

National Conference on

WOMEN EMPOWERMENT, EDUCATION, ENVIRONMENT, BIO-DIVERSITY, HEALTH AND AGRICULTURE

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USE OF GERMINATION PARAMETERS AS INDICATORS OF SUBSEQUENT GROWTH AND YIELD OF WHEAT GENOTYPES GROWN UNDER SIMULATED WATER STRESS CONDITION

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Water deficit negatively affect plant growth and development and causes sharp decline in crop productivity. Wheat is one of the most important staple food crops of the globe, mostly affected by drought. Field and laboratory experiments were conducted to evaluate eight wheat (*Triticum aestivum* L.) genotypes, with a view to understand the characters, which can be used as a quick criteria for early prediction of drought response. Moisture stress in laboratory experiment was induced by polyethylene glycol 6000 (PEG-6000) (0, 15 and 20 %), with three replications each to study germination related traits of wheat genotypes. The PEG induced decline in the shoot and root biomass and coleoptiles length (germination parameters) was greater in genotypes PBW 343, HD 2733, PBW 373 and HD 2967, while relatively less decrease was observed in C 306, HD 2987, HD 3016 and NI 3039. The effect was more prominent in case of 20 % PEG as compared to 15 % PEG. All the genotypes showed decrease in biomass, grain yield, 1,000 grain weight and harvest index (yield parameters) under water stress condition, but higher decrease was found in case of PBW 343, HD 2733, PBW 373 and HD 2967 as compared to C 306, HD 2987, HD 3016 and NI 3039. Correlation coefficient between germination parameters and yield attributes found highly significant and positive. It has also emerged that the PEG technique would be suitable for screening drought tolerance in large populations prior to yield testing trials, which could significantly reduce the overall cost and manpower because all the germination parameters taken in laboratory at 15 and 20 % PEG concentration and yield parameters taken from pot culture for all wheat genotypes under moisture stress condition are highly correlated. This method is helpful for testing of drought tolerance under limited space and resources.

Key words: Germination Parameters, Polyethylene glycol, Vigour index, Wheat, Water stress, Yield

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ROLE OF EDUCATION IN WOMEN EMPOWERMENT

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“**E**ducate your women first and leave them to themselves: then they will tell you what reforms are necessary for them” Swami Vivekananda

Women empowerment' is the process of enabling and developing ability or potential in women so that they can think and act freely, exercises their choice and control their lives and thereby reducing discrimination and exploitation towards them. It brings about upliftment of women in social, economic and political spheres where they are able to play an equal role at par with men in society. But women who constitute half of the population in India yet they have been subjected to the oppression of patriarchal order and suffered from fewer rights and lower social status than men for centuries. This widespread discrimination and exploitation of women evoke the need for empowerment of women. Education is considered as a milestone for women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their lives. Women education in India has a major preoccupation of both the government and civil society as educated women can play a very important role in the development of the country. Education is milestone of women empowerment because it enables them to responds to the challenges, to confront their traditional role and change their life. So that we can't neglect the importance of education in reference to women empowerment and India poised to becoming superpower in recent years. Education of women is the most powerful tool to change the position in society. Women education in India has been a need of the hour, as education is a foundation stone for the empowerment of woman.

Education also brings a reduction in inequalities and functions as a means of improving their status within the family and develops the concept of participation.

Key words: Education, preoccupation, milestone, empowerment, participation

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CERVICAL CANCER: AN ALARMING THREAT TO WOMEN NATIONWIDE

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Cervical cancer is ranked amongst the most common type of cancer in women throughout India and worldwide. It is mainly caused due to infection caused by Human Papilloma Virus (HPV) of Papillomaviridae family of viruses. Statistics show that 122,844 new cases of cervical cancer are diagnosed annually in India and it is the 2nd most leading type of cancer in women (especially between age 15 to 44) in India. Worldwide, the number of cases recorded annually is 522,624.

Cervical cancer is majorly the cancer of cervix (lower part of uterus in women) which also affects the other organs in vicinity as there is abnormal growth and invasion of cells. Symptoms include severe pain in abdomen and abnormal bleeding. This cancer develops from precancerous changes over 10-20 years and most of the tumors are of squamous cell carcinomas. Diagnosis is done by cervical screening followed by biopsy and then finally by medical imaging to check the spread of the tumor.

Almost 90% of the cases of cervical cancer is caused by HPV infection, HPV is HPV is a DNA virus having a genome of 8kbp. The genome primarily consists of a long coding region (LCR), six early proteins- E1, E2, E4, E5, E6, E7 and two late proteins -L1 and L2. HPV has over 100s of genotypes out of which 14 are known to cause cancer (high risk genotypes'). These are 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 70. Out of these, genotypes 16 and 18 have been reported to cause majority of the cases. HPV majorly affects the differentiating epithelial cells. The role of HPV in cervical cancer was discovered by Dr, Harald ZurHausen in 1984 (Nobel Prize 2008).

Efforts have been taken seriously to prevent HPV infection. F.D.A. has approved of majorly two vaccines- Gardasil and Cervarix. These have been recommended to be administered to girls between 9-13 years of age. However the vaccines cover only specific streaks of the virus whereas infection is likely to occur by other streaks as well. Also the vaccines are ineffective for those already contaminated with infection. They also do not provide protection against all the 14 high risk genotypes. Hence till date there is no effective drug against cervical cancer.

Keywords: Cervix, uterus, biopsy, precancerous, squamous cell carcinoma, human papilloma virus, long coding region, differentiating, epithelial, Gardasil, Cervarix



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FINANCIAL INCLUSION OF WOMEN AND CLIMATE CHANGE

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Participation of Women in labour force is 25.51 percent and access to bank accounts and credit is 32 percent. These figures are startling & suffice to portray the discrimination faced by them. Finance is an effective tool to mitigate the impact of climate change and poverty, women need to be empowered with this tool. Several national & international publications reiterate the fact that women are the most vulnerable group in terms of climate change. In rural India, water collection, woods for fuel etc are daily chores for women which in recent years have become a predicament due to climate change. Moreover green technology which is a substitute is farfetched for them as they lack financial resources. The authors analyse this dichotomy that women who can be the harbingers of change for climate are the ones who are least equipped financially to pioneer this change. Data from India is taken to evaluate the conditions of women in respect to climate change vis-à-vis financial inclusion.

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EFFECT OF CLIMATE CHANGE IN AGRICULTURAL CROPS

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Agriculture and climate change are correlated with each other and affected on global level. The climate change phenomenon refers to seasonal changes over a long period. Climate change is caused by human activity, as faced to changes in climate that may have resulted as part of Earth's natural processes. Climate change affects the agriculture in various means including changes in average rainfall, temperature, pests and diseases, atmospheric carbon dioxide, ground-level ozone concentrations, nutritional quality of foods, sea level and climate extremes such as heat, drought, waves, unnatural rains with acid, flood, melting of glacier etc. The Intergovernmental Panel on Climate Change (IPCC) in its Third Assessment Report (2001) concluded that the poorest countries would face reductions in crop yields in most tropical and sub-tropical regions due to less water availability, and new or changed insect pest incidence. A published science study in 2008 suggested that due to climate change "southern Africa could lose more than 30% of its main crop, maize, by 2030. In South Asia losses of many regional staples, such as rice, millet and maize could be 10%". In India, semi-arid areas converted into arid and these zones will be converted into desert areas by 2020. Another biggest consequence of climate change on the spread of pathogens is that the geographical distribution of hosts and pathogens could shift, which would result in more crop losses. In the long run, the climatic change could affect agriculture in various ways like productivity, agricultural practices, environmental effects, adaptation. There are a range of policies that can reduce the risk of negative climate change impacts on agriculture and to reduce Green House Gas emissions from the agriculture sector. Apart from reforestation, the conservation agriculture, drought tolerant crop, water use efficient crop, insect-pest resistant crop and improving stored manure practices etc. are the strategies to mitigate the adverse effects of climate change in agriculture.

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GENETICAL STUDIES OF GLADIOLUS GENOTYPES UNDER AGRO-CLIMATIC CONDITION OF CHITRAKOOT, SATNA (M.P)

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The present investigation involving fifteen genotypes of gladiolus was conducted in during 2015-2016. Important characters studied were days to sprouting, number of leaves, days taken to flower initiation, number of floret per plant. Yield of spike exhibited a wide range of variation *i.e.* 2.6-1.10 with a grand mean value of 1.74. Among them highest yield of salvia *i.e.* 2.60 was obtained followed by Priscilla and red ginger where as lowest yield of spike was noticed in Pacifica (1.10). The shelf life of cut gladiolus flower also showed a wide range of variation and it was obtained in the range of 17.47 to 10.20 with a grand mean of 13.40 however maximum shelf life of salvia genotype was noticed followed by Priscilla and red ginger. A wide range variation was noticed in leaf area of different genotype of gladiolus and its range of variation was 101.67 to 56.10. Similarly Leaf area index in gladiolus genotype were also found in a great range of variation and it was further noticed in the range of 0.2259 to 0.1297 with a grand mean of 0.1627. High magnitude of GCV was noticed for number of spike /plant and yield of spike (lakh/ha.). Were low estimates were observed in height of plant (3.91cm). Besides height heritability in broad sense were found in an important growth attributes of length of pseudostem followed by days to sprouting, number of leaves/ plant, days taken to flower initiation, number florets / spike, and vase life of gladiolus flower. Further it was also observed that genetic advance estimates were found to be height for the length of spike (15.55cm) followed by days taken to flower initiation, Plant height, Length of pseudostem, number of florets per spike, Vase life of gladiolus flower, days to sprouting, number of leaves /plant, and yield of spike. Whereas number of spike per plant (0.85) showed low genetic advance.

Keywords: Gladiolus, Genotypes, Agro-Climatic

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INDUCED MUTAGENESIS IN AGRICULTURE-A PROMISING TECHNOLOGY FOR THE IMPROVEMENT OF CROP SPECIES

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Induced mutagenesis, for its notable notoriety in enhancing the genetic structure of the crop plants, may be utilized as a supplementary or complementary tool in bestowing desirable traits in different species of the plant kingdom. The technology of mutation induction plays a pivotal role in producing new cultivars with desirable traits which in turn could be utilized further in order to develop new genotypes through mutation breeding programmes. Induced mutations have played a significant role in meeting challenges related to world food and nutritional security by way of mutant germplasm enhancement and their utilization for the development of new mutant varieties. In addition to gross chromosomal aberrations, mutagens also cause point mutations among the specific genes that consequently lead to increment in genetic erraticism among the segregating generations which greatly boosts the scope for selection. A wide range of variability in the genetic systems in several crop species has been induced by physical and chemical mutagens. In the past few decades, the technology of induced mutations has contributed massively to the development of enhanced varieties in several crop plants. Till date, 3,274 mutant varieties have been officially released worldwide. More than 60% of them have been produced from Asia with China, Japan and India tops the list. Induced mutations thus offer better opportunity for raising superior plant genotypes through efficient selection methods in the mutagen treated populations.

Keywords: Mutations, Crop, Gamma rays, EMS, Breeding, Asia

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RESPONSE FOR ADOPTING EFFICIENT IRRIGATION METHOD AND IMPROVED PACKAGE OF PRACTICES TO AVERT CLIMATE CHANGE IN COMMANDS OF BETWA RIVER BASIN

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The response of farmers on the need for protecting the environment to avert climate change is presented in the year wise progressive reports of World Bank funded '*Madhya Pradesh Water Sector Restructuring Project*' MPWSRP during 2011 to 2015. Most of the farmers (73%) practiced with improved package of practices for sustainable production and mitigate the effect of climate change. However majority of farmers (55%) applied chemical practices for sustaining crop production and enhancement in water use efficiency (WUE) in command area, except farmers of the Ghaterababaji tank command used biological methods (39%) as practiced for sustainable agriculture crop production. This suggested that farmers are more applying chemicals in their fields as compare to practice of biological method as part of IPP. Based on this impact survey, it is imperative to give training and exposure of other cultural and biological methods to be used in an integrated manner for enhancing crop and water productivity. Thus farmers should learned cultural and mechanical method other than chemical method to minimize its deleterious effect on living being as well as ill effect on environment. In order to avert adverse situation of climate farmers are interested to replace and keen to adopt improved irrigation method (52%) however, 17% farmers are unaware of mismanagement of irrigation water in their fields. Most of the farmers are experiencing scarcity of water at tail end in the command that which directly affects their crop yield. Thirty percent (30%) of farmers agreed that change in rainfall patterns may affect their crop yield furthermore erratic pattern of rainfall is affecting their crop yield followed by unavailability of irrigation (23%) and pest and diseases infestation (18%) occurred. Farmers of Karonda Khurd (Ghaterbabaji tank command) and Dhimroulli (Jajon tank command) faced irrigation problems and their farming dependent on rainfall. Availability of labour is also one of the major challenges (13%) farmers are facing under the current climate scenario conditions.

Key words: Improved package of practice (IPP), Water Use Efficiency (WUE), MPWSRP, Tail end

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WOMEN EMPOWERMENT: A SOCIAL CONSCIOUSNESS IN THE NOVELS OF MULK RAJ ANAND

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Empowerment is the expansion of asserts and capabilities of poor people. The term can be used to characterize relations within household or between poor people and the other actors at global level. Education is one of the important sources of empowering women with the knowledge, skill and self confidence necessary to participate fully in development process. It controls and holds accountable institutions that affect their lives. It enhances better socio-economic development. Women empowerment in India is highly dependent on several variables that include caste, class, family background and culture, geographical location it may be urban or rural and age. The barriers of women empowerment are discrimination in the society, economic disadvantages, religious practices, social believes and violence against women. They are unable to access health and educational services, lack decision making power and face higher level of violence. There is an immediate need for empowering women in present scenario. Mulk Raj Anand was an Indian novelist and short-story writer. Anand's novels present a realistic picture of the poor and suppressed classes of Indian society.

Keywords: Women empowerment, education, socio-economic development, exploitation, self-consciousness.



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“EFFECT OF CARBARYL TOXICITY ON VARIOUS ENZYMES OF HEART OF FISH *CLARIAS BATRACHUS*”

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Carbaryl, a carbamate pesticide is highly toxic to the fishes. Its sub lethal concentrations were used to study the toxic effects of carbaryl on SGOT, SGPT, Acid phosphatase, alkaline phosphatase and Acetylcholinesterase enzymes. It is observed that after the chronic exposure of sublethal concentrations of carbaryl all the enzymes have been significantly influenced in heart. It shows that the heart of fish is severely affected by the pesticide exposure. The histological studies also support the disfunctioning of cardiac conducting system. The study suggests that the aquatic environment should be made pollution free to save the life of aquatic animals. The use of pesticides should be controlled.

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SUSTAINABLE DEVELOPMENT MANAGEMENT

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The paper shows that environment is one of the basic public assets of a human system, and it must be therefore specially protected. According to our present knowledge, the sustainability is necessary for all human systems and it is necessary to invoke the sustainable development principles in all human system assets. Sustainable development is understood as a development that does not erode ecological, social or political systems on which it depends, but it explicitly approves ecological limitation under the economic activity frame and it has full comprehension for support of human needs. The paper summarizes the conditions for sustainable development, tools, methods and techniques to solve the environmental problems and the tasks of executive governance in the environmental segment.

Sustainable development is a universal concept that has presently become the fundamental and primary goal of all peoples inhabiting the planet thus requiring convergent, efficient and effective actions under taken in future. The modern concept of sustainable development is a complex one relying on the following components: economic development, social development, environmental protection, cultural development and preservation, as well as national, regional and international security assurance. The twenty-first century marks the transition from the industrial society to the cultural-intensive and knowledge-based society.

The struggle for sustainable development can be interpreted as systemic and convergent action aimed at: alleviating and doing away with poverty, pollution, work-related uncertainty, migration, expansion of urbanization, financial and economic crises, and last but not least preserving traditional values.

Keywords: Economic development, Environmental protection, Ecological, Sustainable development, Governance.

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WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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Empowerment of women has emerged as an important issue in recent times. Women participation and empowerment are fundamental women rights to enabling women to have control over their lives and put positive influence in society. The aim of women empowerment through skill development, particularly in case of women is not merely to prepare them for jobs, but also to improve the performance of women workers by enhancing the quality of work in which they are engaged and to maintain their prestige. The country has identified major challenges, which need to be addressed for building a conducive ecosystem, of skill development for the women workforce. Skill development is a key to improving household productivity, employment and income earning opportunities for women and also for enhancing sustainable rural development and livelihoods. Women are seriously under represented in many occupations, thus policies are needed to fight exclusions in the labour market by reducing the incidence of discriminatory practices. With this background, it is important to ensure women empowerment in the development programmes and thereby strive to have a conducive atmosphere for their effective participation. The strategy for women empowerment through skill development is addressed to maintain their socio-economic conditions, to maintain their standard of living, to enhance their efficiency, to ensure equality and status in the society. This paper focuses on the empowerment of women through skill development, challenges and issues faced by women while pursuing the same.

Keywords: Skill development for Women, women Empowerment, Skill training, discriminatory Practices.



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A REVIEW STUDY OF SOFTWARE TOOLS AND TECHNIQUES USED TO ANALYZING EDUCATIONAL DATA FOR ACADEMIC GROWTH IN HIGHER EDUCATION

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Nowadays, most of institutes and colleges of higher education are facing of challenges and problems regarding academic issues like student's admissions, academic performance and placements. In this regards, almost institutions and colleges of higher education collected and analyzed vast dataset of their students by means of various tools and techniques to extract some useful and hidden information. This information can then used to make better and efficient policies related to various academic issues. Data mining is one of such powerful tool or technique for analysis big data. This tool and its techniques are also successfully applying in the field of education for analyzing vast dataset of students in any higher educational institute. This application area is known as Educational Data Mining (EDM). This review based paper presents a comprehensive study of many tools and techniques of Data Mining which have been used to analyses student's database. For this study author has read more than 40 research articles published in last five years. This study conclude that there are considerable amount of work is done in this field and even nowadays, there is a wide scope of this tool in educational domain but still there are many untouched techniques which can be used in this field. This study, of course presents a clear approach among researchers to understand the scopes, opportunities and future prospects in this filed.

Keywords: Data Mining, Educational Data Mining, Academic data analysis

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SELF PERCEIVED PSYCHOLOGICAL WOMEN EMPOWERMENT ONSAFTY THROUGH CYBER EDUCATION.

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India has received the highest mile stone in the development from last two decades. The credit not only goes to science and technology but also to the involvement of women in utilization and applying it. The science and user friendly technology has become one of the strong mean of women economical ,social and psychological empowerment. The present study focus on the psychological perspective of tehcnical /cyber education in empowering the women. The sample consist of randomly selected 50 young customer executive officers working in the BPO of Multinational companies in Gurgaon Hariyana India . A questionnaire was developed as a tool to study the psychological perspective of cyber eduction on safty norms and self percieved psychological empowerment. The questionnaire was administered in group as well in individual condition on pre and post design The result indicated positive correlation between cyber education and self percieved psychological empowerment.

Key words: Cyber Eduction , Safty Norms ,Self Perceived Psychological Empowerment .



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OUR LAST SURVIVAL GETAWAY: ZERO WASTE LIFESTYLE

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This world has reached its inimical peak with plastics and pollution prevailing in almost every corner of the earth. Whether you search the depths of the ocean or the peak of the hills, you will surely come up with plastics and more non-biodegradable objects than ever. With such prevailing conditions there is little to no scope left for upbringing a generation with fit and healthy individuals in the coming years.

This paper reviews the insight on what a Zero-Waste/Intentional or Sustainable, Mindful Lifestyle is. What all are its benefits in the long run. Also, why switching to such a lifestyle is the need of the hour. Why is it a must for each and every citizen to handle his waste responsibly? We will discuss some of the many waste free practices to be adopted specifically by clinicians and dentists. How we can achieve complete Zero-Waste Lifestyle on a personal level as well as that on a community level. It will also feature some astonishing individuals both from India as well as from abroad who are on their own zero waste journeys and have successfully been living totally waste-free for quite some time.

We will also be discussing about various large scale public waste disposal practices to handle our countries waste in a sustainable and intentional way; as well as the brilliant waste disposal regulations followed by various other countries like Switzerland, Singapore, Austria, Germany, Taiwan, Brazil, Italy, France, Australia etc as well as those of cities like Bangalore, which are very popular for being intentional and sustainable. Adopting such practices in India will prove very beneficial in the long run.

Living a Zero Waste lifestyle is our last getaway for a healthy and safe future. It is the need of the hour, for each and every citizen of India, to responsibly manage their countries waste sustainably and mindfully, especially clinicians or else the end of this planet is not very far.

Keywords: Intentional Living, Waste Free, Sustainable Lifestyle, Plastic Free, No Pollution, Zero Waste Lifestyle.

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EVALUATION OF LOCAL – DELIVERY SYSTEM CONTAINING 80% ALOEVERA GEL USED AS AN ADJUNCT TO SCALING AND ROOT PLANNING IN CHRONIC PERIODONTITIS: A CLINICAL STUDY.

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Recent interest and advances in the field of alternative medicine has promoted the use of various herbal and natural products for multiple uses in the field of medicine. Aloe vera is one such product exhibiting multiple benefits and has gained considerable importance in clinical research. This clinical study focuses on aloe vera and highlights its property when used as a medicament in the periodontal pocket. The aim of this study was Evaluation of local – delivery system containing 80% aloe vera gel used as an adjunct to scaling and root planning in chronic periodontitis. Objective is to evaluate the efficacy of Aloe vera in reduction of gingivitis and periodontitis and to compare the antioxidant level before and after aloe vera application on test site. Material and method – Present study was conducted among 30 patients having periodontitis. Split mouth design was used. GI, SBI, CPI, LOA & PD were recorded at baseline, 15 days & at 1 month. Immediately after recording all the indices at baseline and prior to drug application, the entire patient underwent scaling and root planning with hand instrument. The aloe vera gel was injected into the pockets with a syringe with blunt needle around the selected teeth in the treatment test site. The control site received only scaling and root planning. Biomechanical analysis-GCF was collected from 15 CP patients before and after treatment. Total antioxidant status was determined using colorimetric method and commercial kits. Result & conclusion -In the present study there was a significant difference in antioxidant level in GCF between test site and control site. Test site showed significant increase in antioxidant level and significant improvement in clinical parameter 2 month after application of aloe vera along with scaling and root planning while on control site there was no significant change in antioxidant level. There was strong significant positive correlation of antioxidant with probing depth and attachment loss. Public health prospectus –Aloe vera play important role in treatment of gingivitis and periodontitis and it is low cost as compare to other medicine available in market.

Keywords: aloe vera gel, gingivitis, periodontitis, antioxidant

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A 10- YEARS RETROSPECTIVE COHORT REPORT ON TOBACCO INFLECTORS FOR PHARMACODYNAMICS OF TOBACCO CESSATION- HOSPITAL BASED INTERVENTION

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Globally about 6 million people die due to tobacco use annually. Current trends predicted 8 million deaths by 2030. Approximately 250 million adults use smoke less tobacco. World health organization mark that 90% of global smokeless tobacco users originates from South-East Asia Region. The prevalence of tobacco use among the adult Indian population is 34.6% (estimated urban 25.3% and 38.4% urban) . Life expectancy of tobacco users at least 10 years shorter than non smokers (CDC Report, 2015). Second hand smoking related deaths toll nearly 60,000 (WHO 2018). Tobacco users in India GATS 2 2016 urban 6.8 crore ,Rural 19.9% crores. GATS 2 MP state fact file states number of smokeless tobacco user are highest in India. Out of pocket expenditure on medical care attributed to tobacco has been reported to result in high poverty rates affecting 0.93 million people in India. The total economic cost attributable to tobacco use in India year 2011 for person aged 35-69 amount to Rs. 1,04,500 crores . the cost of immature mortality was highest in the age group 40-44 is Rs. 20,300 crores. A multiphase tobacco cessation clinic was established, data provides an insight to tobacco cessation activities as well as the explicit percentage of cessation rate its pattern over a period . To enlighten the tobacco quit help among children, youth and also increase cessation activities in individual and community level for accomplishing a dream of healthful, youthful Bharat. Current study is a individual as well as community based tobacco intervention program . Mainly evaluate the trends of tobacco quit help, awareness related to tobacco hazard, initiation to quit, contemplation and pre-contemplation, With-drawl, relapse is recorded with post intervention follow up. A 10 year retrospective report on a cohort of tobacco users both in smoked and smokeless form in a established tobacco cessation counseling centre in a renowned university of Central India All available tobacco cohort ready to quit is tabulated year wise and a descriptive report is been prepared. Sessions with tobacco cessation counselling from a trans-theoretical model to tobacco dependence and dispensing Pharmacotherapy with the Nicotine replacement as the adjuvant. Total of 30.2% people visiting the TCC was success fully able to quit as the final impact with the attrition of patients in follow up the graph gradually dips down. Percentage of withdrawals and relapse is been emphasized. The quit rate in the present study 30.2% is in the par32.6% with Study done at Mumbai and much higher on comparing it with Tamil Nadu 13.9%quit rate. May be the pharmacodynamics of cessation is magical in the Tobacco cessation cell as trained activist are required. RecommendationTo implement surveillance system, with better taxation laws and capacity building in terms of trained health professionals at tobacco cessation clinics for adjuvant in quit therapy is the revolutionary step in curbing the menace.

Keywords: Tobacco cessation, behavior counseling, Nicotine dependence, Pharmacotherapy of tobacco, Tobacco cessation centre.

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ANALYZING THE ASSOCIATION OF DNA REPAIR AND OXIDATIVE STRESS RELATED GENE POLYMORPHISMS IN PREDISPOSITION TO VITILIGO

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Introduction: Vitiligo is a common, idiopathic skin depigmentation disorder caused due to melanocyte death leading to white patches on the skin. It is associated with deep social stigma in India and especially women patients with lesions on facial or exposed regions lead poor quality of life due to long duration of treatment without definite outcome. The exact etiology behind the death of melanocytes leading to vitiligo is unknown. Oxidative stress is implicated in the pathogenesis as patients are benefitted by antioxidant therapy. Also oxidative stress can result in DNA damage in melanocytes thus polymorphism in the genes in DNA repair and genes involved in detoxification of free radicals can predispose to vitiligo.

Aims and objectives: The present hospital based case-control study analysed the association of null genotype of oxidative stress related genes- *GSTM1*, *GSTT1* and genotypes of *GSTP1* (Ala¹¹³Val rs1138272; Gly¹⁶⁹Asp rs41462048, Ile¹⁰⁴Val rs1695) and DNA repair genes- *hOGG1* (Ser³²⁶Cys rs1052133) and *XRCC1* (Arg¹⁹⁴Trp rs1799782) with occurrence to Vitiligo in central India and correlated the genotype with demographic factors.

Materials and Methods: After obtaining informed consent and collecting demographic information, venous blood was drawn from 295 vitiligo patients and 400 healthy controls from a tertiary care hospital and nearby areas. Genomic DNA was isolated from whole blood and PCR followed by PCR-RFLP on ethidium bromide stained agarose gels for genotyping. Statistical analysis of genotype and demographic data was performed using STAT pages and significant correlations ($p < 0.05$) were noted.

Results and conclusion: In the present study, demographics revealed that vitiligo occurs at same frequency in both men and women at all ages. Acrofacial type and active vitiligo were most common among the participants and 25% patients showed family history of vitiligo. Significant association of *GSTM1* null genotype with acrofacial type and *GSTP1* Ile¹⁰⁴Val rs1695 with koebner phenomenon was observed. Preliminary findings of *hOGG1* (Ser³²⁶Cys) and *XRCC1* (Arg¹⁹⁴Trp) will be presented. Correlation of the genotype with phenotype is warranted.

Biography: Ms. Apurva Shrivastava completed M.Sc. in 2015 from Barkatullah University and completed her dissertation work at IGIB, Delhi. Thereafter, she has been working as a DST-SERB, Junior Research Fellow with Dr. Ashwin Kotnis in the Dept. of Biochemistry at AIIMS Bhopal on analyzing genetic biomarkers in Vitiligo for nearly 2 years. She has presented her work and has been awarded in national & international conferences. Apart from personally interacting with Vitiligo patients and healthy controls for sample collection, she is active in spreading public awareness on Vitiligo. She enjoys teaching laboratory skills and molecular biology techniques to undergraduate students.

Acknowledgements: The work was guided by Dr. Ashwin Kotnis (PI) in the Dept. of Biochemistry and Dr. Dinesh Asati (clinical investigator). Sample accrual by Mr. Parth Deshmukh, Ms. Apurva Maheshwari, Ms. Arwa Hussain, Mr. Shivam Choudhary, Ms. Anam Khan, Dr. Saurav Jain, Dr. Ekta Sahu, Dr. Jayashree Patil, Nursing staff and facilities at Dept. of Biochemistry is acknowledged. Funding from DST-SERB is acknowledged.



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EVALUATION OF PHYSICO-CHEMICAL AND BIOLOGICAL PARAMETERS OF RIVER NARMADA AT HOSHANGABAD, MADHYA PRADESH (INDIA)

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The study was carried out to ascertain the quality of water at central zone of Narmada River at Hoshangabad, Madhya Pradesh, India. Due to heavy release of harmful substances in river, the biological chemical and physical properties of water have changed to a considerable extent. The aim of this study was to find out the changes in physico-chemical nature as well as biological condition of river Narmada. The study was carried out from September, 2014 to February, 2016 at eight sampling stations of river Narmada, Hoshangabad. The water quality of river Narmada at all eight sampling stations, based on diversity indices classified “clean to moderate” pollution. Classified the water fit for outdoor bathing and other recreation use.

Keywords: Zooplankton, Narmada River, Bio indicator, Diversity indices, Hoshangabad.



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ETHNO-BOTANICAL STUDY OF SACRED NATURAL SITES OF BETUL DISTRICT OF MADHYA PRADESH AND TRIBAL BELIEVES

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Current ethno-botanical study reviews plants used by tribals (Gonds and Korkus) of Betul district of (M.P.) specially found in sacred natural sites of district. Worshipping nature and various living beings has been practiced in India from the time immemorial. There was a belief that all creation of natural world had to be protected. Such believes preserved several virgin forests in pristine form and any intervention with such forests were forbidden. Ethno-botany is considered as a branch of ethno-biology. It deals with the study and evaluation of plant and human relation in all phases and the effect of plant environment on human society. Ethno-botanists explore how plants are used for such things as food, shelter medicines, clothing, hunting and religious ceremonies.

Keywords: Sacred natural site, Gond ,korku, Ethno-biology

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ENVIRONMENT AND MANGEMENT SYSTEM

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Environment is everything which surround us. It can be living or nonliving things. It includes physical, chemical and other natural forces. Living things live in their environment. They constantly interact with it and adapt themselves to conditions in their surroundings. In the environment there are different interactions between animals, plants, soil, water, and other living and non-living things.

Climate change is a change in which the statistical distribution of weather patterns when that change lasts for an extended period of time. Climate change may refer to a change in average weather conditions, or in the time variation of weather within the context of longer-term average condition.

Global warming, is the observed century-scale rise in the average temperature of the Earth's climate system and its related effects. Multiple lines of scientific evidence show that the climate system is a warning.

Environment pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light.

Environmental management system (EMS) refers to the management of an organization's environmental programs in a comprehensive, systematic, planned and documented manner. It includes the organizational structure, planning and resources for developing, implementing and maintaining policy for environmental protection.

Keywords: Statistical distribution ,Adverse change,Implementing ,Scientific ,Evidence ,Resources

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FOR CONFERENCE THEME- WOMEN'S HEALTH : NANOTECHNOLOGY AND NANO BIOTECHNOLOGY SYNTHESIS AND CHARACTERIZATION OF AMINO ACID MEDIATED IRON NANOPARTICLES

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The interest in nanoparticles research is increasing due to the new discoveries and its capability of modulating metals into their nanosize which have great applications in the field of biology. Nanoparticles are important because of its physical and chemical properties which are mainly determined by its size, shape, composition, crystallinity and structure under 1- 100 nm. The nanoparticles were synthesized using green synthesis method. For synthesis of iron nanoparticles a reduction method was used, using 3 materials which were $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, amino acids and NaBH_4 . Iron nanoparticles were also synthesized using different amino acids along with $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ and $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ respectively. Sodium borohydride were used as reducing agents. Fe^+ ions were added to obtain amino acid-conjugated iron nanoparticles. Analysis was done by using UV-Visible Spectrophotometer, and FTIR. Further analysis will be done using XRD, SEM etc. Biofunctionalized nanoparticles thus obtained shall be further used for biomedical applications.

Keywords: Nanoparticles, functionalized, Spectrophotometer, Biofunctionalized, synthesis.

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FEMALE MATHEMATICIANS AND THEIR CONTRIBUTION TO MATHEMATICS

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You might not have found out about numerous acclaimed female mathematicians. This is on account of until moderately as of late it was difficult for ladies to go to college, not to mention have a profession in science or arithmetic. Notwithstanding this, there have been ladies all through history who have made extraordinary revelations and numerous all the more making incredible disclosures today.

Although there is no doubt that men often excel in mathematically challenging fields, there has been little research to support the fact that women cannot excel in them too. The following few famous females who have proved that gender differences in stereotypically male-oriented subjects like math are but only a matter of preference not ability. Hypatia of Alexandria (AD 350 or 370-AD 417), Émilie du Châtelet (1706-1749), Maria Agnesi (1718-1799), Sophie Germain (1776-1831), Ada Lovelace (1815-1852).

Pythagoras, Euler, and G.H. Strong, in case you're occupied with math or on the off chance that you focused in school, odds are you've known about these popular names and might be acquainted with their work and achievements. Be that as it may, what about Agnesi, Cartwright or Goldwasser? These three names are among ten that we've chosen as a methods for featuring a portion of the best and brightest female mathematicians ever; ladies who not at all like their male partners, have not generally gotten a similar level of acknowledgment despite the fact that their accomplishments and commitments to the universe of science are similarly as essential. These ladies were frequently groundbreakers, exceptionally decided and extremely devoted. They are sparkling cases of the way that science isn't a "young men just" club, regardless of whether at numerous focuses in time it's created the impression that route at first glance. Today their work is perceived and acknowledged, and they remain as incredible wellsprings of motivation for another age of understudies and math lovers – both female and male.

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DIVERSITY OF AQUATIC FUNGI FROM HATAIKHEDA DAM RESERVOIR BHOPAL

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During the present investigation 2015-2016 study of fungal diversity has been taken first time in Hataikheda dam. During the study period 20 fungal forms were isolated and described which belong to groups Mastigomycotina, Zygomycotina, Ascomycotina and Deuteromycotina from the four sites of the Hataikheda dam. The four sites were selected on the basis of pollution, anthropogenic activities and taken almost the catchment area of whole dam. The highest fungal forms were found in site I and site IV as compared to the site II and site III. The variation of the occurrence of the fungal forms is due to the polluted and anthropogenic activities on the dam. The data obtained during the period showed that maximum growth of the fungal forms belongs to Mastigomycotina were recorded in winter seasons as compared to the summer and monsoon seasons whereas the fungal forms belong to Zygomycotina, Ascomycotina, Deuteromycotina. This is the first report of diversity of aquatic fungi in Hataikheda Dam and data is compared with previous studies.

Keywords: Aquatic fungi, Isolation, Pollution, Anthropogenic activities, Diversity, Seasons.

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STAPHYLOCOCCUS AUREUS NASAL CARRIAGE RATES IN ANGANWARIES CHILDREN BETWEEN ONE TO SIX YEARS IN UJJAIN (M.P.)

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Children with nasal carriage of *s.aureus* play an important role in community spread of *s.aureus* and methicillin resistant *s.aureus*(MRSA). Screening the nasal carriage isolates of *s.aureus* for antibiotic resistance patterns will provide guideline for prevent *s.aureus* infections. A prospective study was done among children aged 1 to 6 years of age attending 100 anganwaries. Swabs were collected from anterior nares and tested for susceptibility to various commonly used antibiotics according to CLSI. Total 1002 children were included in the study. The prevalence of *s.aureus* was 35% . Age were the factor that independently associated with nasal carriage of *s.aureus*. The aim of the study is to determine the prevalence of *s.aureus* and it's in vitro antibiotic susceptibility pattern in anganwaries children.

Key words: Staphylococcus aureus, Nasal carriage, MRSA ,Antibiotic, Susceptibility, Anganwarieschildrens.

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ROLE OF WOMEN IN FIELD OF SCIENCE & TECHNOLOGY

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The history shows a lot of examples of great input made by women to the development of STI (*Science, Technology and Innovation*). Scientific and industrial field, as well as other technological industries are influenced and dominated by men. Despite the fact that there are women who have played an important role in the development of STI industry, their names are rarely mentioned. For example, Ada Byron King, the daughter of the famous Lord Byron, became the first computer programmer. She was a prominent mathematician as well. Unfortunately, her name is rarely mentioned in the history of the development of the computer industry and when people speak about this sphere they remember the names of famous male specialists. Hypatia, an Egyptian mathematician who lived in 400s made great contribution to the development of science. Maria Gaetana Agnesi made a great contribution to the science by her work in differential calculus in 1700s. At the present moment all over the world women take an active social role and demonstrate their abilities in a lot of spheres. Nowadays women are active in goods production industry, natural-resources management, educational sphere, community management. Big percentage of women work in the medical industry, as well. Women play an important role in a lot of spheres in the contemporary society. Unfortunately, science and technology are the spheres where women do not have equal possibilities with men. Gender equality and normal work conditions for both, men and women are the characteristics of any normal society and it is necessary to pay attention to the problem of gender inequality in science and technology because this can be beneficial for the development of these spheres.

Keywords: women, science, technology, society, sphere.

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BIODIVERSITY OF PHYTOPLANKTON IN CERTAIN URBAN WATERBODIES

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Biodiversity is the degree of variation of life forms within a given ecosystem, biome or an entire planet. In the present investigation, attempts have been made to find the diversity of phytoplankton and physico-chemical analysis of two urban waterbodies of Bhopal because like other living organisms, algae are also largely affected by the environment in their vicinity. Algae are involved in water pollution in different ways but the selective algae, in polluted water they are also being used as indicator of pollution. Water samples were collected on monthly intervals from Shahpur lake and Motia lake (Bhopal) for a period of two years and comprehensive physico-chemical analysis was carried out. Qualitative and quantitative analysis of phytoplankton were done. In Shahpur lake during the study period 53 genera belonging to three major groups viz., 28 genera of Chlorophyceae, 13 genera of Cyanophyceae, 12 genera of Bacillariophyceae were identified and in Motia lake during the study period 43 genera belonging to three major groups viz., 21 genera of Chlorophyceae, 12 genera of Cyanophyceae and 10 genera of Bacillariophyceae were identified. High value of pH, dissolved oxygen, alkalinity, water transparency and nutrients were found, it shows that the status of the Shahpur lake and Motia lake are highly eutrophic in nature. The physico-chemical parameters played an important role in distribution and diversity of algae. In Shahpur lake maximum density of phytoplankton was recorded as 110090 units/lit (Cyanophyceae), 43280 units/lit (Chlorophyceae) and 4730 units/lit (Bacillariophyceae) and in Motia lake maximum density of phytoplankton was recorded as 64070 units/lit (Cyanophyceae), 25410 units/lit (Chlorophyceae) and 3805 units/lit (Bacillariophyceae). During the present investigation, Cyanophyceae was the most dominant group, which shows the highly polluted nature of waterbody. The presence of pollution indicator phytoplankton species such as Microcystis, Anabaena, Spirulina, Rivularia, Microspora, Scenedesmus, Fragilaria, Navicula, Nitzschia and Synedra indicates organic pollution in these lakes.

Keywords: Biodiversity, Phytoplankton, Physico-chemical parameters, Water pollution.

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ROLE OF SMALL INDIGENOUS FISHES IN NUTRITIONAL AND ECONOMIC SECURITY IN NARMADA BASIN

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The aim of the study was to assess The Role of Small Indigenous Fishes in Nutritional and Economic Security in Narmada Basin. The present study was confined to 50 km. which falls in the central zone of Narmada basin under the administration boundary of Hoshangabad district. The data of total fish was collected by survey and the sampling was carried in post monsoon season. Water sample were collected and analyzed for 14 different parameters. In physico-chemical analysis various quality of parameters are measured including pH, Air Temperature, Water Temperature, Turbidity, Conductivity, TDS, DO, Free CO₂, Total alkalinity, Calcium hardness, Total hardness, Mg hardness, Chloride and Nitrate.

During the study period 18 fish has been identified belonging to 5 Families and 4 Order includes *Salmostoma orissaensis*, *Rasbora daniconius*, *Punctius chola*, *Osteobrama cotio cotio*, *Labeo calbasu*, *Garra gotyla*, *Punctius ambhibius*, *Punctius ticto*, *Mystus vittatus* *Pethia Conchoni* *Punctius sophore* *Punctius titius* *Rita rita* *Gonialosa manmina* *Gudusia chapra* *Chanda nama* *Nandus nandu* and *Xenentodon cancila*. The catch composition indicates that major contribution to the catch is composed of Cyprinidae, Which include major and minor carps. Study indicates towards the necessity of the study of fish diversity.

Keyword: Indigenous Fishes, Narmada Basin, Post Monsoon, Catch Composition, Central Zone

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ENVIRONMENTAL IMPACT AND HUMAN HEALTH ISSUES FROM PESTICIDE USE: A STUDY

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Pesticides are used to kill the pests and insects which attack on crops and harm them. Different kinds of pesticides have been used for crop protection for centuries. Pesticides benefit the crops; however, they also impose a serious negative impact on the environment. Excessive use of pesticides may lead to the destruction of biodiversity. Many birds, aquatic organisms and animals are under the threat of harmful pesticides for their survival. Pesticides are a concern for sustainability of environment and global stability. This research paper intends to discuss about pesticides, their types, usefulness and the environmental concerns related to them. Pollution as a result to overuse of pesticides and the long term impact of pesticides on the environment are also discussed in the paper. Moving towards the end, the paper discusses the methods to eradicate the use of pesticides and finally it looks forward towards the future impacts of the pesticide use the future of the world after eradicating pesticides.

Pesticides are chemical or biological agents that are used to protect crops from insects, weeds, and infections. Acutely toxic organophosphate (OP) pesticides are widely used. Pesticides are used on fruits, vegetables, wheat, rice, olives and canola pressed into oil and on non-food crops such as cotton, grass, and flowers. The OP pesticides malathion and chlorpyrifos are commonly used on all fruits, vegetables, and wheat. Pesticides are used on crops that are fed to animals, although residue from pesticides is generally not found in meat or dairy products. The federal Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) play a role in regulating and measuring pesticides in food. The EPA is responsible for regulating pesticides by enforcing the 1996 Food Quality Protection Act. The EPA registers pesticides for use evaluates potential new pesticides and their proposed uses, reviews the safety of older pesticides, registers pesticide producers, and enforces pesticide requirements. EPA has enacted stricter safety standards for infants and children and restricted many OP pesticides from residential use in order to reduce exposures in children.

The impact of pesticides consists of the effects of pesticides on non-target species. Pesticides are chemical preparations used to kill fungal or animal pests. Over 98% of sprayed insecticides and 95% of herbicides reach a destination other than their target species, because they are sprayed or spread across entire agricultural fields. Runoff can carry pesticides into aquatic environments while wind can carry them to other fields, grazing areas, human settlements and undeveloped areas, potentially affecting other species. Other problems emerge from poor production, transport and storage practices. Over time, repeated application increases pest resistance, while its effects on other species can facilitate the pest's resurgence.

Keywords: pesticides, toxic, exposures, resistance, insecticides, biodiversity

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STUDIES ON THE PATHOGENICITY OF SOME SPECIES OF GENUS *SAPROLEGNIA* ON INDIAN MAJOR CARPS VIZ. *CATLA CATLA*, *CIRRHINUS MRIGALA* AND *LABEO ROHITA* OF RIVER NARMADA

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Present study was conducted to find out the pathogenicity of three species of *Saprolegnia* viz. *S. parasitica*, *S. diclina* and *S. ferax* on indian major carps collected from river narmada. All the three species of fungi tested were originally isolated from the water samples collected from river Narmada at Hoshangabad region. All species were cultured in the departmental laboratory of Department of Zoology and Applied Aquaculture Barkatullah University Bhopal MP under aseptic conditions on different baits. Experimental infection trails were conducted to know the pathogenicity of these species on Indian Major Carps and it was found that all the species were pathogenic to fishes. *S. parasitica* and *S. diclina* showed 100% mortality while as *S. ferax* showed only 33% mortality in 7 days infection trail. *S. parasitica* was most virulent which showed 100% mortality in 5 days. Fish species of indian major carps used for experimental infection trails were also collected from river Narmada with the help of local fisherman.

Keywords: Saprolegnia, Narmada, Pathoogenicity

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CHROMATOGRAPHIC SEPARATION OF PLANT EXTRACT OF *BARLERIA PRIONITIS*

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Aerial parts of *Barleria prionitis* Linn. (Acanthaceae) have shown anti-respiratory syncytial virus, anti-arthritic, anti-inflammatory, hepatoprotective, anti-stress, and immunorestorative activities. So for the separation of constituents of plant extract the techniques of TLC and Column chromatography were used. The solvents used: for Alkaloids were n-butanol, acetic acid, HCl in the ratio of (6: 3: 1). For the separation of flavonoids, the solvents employed were Acetic acid, HCl, Water (10: 3: 30), and for tannins separation water, methanol, chloroform (2.5: 8.9:16.3) respectively. The R_f values in thin layer chromatography (TLC) for flavonoids, tannins, alkaloids were found to be 4.8, 2.5 and 1.6 respectively. The R_f values for flavonoids, tannins, alkaloids using column chromatography were found to be 4.2, 5.8, 4.6 respectively.

Keywords: Anti-respiratory, Anti-arthritic, Hepatoprotective, Immunorestorative, Flavonoids, Tannins, Alkaloids.

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VITAMIN D RECEPTOR (FOK1,TAQ1, APA1 AND BSM1) GENE POLYMORPHISM AND DEFICIENCY OF VITAMIN D IN SCHOOL GOING FEMALES OF MADHYA PRADESH (M.P.): FIRST REPORT FROM CENTRAL INDIA.

Roji Begam

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Vitamin-D (Vit-D) plays an important role in health promotion during adolescence. The vitamin D receptor (VDR) gene is a candidate gene for susceptibility to several diseases. Hypovitaminosis is multifactorial disease, which occurs due to involvement of nutritional, biochemical and genetic components together. The aim of the study is to find out the status of vit-D and their relationship with vitamin D receptor (VRD) gene polymorphism in school girls (age 12-17 years) of Bhopal (Madhya Pradesh) and to find out any genetic or environmental factors associated with Hypovitaminosis D. This study was conducted on 100 females aged 12–17 years. Enrolled adolescents (>90%) were having hypovitaminosis D associated with high values of PTH. Logistic regression showed increased risk of Hypovitaminosis D and when these results were compared with VDR gene polymorphism, Bsm1 showed 36%, Apa1 23%, Taq1 7.48% and Fok1 6.48% polymorphism respectively comparable to other biochemical parameters. The bb (Mutant) genotype was higher in girls. PTH level were high in almost all future child bearing females. Genetic polymorphism of VDR gene makes females more prone to vitamin D deficiency and it may have severe effect on them and their future children.

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WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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Empowerment of women has emerged as an important issue in recent times. Women participation and empowerment are fundamental women rights to enabling women to have control over their lives and put positive influence in society. The aim of women empowerment through skill development, particularly in case of women is not merely to prepare them for jobs, but also to improve the performance of women workers by enhancing the quality of work in which they are engaged and to maintain their prestige. The country has identified major challenges, which need to be addressed for building a conducive ecosystem, of skill development for the women workforce. Skill development is a key to improving household productivity, employment and income earning opportunities for women and also for enhancing sustainable rural development and livelihoods. Women are seriously under represented in many occupations, thus policies are needed to fight exclusions in the labour market by reducing the incidence of discriminatory practices. With this background, it is important to ensure women empowerment in the development programmes and thereby strive to have a conducive atmosphere for their effective participation. The strategy for women empowerment through skill development is addressed to maintain their socio-economic conditions, to maintain their standard of living, to enhance their efficiency, to ensure equality and status in the society. This paper focuses on the empowerment of women through skill development, challenges and issues faced by women while pursuing the same.

Keywords: Skill development for Women, women Empowerment, Skill training, discriminatory Practices.



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TOLERANCE OF LEAD BY BACTERIAL DIVERSITY ISOLATED FROM FLY ASH CONTAMINATED SOIL

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With the intention of screening for heavy metal tolerance, a number of bacteria were isolated and characterized from a fly ash contaminated soil. Isolates were identified by using molecular techniques. Tolerance of Pb by these bacteria was studied after assessment of predominant metal load at sites and found that *Pseudomonas* and *Bacillus* species showed Pb resistance to maximum limit of 900 ppm. These findings revealed the potential of bacterial species in remediation of Pb contaminated soil around industrial area.

Keywords: Pb resistant bacteria; Heavy metals; coal fly ash

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IMPACT OF DEGENERATIVE BONE DISEASES ON THE PSYCHOLOGICAL BEHAVIOR OF ELDERLY WOMEN

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The empowerment of women needs to address the key health issues in elderly women so that they can play an important role in sustainable growth and development of future generations. Independence in performing activities of daily living (ADLs) is a central aspect of functioning. Apart from the sociocultural pattern of a particular society, older women frequently experience impairments and limitations while functioning in various life areas due to degenerative bone diseases. Degenerative bone disease not only cause the physical consequences but also cause mental depression, anxiety, low self-esteem in elderly women.

A gender-based cross-sectional study in 65 female subjects having depression and anxiety, aged ≥ 65 years, was performed. In the present study, Zung Self-Rating Depression Scale was applied to assess anxiety and depression, in these subjects. Binary regression models may be used to establish anxiety and depression as the dependent variables and osteoarthritis, chronic back pain, osteoporosis, education level, age and pain intensity as independent variables.

The study reveals that 37 % women with degenerative bone diseases and resultant musculoskeletal conditions were moderately depressed, 42% mildly depressed, 2% severely depressed and 19% are rated in Normal range. The problems in ADLs give rise to several psychological disorders including low self-esteem, social isolation, anxiety, mania and depression. The aim of this study is to empower the women for the old age more scientifically and clinically so that they can live in the society with dignity.

Keywords: Low Bone Density, Degenerative bone diseases, Activities of Daily Living, Osteoporosis.

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“PERIODONTAL STIPULATION INFERENCE OF INDUSTRIAL RECRUITS OF BHOPAL CITY, INDIA: A CROSS SECTIONAL STUDY”

“PERIODONTAL STATUS, INDUSTRIAL EMPLOYEES, TREATMENT REQUIREMENT”

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Industrial rebellion made brisk tramp to provide scope in employment worldwide; and inflate standard of living. In attributable of frenzied and taxing schedule of industrial employees, adaptation of abhorrent habits like smoking, chewing and drinking are amplified. This exposure deteriorates general as well as oral health of natives working in industries.

Aim & Objectives- This study has been conducted for periodontal stipulation inference of industrial recruits of Bhopal city, India.

Material & Methods- A Descriptive cross sectional study was conducted among 448 industrial employees, to assess their periodontal status. Modified WHO-2013 oral health Performa was used to appraise periodontal condition and related treatment necessities of industrial employees. Statistical analysis was done by using SPSS version 20, Chi square and ANOVA (Analysis of variance) test was used for statistic analysis.

Results- The prevalence of gingival bleeding was found to be 61.2% and periodontal disease prevalence was 48.2%. Out of 182(40.6%) had no loss of attachment. Most of the participants 166(37.1%) had 4-5 mm loss of attachment. 6-8 mm LOA was present in 92(20.5%) and 9-11 mm LOA was present only in 8 (1.8%) participants.

Conclusion- This study, convey an implication of periodontal state and related treatment requirement of industrial recruits. It showed that periodontal health of industrial employees was below the ground of expectations. Therefore, it entails focusing on these peril groups and emphasis on those factors which contribute in pitiable periodontal health.



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PRECURSORS OF THE IONOSPHERIC PERTURBATION BEFORE HOKKAIDO EARTHQUAKE

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The number of earthquakes per year increased day by day in the world. It's a very astonishment because the people know earthquakes from their effects and not from their causes. A magnitude of 8.1 earthquakes struck off the southern eastern coast of Hokkaido, Japan on Friday 26th September 2003. Hokkaido earthquake is scientifically named as Tokachi-oki earthquake. The quake's epicenter was 60 miles off the eastern coast of Hokkaido, and was 21 miles undersea. The epicenter was about 480 miles north-northeast of Tokyo. The type of earthquake was mega thrust. The earthquake was followed shortly thereafter at 6:08 local time by a powerful aftershock measuring 7.0 affecting the same area. The earthquake also causes Tsunami reaching 4 meters in height. Here we found that the variation in ionospheric layers at Wakkanai ionosonde station from (22 sept 2003 to 25/9/2003) at JST. The changes were abruptly seen 3 days before the earthquake occurred on 25 sept 2003 in the E-layer at 5 to 10 MHz frequency.

Keywords: Ionosonde, Earthquake, Epicenter, Frequency

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ORAL HEALTH STATUS AND TREATMENT NEEDS OF TRIBAL (GOND) POPULATION IN RAISEN DISTRICT (M.P.)

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- Health is a prerequisite for normal human development and is essential to the well being of mankind
- Despite remarkable world-wide progress in the field of diagnostic, curative and preventive medicine, there are tribes living in isolation in natural and unpolluted surroundings far away from civilisation who are indigenous people of the land
- Hence, the need of the present study is the assessment of the oral health status and associated behaviours which is an essential part of the process of planning appropriate and acceptable health care and dental health education programmes so as to improve the dental health status of this population

Aim –

- To assess the oral health status and treatment needs of the Gond tribal population of Raisen district (Madhya Pradesh)

Objective-

- To gather baseline information related to their demographic profile, oral health and treatment needs along with oral hygiene practices, dietary & adverse habits.
- To assess the dental health awareness, attitude and practices among tribal people in Raisen, Madhya Pradesh.

Material and method –

- Study Design /Study Type (*Observational*)- A cross sectional study
- Source of data-The study will consist of tribal peoples in Raisen district, Madhya Pradesh
- Sampling: Multistage cluster sampling
- Total tribal population in Raisen District is 15000 .Expected sample size 660 was derived from pilot study by using $4PQ/L^2$ formula.

Result & conclusion -:

In the present study show caries prevalence according to gender & age .total caries prevalence was 444(67.3%). Caries prevalence was more in male i.e. 339(51.4%) as compare to female i.e. 105(15.9%). Statically there was no significant difference in caries prevalence according to gender ($p=0.443$). caries prevalence was highest among 15-35 year old study subject i.e. 222(33.6%).statically there was highest significant difference in caries prevalence according to age ($p=0.001$). Total mean DMFT was seen slightly mean i.e. 2.6 ± 3.7 as compare to male i.e. 2.4 ± 2.9 . But statically there was no significant difference in mean dental caries experience according to age & gender ($P=0.652$).

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EFFECT OF GLOBAL CLIMATE CHANGES ON WOMEN'S HEALTH

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Climate changes are the global changes that burden all of humanity but not equally. The world's weaker, the 1/3 part are women, are encumbered disproportionately. In the year 2015 Global research showed that women are 14 times more likely to die or be injured than other global population. The adverse effects of these events are already felt in many area including Health, WASH (Water, Sanitation, Hygiene), Food, Infrastructure, Protection & safety, psychological services, emergency situations (Pregnancy & Delivery), Child Marriage. These consequences threaten the rights of women specially women living in rural area who are mostly vulnerable. There are many ways in which climate changes disproportionately affect women in low income country, women generally assume primary responsibility to gathering water, food & fuel for households. Climate commission reported in 2013, climate changes induced drought, make this work much more difficult because water becomes less accessible, agricultural production decreases, wood used for fuel need to be obtained from increasingly distance places. The world wide data in the year 2007 showed that 51% women faced greater challenges in gathering water during this period and they have suffer physical injuries & rape. Women have high death rates from extreme weather events such as hurricanes & other storms. The American college of obstetrics & gynecology reported in 2016 the impact of environmental toxins in the preconception & prenatal period can have a profound & lasting impact on obstetrical outcomes. Pregnant women are especially susceptible for all kind of diseases.



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WOMEN EMPOWERMENT AND REPRODUCTIVE HEALTH

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Women empowerment is the process by which unequal power relations are transformed and women gain greater equality with men. For implementing and utilizing and executing effective reproductive health measures by women of, not only India but at the globally they need power. This empowerment would definitely work as an asset for reducing unwanted pregnancies, maternal deaths and infant deaths. Poor sexual and reproductive health outcomes represent one third of the total global burden of disease for women between the ages of 15 and 44 years, with unsafe sex a major risk factor for death and disability among women and girls in low and middle income countries. Although medical advancement and technological progress, good health and well-being continue to embarrass a majority of world's population in view of number of birth effect on maternal mortality rate (MMR) and infant mortality rate (IMR). In India every year 8% girl become mother who are below 19 year age. For improving all this scenario of women health it is need of time to make women empowered through education, knowledge, and make them aware about her reproductive health rights. Better outcomes of women's reproductive health can change not only India's health scenario but it can change world's scenario. The International Planned Parenthood Federation (IPPF) Member Associations in 172 countries across the world are committed to reducing gender inequality and empowering women and girls.

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LITHOLOGICAL MAPPING OF CENTRAL REGION OF LUNAR SURFACE USING CHANDRAYAAN-1 HYPER SPECTRAL IMAGER (HYSI) DATA

Deepti Dwivedi

The Hyperspectral Imager (HySI) on-board Chandrayaan-1 launched on 22 October 2008 is used for mineralogical mapping of the lunar surface in the visible and near infra-red spectral range. The objective of the present study is to carry out spectral analysis of Mare Imbrium of central region of the moon using Hyperspectral Imager (HySI) data to identify the specific minerals present, thereby enabling identification of the rock types in the area. Spectral parameters like band curvature, band tilt and band strength is used for lithological discrimination based on the nature of the spectral profile. These band parameters are essentially measure the shape, position and strength of the absorption feature near 1000nm arising due to electronic transition of Fe^{2+} in crystallographic sites of major rock forming silicates. Spectral band parameters are also used for generation of rock type composite image.

Keywords: Chandrayaan-1; Hyperspectral; Mineralogy; Lithology; Crystallography; Spectral Profile

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CONSERVATION AGRICULTURE AS A TOOL TO MITIGATE THE IMPACT OF WEATHER CHANGE ON WEED DYNAMICS IN RICE-WHEAT-MUNGBEAN CROPPING SYSTEM

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Weed management is a major issue in conservation agriculture due to higher infestation than conventional production system. The floristic composition of weeds under a particular crop or cropping system mainly depends upon the existing agro-ecosystem and cultural practices adopted to grow the crop or cropping system. Tillage and weed management practices influence weed infestation; therefore, interaction between tillage and weed control practices are commonly observed in rice-wheat-mungbean system. Tillage affects the distribution of weed seeds within the vertical profile of the soil, and therefore decisively affects the changes in emergence. Adequate tillage checks and delays the emergence of weeds, and provides a more favorable environment for early crop establishment. In this system crop residues present at the time of herbicide application it can intercept 15- 80 % of the applied herbicide and decrease their efficacy (Chauhan *et al.* 2012). Weed control is depends upon use of herbicides and seed bank present in different soil layer. Meager information is available for rotational use of herbicides in conservation agriculture hence, the present investigation was under taken to see the impact of tillage and weed management practices on weed dynamics in rice-wheat-mungbean cropping system under conservation agriculture

METHODOLOGY

The field experiment was conducted during 2014-2016 at ICAR *Directorate of Weed Research*, Jabalpur (M.P.). The experiment was consisted of fifteen treatments comprising of five tillage as main-plot and three herbicidal treatments as sub plot treatments (Table 1.), were laid out in split plot design with three replications. Rice variety 'IR-64', Wheat 'GW 273' and mungbean 'samart' were sown with happy seed drill with recommended package of practices. Weed population and dry weight were recorded at 60 DAS in rice and wheat and at 45 DAS in mungbean. Whereas, weed seed bank studies were done at 0-5, 5-10 and 10-15 cm soil depth after harvesting of mungbean in each year.



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PHYTOCHEMICAL INVESTIGATION OF NIGELLA SATIVA L.

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Objective: To investigate the preliminary phytochemical characteristics of medicinal plant *Nigella sativa* Linn.

Method: the, physicochemical analysis, preliminary phytochemical testing of the plant WHO recommended methods for the standardization was done.

Results: Determination of physicochemical parameters of a crude drug is essential as it helps in identification and estimation of mishandling, adulteration and also in setting of proper standards. Various physicochemical parameters like ash values, extractive values, moisture content and fluorescence on reaction with various chemical reagents were investigated and the results are presented. (Table 1-3)

Keywords: phytochemical

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STUDY THE CORRELATION, PATH COEFFICIENT BETWEEN YIELD AND ITS ATTRIBUTING CHARACTERS IN BRINJAL (*SOLANUM MELONGENA* L.)

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A field experiment entitled "Study the correlation, path coefficient between yield and its attributing characters in brinjal (*Solanum melongena* L.)" was conducted at the experimental farm of Horticulture AKS University, Satna during kharif season 2015-16. Involving fifteen genotypes of brinjal with a view to assess the genetic parameters and degree of mutual association in respect of yield and yield contributing characters viz. plant height (cm), number of primary branches per plant, number of leaves per plant, days to first flowering, days to 50 % flowering, days to first fruit set, fruit length (cm), single fruit weight, number of fruits per plant, fruit yield per plot (kg). Significant variations were obtained among the genotypes for all the characters under investigation. The variety Arka Nidhi recorded the maximum plant height (cm) at 90 days after transplanting. Maximum number of primary branches per plant at 90 days after transplanting and days to 50% flowering were observed in Swarna mani. Maximum single fruit weight were observed in Utkal Tarini. Minimum days to first flowering, days to 50% flowering and days to first fruit set was observed in Kashi Taru. Further it was also noticed that maximum fruit yield per plot was recorded in Punjab barsati. However, lowest yield per plot was recorded in JB-6. The highest PCV and GCV were recorded for fruit yield per plot.

Keywords: Brinjal (*Solanum melongena* L.), Correlation, Path Coefficient, Yield and Attributing Characters

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HEAVY METALS SCREENING OF HATHAI KHEDA DAM WATER

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HHeavy metals are high atomic weight, naturally occurring elements with a density at least several folds greater than that of water. Their toxicity depends on certain factors including the intake percentage, means of exposure, and chemical sources, as well as the age, gender, genetics, and nutritional status of exposed individuals. Salts of Pb, Hg, Zn, Cd are taken incidentally or accidentally and has become of great toxicological importance having toxic effect. In the present study direct determination of Iron, Copper and Lead (heavy metals) was carried out from samples drawn from Hathai Kheda Dam water. Pre and post monsoon concentrations of different heavy metals were recorded and analyzed. Pre-monsoon Hathai Kheda Water Dam samples showed negative significant correlation for Iron, Copper and Lead during the year 1996-97 while the post monsoon samples showed positive significant correlation for Iron, Copper and Lead during the year 1996-97.

Keywords: heavy metals, Iron, Copper, Lead, significant correlation, pre-monsoon, post monsoon.

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DEFLUORIDATION EFFICIENCY EXHIBITED BY ACINETOBACTER SP. A23 ISOLATED FROM FLUORIDE CONTAMINATED SITES OF MADHYA PRADESH

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The occurrence of fluoride in groundwater where anthropogenic contribution is approximately minor can be ascribed to the dissolution of calcite, weathering and leaching of amphiboles, fluorite, apatite and mica (Singh *et al.*, 2011). Intake of fluoride higher than the optimum level is the main reason for dental and skeletal fluorosis (Arlappa *et al.*, 2013).

To combat this problem, present study was focused on defluoridation capability of indigenous bacterial isolates, identification of potent isolates, and diversity analysis at genomic level in some bacteria under different stressful conditions. Bacterial morphotypes were screened in mineral salts medium with 2-350ppm concentration of sodium fluoride. Effect of environmental factors on growth of bacterial isolates was studied. Defluoridation efficiency of bacterial isolate was determined through SPADNS method (Clesceri *et al.*, 1998). To check the location of degrading gene, plasmid curing was done.

Out of 5 bacterial isolates, *Acinetobacter* sp. A23 showed optimum growth in the presence of 300ppm Sodium fluoride at pH 6.5, 37°C and 85% relative humidity. 26% defluoridation efficiency was shown by *Acinetobacter* sp. A23. On the basis of plasmid curing, it was found that gene responsible for degradation is located on plasmid. Hence, the fluoride-resistant bacteria, *Acinetobacter* sp. A23 could be considered as a powerful candidate for the formulation of bioremediation technology for fluoride contaminated sites. Further consortium can be used for the remediation purpose in future keeping appropriate environmental conditions by developing biofilters.

Keywords : Bioremediation; Defluoridation; Sodium fluoride; Characterization; *Acinetobacter*; Plasmid curing

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STUDY ON ADSORPTION OF PHENOL RED BY ACTIVATED CARBON DERIVED FROM IPOMOEA CARNEA

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Textile wastewater effluents contain synthetic dyes which cause hazard to the environment therefore these dyes need to be removed from the water bodies. But dye removal from textile wastewater has been a big problem over the last decades. The effectiveness of adsorption for dye removal from wastewater is a good and ideal treatment method than other expensive method. Activated carbon was prepared from abundantly available Ipomoea Carnea stem waste. Adsorption which is the most inexpensive and efficient has become the most preferred method for the dye removal. This research paper will present the application of adsorption in the removal of phenol red dyes from aqueous solution. The paper provides the following information about the dyes as well as its toxicity and classification. Further, the adsorption factors that will affect the process such as solution pH, initial dye concentration, adsorbent dosage and temperature have also been reported. Adsorption results show that equilibrium data follow the Freundlich isotherm, and kinetic data was well described by a pseudo-second-order kinetic model. This study provides a low cost effective and environment friendly dye removal process for textile wastewater treatment.

Keywords: Activated Carbon, Ipomoea Carnea, Wastewater, Phenol Red dyes, Adsorption.

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BIOSYNTHESIS OF SILVER NANO PARTICLES FROM APPLE PEEL EXTRACT AND STUDY ITS ANTIMICROBIAL ACTIVITY

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Aim & objective of the study: - The main objective of this study is to evaluate the antimicrobial potential of biologically synthesized silver nanoparticles, against anaerobic bacteria *Fusobacterium nucleatum*. These bacteria are found in oral cavities as a part of the normal human flora and many times responsible for the oral disease like periodontitis. In this experiment two types of silver nanoparticles were used, which are synthesized by using peel of apple.

Result: - Production of Silver nanoparticles was confirmed by UV-Visible and IR spectroscopy. Particle size has determined by Zeta Potential. Antimicrobial activity has done by well diffusion method. Silver nanoparticles made by using Methanolic extract of dried apple peel, shown zone of inhibition of 20.50 mm at 100mg/ml against *Fusobacterium nucleatum* whereas silver nanoparticle made by aqueous extract of fresh apple peel shown 19.50 mm, Zone of inhibition at same concentration.

Conclusion: - The result suggested that the biogenic synthesized silver nanoparticle shown effective antimicrobial activity against *F. nucleatum*. Thus these particles can be utilized to produce biomedical product to control microbial population of infection or diseases causing by *Fusobacterium nucleatum*.

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ISOLATION AND CHARACTERIZATION OF CHLORPYRIFOS DEGRADING SOIL BACTERIA FOR BIOREMEDIATION OF PESTICIDE CONTAMINATED AGRICULTURAL SOIL.

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The extensive use of pesticides is one of the major causes of pollution of soil and water environments. Chlorpyrifos is the major broad spectrum organophosphorus pesticide used extensively in crop protection. Due to its long persistency and high toxicity in the environment, there is an immediate need to eliminate it from contaminated sites. The removal of such contaminants from the environment through biodegradation has been shown to be more effective than any other method. The aim of this study was to screen the bacterial isolates for their potency to degrade harmful organophosphate pesticide chlorpyrifos. For this study soil bacteria were isolated from the agricultural soil from Bhopal and screened for their capacity to degrade chlorpyrifos. The chlorpyrifos degrading bacteria were isolated using serial dilution technique followed by selective enrichment on minimal medium with chlorpyrifos as the sole carbon source. The growth response of the isolates in MSM broth supplemented with graded concentrations of chlorpyrifos was monitored using spectrophotometer. These isolates were then characterized by different biochemical tests. The results of this research indicate that the isolated bacteria hold the potential for chlorpyrifos degradation and they can be further implemented to study the molecular mechanisms of biodegradation. This research can also be useful for bioremediation of chlorpyrifos contaminated soils in future.

Keywords: Pesticides, organophosphates, chlorpyrifos, biodegradation.



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ANTI-OXIDANT POTENTIAL ANALYSIS OF SEED EXTRACT OF GLORIOSASUPERBA

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Gloriosasuperba is an endangered plant with potent medicinal properties. These properties are attributed to the phyto-constituents present in various parts of the plant of *Gloriosasuperba*. In the present study hydro-alcoholic extract of seeds of *Gloriosasuperba* was obtained through the process of maceration. The hydro-alcoholic seed extract of *Gloriosasuperba* was then screened for the anti-oxidant activity by the use of free radical scavenger, Diphenyl picrylhydrazyl (DPPH) assay, taking ascorbic acid as a standard. The free radical scavenging activity of the seed extract solution in methanol revealed quite much anti-oxidant potential as its IC_{50} was found to be 54.30 μ g/ml. It leads to the assumption that the free radical scavenging potency of the hydro-alcoholic seed extract of *Gloriosasuperba* can be much useful for the ongoing research on naturally occurring anti-oxidants in various plants of medicinal importance for the treatment of diseases involving free radical reactions.

Keywords: *Gloriosasuperba*, hydro-alcoholic extract, maceration, anti-oxidant activity, DPPH assay, IC_{50} .

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BIOREMEDIATION OF LIPID RICH WASTE WATERBY USING POTENTIAL LIPASE PRODUCING BACTERIA

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In the present study, for the bioremediation of oil and fat rich waste water, untreated effluents of Indore region such as soybean oil mill effluent from Ruchi soy industry, dairy effluent from Sanchi dairy industry and domestic waste water (kabitkhedi) rich in fat and oils were treated by using a novel and potential lipase producing strain *Staphylococcus argenteus* MG2 for 6 days. BOD value and lipid content was analyzed on alternative days. The BOD value of soy oil effluent reduced from 1500 mg/L to 80 mg/L. The lipid content was 700 mg/L before treatment, which reduced to 58 mg/L after 6 days treatment. A promising lipase producing strain *Staphylococcus argenteus* MG2 was found to have more potential in degradation of oil and grease of soy oil effluent than other effluents as this organism was isolated from oil contaminated soil and can be used as a bacterial based oil and grease removal system as a cost effective and environmental friendly process. This research work would be beneficial for humankind because this isolated lipase producing strain can be used to degrade oil from industrial waste water and that water can be reused for irrigation of crops.

Keywords: Bioremediation, Lipid rich waste water, *Staphylococcus argenteus* MG2, BOD, Lipid content

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ANALYSIS OF ANTIFUNGAL ACTIVITY OF *ALOE BARBADENSIS* AGAINST *CANDIDA ALBICANS*

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The aim of the study was to analyse antifungal activity of Aloe vera extract on *Candida albicans*. The study was done by using 3 different solvents for the extraction of *Aloe barbadensis* which were petroleum ether, ethyl acetate and 70% methanolic extract. Antifungal activity was tested by well diffusion assay. To determine minimum inhibitory concentration (MIC), agar dilution and broth dilution method were performed. Each extract was taken in 4 dilutions (100mg/ml, 150mg/ml, 200mg/ml and 250mg/ml) to analyze the MIC by agar dilution method, which were further tested by broth dilution method. Of these extracts 70% methanolic extract has shown maximum inhibitory action. To compare the results fluconazole was taken as standard.

Keywords: Aloe vera, MIC, agar dilution, tube dilution

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LOOKING BEHIND THE CURTAINS-SHARK FINNING: APPETITE FOR EXTINCTION?

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Compared to humans and even dinosaurs, sharks are old! While we've been around for about 200,000 years, and dinosaurs stretched back to about 225 million years ago, sharks have been swimming in our oceans for nearly 400 million years! They're amazing, powerful creatures, and they deserve a tremendous amount of respect,"said a veteran marine biologist at the Point Defiance Zoo & Aquarium of sharks.

"Swimming with them is absolutely awe-inspiring and peaceful and watching them is like watching a ballet."

People think of sharks as feeding machines," Kagey said, "but the truth is people kill 70 to 100 million sharks a year and the number of people killed worldwide is tiny. When people talk about the dangerous animal in the tank, it's not the shark. It's us."

Bloodthirsty, ruthless, killer: shark. For years people have feared and slaughtered sharks because of the bad rap they have received from Hollywood, but these beliefs are not justified.

Sharks play a very important role in the oceans in a way that an average fish does not. Sharks are at the top of the food chain in virtually every part of every ocean. In that role, they keep populations of other fish healthy and in proper proportion for their ecosystem.

So what is Shark finning? Why the demise of darwin's fishes are going on? How has the predator become the prey? Why science is saying sharks need help? Why is the magnificent lord of the sea diving into extinction? How has the brutal practice of shark finning resulted in making species of sharks endangered? How the human appetite is leading to extinction of this million years old predator? Let's look behind this curtain of atrocious practice of shark finning....

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ROLE OF FOOD PROCESSING INDUSTRIES IN AGRICULTURAL DEVELOPMENT OF INDIA

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The agrarian base of Indian economy places agriculture and allied sector to be pivotal to the sustainable growth and development of the same. Not only does it meet the food and nutritional requirements of 1.3 billion Indians, it contributes significantly to production, employment and demand generation through various backward and forward linkages. The role of the agricultural sector in alleviating poverty and in ensuring the sustainable development of the economy is well established. The sector is, however, currently facing a dilemma. While it has made large strides in achieving the agricultural development goals of food security, availability and accessibility, it is still being challenged by a formidable agrarian crisis. This situation has recently led to fresh thinking on the developmental approach in the agriculture sector. The need for focusing on the welfare and prosperity of farmers has gained prominence. Moreover, the term 'Inclusive Growth' has redefined the role of agricultural and industrial sector in economic development of developing countries. Now, both are considered as active and co-equal partners in the process of economic growth. Thus, there arises a prime necessity to analyse the current growth pattern of agriculture sector along with Food Processing Industries which serves as a strong forward linkage to agriculture. Against this backdrop the present study attempts to provide an insight into the growth pattern of Indian agriculture and FPI. Also, the role played by FPI in agricultural development of India. The paper also draws attention towards the role played by food processing industries in the welfare and prosperity of farmers thereby initiating inclusive growth.

Keywords: FPI, linkages, inclusive growth



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SOCIO-ECONOMIC STATUS OF FISHERWOMEN OF MADHYA PRADESH, SEONI DISTRICT

Shweta Deshmukh, Sadhna Tamot, Praveen Tamot

The fishing Community is almost solely dependent on the water resources for their livelihood (Krishna Srinath, 1987) and the roles that a fisherwomen plays are integral for the maintenance of the family. The ratio of men and women in fishing sector is very low in women part. The women workers in the fishing sector are the most backward among the working women. There are number of reasons for their backwardness, namely traditional beliefs, superstitions, neglect, economic weakness, illiteracy etc. The womenfolk engaged in the fish trading experience great hardships. Those who have no fishing equipments, work as labourers and get a small share of the catches which is sold by women folk. It has been pointed out that per capita income in fishing sector is low, rampant, unemployment and the living conditions of the fishing community is deteriorating.

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IDENTIFICATION OF POTENT LACCASE PRODUCING *ASPERGILLUS SPECIES* ISOLATED FROM INDUSTRIAL AREA OF MALWA REGION FOR BIOREMEDIATION OF DYE CONTAMINATION.

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Laccase is a copper-containing polyphenol oxidase (p-diphenol: oxygenoxidoreductase; EC 1.10.3.2) that acts on a wide range of substrates. This enzyme is found in many plant species and is widely distributed in fungi including white-rot fungi. Laccase has widespread applications, ranging from effluent decolouration and detoxification to pulp bleaching, removal of phenolics from wines and dye transfer blocking functions in detergents and washing powders. The objective of the present study was to isolate the potential fungus and characterize the organism with reverence to laccase production. Different fungal strains were isolated from natural habitat and contaminated soil of different industrial area of Indore. Fungi were cultivated and screened for their ability to produce laccase on solid medium potato dextrose agar (PDA) plates containing indicator compounds namely guaiacol and tannic acid. Among 15 fungi isolated only 9 isolates have ability to produce laccase. Out of the 9 isolates, one (PL3) was presumed to be potent, another (PL1) and (PL7) showed medium potency and six (PL2, PL4, PL5, PL8, PL6 and PL9) showed week laccase producing ability. By the molecular identification of potent strain, PL3 confirmed as *Aspergillus niger*. The dye decolourization potency of selected strain was also checked on three selected dyes Basic fuchsin, Nigrosin and Malachite green. The maximum activity of *Aspergillus* species was shown on Basic fuchsin. The conclusion of this study confirm here that guaiacol is best substrate for laccase producing *Aspergillus* species and this potent strain can be the efficient remedy for bioremediation of textile dye contaminated soil and water.

Keywords: Laccase, Guaiacol, Dye decolorization, Bioremediation, *Aspergillus niger*.

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EXTRACTION, PHYTOCHEMICAL INVESTIGATION AND ANTIOXIDANT ACTIVITY OF VARIOUS EXTRACTS FROM ROOT BARK OF *BERBERIS LYCIUM* ROYLE

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The aim of the present study was to evaluate the phytochemical investigation and antioxidant property of various extracts of *Berberis lycium* Royle. *Berberis lycium* belong to the family Berberidaceae and found in subtropical and temperate regions from Kashmir to Uttaranchal on the outer Northern-western Himalayas. *Berberis lycium* Royle roots were selected for the study and uprooted from the soil. The bark was removed from the roots and dry in shade at room temperature. The coarse powder was made from the dried barks by using electric grinder and extracted successively with petroleum ether, chloroform, methanol and aqueous by Soxhlation method. The extracts were dried (free of solvent) in a vacuum evaporator. The extracts show the presence of alkaloids, glycosides, terpenoids, saponins and diterpenes. Chloroform, Methanol and Aqueous extract shows the presence of alkaloids while alkaloids were absent in petroleum ether extract. The results reveals that methanolic extract have strongest antioxidant activity as compared to other extracts due to less IC₅₀ value (75.87) as compared to others extracts. All the results were compared to standard ascorbic acid. These finding provide clue that *Berberis lycium* Royle root bark are potential source of natural antioxidants.

Keywords: phytochemical, *Berberis lycium*, antioxidant, alkaloids, root bark

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ROLE OF MORINGA OLEIFERA LAM IN TREATMENT OF VARIOUS HUMAN DISEASES

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Moringa Oleifera (L) is an edible plant. A wide variety of nutritional and medicinal virtues have been attributed roots, bark and leaves, flowers, fruits and seeds. Phytochemical Analysis have shown that its leaves are particularly rich in potassium, calcium phosphorus, Iron, Vitamin A and D, essential amino acids as well as such known anti-oxidants such as β carotene, vitamin c and flavonoids. It was observed that fresh leave juice of Moringa Oleifera lam is used for eye disease. Bank leaves and roots are acrid and pungent and are taken to promote digestion. Oil is applied externally for skin disease gums used for diarrhea. Moringa Oleifera lam whole plant is digestive, diuretic, anthelmintic, carminatige and stomachic used in hysteria. This review focuses on the detailed phytochemical composition, medicinal uses, along with pharmacological properties of different parts of this multipurpose tree.

Keywords: Antioxidants, Moringa Oleifera, Phytochemical, Essential Oil.

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REDUCING WATER FOOTPRINT BY RECYLING OF GREYWATER IN SMALL INSTALLATION

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The need to recycle and reuse of wastewater is becoming critical as water shortages spread throughout the world. As long as the problem is about the scarcity of water and no new sources can be developed without the traditional underground water, surface water and some other sources, the only choice remain is to reuse the household water, is named as 'Grey water'. The goal of utilizing the greywater can be accomplished only after understanding the concept of chemical, physical, biological and microbiological characteristics of untreated greywater. This water quality monitoring and comparison with available water quality standards for water reuse, provides empirical evidence to support decision making on the use of treated or untreated greywater for various purposes. This can be used for irrigation, toilet flushing, heat reclamation and some other purposes. The proper reuse of the grey water may have positive impact on the reduction of the scarcity of water and limits the input of nutrients and thus eutrophication which ultimately benefits the ecological system. Advanced technology for this recycling process, standard value recommendation by the government, more survey for knowing the actual level of public acceptance etc. will increase the scope of use of greywater recycling. Greywater recycling is a socially, environmentally and economically viable solution to help utilise our water resource more efficiently.

Keywords: Greywater, Reuse, Irrigation, Recycling, Chemical, Microbiological

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FEMALE MATHEMATICIANS AND THEIR CONTRIBUTION TO MATHEMATICS

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You might not have found out about numerous acclaimed female mathematicians. This is on account of until moderately as of late it was difficult for ladies to go to college, not to mention have a profession in science or arithmetic. Notwithstanding this, there have been ladies all through history who have made extraordinary revelations and numerous all the more making incredible disclosures today.

Although there is no doubt that men often excel in mathematically challenging fields, there has been little research to support the fact that women cannot excel in them too. The following few famous females who have proved that gender differences in stereotypically male-oriented subjects like math are but only a matter of preference not ability. Hypatia of Alexandria (AD 350 or 370-AD 417), Émilie du Châtelet (1706-1749), Maria Agnesi (1718-1799), Sophie Germain (1776-1831), Ada Lovelace (1815-1852).

Pythagoras, Euler, and G.H. Strong, in case you're occupied with math or on the off chance that you focused in school, odds are you've known about these popular names and might be acquainted with their work and achievements. Be that as it may, what about Agnesi, Cartwright or Goldwasser? These three names are among ten that we've chosen as a methods for featuring a portion of the best and brightest female mathematicians ever; ladies who not at all like their male partners, have not generally gotten a similar level of acknowledgment despite the fact that their accomplishments and commitments to the universe of science are similarly as essential. These ladies were frequently groundbreakers, exceptionally decided and extremely devoted. They are sparkling cases of the way that science isn't a "young men just" club, regardless of whether at numerous focuses in time it's created the impression that route at first glance. Today their work is perceived and acknowledged, and they remain as incredible wellsprings of motivation for another age of understudies and math lovers – both female and male.