT

From prehistoric times to the modern era in many parts of the world plants, animals and other natural objects have a profound influence on the culture and civilization of man. India being a tropical country is blessed with natural resources and ancient knowledge for its judicious utilization. India is the largest producer of medicinal plants and is appropriately called the "Botanical Garden of The World". *Ficus carica* is a potent medicinal herb which is used from the ancient time to till date. It is one of the precious flowering medicinal plants in the garden which is commonly known as "Angira" belongs to the family Moraceae. In Sanskrit, "Angira" means "Powerful Nutritive" which signifies it's capability to treat many diseases with just a simple touch. Herbal drugs become very popular due to its easy availability, fewer side effects than synthetic drugs. *Ficus carica* marked as a precious plant of the Indian system of medicine. It has a huge impact on Indian Ayurveda Shastra. It is mainly found in different states of India like Assam, Bihar, Karnataka, Kerala and West Bengal. Phytochemical studies showed that *Ficus carica* is a rich source of different active chemical constituents like fatty acids, flavonoids, triterpenoids, alkaloids, steroids, saponins, Phenol, etc myristic, pentadecylic, palmitic,Margaric, cis-10-heptadecenoic, stearic, oleic, elaidic, Linoleic, arachidic, heneicosylic, behenic, tricosylic, and Lignoceric.. The major pharmacological activities showed by these plants are antibacterial, antifungal, wound healing, anticancer, etc. Therefore, it can be concluded that *Ficus carica* may be considered as a natural source of many pharmacologically active constituents and useful for the development of herbal formulations.

Abstract No. 39

A COMPREHENSIVE STUDY ON TANACETUM PARTHENIUM (ASTERACEAE):- PHYTO-PHARMACOLOGICAL REVIEW

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ABSTRACT

Nature is always a grand sign to show the prominent phenomena of coexistence. Till today naturalproducts from plants and minerals are the basis for treating various human diseases. Herbal plants play a golden role not only as conventional medicine but also as trade commodities, which satisfy the demand of distant markets for the development of new drugs. World Health Organization mentioned that 80% of the world population are dependent on traditional medicine. India possesses well-versed knowledge of traditional medicine and its practice since the ancient past. Tanacetum parthenium is one of such medicinal plant that has been mentioned in many Indian medicinal works of literature. It is a crucially significant plant as it has contains the largest number of phytochemicals and secondary metabolites which having pharmacological and biological properties. Tanacetum parthenium , commonly known as “fever reducer”, 'featherfew '. Almost every part of the plants like stem bark, fruits, and buds is used in the treatment of different diseases like fever, nausea, dysentery, diabetes, etc. Tanacetum parthenium is a rich source of different active chemical constituents like phenols, tannins, steroids, Apigenin, Luteolin, Parthenolide, Costunolide, 3-β-Hydroxy parthenolide, Secotanaparthenolide, Epoxysantamarin etc. It showed a diverse range of pharmacological activities like anticonvulsant, anti diabetic, anti-inflammatory, antimicrobial, proteolytic and anti-amnesic, etc. The present review is to compile up-to-date informationon this plant that covers its natural phytochemical, biochemical, and pharmacological significance.

Abstract No. 40

A VIRTUOUS REVIEW ON ANTIBACTERIAL ACTIVITY OF *CICHORIUM INTYBUS* (ASTERACEAE) : NATURE'S ENDOWMENT

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ABSTRACT

Medicinal plants are the Nature's gift to human beings to help them pursue a disease-free healthy life. Nature has provided a full store of remedies to cure disease problem of human. Now days, the whole world is suffering from the COVID -19 pandemic it is important to boost up the immunity power of the human body to survive. The natural remedies are the backbone of medicines, Bacterial infections are one of the major problems of human life. Now a day's organic extracts of medicinal plants used as antibacterial agents. *Cichorium intybus L.* (Chicory) belongs to the family Asteracene, known as Chicory or Kasni. It is a small aromatic biennial, found in india, Bangladesh, China, Europe. North America, Baluchistan etc. The aim of this article to highlighted the chemical constituents of the chicory, which are responsible for antibacterial agents. The chicory is nutritionally active plant used for health promotion from ancient time, The phytochemical investigations were carried on the whole plant extract of chicory. which revealed the presence of many active ingredients such as Alkaloids, Tannins, Saponins. Phenols, glycosides, steroids, terpenoids and flavonoids. The various in-vitro and in-vivo study has been represented that the ethanolic extract of the leaf, root and seeds of the herb exhibit antimicrobial activities. The bioactive components of the herb are very necessary for the improvement of health condition and prevention of many diseases. Therefore, the *Cichorium intybus* is an important source of pharmacologically active ingredients which could be used as an active ingredient for the new herbal formulations development.

Abstract No. 41

MITIGATION OF DUST LOAD BY VEGETATION COVER IN AND AROUND OPEN CAST MINING IN BUNDELKHAND REGION OF UTTAR PRADESH, INDIA

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ABSTRACT

Mine and stone crushing industry in India has been growing rapidly due to increasing demand from the construction industries and the present emphasis on developing the country's infrastructure. The aim of the present study was to assess the effects of mining on air, especially dust particles and their effects on plant species in and around mining areas of Jhansi, Bundelkhand region, India. Undoubtedly, the mining and stone crushing activities have considerable effects on the environment and well-being of living organisms. The dust emissions and possibility of leaching of contaminants during the stone mining and its allied activities may contaminate the air and water therefore affecting the exposed living organisms. Stone crushing and associated activities mainly contribute SPM to surrounding environment and studies showed that the mean minimum and maximum values of SPM at crushing and residential sites were recorded of 1064.2 µg/m^3, 1266.5 µg/m^3 and 545.86 µg/m^3, 599.26 µg/m^3 respectively. The variation in terms of dust deposition with species specific result has been observed during the entire study. Decreasing of leaf pigment concentration indicate the positive impact of dust pollution. Species like *Ficus hispida*, *Calotropis procera*, *Butea monosperma*, *Ficus benghalensis*, are shown the maximum deposition of dust on their leaf surface. Our observation may be helpful to find out some species which is resistant or to cope with open cast mining generated dust pollution in and around mining areas and adopt also for the beautification of highways.

Abstract No. 42

FORAGING BEHAVIOUR OF YELLOW WATTLED LAPWING, *VANELLUS MALABARICUS* (BODDAERT, 1783)

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ABSTRACT

The present study was carried out to assess the foraging behaviour of yellow wattled lapwing at four different selected sites in Lucknow district from August 2019 to July 2020. The yellow wattled lapwing is a wader; belongs to family Charadriidae, which have comparatively long stout legs, short straight bill, and wing with rounded edges. We observed the foraging behaviour by individual focal observations using binoculars, stopwatches, and video recorders. In this study, we demonstrated that yellow wattled lapwing adopted different foraging techniques and consumed prey at different rates in different habitats. Our observations indicate that pecking was mostly used by yellow wattled lapwing while probing technique was also adopted. Yellow wattled lapwings mostly forage at open uncultivated area, followed by wetland, river bank, and agricultural land.

Abstract No. 43

A COMPARATIVE STUDY ON THE DISTRIBUTION PATTERN OF ACETYLCHOLINESTERASE IN THE OCTVOLATERAL AREA OF TWO AIR BREATHING TELEOSTS

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ABSTRACT

Octavolateral area is a significant component of rhombencephalon in teleosts which shows a fine cytoarchitecture and comprises many intermingled nuclei, neuropil, fibre tracts and commissures . In the present study, distribution pattern of enzyme acetylcholinesterase has been carried out by employing a modified histochemical technique to visualize acetylcholine containing neurons described by Hedreen, J.C. (1985), in two Indian fishes, *Channa punctatus* and *Heteropneustes fossilis*.

Acetylcholinesterase is an effective marker of cholinergic-cholinoceptive neurons since it hydrolyses acetylcholine in to choline and acetate at synaptic clefts. Present histochemical results exhibited a widespread distribution of acetylcholinesterase in the different nuclei of octavolateral area of both the fishes. Octavolateral efferent nucleus, medial octavolateral nucleus, magnocellular and posterior octaval nucleus demonstrated intense activity for acetylcholinesterase in both the fishes with slight variation, while anterior octavolateral nucleus and descending octaval nucleus exhibited moderate staining. The distribution of acetylcholinesterase was homogenous in the whole rostro-caudal and lateral extension of this nucleus.

Thus in overall picture, octavolateral nucleus contains abundant cholinergic cells in both the fishes. In conclusion, the abundance of cholinergic innervations in this area is a well conserved characteristic feature among vertebrates which has been discussed from phylogenetic perspective.

Abstract No. 44

BREEDING PERFORMANCE OF INDIAN SARUS CRANE IN ALWARA LAKE DISTRICT, KAUSHAMBI (U.P.) INDIA

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ABSTRACT

The breeding performance of Indian Sarus Crane was studied in Alwara Taal and adjoining villages viz: Alwara lake, Alwara village, Koripur, Daksharira, Paurkashirampur, Pashchim Sharira, The farmers of the area and Sarus Crane co-exist in this region which is vital for the conservation of the species. The Crane times its nesting with the flooding of the fields by farmers just before the monsoon. Thanks to farmer's tolerance, Sarus Crane building nests in paddy fields are as successful as pairs that have natural wetlands for building their nests. Wetland habitat amid the fields improves chances of Sarus Crane raising their chicks successfully. The wetlands vegetation helps hide the chicks until they can fly, considerably reducing predation. When the monsoon arrives on time, the farmers reap a rich rice harvest and Sarus Crane have good breeding season. Crane pairs do poorly either when rains are late, or the amount of rains is lower than necessary to flood land scape. Detailed records of 157 nests and 301 eggs were maintained from egg laying till fledging. Generally two chicks hatched from the clutches although few clutches were destroyed due to predation and various other factors, but at least 20 pairs renested.

The breeding behavioural study was conducted during end of June (i.e. pre-breeding season) and December (i.e. post-breeding season). The birds were observed during three separate periods of the day : 07:00 – 10:00, in the morning 11:00-14:00 during noon and 17:00-19:00 hours in the evening. For this purpose 166 Crane pairs were studied. During the breeding season, behaviour was recorded 1 hour for every bird/pair of birds observed during the survey with total 8 hours per visit. Behaviours included : resting position, comfort movements, locomotion, foraging, defecation, inter individual or social behaviours, nest building, fledging, hatching and post hatching, search for suitable mate pair partner by newly hatched young, establishment of its own territory by life time mating pair, searching for suitable nesting site for nest building, courtship and mating, egg laying, incubation, hatching and parental care. The sex, number of birds, presence/ absence of Juveniles, number of nests, habitat type and potential threat to Sarus Crane was also noted. The Cranes were observed either with the naked eye and / or with binocular within 800 m on either side of the studied area.

Abstract No. 45

WATER, SANITATION AND HYGIENE

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ABSTRACT

A proper water, sanitation and hygiene is crucial for preventing the cause of neglected tropical diseases, which affect over 1 billion people of lower socio-economic societies like rural areas since they have improper water facilities sanitation and hygiene facilities. Water is a fundamental human right. This provides access to safe water is one of the most effective instruments in promoting health and reducing poverty. Safely managed sanitation and safe wastewater treatment and reuse of water are fundamental to protect public health. WHO is giving efforts just to monitor the global burden of sanitation related disease and access to safely managed sanitation and safely treated wastewater development agenda. WHO also monitors the factors that enable or delay progress towards these targets. Proper sanitation is needed for prevention of many diseases including diarrhoea, intestinal worms, trachoma which affects millions of peoples worldwide. Ensuring access to proper sanitation in households and educational and health-care and miscellaneous institutions is vital in reducing disease, improving nutritional outcomes, enhancing safety, well-being and educational prospects, especially for women and girls. 1- Sanitation 2- Safe child stool disposal 3- Water supply 4- Food hygiene 5- Hand hygiene 6- Water quality 7- Cystitis 8- Thrush 9- Housing and clustering 10- Migration, disasters and conflicts 1 1- Sociocultural factors and gender 12- Poverty Current situation Today, 2.2 billion people lack access to safely managed drinking water services and 4.2 billion people lack safely managed sanitation services. Unsafe hygiene practices are widespread, compounding the effects on people's health. The impact on child mortality rates is devastating with more than 297000 children under five who die annually from diarrhoeal diseases due to poor sanitation, poor hygiene, or unsafe drinking water.

Abstract No. 46

IMPACT OF SOCIO-ECONOMIC DEVELOPMENT IN GROUNDWATER QUALITY

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ABSTRACT

Around half of the world's population lives in urban areas and the urban population is increasing 2% annually. A rapid population growth in urban areas leads to mushrooming of slums, industries with no proper disposal facilities for their effluents, inadequate sewerage systems and unwanted stress on the natural resources especially increased ground water pollution. Unlined drains containing treated and untreated waste may contribute considerable amount of metals to the groundwater coming from disposal of household materials, plastics, paints and inks, body care product, medicine and household pesticide. In Delhi, there are 16 unlined drains carrying about 1900 MLD municipal and domestic wastewater and 392 MLD industrial effluents are discharged into the Yamuna River. Groundwater samples, drain samples and soil samples were collected from the major nine different drain locations of Delhi named, Najafgarh, Okhla, Shahadra, Khyberpass, Morigate, Delhi gate, Barapula, Maharani bagh and Kalkaji. Lysimetric experiments were setup to know the leaching behaviour of various metals from surface to groundwater from the drain. Drain samples were found to have metals, lead (0.22-18.5 mg/l), arsenic (0.2-2.5 mg/l), mercury (0.01-3.06 mg/l), Nickel (0.3-18.2 mg/l), chromium (0.05-13.6 mg/l), Cyanide (0-0.01 mg/l) and cadmium (0-0.01 mg/l), however in control leachate, lead (0.01-6.2 mg/l), arsenic (0.05-1.04 mg/l), mercury (0.0-0.01 mg/l), Nickel (0.3-1.0 mg/l), chromium (0.01-1.0 mg/l), Cyanide (0.0-0.01 mg/l) and cadmium (0.0-0.01 mg/l). While samples of groundwater taken from near the actual drain sites showed all heavy metals below detectable limits. Lysimetric experiments have shown that after passing the water and drain samples from soil profile, the maximum concentration of heavy metals has been caught up by soil (holding capacity) indicating the compact nature of soil structure, however a remaining concentration of the heavy metals leached down from a point sources (Unlined drain) to the aquifer and diluted in the entire ecosystem. This finding strongly convinced that unlined drains are feasible point (source) to raise the heavy metals contamination of groundwater aquifer, various new ecological sanitation approaches should apply to protect the water resources, further groundwater contamination and to improve the health status of the population.

Abstract No. 47

CORONAVIRUS PANDEMIC AND RELIEF PROCEDURES: SUGGESTIONS FOR MATERNAL AND KID WELLBEING AND NOURISHMENT

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ABSTRACT

Covid illness 2019 (Coronavirus) keeps on attacking wellbeing and financial measurements universally, remembering progress for maternal and youngster sustenance. In spite of the fact that there has been center around increasing paces of youth squandering for the time being, maternal and kid undernutrition rates are additionally prone to increment as a result of Coronavirus and its effects on neediness, inclusion of fundamental intercessions, and admittance to proper nutritious nourishments. Key areas at specific danger of breakdown or diminished effectiveness in the wake of Coronavirus incorporate food frameworks, earnings, and social security, medical care administrations for ladies and kids, and administrations and admittance to clean water and sterilization. This survey features key zones of worry for maternal and youngster nourishment during and in the fallout of Coronavirus while giving vital direction to nations in their endeavors to decrease maternal and kid undernutrition. Established in learnings from the models in Worldwide Wellbeing's Hindering Decrease Models venture, we give a bunch of suggestions that range interests in areas that have supported immediate and roundabout effect on sustenance. These incorporate mediations to reinforce the food-flexibly chain and decreasing food uncertainty to help those at impending danger of food deficiencies. Different methodologies could incorporate focused on social security net projects, installment deferrals, or tax cuts just as reasonable money uphold programs for the most defenseless. Focusing on the most minimized families in country populaces and metropolitan ghettos could be accomplished through sending network wellbeing laborers and supporting ladies and network individuals. Network drove disinfection projects could be critical to guaranteeing sound family conditions and decreasing undernutrition. Furthermore, a few Coronavirus reaction estimates, for example, contact following and self-detachment could likewise be misused for nourishment insurance. Worldwide wellbeing and enhancements in undernutrition will require governments, benefactors, and improvement accomplices to restrategize and reprioritize ventures for the Coronavirus time, and will require information driven dynamic, political will and responsibility, and global solidarity.

Abstract No. 48

ICHTHYOFAUNAL DIVERSITY OF CHITAURA JHEEL, A WETLAND OF DISTRICT BAHRAICH, U.P. (INDIA)

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ABSTRACT

Fishes are very important components of the wetlands and they play an important role in food wed. The results of the present study reveal that occurrence of 29 fish species belonging to 20 genera 14 families and 8 orders. The member of order Cypriniformes were dominated by 10 species followed by Siluriformes (7 species); Ophiocephaliformes (3 species); Perciformes (4 species); Osteoglossiformes (1 species); Clupiformes(1species); Beloniformes (1 species) and Synbranchiformes (2 species). As per latest version of IUCN Red List, out of 29 fish species identified, 1 species comes under EN(Endangered), 1 under NT (Near threatened),1 under VU (Vulnerable), 3 under NE (not evaluated) and 23 under LC (least concern) so far. All the species reported in the present study are reporting first time under mopping survey programme. It is concluded that the fish in this area are under threat due to anthropogenic activities such as overfishing and pollution of the river. Therefore conservation action plan are needed for conservation of rare and threatened fish in this area. The considerable attention should be paid to conserve fish species comes under EN and NT categories.

Abstract No. 49

WASH AND INFECTIOUS DISEASES

Seema Pandey and Archana Shukla

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ABSTRACT

WASH is the collective term for Water, Sanitation and Hygiene. Due to their interdependent nature, these three core issues are grouped together to represent a growing sector. While each a separate field of work, each is dependent on the presence of the other. For example, without toilets, water sources become contaminated; without clean water, basic hygiene practices are not possible. The main principle of WASH response is to ensure the consideration of water supply, sanitation and hygiene factors at the site selection and planning stages, while also coordinating the response closely with physical planning, public health and environmental stakeholders. Safe water supply, sanitation and hygiene services and medical waste management in health care facilities are essential to deliver quality health services, protect patients, health workers and staff, and to prevent further transmission. During an infectious disease outbreak, services should meet minimum quality standards and be separated for infected vs. non-infected patients. Support is required to ensure that services are not disrupted and products such as soap and alcohol-based hand rubs are available. Efforts to eradicate open defaecation and improve sanitation access are unlikely to achieve health benefits unless interventions reduce microbial exposures. As millions of people worldwide continue to rely on shallow groundwater sources and on-site sanitation, it is important to develop an understanding of the causes of microbiological contamination of groundwater when considering the potential for improvement in water supplies and sanitation. This scenario is not only unhygienic environmentally but also poses a risk to human health of the residents such as contracting waterborne diseases. Because a large proportion of communities in developing countries depend on water systems that require the users to collect and store drinking water, it is important that we are able to assess the significance of any associated health risks. Solutions aimed at improving the sanitation situation is therefore a modest step towards safeguarding the bacteriological quality of the water sources.

Abstract No. 50

MOLECULAR CHARACTERIZATION OF WILD AND CULTURED *CATLA CATLA* BASED ON 16S RRNA GENE

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ABSTRACT

The present study was conducted on Molecular characterization of *Catla catla* collected from different sites of Western Uttar Pradesh. DNA isolation was done and gel electrophoresis was carried out. 16S rRNA gene region of taxonomic importance was amplified using available primers and sequenced. The Phylogenetic analyses of all the sequences were performed using software MEGA 7.0. The results revealed that the molecular data based on 16S rRNA was close to topotype population. The cryptic samples and other fish were identified and characterized based on gene studies viz. 16SrRNA, showed maximum similitude to available gene sequences of on NCBI *Catla catla* and hence considered as the same.

Abstract No. 51

TOXICITY OF INDUSTRIAL EFFLUENT ON IMMUNOLOGY AND BIOCHEMISTRY OF FISHES

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ABSTRACT

Industrial effluent and its toxicity is a serious concern worldwide. Due to rapid industrialization many rivers in India are facing the complicated problems of pollution because these Indian rivers act as temporary reservoirs for drainage of water. Discharge of untreated industrial effluent into aquatic system depleted the dissolved oxygen content and affects aquatic biota and their production. Alkaline pH, low organic load, high BOD, COD, TDS, TSS, TS indicate high pollution potential of industrial effluent.

The alteration in the chemical composition of the aquatic environment usually affects behavioral, haematological, biochemical, histological and physiological activities of the inhabitants, particularly the fish population. The health of any organism is influenced by the physiological activities taking place in the body. Immunological, haematological, biochemical and histological alterations are easier to measure and can provide integrated measure of physiological status of any animal.

Blood is involved in respiration, defense mechanisms and movements of nutrients and metabolites. Thus any change in the chemistry of blood will affect the efficiency of fish. Biochemical alterations is a sensitive tool for assessing the impact of toxicants on fish health and also allows for early warning signs of disease and injury in cells, tissues, or organs. Study of such changes in immunological and biochemical parameters provide information regarding of chronic toxicity of any toxicant. This study will also help the government and other agencies in the improvement of restrictive measures to control or limit developmental activities causing water pollution.

Abstract No. 52

ASSESSMENT OF WATER QUALITY OF LAKE MANSAR USING WATER QUALITY INDEX (WQI) AND COMPREHENSIVE POLLUTION INDEX (CPI)

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ABSTRACT

Freshwater is the most valuable resource for all kinds of life on earth. However, excessive anthropogenic influences have deteriorated its quality, creating the immediate need to assess its quality and suggest restoration measures. The present work aims to evaluate the surface water quality of lake Mansar, a Ramsar site located in lower Himalayas and is used for domestic purposes by the local inhabitants. Two important indexes i.e., Water Quality Index (WQI) and Comprehensive Pollution Index (CPI) were employed since they provide ratings depicting the overall quality of water at a certain location and time that can be converted into easily understandable and usable information for the public. Various important water quality parameters like pH, electrical conductivity, total dissolved solids, total alkalinity, dissolved oxygen, biological oxygen demand, calcium hardness, magnesium hardness, chlorides, nitrates, sulphates, phosphates, etc. were analysed for a period of two years at the selected stations of the lake following standard methodology. A comparison was also made with the standard permissible values recommended by WHO and BIS. The results of the present study suggested that most of the parameters were within the permissible limits recommended by WHO and BIS. However, the value of WQI and CPI indicated that the water quality at all the study sites is poor and moderately polluted, suggesting that the water is unfit for drinking and can be used only for irrigation and industry. This study proposes immediate restoration measures for sustaining the water body for future.

Abstract No. 53

WATER, SANITATION, HYGIENE (WASH) AND WASTE MANAGEMENT

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ABSTRACT

Global access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, leading to improved health, poverty reduction, and socio-economic development. However, many countries are challenged to provide these basic necessities to their populations, leaving people at risk for water, sanitation, and hygiene (WASH)-related diseases including the COVID-19 outbreak. Ensuring good and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces, prisons and health care facilities will further help to prevent human-to-human transmission of the COVID-19 virus. An update to the interim guidance document entitled 'Water, sanitation, hygiene, and waste management for the COVID-19 virus', published on 23 March 2020. Waste is a very visible issue in an emergency, but it is often a neglected area of environmental sanitation. It is a diffuse problem that can impact adversely on health, sanitation, drainage and the wider environment. Solid waste also affects public space, reducing the sense of ownership of the problem, both to the general population and to the aid agencies providing relief. Each agency produces waste, from its activities, their general operations and from their staff (whose living conditions may be in contrast to those of the local population). Though little evidence is available, some data suggest that transmission via faeces, is possible but unlikely, especially where faeces become aerosolized. Because of the potential infectious disease risks from excreta, including the potential presence of SARS-CoV-2, wastewater and sludge should be contained, and treated either on-site or conveyed off-site and treated in well-designed and managed wastewater and/or faecal sludge treatment plants. Standard treatment processes are effective for enveloped viruses, including SARS-CoV-2. Each stage of treatment combining physical, biological and chemical processes (e.g. retention time, dilution, oxidation, sunlight, elevated pH, and biological activity) results in a further reduction of the potential risk of exposure and accelerates pathogen reduction.

Abstract No. 54

GROUND WATER RECHARGE: A WELL PROVED TECHNIQUE FOR REMEDIATION OF FLUORIDE CONTAMINATED WATER IN VARIOUS PART OF INDIA

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ABSTRACT

Excessive intake of Fluoride causes Fluorosis in human. More and more areas are being discovered regularly that are affected by fluorosis in different parts of the country. Children in the age group of 0 to 12 years are most prone to fluorosis as their body tissues are in formative / growth stage during this period. Fluorosis, which was considered to be a problem related to teeth earlier, has now turned up to be a serious health hazard. It seriously affects bones and problems like joint pain, muscular pains etc. are its well-known manifestations. Skeletal fluorosis is deforms the skeleton structures and quite painful. Neurological Problems are also being reported due to over consumption of fluoride. BIS: 105001991 and WHO standards permit 1.5 mg l-1 as a safe limit of fluoride in drinking water for human consumption. The problem of increasing fluoride concentration in drinking water is increasing with excessive pumping of ground water. Most common cause of fluorosis in India is fluoride-laden water derived from wells for drinking purpose. It has affected 17 states of India. Nearly 50-100% districts are affected in Andhra Pradesh, Tamil Nadu, Uttar Pradesh (From Agra to Unnao to Sonbhadra, Uttar Pradesh has hundreds of habitations with high Fluoride), Gujarat, Rajasthan, 30-50% districts are affected in Bihar, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Punjab, Orissa, West Bengal and < 30 % districts are affected in Jammu & Kashmir, Delhi, Kerala. Dilution of fluoride in drinking water seems to be an easiest solution of the problem. Ground water recharge has great potential to dilute fluoride concentration in ground water. Roof top harvesting, storage and its use for dilution of fluoride concentration can be also considered as a solution. In rural area generally hand pumps are employed for abstraction of ground water for drinking purposes, hence it is possible to use hand pump for ground water recharge using roof top harvested rain water for diluting the contaminated water within a safe limit.

Abstract No. 55

ROLE OF WATER, SANITATION AND HYGIENE (WASH) ON HEALTH WITH REFERENCE TO COVID-19

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ABSTRACT

Clean drinking water, improved sanitation and good hygiene practices are life-sustaining and play an important role in public health. The benefits of water, sanitation and hygiene (WASH) cannot be underestimated in controlling the spread of disease, as well as underpinning human rights, well-being and development. Safe water, sanitation and hygiene is a necessity to reduce the spread of COVID-19 and maintain good hygiene practices. Today billions of the most vulnerable people lack access to safe WASH services, despite its importance to health, social and economic outcomes, leaving them behind, and exposed to the risk of COVID-19. A serious disease outbreak which has rapidly expanded into a pandemic, COVID-19 is reaching deadly proportions globally. COVID-19 poses direct threats and impacts with immediate consequences on human health. WASH is a key preventative measure in reducing the spread of COVID-19 and is one of the principal public health recommendations. Nevertheless, the most vulnerable populations with no access to adequate WASH or without social and economic safety nets will be hit hardest. Infrastructure that supports water, sanitation, hygiene (WASH) and healthcare waste management practices helps prevent the spread of diseases within the healthcare facility and to the surrounding community.

Abstract No. 56

ROLE OF WASH IN ACHIEVING GOOD HEALTH AND DETERRING CORONA

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ABSTRACT

In the current era health is the most important aspect for a person. It will be maintained by adopting proper sanitation, hygiene as well as by use of clean water. WASH refers to the provision of water, sanitation, health care waste management, hygiene and environmental cleaning infrastructure, and services across all parts of facilities. Globally in the recent years 92 countries had estimates for safely managed services, representing 54% of the global population. 3.4 billion People used safely managed services. An additional 2.2 billion used at least basic services. 627 M people used limited services, 701 M people used unimproved facilities, and 673 M still practiced open defecation. 7 out of 10 people who still lacked basic services lived in rural areas. 1/3rd lived in least developed countries. The JMP 2020 report on basic WASH services in schools, finding that globally nearly one in three schools (31%) lacked basic drinking water services (affecting nearly 600 M children) and over one third (37%) lacked basic sanitation services (affecting nearly 700 M children). Two in five schools (43%) lacked basic hygiene services, affecting more than 800 M children around the world. In least developed countries, 49% of all schools have no hand washing facility at all. Improper hygiene, contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhea, dysentery , hepatitis A, typhoid, and polio. The issues (water, sanitation and hygiene) would be improved by providing sanitation facilities for toilets and latrines that flush into safe enclosure and promoting good hygiene habits through education. Adopting good and consistently applied WASH and waste management practices helps to prevent human-to-human transmission of COVID-19 virus.

Abstract No. 57

APPLICATION OF TRICHODERMA TO REMEDIATE FOR ENVIRONMENT POLLUTION

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ABSTRACT

Trichoderma is filamentous fungi with distinguished bio-control agents used globally. The genus Trichoderma is genetically quite diverse, with a number of various capabilities between various strains. In this review topic illustrates how these prolific fungi may be used in remediation of pollutants in the environment, with focus on mechanisms and capabilities of the fungi and their emergence as novel and useful tools to improve agriculture and environmental quality . Trichoderma spp. are used substantially for metabolic compounds production and in agriculture for plant protection against diseases and for bio-fertilization and plant growth promotion. In addition to direct venomous activity against phytophathogens, bio-control concerned metabolites may also increase disease resistance by activate systemic plant defence activity. Furthermore, some compounds may be highly useful in degradation of toxic soil pollutants.

Abstract No. 58

MIXED MALARIA INFECTIONS IN INDIA

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ABSTRACT

Human malaria is caused mainly by two species of Plasmodium; Plasmodium falciparum and P. vivax. In recent years, changes in clinical manifestations of P. vivax malaria (severe, complicated and fatal malaria) and emergence and spread of P. falciparum malaria have posed great threat for human health in India as well as in the globe. Since malaria treatment regimens are different for these two different species of Plasmodium, proper diagnosis is very important for malaria treatment. Furthermore, mixed species infections cause greater challenges to public health than single-species infections and in many endemic countries including India no proper treatment guidelines for patients with mixed-malaria parasite infection is in place. This is because, incidences of mixed-species infection have been thought to be very minimum in the field and using microscopic identification technique, report of negligible incidences of mixed malaria parasite infections have been reported in almost all endemic countries of the globe. Therefore malaria treatment guidelines only consider single species infection. However, this causes severe issues, because if one species is diagnosed and treated, the other species is not treated and remain as such. Therefore, proper diagnosis of malaria parasite species infecting human is very important for malaria management. Mixed species infections in patients are often under reported, with a tendency to over report the more dangerous P. falciparum.

Abstract No. 59

IMPACT OF COVID-19 ON FARMERS AND INDIAN AGRICULTURE

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ABSTRACT

In 2020, Covid-19 (Corona virus disease) pandemic had negative impact on global economic system in the entire world. No sector has escaped its impact. Not even agriculture. Agriculture and its allied sectors are the source of livelihood in India. The sufferers vary widely among different regions and among producers and agricultural workers. In India, according to Ministry of Agriculture and Farmers Welfare (2015), more than 80% of the agriculture sector comprises of small and marginal farmers. Farmers are a crucial part of the food value chain in India. The Covid-19 had brought new risks that threaten livelihoods as well as food security. The lockdown and the spread of the novel coronavirus disease also forced 55 per cent of the farmers to store their crops as they were unable to sell them. During Covid-19 period, farmers were forced to sell their produce at lower price, inturn were forced to satisfy with lower profit. Around 60% farmers suffered yield loss on their harvest. Farmers also faced the problems viz., unavailability of timely seeds, fertilizers, tractors, and harvesting and crop protection facilities. Covid-19 has contributed deep impact on weak financial support, increased yield losses, profit cuts and lower income margins. The massive impact was the complete stoppage of exports. In turn all the ports were locked and huge produce were strucked with the farmers and exporters. Because of nation-wide lockdowns, there were disruptions in supply chains and prices have declined for maximum agri-products yet consumers were on the part of paying more.

Abstract No. 60

ADVERSE EFFECTS OF SODIUM NITRITE ON THE KIDNEY OF SWISS ALBINO MICE

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ABSTRACT

Sodium nitrite is used as a common food preservative and color stabilizer in meat, poultry, root vegetables, some cheese and hamburger and fish products. The sodium nitrite when added to meat gets converted to nitric oxide when combines with myoglobin to form nitrite oxide myoglobin (nitrosylmyoglobin) which is a heat stable pigment. The curing also contributes flavor to meat. In addition, nitrite curing inhibits the growth of clostridium and streptococcus and also lowers the temperature required to kill C. botulinum. Sometimes nitrite salts can react with certain amines (Derivatives of ammonia) in food produce nitrosamine many of which are known to cause cancer . The present study aimed to investigate the possible effects of sodium nitrite toxicity on histological parameters of kidney in Swiss albino mice at the rate of 75 mg/kg bw and 100 mg/kg bw daily in a single dose for 120 days. Histopathological examination showed several changes like lobulation of glomerular tuft. Cellular infiltrate prominent around bowman's capsule and tubule interstituim. Degeneration of cytoplasm of tubular epithelial cells and loss of brush border of proximal convoluted tubules. On the basis of these findings the study concluded that nitrite could have direct toxic effect on the kidney.

Abstract No. 61

AQUALINE/ BHUNGRU (A UNIQUE TECHNOLOGY TO AUGMENT GROUNDWATER IN DRY ZONES) BHUNGRU/ AQUALINE

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ABSTRACT

Bhungru is a unique scientific technology for storing rain water into subsurface zone of earth for augmentation of groundwater & return it back in lean periods for domestic, agricultural & industrial uses. For its uniqueness JHARKHAND GOVERNMENT has chosen it under JHARKHAND INNOVATIVE FORUM & NITI AAYOG has recognized it under 'ASPIRATIONAL DISTRICTS, UNLOCKING POTENTIALS'. It has also been selected as a ' start up' by Jharkhand government as well as India government. The word 'BHUNGRU' is derived from BHUNGRU MAHADEV or BHUNGRU DEVTA, an ancient God of Adivashis. BHUNGRU MAHADEV is another name of LORD 'SHIVA'.According to Hindu Mythology, Goddess River Ganga originates from matted hair of LORD 'SHIVA' and flows through Indo-Gangetic plain of India to Bay of Bengal. Pure and holy water of river Ganga brings prosperity to millions of Indians who live along its course and depends on it for their daily need. In the same way, fresh, clear and light water from 'BHUNGRU' also brings prosperity to people living in its surroundings.It is well tested environment friendly disaster alleviation technology that purifies ,injects and reserves rain water , excess farm water and storm water below the surface of earth for lean period uses .Use of Bhungru/ AQUALINE in Agriculture The demand of water resources is increasing by the day due to rapid urbanization, increase in population, agriculture, depleting forest cover and infrastructure growth. An uncertain monsoon, lack of adequate irrigation facilities and over exploitation of surface/ground water have only compounded the problem and the situation ahead can only be described as alarming.

Approximately 70 per cent of global freshwater consumption is used in the agricultural sector, The FAO (Food and Agriculture Organization) forecasts that by 2050 global water requirements for agriculture will increase by 50 per cent to meet the increased food demands of a growing population. Global freshwater is becoming increasingly scarce, due to improper management, indiscriminate use and a changing climate.

The Bhungru Aqualine:- plays a significant role in agriculture with ensuring adequate amount of water during lean period .Each unit of Bhungru ensures irrigation water to 15- 20 acres of farm lands for 6 months in a year, starting from one to five million liters of stored water depending upon Geo-hydrological condition of particular place.

This technology provide two dimensional supports to farmers, first, saves standing crops in monsoon with de-flooding the farm land, second, ensure enough irrigation water for Ravi crops.

Many a times delayed or insufficient rain as well as critical groundwater conditions results in Hugh crop failures with big financial losses to farmers and these situations several times compel farmers either to commit suicide or to migrate to cities and towns as a daily laborers. Water from "Bhungru" helps enormously in reducing migration and suicides of farmers.

Abstract No. 62

A UNIQUE SOLUTION FOR GROUNDWATER CONSERVATION. COVID 19 : SANITATION AND HYGIENE

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ABSTRACT

Cleaning refers to the removal of germs, dirt, and impurities from surfaces. It does not kill germs, but by removing them, it lowers their numbers and the risk of spreading infection. Disinfecting refers to using chemicals, for example, registered disinfectants, to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection. Sanitizing is the act of cleaning and/or disinfecting to cut the number of germs, bacteria, and Viruses on a surface or object. When disinfecting a surface, by far the most important consideration is what's known as dwell time: the amount of time the disinfectant needs to remain on a surface to kill pathogens, and in this case, specifically the coronavirus that causes Covid-19. No disinfectant works instantly; most of those sold to the public take several minutes. Different dwell times don't indicate that one disinfectant is more or less effective than another. But in this moment, those are secondary concerns. As we know, disinfectants are high demand and low supply, According to leading experts, apply a disinfectant and give it a 10-minute dwell time.

Abstract No. 63

ESTIMATION OF PRIMARY PRODUCTIVITY OF TERNA DAM WATER RESERVOIR DIST. OSMANABAD (M.S.) INDIA IN RELATION TO SEASON AND ANTHROPOGENIC ACTIVITY.

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ABSTRACT

Anthropogenic activities drastically altered the aquatic systems, posing a serious threat to the survival of the existing flora and fauna. Primary productivity estimation is one of the important measurement tool in comparing the effect of industrial agricultural discharge on biological phenomenon and alteration in its, physiological status. The productivity of Terna River water reservoir from Marathwada region, Dist- Osmanabad (M.S.) India was estimated for one year from one and half feet deep water. The results shaved that respiration 0.04-0.15 Gross primary productivity -0.01-0.04 and Net primary productivity -0.02-0.15 mg/l/hr respectively, showing fluctuation seasonally high during summer season due to anthropogenic activities and decreasing trend in rainy season due to stabilizing activity and show increasing trend in winter.

Abstract No. 64

TAXONOMICALLY STRATEGIC EMERGENCE OF PRECOCIOUS AUTOGENIC DEVELOPMENTAL CYCLE AND MOLECULAR BARCODING OF GNATHOSTOMATOID ROUNDWORMS

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ABSTRACT

The freshwater fishes are the most well-known, universal and characteristic living space of parasitic helminthes. The parasites of these hosts are useful in giving data to population ecology of separate hosts. The parasite networks may be utilized to recognize populaces of comparable fish species using same natural surroundings. The fishes show colossal variety of parasites in common event. These parasites are commonly present either on gills, skin or balances or even in mouth, digestive system and interior body organs including muscles of the fish. The findings reflected the exceptionally large and comparatively more developed forms of advance third stage of larvae in gnathostomatoid roundworms from freshwater garfish reported so far. The occurrence of roundish bosses containing caudal papillae as in Gnathostoma sp. and ornamentation of spines all over the body reflected the strong possibility of precocious development. The morphotaxometric analysis and ultra topological investigations through scanning electron microscopy of the current gnathostomatoid roundworms were validated by the critical appraisal of molecular barcoding on the basis of 18S rDNA, ITS and CoxI analysis. The phylogenetic interrelationship of the present nemic fauna worked out with the earlier existing genera of the same family and revealed their significant differences with Raphidascaris, Anisakis, Goezia, Porrocaecum and Terranova. Therefore, author assumes to propose the mindfulness among social orders about the parasite diversity in normally possessing fauna viewpoint to correct taxonomic identification, developmental behavior, pathogenecity, health and challenges.

Abstract No. 65

ROLE OF AN INDIVIDUAL IN PREVENTION OF POLLUTION: TO KEEP OUR ENVIRONMENT HEALTHY

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ABSTRACT

Pollution is the introduction of contamination into the natural environment that causes adverse impact on nature. Pollution is an unfavorable alteration of the environment. The term pollutant refers to any substance which negatively impacts the environment or organisms that live within the affected environment. The groups most affected by pollution are elderly persons, children, people living in poverty, animals, buildings etc. Factors determine the severity of pollution is the chemical nature and concentration of pollutants, the area affected and the persistence. Long-term exposure to pollutants can cause permanent health issues. Waste minimization is more desirable than pollution control. As the problems are diverse and some of them are only being recognized but it is also important to keep a close control over all pollutants so that we can maintain our environment in an acceptable condition for future generations. Pollution control is the management of environment. Much is being done to control, to monitor and to rectify damage done by pollutants. Still we will have to use the process, practices, products that avoid or minimize the creation of pollutants and good for environmental conditions. Although government takes plenty of initiatives to control this alarming situation, but it is moral responsibility of each an individual to keep our environment healthy and pollution free for all.

Abstract No. 66

ROLE OF BIODIVERSITY MAY CLEAN UP WATER AND ENVIRONMENT

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ABSTRACT

In the present investigation conserving biodiversity could help shield water ways against nitrogen pollution. Study was carried out that showed how streams with more species are better at removing excess nutrients from water. Mopping up nitrogen compounds a major cause of water pollution released from agricultural fertilizers and waste, human sewage, and fossils, fuel burning is an important goal for environment policy. Biodiversity may help to better natural ecosystem against the Ecological impact of nutrient pollution. Excessive nutrient loading of water bodies is a leading cause of water pollution worldwide and controlling nutrient level in water sheds is a primary objective of most environmental policy. Over the past two decades, different research has shown that Ecosystem with more species are more efficient are removing nutrients from soil and water that are Ecosystem with fewer species. Conservation of biodiversity a useful tool for managing clean up water and environment. Water is an Ecosystem service well functioning Ecosystem- Forest, grassland, Soli, Rivers, lakes, wetlands and Costal water- Provide services that influence the availability of water and its quality. These services are also vital to meet water management goals such as water storage and flow regulation filtering and flood and drought protection, among- others these ecosystem service are impact by water and land management decisions and in turn influence water availability and quality.

Abstract No. 67

SAVE WATER

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ABSTRACT

This paper reports on a review of international water conservation efforts, but with a particular focus on the Australian context. The aim is to take stock of the current understanding of water conservation, in particular: what influences people's decision to conserve water, what influences whether people persist with water conservation behavior and what contributes to awareness and familiarity of water conservation behaviors. We also explore how all these factors jointly can achieve water savings over time, and the efficacy of past efforts to save water. Subsequently, this is used to identify where leading practice for managing water conservation is heading, which we argue is the application of recent developments in behavioral science and advances in smart metering to personalize water conservation programs. To support individualized water conservation efforts, we need more longitudinal studies of water conservation behavior, a greater focus on behavioral science, as well as the development of modelling tools that embed insights and lessons of this research into decision support capability. This can help to develop the capacity to better implement water conservation programs that respond to short-term water scarcity crises, such as droughts, while also providing persistent reductions in per-capita water demand that can help meet strategic water planning needs, such as deferring or downsizing capital investment in supply infrastructure to accommodate demands associated with population growth.

Abstract No. 68

SOCIO-ECONOMIC DEVELOPMENT AND WASH

Sunjana Srivastava

NMIMS

ABSTRACT

Socio-economic development is a process that seeks to identify both the social and the economic needs within a community, and seek to create strategies that will address those needs in ways that are practical and in the best interests of the community over the long run. Creating a prosperous, sustainable economy goes hand in hand with building world-class communities. One cannot exist without the other. The balance between interventions focusing on a basic level of service and on moving people up the ladder towards safely managed services will be informed by the specific situation. This Strategy provides guidance on which approaches could be used in different contexts, leaving discretion with UNICEF's country offices to work with governments to decide on the most effective programmatic focus. The Strategy builds on lessons from existing programmes and experiences, while introducing new areas of emphasis. These include greater engagement with partners in urban areas, to help ensure that children are reached wherever they are; mainstreaming risk-informed programming to mitigate the impact of climate change and emergencies; and more extensive involvement with the private sector and other new partners to encourage innovation and programming at scale.

Abstract No. 69

WASH AND EDUCATION: SENSITIZATION OF STAKEHOLDERS FOR SANITIZATION AND HYGIENE

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ABSTRACT

The future of the planet lies primarily on the future generations and the best way to make them aware of their responsibility is to educate them right from their childhood. Sanitization and Hygiene is necessary to all human beings it is what keeps a human body healthy and fit. If the children are taught proper sanitization and hygienic techniques there will be reduced absenteeism due to sickness. In a recent study it was found that almost 88% of diarrheal diseases are caused by lack of hygiene, improper sanitization and use of unfit water. There are numerous sources which prove that majority of chronic diseases amongst children can be avoided by proper handwashing and eating habits. Key stakeholders in improving the children's health are the communities, families and government. The education of WASH should extend beyond the boundaries of schools, the constant efforts of these stakeholders can help in ensuring that these habits are being followed consistently. Including WASH in the curriculum should be made essential in schools and participation of students in presentations and street plays can help create awareness amongst students. One of the most important steps which needs to be taken is constant measurement and tracking of the progress made across all educational institutions, after that the shortcomings should evaluated against proper standards and necessary measures should be taken to make reforms and ensure that the sanitary and hygiene facilities are up to the mark. Water being the most essential commodity is also the carrier of a number of diseases, according to UNICEF less than 50% of the population had access to clean drinking water in 2017. There is an immense lack of sanitization for girls in many schools in India, inadequate washing facilities discourages them to attend school and sometimes even drop out. Proper education about menstruation and use of sanitary napkins should be encouraged, inadequate menstrual hygiene can potentially have health consequences such as increased risk of reproductive and urinary tract infections.

Abstract No. 70

APPLICATIONS OF BIOREMEDIATION IN TREATMENT OF WASTE AND FUTURE PROSPECT

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ABSTRACT

Water is a fundamental need for life. In the Indian constitution, the right to water is a well-defined part of the right to life. According to the UNICEF, India, more than 50% population of India is deprived of safe water. As the level of groundwater is going down at higher rates and the rivers and other water sources are getting polluted due to anthropogenic activity it becomes more challenging to provide safe water to the people. The untreated sewage water is the biggest source of water pollution in India. The discharged water from the various industries contains different types of pollutants and toxic substances e.g. heavy metals, hydrocarbons, sterols, azo dyes, halogenated organic compounds, pesticides and many xenobiotic compounds. The hazardous wastes are treated by the chemical and physical methods are costly processes and some of the methods are not ecological suitable. Bioremediation includes technologies that accelerate natural processes for degrading or reducing toxic effects of harmful chemicals and thereby provides a good cleanup strategy for many, if not all, types of pollution. Several approaches of bioremediation have been applied and found effective in the cleanup of contaminated sites. Bioremediation methods are promising and cost-effective strategies. The bioremediation rate and effectiveness depend on several biological, chemical and physical factors. It is dire to investigate and research more to make bioremediation methods better, effective and applicable.

Abstract No. 71

POPULATION DYNAMICS OF MACROZOOBENTHOS OF BHAGDA TAAL, A WETLAND OF DISTRICT BALRAMPUR, U.P. (INDIA)

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ABSTRACT

Wetlands support vast biodiversity of flora and fauna, provide food and shelter to organisms that thrive in. Macrozoobenthos play an important role in aquatic ecosystem as primary and secondary consumers and form the trophic relationships include those that feed on them directly or indirectly like fish and bird population. They are the best indicators of the stress in the aquatic ecosystem, so it is utmost important to document the benthic diversity. During the present investigation 22 genera of macrozoobenthos were recorded. Out of 22, 8 genera belong to phylum mollusca, 7 to annelid and 7 to arthropod.

The annual density shows that molluscans dominates and constituted 41.08% of the total macrozoobenthos population was followed by annelids (35.35%) and arthropods (23.57%).

Abstract No. 72

WASH AND ITS IMPACT ON ALL AREAS OF LIFE

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ABSTRACT

WASH represents water, sanitation and hygiene because of their interdependency on each other all three are grouped together. In all over the world, basically in developing countries access to fresh water, proper sanitation facility is one of the major problem of 21st century . Lack of safe water supply, lack of proper sanitation and lack of proper hygiene affects all areas of life along with economic growth and development of the country. Poor access, to WASH facility and services, can adversely affect health, school attendance, gender inequality and livelihood. Each day so many children die because of improper sanitation and water related diarrhoeal diseases which could be prevented by improving WASH facility. Illness due to improper WASH habits keeps children away from school. For girl students improper sanitation facility decreases their attendance. Access to safe and fresh water along with proper sanitation is basic right of all human being. To achieve the target of clean India it is required to provide fresh water , good sanitation and hygiene in all around rural and urban areas including health care sector, house hold, schools etc.

Abstract No. 73

OPEN DEFECATION AND ITS IMPACT ON THE QUALITY OF DRINKING WATER

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ABSTRACT

Sanitation has been declared as a human right by the United Nations. Open defecation is the human practice of defecating outside rather than into a toilet. It is the practice of defaecating in the fields, bushes, and bodies of water or other open places. According to the 2015 Sanitation Update report by World Health Organization (WHO), about 1.3 billion people were practising open defaecation, whereas another 2.6 billion people lack access to improved sanitation, almost all in developing countries and predominantly in rural environments. The practice is common where sanitation infrastructure and services are not available. Even if toilets are available, behavior change efforts may still be needed to promote the use of toilets. Open defecation can pollute the environment including water pollution and cause health problems, and spread of diseases leading to, childhood malnutrition. Despite recent improvements in the sanitation sector, open defaecation still remains a widespread environmental and health hazard including diarrhoea, trachoma, helminthic infections and mortality. It is also estimated that 663 million people worldwide still used unimproved drinking water sources, including unprotected wells and springs and surface water, most of them living in developing countries of Africa and Asia. In India most of inhabitants defecates in open area that leads to health problems, particularly in rural India. Since 1986, Government of India has been taking remedies to address the open defecation problem to improve health and hygiene.

In most rural areas, surface and shallow groundwater sources are used as drinking and domestic uses. The water sources have many microbial pathogens, even where the water is clear and perceived to be clean. The factors leading to contamination of water sources are often not well understood but are frequently ascribed to pollution by on site sanitation facilities such as pit latrines and defaecation along boundaries of water sources as these represent an obvious source of faecal contamination. Open defaecation has been reported to not only deteriorate the quality of drinking water but also make the water unfit for drinking purposes. A study to assess the water quality index and multivariate analysis for groundwater quality assessment of villages of rural India cited faecal contamination as a key threat to quality of water sources. Open defaecation contributes to the conversion of large areas of land within the community into faecal fields. These 'faecal fields' potentially put the village and consequently water sources at risk of flooding with faecal material from surrounding areas during rainy season. Dust particles along with faecal microbial pathogens often deposited in or near water sources leading to contamination. Thus eradication of open defaecation and improved sanitation is the first step to ensure safe drinking water.

Abstract No. 74

HYGIENE AND COVID-19

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ABSTRACT

Global access to safe water, adequate sanitation, and proper hygiene education can reduce illness and death from disease, leading to improved health, poverty reduction, and socio-economic development. Clean water, sanitation, and hygiene (WASH) education are basic necessities for a healthy environment and a productive life. The facts that WASH is the subject of dedicated targets within the sustainable development goal. Indeed, access to safe water and sanitation are human rights, as recognized in 2010 by the United Nations General Assembly. However, many countries are challenged to provide these basic necessities to their populations, leaving people at risk for water , sanitation, and hygiene (WASH) related diseases. WASH services are an essential part of preventing and protecting human health during infectious disease outbreaks, including the current COVID-19 pandemic. One of the most cost effective strategies for increasing pandemic awareness, especially in resource controlled settings, is investing in core public health infrastructure, including water and sanitation systems. Good WASH and waste management practices, that are consistently applied, serve as barriers to human-to-human transmission of the COVID-19 virus in homes, communities, health care facilities, schools, and other public places. Safely managed WASH services are also critical during the recovery phase of a disease outbreak to mitigate secondary impacts on community livelihoods and wellbeing. According to a WHO/UNICEF technical brief on WASH and waste management for COVID-19:Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus. WASH services should enable more frequent and regular hand hygiene by improving facilities and using proven behavior change techniques.

WHO guidance on the safe management of drinking water and sanitation services applies to the COVID-19 outbreak. Measures that go above and beyond these recommendations are not needed. To respond to the COVID-19 pandemic, the World Bank Water Global Practice has developed a menu of solutions, including concrete actions to help our client governments in their preparedness and emergency response, and future resilience to similar epidemics.

Abstract No. 75

WATER-A VALUABLE RESOURCE

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ABSTRACT

As human society evolved and progressed, human being involved themselves in pursuit that made our living more and more conducive and comfortable. During this process, history witnessed the emergence of various problem, both form natural and social environments.

The earth is getting polluted. The soil, water, minerals, fuel, plants and animal resources are extracted for their use and are getting depleted day by day. Chemical contamination caused by synthetic fertilizers, pesticides, food additives, effluents are causing havoc to plants, animals and human life. More seriously, contaminated water destroys aquatic life and reduces its productive ability. Eventually, it is also hazardous to human health. Climate changes, desertification and floods are becoming drastic.

When toxic substances like pesticides, heavy metals, fluorides, nitrates, petrochemicals, chlorinated solvents, arsenic etc. enter lakes, streams ,river, ocean and other water bodies they get dissolved or lie suspended in water or get deposited on the bed. Pollutants can also seep down and effect the ground water deposits. This results in the pollution of water whereby the quality of the water deteriorates, effecting aquatic eco-system. Domestic sewage, agriculture runof f, industrial waste reduces the quality of water by decreasing the amount of dissolved oxygen in it and causing severe health hazards. Therefore there is an urgent need to educate people about the concept, methods and techniques of water management. The most important step in this direction is to change people attitude and habits. This can only be achieved by individual efforts to conserve our valuable resources.

Abstract No. 76

STORAGE OF CLEAN WATER, IMPORTANCE AND FUTURE SCOPE

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ABSTRACT

Only 3% of water on the surface that is fresh water, 97% resides in the ocean. Surface water is 97% resides in glaciers, 30% underground and less than 1% is located in lakes, rivers and swamps. Clean water and drinking water also known as potable water. According to The World Health Organization 2017 report, clean or fresh drinking water is water that "dose not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life style".

Storage of clean water by tank, pond, dam or another some methods. Most of the earth's water is sea water. In the present time both developing and developed countries start water storage. To supply drinking water during dry season and agricultural uses. Ground water storage,, soil moisture, ponds, tanks, dams, reservoirs, wetlands are some types of water storage methods. Water storage not only new techniques, this techniques used from ancient India Jhalara, talab/ bandhi, beware, taanka, auar pynes, johads, panam keni, khadin, kund, baolo, nadi, bhandara phad, zing, kuhls, zabo, bamboo drip irrigation, jackwells, ramtek model, pat system, eri used for water storage methods in India. Growing water demand, water pollution, financial problem, insufficient assess to safe, affordable water sanitation and hygiene are some things for fresh or clean water storage problem. For drinking, for agriculture, for industrial uae and for house working are some things to need.

Abstract No. 77

WATER QUALITY MONITORING OF GROUND WATER

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ABSTRACT

The present study has been carried out to get physico-chemical characteristics of ground water. Water samples from 6 bore wells were collected from different areas of Aurangabad. The assessment of water quality for its suitability for drinking and domestic purposes was carried out. The physico-chemical parameters studied were pH, Turbidity, alkalinity, Hardness, Sulphates, Nitrates, Total dissolved solids. From this study it was observed that some samples are having high concentration of Calcium and Magnesium (hard water). The quality of water was compared with Bureau of Indian Standard (BIS) norms of potable water.

Abstract No. 78

IMPORTANCE OF SANITATION AND HYGIENE FOR GOOD HEALTH

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ABSTRACT

Sanitation is important for all, helping to maintain health and increase life-spans. However, it is especially important for children. Around the world, over 800 children under age five die every day from preventable diarrhoea-related diseases caused by lack of access to water, sanitation and hygiene. Benefits of improved sanitation extend well beyond reducing the risk of diarrhoea. These include reducing the spread of intestinal worms, schistosomiasis and trachoma, which are neglected tropical diseases that cause suffering for millions; reducing the severity and impact of malnutrition; promoting dignity and boosting safety, particularly among women and girls; promoting school attendance: girls' school attendance is particularly boosted by the provision of separate sanitary facilities; and potential recovery of water, renewable energy and nutrients from faecal waste. Countries like India need to adopt a system of proper sanitation and waste management to protect our population from getting infected and being exposed to pathogens. This practice can be helpful in making the country cleaner and safer for everyone and it will reduce the diseases caused by unhygienic environment.

Abstract No. 79

PRESENT STATUS OF FISH GERMPLASM RESOURCES OF INDIA AND STRATEGIES FOR CONSERVATION OF THREATENED TAXA

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ABSTRACT

The Convention on Biological Diversity (CBD) which came into force in 1993 after United Nations Conference on Environment and Development (UNCED), Rio de Janeiro (June 03-14, 1992) reaffirms the sovereign rights of the member nations over their entire genetic resources. It also envisages conservation, sustainable use and equitable sharing of the benefits arising from the biological resources. There exist reports on the existence of more than 28,400 finfish species throughout the world representing more than half of the entire vertebrate diversity. India has been identified as one of the mega biodiversity centres for the genetic resources in the world and the same is true in case of fishes too. Nearly 2,868 species of fin-fishes belonging to 42 Order, 426 Family and 1,019 Genus have been recorded from different ecosystems of this subcontinent. The approximate ecosystem-wise distribution of fish germplasm resources of India are: freshwater (877; 30.6%), brackishwater (113; 3.9%) and marine (1368; 65.5%). Out of these, about 258 species are commercially important which include cultured, cultivable and wild taxa, 199 endemic and 275 game fishes. There is record of the introduction of 447 exotic species in Indian water, most of which are of ornamental value.NBFGR, Lucknow has tentatively identified 4 Endangered, 21 vulnerable, 2 rare and 52 indeterminate fishes from the different ecosystems of the Indian waters.

It is essential to prevent the further decline of fish germplasm resources by devising all the possible in situ as well as ex situ measures of conservation and rehabilitation.The conservation policy should promote the management practices that maintain integrity of aquatic ecosystems, prevent endangerment and enhance recovery of the threatened species. Five principal elements or tasks in the recovery programs have been suggested which include (i) habitat management, (ii) habitat development and maintenance, (iii) native fish stocking (iv) non-native fish invasion and sport-fishing and (v) research data management and monitoring. The Government of India has various Acts, Rules and Regulations for helping society to conserve fish and aquatic biodiversity with judicious utilization for betterment of human beings. Consequent to CBD (1992), the Government of India has enacted Biological Diversity Act, 2002 (BDA-2002) and Biological Diversity Rules, 2004 (BDR-2004) to put administrative procedures with a view that the inherent biological resources are optimally utilized along with protecting sovereign right of the nation over them. The irreparable harm caused to fish and habitats need be compensated through forestation, eco-restoration, soil conservation, complete ban on deforestation, particularly in the fragile mountains and strict implementation of Endangered Species Act (ESA)/Indian Fisheries Act would positively help in conservation of the threatened fish fauna. Furthermore, in a huge country like India with diverse ecosystems, enforcement of law is not an easy task. The most effective way of tackling the problem seems to be the mass consciousness (awareness) through active participation of the public.

Abstract No. 80

IMPACT OF OPEN SANITATION ON HUMAN HEALTH

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ABSTRACT

Adequate sanitation, together with good hygiene and safe water, are fundamental to good health and to social and economic development. All the three components are necessary for good health and can help in reducing the rates of morbidity and the severity of various diseases and improve the quality of life of huge numbers of people, particularly children, in developing countries . Although linked, and often mutually supporting, these three components have different public health characteristics.

Sanitation is the safe disposal of human excreta. The phrase "safe disposal" implies not only that people must excrete hygienically but also that their excreta must be contained or treated to avoid adversely affecting their health or that of other people. Lack of sanitation lead to infectious diseases. The diseases associated with poor sanitation are particularly correlated with poverty and infancy and alone account for about 10% of the global burden of disease. At date about half of the urban populations of Africa, Asia, and Latin America have a disease associated with poor sanitation, hygiene, and water.

Of human excreta, faeces are the most dangerous to health. One gram of fresh faeces from an infected person can contain around 106 viral pathogens, 106–108 bacterial pathogens, 104 protozoan cysts or oocysts, and 10–104 helminth eggs. The safe disposal of faeces, help in preventing the transmission infectious disease.

Abstract No. 81

EXPLORING WASH BEHAVIOUR AMONG THE KOLS, SAPERAS AND MUSAHARS OF EASTERN UTTAR PRADESH DURING COVID-19 PANDEMIC: AN ANTHROPOLOGICAL STUDY

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ABSTRACT

WASH (water, sanitation and hygiene) is an important issue worldwide which draws serious concern in the sectors of health development programs and as part of rehabilitation programs. Clean drinking water, proper sanitation and hygiene are essential factors of health. More than 900 million people worldwide continue to live without access to drinking water and 3.5 billion without sanitary facilities. These deficiencies account for 80 per cent of illnesses in developing countries. Functioning and environmentally sound waste water management and garbage disposal remain the exception in rural and poor urban areas. Water, Sanitation and Hygiene (WASH) is one of the thematic priorities detailed in the health policy of our country too. In this backdrop, the present study applying anthropological methods of fieldwork attempts to explore WASH Behaviour among the Kols, Saperas and Musahars residing in five villages of Bara tehsil of district Prayagraj in Eastern Uttar Pradesh during Covid-19 Pandemic. The study reveals that the level of awareness among the studied populations regarding WASH practices is very low. All the three populations suffer various water-borne and vector-borne diseases and lack awareness regarding Covid-19 precautions. Sanitary and hygienic habits are pathetic and require serious intervention as well as overhauling of WASH infrastructure. Poverty and low level of education are also aggravating to such conditions.

Abstract No. 82

HOUSEHOLD SANITATION MANAGEMENT AND PREPAREDNESS FOR FUTURE PANDEMIC: LESSON LEARNED FROM NOVEL CORONA VIRUS DISEASE-19 (nCoV-19)

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ABSTRACT

Novel Coronavirus diseases-19 (nCoV-19) has been emerged as the main cause for recent global pandemic and infected over 46 million people in less than a year. Global warming due to climate change creates opportunity for pathogens, which will play a bigger role in future pandemics. The infectious agent for this disease is Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It is related to SARS-CoV-1, that caused the 2002–2004 SARS outbreak. While scientists around the Globe are evaluating candidate therapies and vaccines to treat and prevent the disease, currently there are no treatments or vaccines for nCoV-19. People through close contact and respiratory droplets produced from coughs or sneezes are the prime mode of transmission but several environmental factors might also contribute for the virus spread. In humans, SARS-CoV-2 enters to lungs through respiratory droplets and attack type-2 pneumocyte cells by binding with angiotensin converting enzyme 2 (ACE2) receptor. The major symptoms after infection are hypoxemia (low oxygen), fever, increased heart rate, increased respiration rate and shortness of breath due to fluid accumulation. This eventually leads to systemic inflammatory response syndrome (SIRS) affecting circulatory system characterized by low blood pressure, low blood volume, low perfusion and finally multi system organ failure (MSOF). Death of infected individual occurs and through faecal matters, saliva etc. the viral cycle continues. Water can be contaminated with SARS-CoV-2 through sewage system and other secondary sources containing viral particles from faecal matters of infected patients. Good quality water is essential for life. The provision of safe water, sanitation and hygienic conditions (WASH) is essential for preventing and for protecting human health during all infectious disease outbreaks, including nCoV-19. Indirect contact via contaminated surfaces is another possible cause of infection. The virus may remain viable on plastic (polypropylene) and stainless steel (AISI 304) for up to three days. Hence household sanitation and hygiene is highly essential to keep everyone safe. Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the SARS-CoV-2 virus

Abstract No. 83

COVID-19: CURRENT DRUGS WITH POTENTIAL FOR TREATMENT: A REVIEW

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ABSTRACT

The world has experienced a major deadly pandemic which proved to be brutal killer of various intestles such as Antunualflue in 168.AD, then Black fever, cholera Asian/Russian Flue, HIV/AIDS. Now recently in Dec.2019 a novel coronavirus, now called as Severe Acute Respiratory Syndrome Coronavirus (SARS-COV-2) emerged in the Wuhan city of China, and rapidly spread worldwide, and in March 11,2020 World Health Organisation declared COVID-19 a world pandemic. As no vaccine or approved drug is available to eradicate the virus, as such researchers and scientist of different countries are in the race of preparation of vaccine to eradicate this pandemic and experimenting with drugs and therapies to help ease the strain in hospitals and intensive care units. Some drugs that are indicated for other afflictions seems to be potentially beneficial to treat the infected albeit without unequivocal evidences. Thus the present article is composed with the objective to review the published literature on the effectiveness of these drugs against COVID-19 which is need of human.

Abstract No. 84

RELATIONSHIP OF DIFFERENT MUNICIPAL SOLID WASTE COMPOST TREATMENTS WITH GROWTH OF OKRA AND TOMATO

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ABSTRACT

The total amount MSW generation in India has reached up to 48 million tons per annum and is expected to increase to approximately 300 million tons by the year 2047. To manage this increasing rate of waste production via eco-friendly way, composting and compost application in India is the most followed practice. Composting is advantageous over landfilling and incineration methods because of its lower investment and operation costs, no environmental polluting potential, and the obtained end products after the processcan be used as a resource but they possess some possible health threats related to pathogens, heavy metals, and organic contaminants present in compost.

For present study, an experiment was conducted to assess the response of two kharif crops i.e. Okra and Tomato to different compositions of MSWC and soil. For the experiment, MSWCsamples were collected from two different manufactures located in Delhi. Vegetative crops were sown in pots filled with dif ferent ratios of soil and compost. The soil and compost ratios used were 75: 25, 50: 50, 25: 75, 100% compost and 100% soil (control). Plants could grow in all these compositions and no additional supplements were given to support the growth. Germination phase and no. of survival days were observed in all compositions to assess the best suitable composition for the growth of crops. Okra and Tomato displayed the best growth in 50% and 75% composition, due to the appropriate balance of nutritive value in compositions.Survival rate i.e. no. of days plants survived of crops in 75% and 100% compositions signified the presence of somegrowth inhibitors in compost which does not let the crop grow for a longer period. With this, Compost collected from Bawana plant was found to be more growth promoting as compared to Okhla compost when applied in both the crops. Fruiting, flowering, stem height, stem width, number of leaves and yield of both the crops was found to be more in the Bawana compositions as compared to Okhla Compost. Presence of higher concentrations of compost in soil showed some physiological changes in leaves also which could be due to its high toxicological effect on them. These observations are unable to state that which composition has a minimum toxicological effect. That iswhy heavy metals analysis needs to perform to get information about composition which is least toxic and supports the growth of crops in a balanced way.

Abstract No. 85

DETERIORATION OF POTABLE WATER QUALITY DUE TO HOLY DIP RITUALS

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ABSTRACT

Rivers are an indispensable part of our biosphere and the water of the rivers is used for various purposes such as drinking, bathing, public water supplies, industrial, agricultural, aquaculture etc. hence purity of water is essential for human consumption as it directly affects the human health. Prayagraj is situated at the confluence of the holy rivers Ganga and Yamuna. Maagh and Kartik are the auspicious months in the Hindu calendar in which devotees from all over India flock in large numbers for a holy dip in river Ganga and Yamuna respectively. It has been suggested that water quality of Ganga and Yamuna rivers gets affected during mass bathing rituals during Maagh, Kartik and other religious activities, apart from discharge of sewage. The analysis of physio-chemical characteristics of water bodies provides a fair idea of its water quality. Deteriorated water quality of rivers has potential health risks to drinking water consumers and organisms in Ganga and Yamuna rivers.

Abstract No. 86

ROLE OF SAFE WATER, SANITATION AND HYGIENE (WASH), ENVIRONMENT AND BIODIVERSITY

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ABSTRACT

Biodiversity is the scientific term for the variety of life on earth. Species lives together and depends on one another. Every living individual is involved in these complex networks of interdependent relationships. Healthy ecosystems clean water, air, soil, regulate the climate, recycle nutrients and provide individual with food. They provide raw materials and resources for medicines and other purposes. Man cannot live without ecosystem services. Biodiversity is the key indicator of the health of an ecosystem. A wide variety of species will survive better with threats than a limited number in large populations. Certain species are affected by pollution, climate change or human activities, the ecosystem as a whole may adapt and survive. The impacts on human health linked to the lack of access to improved water and sanitation facilities are well known. Household livelihood security depends on the health of its members. Healthy people are better able to absorb the nutrients in food than those suffering from water-related diseases, particularly worms. Reducing illness related to water and sanitation, including injuries from water-carrying, improves educational institution attendance. Sanitation and safe water in health care facilities help ensure clean delivery and reduce neonatal deaths. Accessible sources of water reduce labour burdens and health problems resulting from water portage, reducing maternal mortality risks. Safe drinking water and basic sanitation help prevent water-related diseases, including typhoid, diarrhoea, schistosomiasis, filariasis, trachoma, and helminthes. People are died yearly for unsafe water, poor sanitation, and lack of hygiene. Adequate treatment and disposal of excreta and wastewater contributes to better ecosystem management and less pressure on freshwater resources.

Abstract No. 87

ROLE OF PHOTOSENSITIZERS FOR SOLAR ENERGY CONVERSION AND STORAGE

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ABSTRACT

Now this time energy crisis is one of the biggest problems facing whole world. Non-renewable sources of energy like oil, natural gases, petroleum, coal etc are quitelow, the problem is now if these sources finish, we will not be able to more energy during our life time to avoided this problem we start to use renewable sources of energy. Solar energy, which is renewable, environmentally friendly and cost effective source of energy, play an important role as future energy source. Conversion of solar energy into electrical energy by using Photogalvanic cell have received considerable attention because of their high conversion efficiency, storage capacity and low cost of production. Photogalvanic solar system reported by using photosensitizers (dye). The generation of electricity in Photogalvanic cell based on photochemical reaction, which give rise to high energy products on excitation by photon. The electrochemical parameters, conversion efficiency and storage capacity have been studied in photogalvanic cell composed of photosensitizer (dye) in presence of surfactant and reductant. The effect of PH, Light intensity, Electrode area, Diffusion length and concentration of dye, surfactant and reluctant on electric output of the cell were also observed in various condition.

Abstract No. 88

WASH AND AGENDA 2030

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ABSTRACT

In September 2015, the United Nations elaborated 8 Millennium Development Goals (MDGs) into 17 Sustainable Development Goals (SDGs) with 169 targets that all 191 UN Member States agreed to achieve by the year 2030 by calling it agenda 2030. SDG 6 of Agenda 2030 aims to 'Ensure availability and sustainable management of water and sanitation for all' and comprises six technical targets relating to drinking water, sanitation and hygiene, wastewater management, water efficiency, integrated water resource management and protection of aquatic ecosystems. Although considerable progress has been made in increasing access to clean drinking water and sanitation, billions of people, mostly in rural areas, still lack these basic services, yet billions of people still lack safe water sanitation, and funding is inadequate. One in three people do not have access to safe drinking water, two out of five people do not have a basic hand-washing facility with soap and water, and more than 673 million people still practice open defecation worldwide as per UN records. There shall be 40 per cent shortfall in freshwater resources by 2030 coupled with a rising world population careening world towards a global water crisis. While recognizing the growing challenge of water scarcity, the UN General Assembly has launched the Water Action Decade on 22 March 2018, to mobilize action that will help transform how we manage water. The COVID-19 pandemic in the meantime, has demonstrated the critical importance of sanitation, hygiene and adequate access to clean water for preventing and containing diseases. Hand hygiene is saving lives. Handwashing is one of the most effective actions one can take to reduce the spread of pathogens and prevent infections, including the COVID-19 virus, as per World Health Organization (WHO) current guidelines. In this regard an attempt has been made to analyze the progress, challenges and ways forward to meet the Agenda 2030 through WASH and other initiatives.

Abstract No. 89

PHYSICO-CHEMICAL PROPERTIES OF WATER BODIES AND BIODIVERSITY IN BALRAMPUR, DISTRICT OF UTTAR PRADESH

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ABSTRACT

Balrampur district with an estimated population of above approximately 15 lakh has many lentic water logging and deeper ditches in and around including Bhagwatiganj, Kuwana, Tulsipur, Rapti River, Shridattganj, Utraula etc. These localities are presently under intense human activities due to which destruction of aquatic life is taking place rapidly. The present study was carried out to assess PH, Turbidity, Free CO2, Calcium, Magnesium Hardness, Alkalinity, Sodium Potassium, Chloride Phosphate and Nitrate in different water bodies. Water affects directly as well as indirectly the biodiversity that is the basis of life on this planet. Therefore, water and their physico chemical properties affects the biodiversity as well as survival of mankind.

Abstract No. 90

IMPORTANCE OF WATER, SANITATION AND HYGIENE (WASH) AND WATER POLLUTION TO PREVENT HUMAN HEALTH

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ABSTRACT

Water is utilized in the human body for various functions like lubricant in the body, body temperature regulation and eliminating harmful toxins in the body etc. Most of the people know the importance of water; however those tend to not completely understand the importance of that water being clean. This clean water is to be utilized for the various purposes like cooking, sanitation, drinking, etc. If clean water becomes easily available for populations, it can be secure to assume that human health will also be secure; this in turn will fall off the time lost to sickness and various diseases. There are a various virulent agents adverse to human health that extends in infectious/unsanitary/unhealthy water which can originates from various waterborne illnesses; such as diarrhea, hepatitis cholera, typhoid, etc. Now days water borne diseases are easily compasses because the drinking water arrangements are not satisfactory for human use. Untreated discharges from the various sources like domestic and industrial ef fluent, outflow from water tanks, municipal solid wastes' leachate contaminated water sources are the major causes of water pollution as they contains various toxic substances with them like heavy metals etc. Hence it is necessary to aware the community about the water, sanitation and hygiene "WASH" with their various programs on all level of educations.

Abstract No. 91

ATTAINING WOMEN HEALTH THROUGH CURRICULAR PRACTICES

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ABSTRACT

Present paper reviewed some studies and showed that school and childhood should go hand in hand, but many children in low-income communities with no access to WASH are unable to attend class because they are sick with a diarrheal disease or, particularly in the case of girls in rural areas, because they have to spend large parts of each day fetching water for their family. For children who are in school, the situation may be no better than at home: globally, around a third of schools have no safe water supply or adequate sanitation, leaving children dehydrated and less able to concentrate, and forcing pupils to use inadequate latrines or go to the toilet outside in the school grounds. For adolescent girls, the presence of a safe water supply and clean, functioning, private toilet facilities can be the difference between dropping out and getting an education. Furthermore, hygiene education at school can begin a lifetime of better health for all children. Some studies showed that school-based WASH programs help student to regular in schools and prevent them from various diseases. Therefore, government should take some steps to improve the quality of hygiene which helps to school going children to get education in a better manner without any health issues.

Abstract No. 92

DOSE DEPENDENT IMPACT OF SODIUM BENZOATE ON THE HEPATIC CELLS OF SWISS ALBINO MICE

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ABSTRACT

The present investigation was an attempt to determine the effects of sodium benzoate, a food preservative of choice for its toxic effects at the dose level 171 mg/kg body weight for 7 days and 15 days when intraperitoneally injected to Swiss albino mice. The animals were divided into two groups- control and treated. Treated mice received intraperitoneal injection of sodium benzoate at a dose of 171 mg/kg body weight for 7 days and 15 days respectively. The animals were sacrificed after last treatment. Liver was isolated, fixed in 1.5% glutaraldehyde in 0.2M phosphate buffer for Transmission Electron Microscopic study. An exposure to sodium benzoate changed the normal features of liver to a diseased one. Electron microscopic studies have revealed significant changes in treated animals compared to control. It appears that an alteration of the normal features of liver to disease form by an intraperitoneal injection of sodium benzoate possibly could be a reason for liver cell damage. Histopathological changes in liver revealed abnormal architecture of the nucleus, clear space with liquid deposition around the nucleus, heterochromatization of the chromatin material, dissolution of the nuclear membrane at some places, increased mitochondrial and endoplasmic reticulum activity, shrinkage of the plasma membrane with outgrowth and fusion of the vacuoles. The present study highlights the fact that any type of stress-physical or chemical changes the normal physiology of the cell that is reflected either in the blood, a system more vulnerable to toxic exposure, or in tissues like liver.

Abstract No. 93

GLOBAL PANDEMIC COVID-19: IMPORTANCE OF SANITATION AND HYGIENE

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ABSTRACT

The impact of pandemic Covid-19 round the world and thus the ensuing mayhem in international markets are dominating global attention. The pandemic is turning into an un precedented international crisis, with serious repercussion on people's health and economic activities. The outbreak of coronavirus disease could also be stressful for people. COVID-19 has and is probably going to affect people from many countries, in many geographical locations. Don't attach it to any ethnicity or nationality. The provision of sanitation and waste management, safe water and hygienic conditions is crucial for preventing and for shielding human health during all communicable disease out breaks, including of coronavirus disease 2019. Consistently applied water safety, hygiene, sanitation and waste management practices in homes, communities, marketplaces, schools and healthcare facilities will help prevent human-to-human transmission of pathogens including SARS-CoV-2, the virus that causes COVID-19. Frequent and proper hand hygiene is one among the foremost important measures that can be used to prevent infection with the COVID-19 virus. Water, sanitation and hygiene services should enable more frequent and regular. Improving handwashing behavior, food hygiene, and safe water practices. Provision of mounted and portable handwashing facilities, purchase of soap and alcohol-based hand rubs, provision of water supplies for handwashing, and purpose of use water treatment ought to be included in hygiene techniques. Schools, workplaces, markets, transport stations and different areas where every individuals gather all needs quick access to handwashing facilities and water and soap for handwashing. Proven behavior change techniques can help increase the frequency and improve the practice of critical hygiene behaviors.

Abstract No. 94

ROLE OF WATER, SANITATION AND HYGIENE IN EDUCATION

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ABSTRACT

Present paper reviewed some studies and showed that school and childhood should go hand in hand, but many children in low-income communities with no access to WASH are unable to attend class because they are sick with a diarrheal disease or, particularly in the case of girls in rural areas, because they have to spend large parts of each day fetching water for their family. For children who are in school, the situation may be no better than at home: globally, around a third of schools have no safe water supply or adequate sanitation, leaving children dehydrated and less able to concentrate, and forcing pupils to use inadequate latrines or go to the toilet outside in the school grounds. For adolescent girls, the presence of a safe water supply and clean, functioning, private toilet facilities can be the difference between dropping out and getting an education. Furthermore, hygiene education at school can begin a lifetime of better health for all children. Some studies showed that school-based WASH programs help student to regular in schools and prevent them from various diseases. Therefore, government should take some steps to improve the quality of hygiene which helps to school going children to get education in a better manner without any health issues.

Abstract No. 95

WATER POLLUTION AND ITS EFFECT ON HUMAN HEALTH

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ABSTRACT

On the earth more than one-third of freshwater is accessible and renewable for the use in agricultural, industrial and domestic purposes. However, many cities worldwide facing an acute shortage of water and nearly 40 percent of the world's food supply is grown under irrigation and a wide variety of industrial processes depends on water. All these activities of humans lead to water contamination with diverse synthetic and natural chemicals which causes different type of water pollution. It has become a major public concern in almost all parts of the world. The chemical pollutants of water may be smaller which macro pollutants which typically occur at the milligram per liter level and include nutrients such as nitrogen and phosphorous species as well as natural organic constituents. Different organic micro pollutants such as toxic metals and metalloids also cause impact on the human health. Therefore, the sources and impacts of these common classical pollutants are reasonably well understood, but designing sustainable treatment technologies for them remains a scientific challenge. For example, high nutrient loads can lead to increased primary production of biomass, oxygen depletion, and toxic algal blooms. Increasing salt loads entering surface water via road salt and excessive irrigation pose another long-term problem. High salt concentrations prevent the direct use as drinking water. The water quality issues are a major challenging for humanity which facing in the 21st century. With respect to human health, the most direct and most severe impact is the lack of improved sanitation, and related to it is the lack of safe drinking water, which currently affects more than a third of the people in the world. Therefore, the water pollution threatens food production and is raising both environmental and human health concerns.

Abstract No. 96

WATER ANALYSIS OF RIVER BANK AREAS

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ABSTRACT

Water is an essential element for life. Safe drinking water is the basic need for safeguarding the health and well-being of humans all over the world. The present investigation is an attempt to study the quality of water in the vicinity of Godavari River in Aurangabad (M.S.). Aurangabad is a prone city and the people have to largely depend on as a source of drinking water. In the present study, the physico-chemical parameters such as chloride, electrical conductivity, pH, alkalinity, sulfate, total dissolved solid (TDS), total hardness, calcium, magnesium and water quality index (WQI) was analyzed during the year 2020 to know the suitability of water for drinking purpose.

Abstract No. 97

AN INSIGHT IN TO IMPACT OF PESTICIDES (INDIVIDUAL AND IN COMBINATION) ON THE STRESS RESPONSES OF FISH, *HETEROPNEUSTES FOSSILIS*

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ABSTRACT

The application of a mixture of pesticides to the agricultural field may pose adverse impact on the health of non-target organisms besides the target ones in aquatic ecosystem. In the present study, the synergistic effect of pesticides, chorpyrifos, cypermethrin and their combination has been observed in fish, *Heteropneustes fossiis*. The LC_{50} value for formula grade pesticides viz chorpyrifos, cypermethrin and their combination was evaluated. To study the effect of sub-lethal dose (5% and 10% of LC50) of these pesticides on fish, *Heteropneustes fossiis* was exposed for 96 h. Significant perturbations in oxidative stress parameters such as nonenzymatic(MDA, GSH) and enzymatic (SOD, CAT, GST, LDH, ACP, ALP, ALT and AST) were observed in tissue-specific and dose-dependent manner. Histopathological studies of liver and kidney tissues showed severe damage in the exposed groups compared with control. The findings further indicate that the toxicity of pesticides was more pronounced in co-exposed group than individual. Therefore, the changes speculate the potential health risk to these organisms on exposure at higher concentrations of the pesticides accumulated in aquatic ecosystem.

Abstract No. 98

A STUDY ON FEW MEDICINAL PLANTS HAVING POTENT ANTI-DIABETIC ACTIVITY: A SYSTEMATIC REVIEW

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ABSTRACT

Diabetes mellitus is a global health concern today, a common metabolic disorder affecting a large population worldwide over the past few decades. Herbal plants play a potent role in treating the diabetes mellitus and many studies already confirmed the benefits of medicinal herbal plants with potential hypoglycemic effects. The present review focuses on anti-diabetic activity of extracts of few herbal plants such as *Momordica charantia, Trichosanthes dioica, Tinospora cordifolia, Allium sativum, Gymnema sylvestre, Ficus bengalensis* and also aims to identify the active principles of the herbs found effective in lowering blood glucose.

Abstract No. 99

ENVIRONMENTAL IMPACT OF WATER-BORNE DISEASES

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ABSTRACT

Climate directly impacts the incident of waterborne disease through effects on water temperature and precipitation frequency and intensity. Climate also indirectly impacts waterborne disease through changes in ocean and coastal ecosystems including changes in pH, nutrient and contaminant runoff, salinity, and water security. Severe outbreaks of cholera, in particular, have been directly associated with flooding in Africa and India. Other climate-related environmental changes may impact marine food webs as well, such as pesticide runoff, leaching of arsenic, fluoride and nitrates from fertilizers and lead contamination of drinking and recreational waters through excess rainfall and flooding. By 2025, half of the world population will be living in water stressed areas. Dangerously high concentrations of chemical hazards cause conditions such as cancer and fluorosis. WHO estimates that more than 200 million people are affected by schistosomiasis and around 800 million more are at risk of infection. To overcome such pathetic situation, we can foster collaborative actions at international, national and local levels to promote a stewardship role for the health sector to foster policy coherence across other sectors impacting the safety of water. Also water disinfectants can be used or purifying water by oxidation with chemicals such as chlorine, chlorine dioxide or ozone, and irradiation with Ultra-Violet (UV) radiation. Additional recommendation by WHO is that ORS solution should be dissolved in 1liter of clean drinking water for better health benefits. Harmonized and integrated initiatives may require a longer time to improve quality, but ultimately they will be more effective and sustainable than a treatment-focused approach.

Abstract No. 100

DIAGNOSING ANTI- PREDATOR RESPONSE OF RED WATTLED LAPWING, *VANELLUS INDICUS*, (BODDAERT, 1783)

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ABSTRACT

Observation on anti-predator response of red wattled lapwing was done during the breeding period (March-August) of 2018 and 2019 along the river Ganges in Raebareli district, U.P., India. The number of nesting pairs were counted by the line transects method and anti-predator responses were recorded by the focal sampling method. Sitting tight response was significantly dif ferent during the incubation period. The mobbing response, flying away and running away responses were significantly different during post-incubation period. Circle nosily over the nests and alarm call were not significant between the two reproductive stages.

Abstract No. 101

INSECTICIDE DIMETHOATE INDUCED TOXICITY AND ALTERED PROTEIN CONTENT IN FRESH WATER FISH PUNTIUS TICTO

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ABSTRACT

The last three decades, use of modern organic synthetic pesticides has increased in agriculture sector in order to improve crops yield with low labour and efforts. Various pesticides such as insecticides, herbicides, fungicides etc. are being used intensively in agriculture leading to numerous health-related problems due to unsystematic applications of the same. These chemicals influence almost every system of environment especially aquatic ecosystems. Pesticides residues reach into the aquatic environment by surface run-off causing risk hazards for aquatic flora and fauna, fishes being one of the most affected organisms. These pesticide residues enter in non-targeted animals via food chain threatening the ecological balance and biodiversity of the nature. Long-term exposure of dimethoate induces biochemical changes in the protein content of fish. Dimethoate is widely used insecticide that relentlessly causes toxic effects in the various aquatic organisms especially in fishes. The effect of dimethoate on certain metabolism of protein was evaluated in the liver, gills and muscle of the *Puntius ticto* during sublethal toxicity exposure to 30 days. The present findings suggest that accumulation of dimethoate critically altered the protein content in the liver, gills and muscles of *puntius ticto*.

Abstract No. 102

IMPACT OF WATER POLLUTION ON AQUACULTURE

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ABSTRACT

Aquaculture is rapidly growing part of agriculture worldwide. Recently the agriculture sector attracted great attention and it is growing rapidly through the development of aquaculture. It makes up around 44 percent of total fish production globally. Fisheries play a great role in food security and livelihood and are a source of income and social development in developing countries. Fisheries are an important sector in Indian economy. India has third position in fish producing countries in the world but it holds second rank in global inland fish production. Almost all fish produced from aquaculture is for human consumption. Huge loss of production in fish production is occurring because of many reasons. Among these causes, fish diseases caused by variety of fish parasites. Fish production was influenced by infectious diseases of fishes that causing loss of annual income and livelihood of fish farmers. Fish parasites and their infections are matter of concern since they affects the fish productivity especially inland culture fishery by decreasing their reproductive potential, market and nutritive value.To reduce the impact of fish parasite, it is necessary to address health constraints based on scientifically proven and recommended ways. To prevent these diseases antibiotics are used in aquaculture despite their side effects in the development of drug resistance by microorganisms. Helminth group is one of the major group of fish parasites about 20,000 to 30,000 helminth species have been reported worldwide. Infection of these parasites may result in poor growth, postpone sexual maturity and mortality of fishes, and cause human and animal diseases due to weak association of host and parasites. These fish parasites may be control by using of antibodies, but it advisable to follow a preventive approach before the event of any disease outbreaks. One of the most important preventive measure is to restricted the open defecation around the waterbodies because it not only pollute the water of waterbody and also responsible to spreading of bacterial and helminth diseases in fishes.

Abstract No. 103

STATUS OF DRINKING WATER WITHIN KATHMANDU VALLEY, NEPAL

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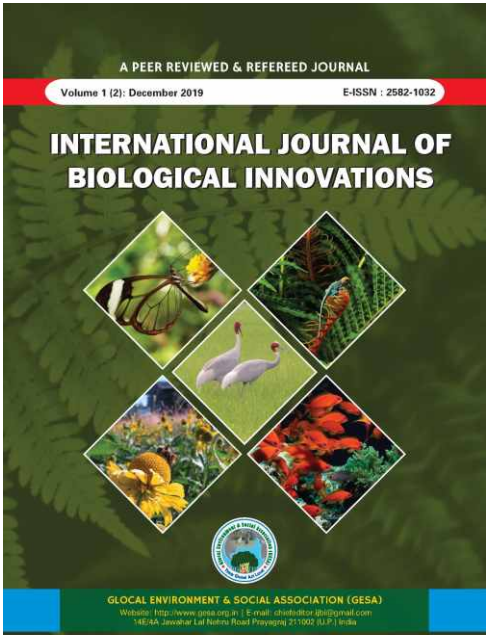
ABSTRACT

Water scarcity is an emerging issue of Nepal. Due to rapid growth in the population, migration to Kathmandu valley, deforestation and unavailability of adequate water from the existing Kathmandu Upatyaka Khanepani Limited (KUKL) have made the big section of population dependent upon ground water. This has led to gradual decline in the ground water table. Since, decades people were using stone spouts, wells tube wells which were having natural sources and was pure. But with the unplanned urbanization and limited budget KUKL was unable to expand their services. As a reason these spouts and wells started to dry. Among 450 (approx.) spouts only 235 (approx.) are functional. So in this paper the present scenario of drinking water within Kathmandu valley will be discussed. Some recommendations are also made in order to make the optimum use of water.

The Indian sarus crane, *Grus antigone antigone* (State Bird of Uttar Pradesh): An eternal symbol of unconditional love, devotion and good fortune with high degree of marital fidelity.



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