Effect of COVID – 19 Pandemic

on Agriculture and Allied Sciences

(ECPAAS-2020)

Organised by

Society For Science and Nature (SFSN), Lucknow

In Association With

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INVITED TALK

NANOTECHNOLOGY: A BOON FOR MEDICAL SECTOR

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ABSTRACT

Nanotechnology is an advanced technique that uses materials at molecular level to build functionally important structures. Materials with 1-100nm particle size are used in this technique. With the advancement in many fields, this technique plays an important role in chemistry, physics, molecular biology, molecular engineering and medicine. Various types of nanoparticles are used including nanotubes, nanofibres, noclusters, nanocrystals, dendrimers and liposomes that have specific properties and are used for different purposes. Nanotechnology has been showing promising results in cancer therapy, cardiovascular problems, immuno-prophylaxis and most importantly tissue engineering. In cancer therapy, nanotechnology aids at both diagnostic and therapeutic level. As cancer has its roots at nano scale, nantechnology helps to diagnose the root cause and helps to monitor and manage cancers and tumors of different histological pattern to produce excellent recovery response. Nanobiosensors and nanomaterials are used for this purpose. Nanoparticles due to their efficient drug delivery rate ensure increased adhesion to the damaged site and cause ablation of the effected tissues. In tissue engineering, nanotechnology plays an important role in bone, muscle and vascular tissue grafts. Nanofibrous scaffolds/grafts are used that mimic the natural extracellular matrix hence ensuring rapid cell regeneration at the damaged site. This article aims to summarize and review the applications of nanotechnology in medical field.

KEYWORDS: Nanocrystals, nanotubes, liposome, dendrimers, cancer, cardiology, immunoprophylaxis, tissue engineering

VALUE ADDITION IN SERICULTURE FOR INCOME AUGMENTATION OF STAKEHOLDERS--AN INSIGHT

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ABSTRACT
In view of growing population the food requirement world over has registered sharp increase and is likely to further indicate upward trend by 2050 which is also indicated by changing agricultural scenario getting influenced by climate change and other anthropogenic interventions taking place in the name of infrastructural development along with other underlying needs. This situation calls for focused attention of various agricultural technocrats for technology generation and its subsequent adoption by the farmers for increased food grain production. It is also equally important that more stress on value addition of various agricultural avocations should be laid through multipronged approach involving the use of left over material obtained through post harvest technologies and the reuse of both on farm and of farm products which can be more remunerative for the farming community. The various left over material in sericulture industry which includes farm waste, rearing waste, reeling waste etc is also put to efficient use including conversion of farm waste into suitable manure for its effective utilization in soil health built up, feeding of rearing waste like left over litter etc to poultry and fish and conversion of reeling waste into suitable flooring material. In addition to this processing of mulberry fruit into value and marketable products like Jam, juice and jelly and even mulberry tea etc is also being done and more modernization could be bought in these areas of value addition for further boosting the sericulture industry. The details are discussed.

KEY WORDS: Technology, Sericulture, Value addition, Income generation

CLOVE (SYZYGIUM AROMATICUM) OIL, A NATURAL PRODUCT FOR CONTROLLING STORAGE FUNGI AND INSECTS OF CHICKPEA DURING STORAGE

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ABSTRACT

The chickpea or chick pea (Cicer arietinum) is the most important and versatile legume, from Fabaceae, subfamily Faboideae. It is locally known as gram or Bengal gram or garbanzo. This has high nutritional value. Dried chickpea seeds have 61% carbohydrate, (17-22%) proteins and 6% fat by weight. It is one of the earliest cultivated legumes.Its 7500-year-old remains have been found in the Middle East. Chickpea is a key ingredient in hummus and chana masala.This is ground into flour to make falafel. It is also used in salads, soups and stews, curry and other meal products like roasted/ baked channa . Chick pea is typically stored for six to eight months after harvest.But more than 90 % of farmers do not take any precautions to protect it. Its proper storage enables farmers to earn high profit margins. Most farmers sell their chick pea seeds in village/local and urban markets. To examine the storage losses, 25 samples of chick pea seeds were collected from grocery stores of Gurgaon and Gorakhpur for examination of associated fungal species and insects. Mycological study of seed samples revealed presence of 16 fungal species viz.,Aspergillus flavus, A. fumigatus, A. niger, A. sydowi, A. ochraceous, A. terreus, A. nidulans, Cladosporium macrocarpum, F. oxysporum, F. semitectum, Macrophomina phaseolina, Penicillium notatum, Sclerotium rolfsii, Rhizoctonia solani, R. batatiocola, Rhizopus arrhizus. In these Aspergillus flavus, A. niger, A. ochraceous, A. terreus had dominance interms of per cent occurrence. The insect analysis revealed presence of only one species of Bruchid (Callosobruchus chinensis L) in all the 25 samples. For its control in vitro, volatile constituents were extracted in the form of essential oils from 50 plant species and evaluated against most dominant two fungi, Aspergillus flavus and Aspergillus niger. Clove oil exhibited the maximum inhibition of two fungi tested. It showed MIC 400 ppm against dominant fungi. It was fungicidal at 500 ppm against dominant fungi. It inhibited all 16 fungi at 500ppm.The oil was found to be thermostable at its MIC of 400 ppm and maintained its antifungal activity up to full six (6) months of storage period at room temperature. The oil was characterized by the determination of its various physico-chemical properties. In vivo studies revealed that the clove oil as a fumigant was able to preserve the chick pea seeds fully & even beyond six months with pure clove oil at 1000 and 1500 ppm in tin containers and gunny bags of 250 gm capacity holding 200 gm seeds. This preserved nutritional value in terms of carbohydrate and protein content of chick pea seeds during storage was comparable to synthetic pesticides aluminium phosphide and ethylene dibromide. This did not ause any adverse effect on seed germination,seedling growth and general health/ morphology of plants. GC–MS analysis of the oil revealed it to have a major compound, eugenol (94.4%) inhibiting both fungi & insects

KEYWORDS: Cicer arietinum.;Clove(Syzygiumaromaticum), oil; seed losses, Bruchid (Callosobruchus chinensis L).

STUDY OF CORROSION INHIBITION OF MILD STEEL IN ACIDIC MEDIUM WITH WEIGHT LOSS METHOD

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ABSTRACT

Mild steel, also known as plain-carbon steel, is most common form of steel and provides material properties that are acceptable for many applications [1, 2]. It has low corrosion resistance especially in acidic environments [3]. Unestimated losses occur due to corrosion of mild steel and so, are necessary to develop new methods for control corrosion of mild steel [4]. Here, corrosion of mild steel is studied at different temperature 35, 40, 45, 45, and 55±0.1˚C for different immersion period 1, 2, 3 and 4 hours in 0.5M trichloroacetic acid using weight loss method. Schiff base [N'-(3,4-dimethoxybenzylidene)pyridine-3-carbohydrazide] used here and is characterized by IR, Elemental analysis, and Mass spectroscopy. The protective surface of metal is explained by SEM and X-ray diffraction methods. Multilayered formation of Schiff base is observed on the surface of mild steel. Inhibitors efficiency is calculated and rate of inhibition is studied in presence of factors like effect of temperature, immersion period, and concentration of inhibitor. Rate of corrosion increases with temperature and decreases with concentration of inhibitor. Adsorption isotherms are plotted and thermodynamic parameters are calculated.

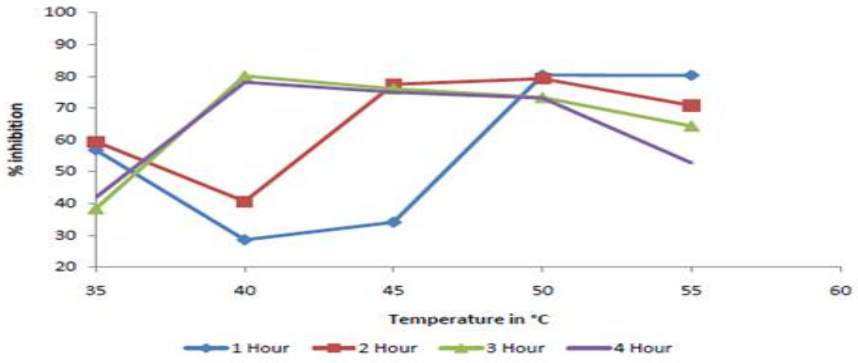

Fig. : 1 Effect of Temperature on inhibition Efficiency of Mild Steel in 0.5 M Trichloroacetic acid in presence of 0.5 % SB.

KEYWORDS: Corrosion, Inhibition, different temperature and immersion period, Schiff base

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CULTURE INDUCED PHENOTYPE AND METHODS TO HARDEN MICROPROPAGATED PLANTS

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ABSTRACT
The benefit of any micropropagation system only be fully realized if there is successful transfer of plantlets from tissue-culture vessels to the ambient conditions. A substantial number of micropropagated plants do not survive on transfer from in vitro conditions to greenhouse or field environment as plantlets developed within the culture vessels under low level of light, aseptic conditions contribute a culture-induced phenotype that cannot survive the environmental conditions when directly placed in a greenhouse or field. Plantlets or shoots that have grown in vitro have been continuously exposed to a unique microenvironment that has been selected to provide minimal stress and optimum conditions for plant multiplication. The culture conditions that promote rapid growth and multiplication of shoots often results in the formation of structurally and physiologically abnormal plants. Many a times they are characterized by poor photosynthetic efficiency, malfunctioning of stomata and a marked decrease in epicuticular wax. Understanding these abnormalities is a prerequisite to develop efficient transplantation protocols. The major abnormalities in in vitro culture of plants and the current and developing methods for acclimatization of in vitro cultured plantlets will be discussed.

KEYWORDS:

Section – I

Value addition in Traditional Crops

VALUE ADDITION IN SERICULTURE FOR INCOME AUGMENTATION OF STAKEHOLDERS--AN INSIGHT

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ABSTRACT
In view of growing population the food requirement world over has registered sharp increase and is likely to further indicate upward trend by 2050 which is also indicated by changing agricultural scenario getting influenced by climate change and other anthropogenic interventions taking place in the name of infrastructural development along with other underlying needs. This situation calls for focused attention of various agricultural technocrats for technology generation and its subsequent adoption by the farmers for increased food grain production. It is also equally important that more stress on value addition of various agricultural avocations should be laid through multipronged approach involving the use of left over material obtained through post harvest technologies and the reuse of both on farm and of farm products which can be more remunerative for the farming community. The various left over material in sericulture industry which includes farm waste, rearing waste, reeling waste etc is also put to efficient use including conversion of farm waste into suitable manure for its effective utilization in soil health built up, feeding of rearing waste like left over litter etc to poultry and fish and conversion of reeling waste into suitable flooring material. In addition to this processing of mulberry fruit into value and marketable products like Jam, juice and jelly and even mulberry tea etc is also being done and more modernization could be bought in these areas of value addition for further boosting the sericulture industry. The details are discussed.

KEY WORDS: Technology, Sericulture, Value addition, Income generation

IMPACT OF COVID-19 LOCKDOWN ON AGRICULTURE IN INDIA: A REVIEW

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ABSTRACT
The imposition of nationwide lockdown due to covid-19, no doubt has devastating impact on economy.But its impact on agriculture is complex and faced a severe hit ,because of halted transportation and stagnating the harvest as the produce could not reach the mandis and as a result disrupting the supply chain.Also the non availability of migrants labourers intercepring the harvest and post harvest operations. Thus the pandemic has given rise to several challenges in procurement operation as well.This impact will reverberate across the large economy and will have longer impacts than a few months.

KEY WORDS: Lockdown,Economy,Agriculture, Pandemic,Migrant labourers

STUDIES ON EFFICACY OF (F.Y.M) AND VERMI COMPOST ON BLACK GRAM (VIGNA MUNGO L) UNDER THE RAIN FED CONDITION IN CHITRAKOOT AREA

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ABSTRACT

The present investigation was carried out entitled studies on efficacy of (F.Y.M) and vermi compost on Black gram (Vigna mungo L) under the rain fed condition in chitrakoot area was undertaken with the two objectives to study the effect of F.Y.M and vermi compost on growth and yield attributing characters of black gram crop to found out the suitable dose of organic manure among the different combination of organic manure.

A field experiment was conducted at research farm Rajola of Mahatma Gandhi Gramoday Vishwavidyalaya Chitrakoot Satna (M.P) during 2018 kharif season. Chitrakoot is situated at 25º10 to 25º10 North latitude 80º52 East longitude of place is nearly 190-210 meter above mean sea level the climate conditions are semi arid with extremes of summer and winter the average minimum temperature is between 46ºc and 47ºc the annual rain fall is about 950mm with major precipitation between first week of July to last week of September. Chitrakoot spreads over a total geographic area of 14345 hectare and is located at kymoor plateau in Madhya Pradesh the Maine geographic units are hills pediments alluvial plain ravines etc. within pediments a number of rocky hills is also found geographical situation geographically the experimental site falls under the subtropical zone of Madhya Pradesh the area wise between 25º10 to 15º North latitude and 80º52 East longitudes it is situated at an elevation of 190 to 210 meters above the sea level the climate of the satna district is classified under the category of semi-arid.

For going results and inferences revealed that presence of wide spectrum of exploitable variability in the material studies with respect the treatment combination T9 showed Maximum seed yield per plot (g) using F.Y.M and vermi compost combination Number of primary branches per plant and plant height has high values for different genetic parameters projecting there by immense scope for genetic up gradation in black gram.

KEYWORDS: FYM, Vermi compost, Black Gram, Semi arid, Genetic Up Gradation.

AGRICULTURE IN INDIA DURING COVID-19

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ABSTRACT

In India the first ever COVID-19 case was reported on 30th January 2020 from Kerala and the total reported case in India is 1.4 million as till July 26 2020 with a death toll of 32 k. Beside costing health and life of people this pandemic has worstly affected the trade and economy worldwide. Key sectors which are witnessing significant slowdown are Aviation, Tourism/Hospitality, Capital markets, E commerce, Education sectors, Sports/Entertainment, Real estate and Construction, MSME and Agriculture or Different Food processing sectors. Agricultural sector in India like Seeds, Fertilizers, Microirrigation, Agricultural insurance, Farm equipments has witnessed a substantial setback during the COVID time.

Net worth of seed industry is around 28,700 crore INR, sector witnessed 15-20% drop in sales during lockdown. Industry faced restricted movement across geological boundaries or within country, resulting unavailability or high quality exotic seeds. Micro irrigation sector is expected to shrink by 50% in the short term however installation of Micro irrigation system has been reduced by more than 40% during current kharif season. Farm equipment sector of India values about 43,245 crore INR in FY 2020, out of which contribution of tractors alone were over 90%. The farm equipment industry is forecasted to de grow by 10% during the year and dealer level prices are likely to reduced by around 5%. Agricultural insurance penetration in India is marginal at around 20-30%. Claim settlement of last year kharif season is pegged at around 64% only. Insurance claim by farmers have increased by 20% on account of losses due to the COVID-19 lockdown. Amidst several challenges Department of Fertilizers had a record sale during the lockdown, during April – June (2020) POS sale of fertilizers to farmers was 111.61 lakh Metric tonne (82.81% higher than previous year).

As per the census of 2011 total migrant population of India was around 45.60 crore (38% of total population). The states of UP and Bihar ranked first and second respectively in net out migration, Around 2 crore seasonal migrant are involved in states like Punjab, Haryana, UP, Rajasthan, Gujarat etc for agricultural works. The exodus of these migrants during had direct impact on farm operations. The absquatulation was scheduled at the time when 90% of Rabi crop were harvested and ready to store/transport and operations of kharif season was about to begin. Farmers of different regions had a major setback of migrant crisis.

KEY WORDS: COVID-19, Indian Agriculture, Migrant, Lockdown

A STUDY ON AGRICULTURAL GROWTH IN AZAMGARH DISTICT, UTTAR PRADES

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ABSTRACT:
The introduction of Green Revolution was a major breakthrough that the transformed the rural scenario in India. The adoption of technology, H.Y.V^{S}. and Chemical inputs with policy support of land reforms and development of irrigation and extension boosted agricultural growth and likely concerned to what in irrigation area of wrath, India takes initiatives of government like Rashtriya krishi vikas yojana (RKVY), National Food Seeking Mission (NFSM) and National Horticulture Mission (NHM) have given a significant result all round by increasing agriculture growth to 3-13%. in period of recovery. On the basis of Human Development Index the development of Azamgarh district measured. Study concluded that over all development of the study area indicates that the area and the country (India) will be fully developed country very soon.

KEYWORDS: NFSM, NHM, Green revolution, RKVY.

APPLICATION OF LIGHT BACKSCATTERING IMAGING TECHNIQUE IN QUALITY EVALUATION OF FOOD PRODUCTS

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ABSTRACT
Recent researches in machine vision is being concentrated more toward the ranges of light spectrum that are invisible to the human eye. Light backscattering imaging (LBI) is a developing technique, which uses principles of light backscattering and image processing in visible (VIS) and shortwave near infrared (SWNIR) range of light spectrum. When light or electromagnetic radiation, interacts with the turbid biological tissue, reflectance, absorption or transmittance may occur. Only 4–5% of incident light is reflected by both regular and external diffuse reflectance. The remaining part of the light is passed through the tissue skin and is distributed through the porous space of the tissue. Most of the passing light is reflected by internal contents of biological tissue and scattered toward the exterior tissue surface. Light scattering is a physical phenomenon and depends on the cell size and inter- and extra-cellular properties of tissue matrices. The joint surfaces of the cell wall are the most common cause of backscattering phenomenon in fruits and vegetables.
The applications of LBI can be divided in three categories: fruit quality inspection, postharvest process monitoring, and food quality control. Backscattering mainly detects the internal characteristics of agricultural and food products such as moisture content, firmness, SSC, acidity and the presence of external defects. The main challenge of this technique is to do continuous assessment in real time. However, backscattering imaging proves a high potential to provide a non-destructive low-cost technology with rapid evaluation for predicting the quality of agricultural and food commodities.

KEYWORDS: Image processing, backscattering, Non-destructive and Quality evaluation

ORGANIC FARMING IN PRESENT SCENARIO

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ABSTRACT
More than 60% of India's available land is under traditional agriculture, where no synthetic inputs are being used. Although, the products are grown under such systems have so far not been defined as organic product but by all means they are genuine organic product. The organic movement was initiated over a decade ago it has failed to gain the expected momentum due to several ambiguities. Organic farming is mostly envisaged as the stoppage of synthetic inputs and their replacement by organic alternatives that is use of organic manures and natural methods of plant protection instead of using fertilisers and pesticides. Due to lack of awareness most of the farmers prefer using fertilisers and pesticides to get better yield without knowing the ill effects it has on the health of consumers.

The world Organic Agriculture report of 2018 notes that a third of all organic food producers in the world live and cultivate in India. But at the same time organic food cultivation makes up only 2.59% or 1.5 million hectares of total global organic cultivation area of 57.8 million hectares the size of Indian organic food markets remain relatively small. Some states like Sikkim have taken the lead in converting the entire produce to organic cultivation and while still unorganised, estimates suggest that India and organic agriculture is growing at 25% a year.

In the time of Covid 19, most of the doctors are recommending to eat healthy vegetables and fruits to strengthen the immune system to fight the disease. And there is more likely to be an unprecedented demand for organic food whose origins are unambiguous and cultivation is organic. But the question is: Where will all this organic food come from? Who will fulfil the demand when it soars? It is important to understand that the post COVID-19 world could be strikingly different and hence we need to take steps towards being healthy, and that is why the demand for organic food more specifically vegan and vegetarian food already a movement around the world is certainly going to rise exponentially in the world where the fallacy of living out of tune with nature is being exposed to the most brutal manner.

Ecologically and economically sustainable organic farming is a pre-requisite for enabling wider adaptability, secure livelihoods and ensuring affordability and consumer's end. India has a rich history of organic farming and the increase in domestic markets of organic food can provide the necessary drive with organic moment. Awareness programme at both consumer and farmer's level is necessary for bringing about large-scale organic conversion. But most importantly innovative organic farming technologies can popularise the practice even among the resource poor farmers by ensuring ecologically and economically sustainable organic crop production in a time bound manner.

M.S. Swaminathan, the father of India's Green Revolution once said that the wars of the future will be won by those with food, and not by those with guns. The democratic destruction that the coronavirus has unleashed shows us the power of that statement It is the future that Indian agriculture must embrace to ensure its future success.

KEYWORDS: synthetic inputs, immune system, COVID-19, Green Revolution.

BIOEFFICACY OF HERBICIDES MIX FOR WEED MANAGEMENT IN SOYBEAN [Glycine max (L.) Merr.]

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ABSTRACT
A field experiment was conducted during summer seasons 2016-17 to 2018-19 at Junagadh (Gujarat) to study the bioefficacy of herbicides (pendimethalin and diclosulam as pre-emergence, imazethapyr and chlorimuron as post-emergence) and their mixtures for weed management in soybean. The pooled results revealed that IC & HW at 20 & 40 DAS and pre-mix pendimethalin + imazethapyr 800 g/ha as pre-emergence *fb* IC & HW at 40 DAS were found equally effective to the weed free check in controlling weeds and improving growth and yield attributes and ultimately seed yield (1569 and 1552 kg ha^{-1}) and stover yield (3138 and 3061 kg ha^{-1}) of soybean. These treatments also recorded higher net returns (` 32948 and 35796 ha^{-1}) and B:C ratio (2.11 and 2.37), therefore, pre-mix pendimethalin + imazethapyr 800 g/ha as pre-emergence *fb* IC & HW at 40 DAS could become effective and economical under south Saurashtra agro-climatic conditions of Gujarat.

KEYWORDS: bioefficacy, herbicides, soybean, weed.

ESTIMATING CRITICAL STAGES OF GROUNDNUT PRODUCTION BY REGRESSION ANALYSIS

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ABSTRACT
The distribution of rainfall within the crop period is important as the response of various phases of crop growth is different with respect to availability of moisture. The study was planned to evaluate most critical stages of *Kharif* Groundnut at district level for Junagadh (Gujarat). The Multiple linear regression analysis showed that seasonal, monthly, fortnightly and weekly rainfall could describe 62 %, 77 %, 90 % and 99% variability respectively for groundnut by developed models. Second Fortnight of rainy season showed highest positive effect. For weekly rainfall, most critical stages for groundnut was 38SMW with coefficient as 15.70 followed by 34MSW with 10.67. SMW 30, 31 and 32 found to have almost no effect on yield as per the regression analysis. The total seasonal rainfall splitted into 15 weeks, the predictability was increased 37 % as compare to seasonal, 22 % compare to monthly and 9 % as compare to fortnightly rainfall with large number of variables as significant.

KEYWORDS: Rainfall Distribution, Rainfall departure, Groundnut productivity , Standard Meteorological Week, Regression, Junagadh

MEDICINAL PLANTS AND THEIR ANTIGLYCATING AND ANTIAGGREGATION POTENTIALS

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ABSTRACT
Diabetes has become a major socioeconomic and health concern all over the world. The most common symptom of the Diabetes is hyperglycemia, the high blood glucose level. This leads to a metabolic condition which is known as glucotoxicity wherein the accumulated glucose starts disturbing the homeostasis. One of the mechanism by which the glucose affects the cells is that reactive carbonyl group of this molecule (or other sugars) interacts nonenzymatically with the amino group of proteins and other molecules by a process known as glycation. This interaction leads to generation of Schiff bases and Amadori products which in turn get converted to a group of very harmful products commonly called as advanced glycation end products. These AGEs have been implicated in secondary complications of Diabetes and neurodegenerative disorders. The objective of the present study was to evaluate the antiglycating and antiaggregation potentials of some of very commonly used medicinal plants. The plants selected for this purpose are *Nigella sativa* and *Stevia rebaudiana*. The extracts of these plants were incubated with the glycation system, sugar and protein. Amount of glycation products generated were measured with the established methods like browning, NBT assay, protein oxidation, Congo red and aggregation index. The results indicate that extracts of all these plants significantly decreased the amount of early and advanced glycation products. The active compounds from these plants were also used to characterize the exact mechanism of above mentioned potentials. It can be concluded that these plants have significant antiglycation and antiaggregation potentials and they can be used for the prevention of some of the secondary complications of Diabetes and aggregation related disorders.

KEYWORDS: hyperglycemia, Schiff bases, antiglycating, antiaggregation.

BIO-EFFICACY OF DIFFERENT HERBICIDES IN BROAD SPECTRUM WEED MANAGEMENT FOR CHICKPEA

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ABSTRACT
A field experiment was conducted during rabi seasons of 2014-15 and 2015-16 at research farm of TCA, Dholi, Muzzafarpur, a campus of Dr Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar (India) to evaluate the bio- efficacy of different herbicides in broad spectrum weed management for chickpea. Ten treatments were tested in randomized block design with three replications. Among the herbicides pendimethalin CS formulation (1 kg/ha), PE + One hoeing 35 DAS recorded significantly higher seed yield (1348.50 kg/ha), straw yield (1600.33 kg/ha) lower weed dry weight (1.34 g/m^2), lower weed index (5.91 %), higher weed control efficiency (73.28 %) and more added returns (Rs. 64280/ha) than all other herbicidal treatments. Present investigation revealed that pendimethalin CS formulation (1 kg/ha), PE + One hoeing 35 DAS could be used effectively as an alternative for controlling most of the weeds and obtaining optimum seed yield of chickpea during rabi season in Bihar.

KEYWORDS: Broad-spectrum, Pendimethalin, Bio-efficacy, CS Formulation and Partial budgeting

EFFECT OF TILLAGE AND NUTRIENT MANAGEMENT ON GROWTH, YIELD, HARVEST INDEX AND NUTRIENT USE EFFICIENCY OF WHEAT (*TRITICUM AESTIVUM* L.) IN INDO-GANGETIC PLAINS OF INDIA

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ABSTRACT

The present experiment was carried out during 2013–14 and 2014–15 at Norman E. Borlaug Crop Research Centre, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India representing the *Tarai* belt of Uttarakhand. The experiment was laid out in a split plot design with 18 treatments with 06 tillage options i.e. FIRBS, conventional tillage (CT), sub soiling (SS), zero tillage (ZT), minimum tillage with two pass of rotavator (MT) and permanent raised bed system (PRBS) in main plot and 03 nutrient levels i.e. 50% of recommended dose of fertilizers (50% RDF), site specific nutrient management (SSNM) and 100% recommended dose of fertilizer (RDF) in sub plot with three replications. The tillage options and nutrients levels influenced significantly most of the growth and yield attributes. Based on pooled values PRBS the highest grain yield that was statistically equal to FIRBS and SS. In general wheat grain yield was almost equal at PRBS, FIRBS and SS that was 9.5 and 16% and 32.5% greater than CT, MT and ZT respectively. The harvest index was also recorded significantly highest under FIRBS followed by PRBS and Nutrient use efficiency was recorded highest under PRBS followed by SS and FIRBS, though remained non significant on pooled basis. Similarly RDF produced highest grain yield on pooled basis that was 11.7 and 48.6% higher than SSNM and 50% RDF, respectively but the harvest index was found significantly highest under at 50% RDF. The Nutrient use efficiency was recorded significantly highest under 50% during growth stages

KEY WORD: Tillage and Nutrient Management , Growth, Yield, Harvest Index and Nutrient Use Efficiency

USE OF FOLDSCOPE FOR IDENTIFYING PATHOGENS ASSOCIATED WITH POST-HARVEST VEGETABLES

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ABSTRACT
Biotic fungal organism hampers quality as well as quantity of post-harvest produce. During present case of study biotic pathogens associated with commercially available vegetables under market condition of Tripura were evaluated. Samples were collected randomly from different regions of Tripura and examined in laboratory condition for association of pathogens by the help of Foldscope (Origami microscope made up of cardstock, glass lens, light emitting diode and a diffuser panel etc). Microscopic observation revealed that fungi namely *Alternaria. sp., Fusarium sp., Colletotrichum sp., Sclerotium rolfsii and Cercospora sp.* were associated in post-harvest vegetables under market condition of Tripura. The vegetative as well as fruiting body of fungi including hyphae, conidia, conidiophores etc. were viewed and captured easily by the use of Foldscope.

KEY WORDS: Foldscope, Alternaria. sp., Fusarium sp., Colletotrichum sp., Sclerotium rolfsii and Cercospora sp.

EFFICACY OF BOTANICALS AND BIO-PESTICIDES IN THE MANAGEMENT OF PEST COMPLEX OF POTATO DURING POST-RAINY SEASON IN KARNATAKA, INDIA

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ABSTRACT
A field experiment was conducted in a randomized block design at Hangaraki, a village near Dharwad, Karnataka, India to evaluate the effect of botanical and bio-pesticides on insect pests of potato during *rabi* 2016-17 and 2017-18. The experiment consisted of ten treatments including an untreated check and replicated thrice. The test variety Kufri Pukhraj was raised in a plot size of 3 × 4 m with a spacing of 60 × 20 cm. The results revealed that, the treatment with NSKE @ 5 % proved to be the best botanical by recording 45.96 and 53.67 per cent protection followed by azadirachtin 3000 ppm @ 3.00 ml/l (38.32 and 51.27 %) against shoot borer and *S. litura*, respectively. However, in case of aphids and leafhoppers, neem oil @ 2 % (63.38 and 60.23 %, respectively) was the next best treatment followed by azadirachtin 3000 ppm @ 3.00 ml/l (62.68 and 53.02 %, respectively). The highest percent protection against whitefly and thrips was afforded by *Verticillium lecanii* 2×10^8 cfu/g @ 2 g/l which recorded 61.20 and 62.27 per cent protection, respectively. The treatments azadirachtin 3000 ppm @ 3.00 ml/l and NSKE @ 5 % offered the highest protection over control against mites by recording 45.24 and 44.44 per cent protection, respectively. Whereas, the least per cent protection over control with respect to majority of pests (aphid, leafhopper, whitefly and thrips) was recorded by *Metarhizium (=Nomuraea) rileyi* 2×10^8 cfu/g @ 2 g/l treated plot.

KEY WORDS: Potato, *Rabi*, Botanicals, Bio-pesticides, Insect pests.

INDUCTION OF REGULARITY IN MANGO CV. DASHEHARI BY TIP PRUNING AND PACLOBUTRAZOL APPLICATION

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ABSTRACT

A major threat to the expansion of mango industry is irregular bearing habit in most of North Indian mango cultivars including Dashehari which causes hurdles in maximising fruit production. Therefore an experiment was conducted for four consecutive years on 10-12 years mango cv. Dashehari spaced at 7.5 m × 7.5 m to induce synchronous vegetative growth to get same physiological stage of shoots for regular uniform flowering and fruiting in mango cv. Dashehari. For this purpose, whole tree was tip pruned just below first node after crop harvest and thereafter drenched with paclobutrazol @ 3.2 ml m^{-1} canopy diameter during September. Tip pruning was also performed in October to study its effect on panicle emergence bypassing vegetative flushing. The result exhibited significant influence of post-harvest pruning cum paclobutrazol application on uniform flowering, fruit yield and quality parameters while October pruning had positive effects on light availability below tree canopy, however increased vegetative growth at the expense of flowering and fruiting. Thus whole tree tip pruning after harvest of 'on' year fruits followed by soil drenching with paclobutrazol, a month prior to flower bud differentiation, could be adopted for regulating flowering and fruiting during 'off' year.

KEYWORDS: Alternate bearing; Dashehari; Light interception percent; Post-harvest tip pruning; Paclobutrazol; Synchronized flushing.

VALUE ADDED HORTICULTURE PRODUCT AS A INCOME GENERATION FOR RURAL WOMEN DURING COVID-19

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ABSTRACT

Women play an important role in the agricultural system and contribute significantly to the physical aspect of farming, livestock management, harvesting and allied activities. Employment and social inclusion of women is associated with participation in positive activities, skill development, increased social interaction, development of personality and professional characteristics and promotion of socio-economic status. Women have different roles in rural contexts, with rural women having a special influence on food production to improve their economic conditions. A price increase is added to the product or market to be sold by the company before the product is offered to customers. A business strategy is adopted to increase its demand in a fresh market to create its demand in the market or to set traditional customers. A value-added horticultural product can ignore crop availability and seasonal risk in the market. The loss of high level foods during COVID-19 and in this epidemic reduces the income of producers, especially smallholder farmers, who negatively affect the maintenance of their families, making them economically have become weaker than the weak. This paper emphasizes the value addition of rational fruits and vegetables to be undertaken by women to develop their own business and also discusses the steps to be taken to develop it with a comprehensive list of schemes and institutions that support entrepreneurship for women in various levels.

KEYWORDS: women, Income, economic status, value added, horticulture product, covid-19

CLOVE (SYZYGIUM AROMATICUM) OIL, A NATURAL PRODUCT FOR CONTROLLING STORAGE FUNGI AND INSECTS OF CHICKPEA DURING STORAGE

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ABSTRACT

The chickpea or chick pea (Cicer arietinum) is the most important and versatile legume, from Fabaceae, subfamily Faboideae. It is locally known as gram or Bengal gram or garbanzo. This has high nutritional value. Dried chickpea seeds have 61% carbohydrate, (17-22%) proteins and 6% fat by weight. It is one of the earliest cultivated legumes.Its 7500-year-old remains have been found in the Middle East. Chickpea is a key ingredient in hummus and chana masala.This is ground into flour to make falafel. It is also used in salads, soups and stews, curry and other meal products like roasted/ baked channa . Chick pea is typically stored for six to eight months after harvest.But more than 90 % of farmers do not take any precautions to protect it. Its proper storage enables farmers to earn high profit margins. Most farmers sell their chick pea seeds in village/local and urban markets. To examine the storage losses, 25 samples of chick pea seeds were collected from grocery stores of Gurgaon and Gorakhpur for examination of associated fungal species and insects. Mycological study of seed samples revealed presence of 16 fungal species viz.,Aspergillus flavus, A. fumigatus, A. niger, A. sydowi, A. ochraceous, A. terreus, A. nidulans, Cladosporium macrocarpum, F. oxysporum, F. semitectum, Macrophomina phaseolina, Penicillium notatum, Sclerotium rolfsii, Rhizoctonia solani, R. batatiocola, Rhizopus arrhizus. In these Aspergillus flavus, A. niger, A. ochraceous, A. terreus had dominance interms of per cent occurrence. The insect analysis revealed presence of only one species of Bruchid (Callosobruchus chinensis L) in all the 25 samples. For its control in vitro, volatile constituents were extracted in the form of essential oils from 50 plant species and evaluated against most dominant two fungi, Aspergillus flavus and Aspergillus niger. Clove oil exhibited the maximum inhibition of two fungi tested. It showed MIC 400 ppm against dominant fungi. It was fungicidal at 500 ppm against dominant fungi. It inhibited all 16 fungi at 500ppm.The oil was found to be thermostable at its MIC of 400 ppm and maintained its antifungal activity up to full six (6) months of storage period at room temperature. The oil was characterized by the determination of its various physico-chemical properties. In vivo studies revealed that the clove oil as a fumigant was able to preserve the chick pea seeds fully & even beyond six months with pure clove oil at 1000 and 1500 ppm in tin containers and gunny bags of 250 gm capacity holding 200 gm seeds. This preserved nutritional value in terms of carbohydrate and protein content of chick pea seeds during storage was comparable to synthetic pesticides aluminium phosphide and ethylene dibromide. This did not ause any adverse effect on seed germination,seedling growth and general health/ morphology of plants. GC–MS analysis of the oil revealed it to have a major compound, eugenol (94.4%) inhibiting both fungi & insects

KEYWORDS: Cicer arietinum.;Clove(Syzygiumaromaticum), oil; seed losses, Bruchid (Callosobruchus chinensis L).

Section – II

Climate Change & Agriculture

DEVELOPMENT OF SUITABLE GROUNDNUT GENOTYPES FOR SUMMER SEASON UNDER CLIMATE CHANGE AND TO FOOD AND NUTRITIONAL SECURITY

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ABSTRACT

The warming trend in India over the past 100 years has indicated an increase of 0.60^{o}C. The projected impacts are likely to further aggravate yield fluctuations of many crops thus impacting food security. There are evidences already of negative impacts on yield of groundnut in North India due to increased temperature, increased water stress and reduction in number of rainy days. Enhancing agricultural productivity, therefore, is critical for ensuring food and nutritional security for all, particularly the resource poor small and marginal farmers who would be affected most. In groundnut production, it consists of introducing drought/temperature tolerant varieties, advancement of planting date of rabi/zaid crops in areas with terminal heat stress, water saving, location specific, inter cropping systems with high sustainable yield index. It is well known fact that groundnut is an important Kharif season oilseed crop of Uttar Pradesh. The area and production of rainy season groundnut declined after 1982-83 due to biotic and abiotic reasons specially increased temperature. With the consideration of above point the work on summer season groundnut under climate change was carried out at Regional Research Station, Mainpuri, C.S.Azad University of Agriculture & Technology, Kanpur for development of summer groundnut genotypes with suitable physiological parameters. The twenty genotypes i.e. Dh86, Dh40, R9251, R8808, R2000-1, ICGS44, ICGS1, ICGS37, ICGS11, ICGS76, ICGV93468, ICGV86590, ICGV86325, ICGV00310, ICGV00298, ICGV99195, ICGV02099, ICGV02022, ICGV94361 and G201 (Check) were tested for evaluating the suitable physiological parameter during summer season. The sowing was done in rows 30 cm apart with 10 cm plant spacing. The experiment was conducted in RBD with three replications. The sowing was done on 10th March, 2007 and 2008 and harvested after 90 days of sowing during both the experimental years.

Cultivars Dh86 (29.02 q/ha) and ICGV93468 (28.91 q/ha) gave highest pod yield, while genotypes Dh40 and G201 gave minimum pod yield. The increase or decrease in pod yield (q/ha) was due to increase or decrease in number of pods per plant, pod weight per plant, number of kernels per plant, weight of kernels per plant, number of kernels per pod, kernels weight per pod, weight of 100 kernel, dry matter accumulation in pods and harvest index. The better source sink relationship was also responsible for higher pod yield. The aforementioned parameters were found superior in Dh86 and ICGV93468 in summer season resulted in, both cultivars gave highest yield under summer season in U.P.

KEY WORDS: groundnut, North India, cultivers, Growth.

GENETIC IMPROVEMENT THROUGH IDENTIFICATION OF HEAT TOLERANCE DONORS IN RELATION TO CLIMATE CHANGE

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ABSTRACT
Breeding heat-tolerant rice is one of the strategies used to mitigate the effects of climate change, particularly in high temperature regions where the majority of rice is grown. Rice is the staple food for more than half of the world's population. Rice yields are estimated to be reduced by 41% as a result of high temperature. In this study, phenotyping and selecting desirable materials from rice genotypes were performed under high temperature conditions during the reproductive stage. Eighty-seven rice genotypes screening were performed in the field to select individual donors with heat tolerance and high yield potential. On the basis of grain yield per plant, spikelet fertility percent and pollen fertility percent, rice genotypes were selected for heat screening.
On the basis of heat screening thirteen genotypes viz., Dadbko, NPT 6, Gangtai, RJR:II, Ganga kali, NPT 19, NPT 9, Dan Banko, Kolhin khosa, Banspatri, Ganga dhan, Safed Lalak and Ajam dhan were identified. Identified of heat tolerance donors should be used in genetic improvement of rice in relation to climate change is one of solution.

KEY WORDS: Rice genotypes, grain yield, spikelet fertility, pollen fertility, genotypes.

WATER MIMOSA: AN UNDERUTILISED MULTIPURPOSE AQUATIC VEGETABLE

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ABSTRACT
Water mimosa, a pantropical nitrogen-fixing perennial legume, is an important aquatic vegetable in South East Asian Countries. The present study was carried out to document the mode of use and importance of the plant. It was observed that the plant is used as a culinary delicacy and also for its nutritional and medicinal properties. Leaves, young ends of stems and pods are edible and usually eaten raw as a vegetable or fried or cooked. The plant is also used for its nutritional and medicinal properties and is mainly used for treatment against dysentery and also as an anthelmintic or vermifuge. This underutilized vegetable is embedded with rich nutrient potentials along with ability to stand against adverse climatic conditions. The cultivation of this plant as an aquatic vegetable will help to sustain the livelihood of community around the waste water wetland where it may be grown. Awareness about the multifaceted use of the plant may be created so that *water mimosa* may be uplifted from being an underutilised vegetable to an economically important vegetable crop.

KEY WORDS: nitrogen-fixing, anthelmintic, vermifuge, water mimosa.

AGRO MET ADVISORIES TWICE IN A WEEK TO AWARE A HUGE NUMBER OF FARMERS FOR SAFE HARVESTING AND STORAGE OF RABI CROPS IN ADVERSE WEATHER SITUATION, SHORTAGE OF LABOUR DURING LOCKDOWN PERIOD COVID- 19 IN MUZAFFARPUR DISTRICT

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ABSTRCT

In the year 2017-18 farmers of Saraiya block were affected by heavy hail storms at the time of wheat harvesting. But this time framers were planning according to Agro Met advisory andsaved their crop with untimely rain and hail storm and make storage of grain safely.This Kendra during lockdown period of COVID-19 also provided technical support to theoperation, weather update and advisories through phone call, what's app message etc whichmade farmer confidence in solving their agricultural problem. They were also advisedregarding social distancing in doing the agricultural operation.This lockdown period farmer were unable to harvest their mature rabi crops due tounavailability of labours. This adverse situation was also creating a stress condition amongthem. In this situation, the agromet weather advisories helped them to plan accordinglyadverse weather condition. They protected their crops with untimely heavy rain and hailstorm. This advisories also helped them in self-storage of grain. This has created confidenceamong farmers, and many of farmers of that particular block try to add in what's app groupby seeing the benefits of that advisories. This groups not only provides weather advisories butalso provide, need-based suggestions related to the sowing of crop and intercultural activitiesrelated to agriculture and allied sector. Previously the district level weather forecasting was not perfect, and this block-level forecasting is very near to real condition. Due to which farmers have faith on this.During lockdown period farmers are facing lots of problem in agricultural and allied sectors.They are unable to take necessary action in the harvesting of matured Rabi crops. Due tocomplete lockdown they were not getting sufficient labours for harvesting and in themeantime, irrelevant weather condition of north Bihar also creating problem with untimelyrain and hail storm.Thus the farmers were advised regarding use of agriculture equipments like reaper andharvester to meet with the problem of shortage of labours.

Economic impact of Agromet advisory services:

A total 1145 numbers of beneficiary farmers i.e., users of AgroMet Advisory Services (AAS)were selected purposively from seven blocks (Motipur, Kanti, Marwan, Minapur, Paroo,Sahebganj, Saraiya). The same number of non-beneficiary farmers i.e., non-users of AgroMetAdvisory Services (non AAS) were selected randomly from the respective blocks. Thesample size selected for the study was 3450 comprising 60 numbers from both the categories.To assess the economic benefit of the farmers due to adoption of agromet advisory services,users of agromet advisory services (AAS) and non-users of Agromet Advisory Services (nonAAS) of 20 number each were selected for wheat, crop grower.The data were collected by personal interview, mobile calls, either at home or at farm. Thedata so collected were classified, tabulated and analyzed in order to make the findingsmeaningful.KVK, Saraiya, Muzaffarpur provides Agromet advisories two in a week at block level undera project Gramin Krishi Mausam Seva (GKMS). This block-level advisory helped thefarmers in planning the harvesting of rabi crops and also in the sowing of summer crops.Muzaffarpur district has 16 blocks, seven blocks have what's app group and rest of block thegroup is in progress. In each group agricultural officers and farmers are member.

KEYWORDS: Agro met advisories, Covid-19, GKMS

EFFECT OF INTEGRATED NUTRIENT MANAGEMENT PRACTICES ON QUALITY AND PROTEIN YIELD IN DIRECT SEEDED RICE (*ORYZA SATIVA*) UNDER MID LAND SITUATION OF JHARKHAND

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ABSTRACT
A field experiment on direct seeded rice was conducted during *kharif* 2017 and 2018 at Rice Research Farm, Birsa Agricultural University, Kanke, Ranchi to evaluate the effect of integrated nutrient management in direct seeded rice (*Oryza Sativa*). The experiment comprised ten treatments viz. control (no fertilizer or manure), 50% RDF, 75% RDF, 100% RDF, 50% RDF +50% N through FYM, 50% RDF + 50% N through vermi compost, 75% RDF +25% N through FYM, 75% RDF+25% N through vermi compost, 100% RDF +25% N through FYM and 100% RDF +25% N through vermi compost were laid out in randomized block design with three replications. Pooled data of two years experimentation indicated that the application of various integrated nutrient management practices significantly increased protein content and protein yield but hulling %, milling % and head rice recovery of rice had not been significantly influenced. Among all treatments, application of 100 % RDF + 25% N through VC resulted in higher protein content (8.32 %) and protein yield (360.87 kg/ha) which was superior to rest of the treatments. Two year study indicates that the application of 100% RDF + 25% N through VC was the best for higher protein content, protein yield and yield from rice.

KEY WORDS: Protein content, Protein yield, Hulling %, Milling %, Head rice recovery

BIONOMICS OF THE MOST ABUNDANT VIRGINOPARAE MORPH OF WOOLY APPLE APHIDS ON APPLE PLANTATIONS IN JAMMU PROVINCE OF J&K STATE

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ABSTRACT
Virginoparae morph is the most predominating morph of Eriosoma lanigerum Hausmann, wooly apple aphid that causes considerable loss to apple crop throughout the world. In the present study, life history of virginoparae morph of woolly apple aphid was studied during March to December months on apple host and the data on total life period (pre reproductive, reproductive and post reproductive periods) was recorded. Total progeny produced and total nymphal period was also calculated. The detailed biology of the pest has been recorded for the first time in Jammu province of J&K state on apple plants.

KEY WORDS: Bionomics, abundant, virginoparae, wooly apple aphid, Jammu

STUDIES ON YELLOW MOSAIC VIRUS RESISTANCE IN MUNGBEAN (VIGNA RADIATA L WILCZEK)

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ABSTRACT
The present investigation, " Genetics of yellow mosaic virus resistance in mung bean_(Vigna Radiata (L)Wilczek)" was undertaken alongwith different strains of yellow mosaic virus during kharif 1999 and 2000 in 12 crosses_(LxT) mating system in F_1 & F_2 population. In susceptible x resistant crosses, all F_1's were found susceptible suggesting that susceptibility is dominant over yellow mosaic virus resistance. In all 12 F_2 segregating population Chi-square values were for 63:1 ratio were non- significant indicating that inheritance of yellow mosaic virus resistance is governed by 3 recessive genes. No reciprocals differences were observed in the present study. Ratio of back cross is also confirming the same mode of inheritance of YMV resistance. Set of yellow mosaic virus resistant varieties along with susceptible were tested at 5 hot spots of yellow mosaic virus viz., PAU Ludhiana, NDUA&T Faizabad, IIPR. Kanpur, UAS Agril. Research Station Kaithalgeri (Karnataka) and GB Pant University of Agri. & Technology, Pantnagar. Incidence of yellow mosaic virus in mungbean varieties grown at different locations varied location to location and varieties to varieties. In general types of symptoms in different varieties were similar at different locations. Some varieties like ML 682 had high incidence at Faizabad but few incidence at Ludhlana, Kanpur, Pantnagarand Kaithalgeri. Similarly variety RMG 502 has also shown different reaction to YMV disease at different locations and hence it is learly indicating the presence of different strains of yellow mosaic virus at different locations.

KEYWORDS: YMV- Yellow Mosaic Virus

BIOCHEMICAL ANALYSIS OF SOME SELECTED *BORO* RICE CULTIVARS OF ASSAM UNDER COLD AND HEAT STRESSES

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ABSTRACT
Temperature being one of the most devastative environmental stresses variously affects rice cultivation limiting the socio-economic background to a vast extent. The present investigation was carried out to indentify the promising *boro* rice cultivars having the ability to cope with temperature stress (heat and cold stress) conditions. Seven different rice varieties namely *Buro*, *China boro*, *Swarnabh*, *Laal bihari*, *Moricha*. *Kolong* and *Disang* were selected for the study with an aim to unravel the underlying antioxidant protection mechanisms through standard biochemical, enzymatic and non-enzymatic analyses. However, the varieties have different labels of tolerance under both the stress conditions. The study revealed *Buro* to have significantly positive results in all the enzymatic antioxidants such as superoxide dismutase (SOD), ascorbate peroxidase (APX), catalase (CAT), guaiacol peroxidase (GPX), and glutathione reductase (GR). However, increase in the activity of the enzymatic antioxidants reduces the activity of hydrogen peroxide and lipid peroxidation in the tolerant varieties. Thus, the findings can help to provide a better understanding of the various enzymatic and non enzymatic antioxidants for future rice breeding programme.

KEYWORDS: Biochemical analyses, Boro rice, Heat stress, cold stress

SAND-GRAVEL MINING AS A THREAT TO MACRO-BENTHIC ASSEMBLAGE AND HABITAT PARAMETERS OF RIVER GANGA, INDIA

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ABSTRACT
The present study was conducted for assessing impact of sand-gravel mining on the habitat parameters, diversity and abundance of macro-benthic species in the mining impacted area of the Ganga river from April 2017 to March 2018. Samples were collected from four different zones i.e. zone A as reference zone while zones B, C and D are mining impacted area of Ganga river correspondingly. During the study, habitat parameters such as substratum type, pH, dissolved oxygen, biochemical oxygen demand, turbidity and TDS showed a significant difference at selected zones throughout the study. Besides, during the survey, a total of twenty-nine macro-benthic species belonging to ten groups mainly Oligochaeta (2 species), Turbellaria (2 species), Hirudinea (3 Species), Odonata (2 species), Ephemeroptera (4 species), Trichoptera (3 species), Diptera (6 species), Gastropoda (3 species), Decapoda (1 species) and Coleoptera (3 species) were found respectively. The Diptera group was found a maximum of 30.77 % throughout the study period at selected zones. Besides this, the other major groups were such as Coleoptera 12.73 %, Gastropoda 10.80% and Ephemeroptera 9.65 %. The result showed that the zone A contains the higher number 1205 ind./m2 while zone B, zone C, and zone D contain 899 ind./m2, 714 ind./m2 and 497 ind./m2 respectively throughout the year. The canonical correspondence analysis (CCA) analysis showed a strong relationship with habitat parameters mainly substratum structure, pH, water temperature, dissolved oxygen with the macro-benthic species. Besides this, the reason for the decline in species number in respected zones (B, C & D) is the removal of the sand and gravel material. The removal of these materials causes habitat destruction in the form of increasing depth, slope, channelization of river and water quality.

KEYWORDS: Macro-benthic species; mining-impacted area; CCA; Ganga river

JUDICIOUS MANAGEMENT OF SALINE WATER WITH AMENDMENTS FOR HIGHER PRODUCTIVITY OF *KACHRI (CUCUMIS CALLOSUS)* UNDER HOT ARID AGROECOSYSTEM

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ABSTRACT

In hot arid region, *Kachri* (*Cucumis callosus*) is the most important vegetable crop and potential source of income for farmers. The availability of good quality of irrigation water is very less. Thus sustainable irrigation systems using saline soils and waters have the potential to improve crop production in arid region. This will require a comprehensive approach to soil, water and crop management. The field experiment was conducted at ICAR- Central Institute for Arid Horticulture (CIAH), Bikaner research farm with cucurbitaceous crop (*kachri*) during 2019-20 in the *kharif* season to investigate the effect of saline water with the combination of different amendments (gypsum, farm yard manure and vermicompost) on *kachri* crop performance. In *Kachri* crop, the two salinity level in irrigation water 0.5EC(dSm^{-1}) and 4EC(dSm^{-1}) were taken with amendments like gypsum, farm yard manure and vermicompost and the highest yield was recorded with the treatment of Gypsum @4 t/ha + $4EC_{IW}$ (50.00 q/ha) followed by vermicompost @ 10 t/ha + $4EC_{IW}$ (45.83 q/ha), FYM @15t /ha + $4EC_{IW}$ (42.66q/ha) and in control (30.66 q/ha) and with the salinity level of 0.5EC($dSm^{-1)}$ the highest yield was recorded with the treatment of FYM @15t/ha+.$5EC_{IW}$ (69.83 q/ha) followed by vermicompost @10 t/ha +.$5EC_{IW}$ (64.67q/ha), Gypsum @ 5t/ha + .$5EC_{IW}$ that was (58.00 q/ha) and in control (42.00 q/ha). The maximum dry matter percentage (12.39%) and (12.80%) were recorded with the treatment of FYM @15 t/ha under with or without saline water. The treatments of Gypsum @ 4t/ha+$4EC_{IW}$ irrigation water were registered good for leaf area (52.97cm^2), leaf area index (0.75) and TSS (4.09*B). Maximum per cent yield response was observed in treatment of FYM @15 t/ha +.$5EC_{IW}$ was applied (68.8%) followed by vermicompost @10 t/ha + .$5EC_{IW}$ was (63.7%) and Gypsum @ 5 t/ha + .$5EC_{IW}$ (55.0%) compared to control. With 4EC irrigation water the maximum percent yield response was recorded with the treatment of Gypsum@5t/ha+$4EC_{IW}$ was (49.00%) followed by vermicompost @10 t/ha+$4EC_{IW}$ was (45.83%), FYM @15t/ha+ $4EC_{IW}$ was applied (41.66%) as compared to control. Thus *Kachri* crop production with saline water irrigation can be an alternate source of income and concluded that the treatment of Gypsum @ 5t/ha+$4EC_{IW}$ was good for yield as well as yield response of *Kachri* crop production under arid region.

KEYWORDS: Saline water, Cucurbitaceous crop, Hot arid, Agro-ecosystem.

CLIMATE CHANGE AND ITS IMPACT ON INDIAN AGRICULTURE AND FOOD PRODUCTION

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ABSTRACT

Impact of climate change on agriculture will be one of the major deciding factors influencing the future food security of mankind on the earth. The tropics are more dependent on agriculture as 75% of world population lives in tropics and two thirds of these people's main occupation is agriculture. Food production in India is sensitive to climate changes such as variability in monsoon rainfall and temperature changes within a season. Every 1°C rise in temperature reduces wheat production by 4-5 MT. Pathogens and insect populations are strongly dependent upon temperature and humidity, and changes in these parameters may change their population dynamics. Other impacts on agricultural and related sectors include lower yields from dairy cattle and decline in fish breeding, migration, and harvests. Global reports indicate a loss of 10-40% in crop production by 2100. Scientists also estimated that a 2°C rise in mean temperature and a 7% increase in mean precipitation would reduce net revenues by 12.3% for the country as a whole. In the context of climate change, the measures taken to minimize the adverse impacts of climate change include measures to reduce the emissions of greenhouse gases that cause climate change in the first place, to minimize the adverse effects of drought on production of crops and livestock, productivity of land, water and human resources, so as to ultimately lead to drought proofing of the affected areas, non-conventional methods for utilization of water, including artificial recharge of groundwater, as well as traditional water conservation practices like rainwater harvesting, including roof-top rainwater harvesting, and including the Crop Insurance Scheme which supports the insurance of farmers against climate risks, and the Credit Support Mechanism facilitates the extension of credit to farmers, especially for crop failure due to climate variability. Overall, there is an urgent need for coordinated efforts to strengthen the research to assess the impact of climate change on agriculture, forests, animal husbandry, aquatic life and other living beings.

KEYWORDS: climate change, population dynamics, forests, animal husbandry, aquatic life.

IMPACT OF COVID-19 LOCKDOWN ON AGRICULTURE IN INDIA: A REVIEW

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ABSTRACT
The imposition of nationwide lockdown due to covid-19, no doubt has devastating impact on economy.But its impact on agriculture is complex and faced a severe hit ,because of halted transportation and stagnating the harvest as the produce could not reach the mandis and as a result disrupting the supply chain.Also the non availability of migrants labourers intercepring the harvest and post harvest operations. Thus the pandemic has given rise to several challenges in procurement operation as well.This impact will reverberate across the large economy and will have longer impacts than a few months.

KEY WORDS: Lockdown,Economy,Agriculture, Pandemic,Migrant labourers

EVALUATION OF BIOCHEMICAL AND ANTIOXIDANT PROPERTIES OF SOME *BORO* RICE VARIETIES OF ASSAM, INDIA

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ABSTRACT
Boro rice - a *rabi* season crop is generally cultivated from November to May in the eastern states of India such as Assam, West-Bengal, Odisha and Eastern Uttar Pradesh. They are grown in low-lying, water-logged areas with high residual moisture. One of the major problems in Assam is flood which is responsible for the destruction of a large scale of crops during monsoon due to heavy rainfall. So, *boro* rice as a *rabi* season crop is ideal for cultivation during the dry season in this area. In this study, some important characteristics like biochemical and antioxidant properties of 21 collected *boro* rice varieties were determined. In biochemical analysis, alkali digestion value, amylose content, reducing sugar, starch content, phenol and flavonoid content were estimated. In case of antioxidant properties, DPPH scavenging assay, H_2O_2 scavenging assay and reducing power were determined.The mean value of DPPH and H_2O_2 were found in the ranges of 8.03-35.61% and 20.71-52.06 % respectively. The low IC50 values for both DPPH and H_2O_2 of the *boro* varieties found in this study may be an indication of more active DPPH activity which makes these varieties to be good sources of antioxidants. All the biochemical properties were also found to be in a good proportion.With the increasing population the requirement of a rapid increase in the production and yield of rice is also enhancing. *Boro* rice in this case can be proven as an important milestone which can remarkably contribute towards the economy of the country. In this regard, the state Assam is an important site for further investigation on *boro* rice due to a rich diversity.

KEYWORDS: *Boro* rice; biochemical properties; antioxidant properties

COVID 19: HOOTER FOR CLIMATE CHANGE

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ABSTRACT

Amidst the covid 19 pandemic, one of the silver things that has been reported from across the world is that people are breathing cleaner air and witness to clear and more blue skies because of restrictions on human movement due to lockdown. Is not it sounds odd that the only thing helping us reduce carbon emissions globally , at the time we need the most, is the corona virus? Its not wrong if we say that this crisis is nature's blessing in disguise. The current crisis is not the real warning but its simply a alarm bell of what is coming. Covid 19 threatening lives and upending the economy of the world. If we pay a close eye to all that is happening around us due to corona virus, we will notice that effects of this virus are restricted to mankind only and our co owners of earth *viz* plants animals and natural resources are enjoying the positives out of this deadly virus. With covid 19 Nature has forwarded a message that humankind has placed too much pressure on the ecosystem with miserable results. Planet earth has certain boundaries, four out of nine planetary boundaries including climate change, loss and extinction of certain species, bio geochemical flows and land system change have already been exceeded which have destructive consequences for humankind. Covid 19 is a result of climate change, depletion of ozone layer, human activities which totally devastating the world. This requires an acute and reviewable or you can say life changing action to protect the natural resources for present and future generation. Many of environmental challenges caused by corona virus crisis will gradually resolve and the crisis comes to an end ,but it is also true that the benefits of air pollution reductions will also erased. So what we have learned during the covid crisis about environmental benefits and risks of acute drop in economic activity globally? Obviously it help us to better understand the mechanics of environmental sustainability, societal consumption patterns and how we can reduce environmental degradation in future for crisis free world. So covid 19 is a hooter, its an alarm bell against climate change. The threat of covid 19 is temporary but threat of climate change will remain for years if human being is constantly interfering the nature.

KEYWORDS: human movement, ozone layer, environmental challenges.

COVID-19 AND CLIMATE CHANGE: TIME TO INVOKE INDIA'S ANCIENT WISDOM

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ABSTRACT

Long before the origination of the concepts of Environmental Justice, Environmental Governance and Environmentalism, the ancient Indian traditions had established the principles of ecological harmony to protect and preserve the environment. This had been done not because of any impending fear of natural catastrophe or destruction, or because of any immediate utilitarian exigency, but through its quest for spiritual and physical symbiosis, synthesised in a system of ethical awareness and moral responsibility. Vedas enshrine a holistic and poetic cosmic vision. Vedic literature instructed us that the animals and plants are sacred; that like humans, our fellow creatures, including plants have consciousness; and therefore all aspects of nature are to be revered. The Vedic seers regarded the Earth as a sacred space and gave it the status of Mother: 'Mata Bhumih Putroham Prithiviyah- Earth is my mother, I am her son.' Great importance was also attached to the environment sustainability in the Vedic scriptures since they realised that for a balanced growth of humanity, protection of environment is important. The principle of Ahimsa which runs as a golden thread from the Vedic literature to the Buddhist and Jain philosophy is rooted in a host of positive aims and actions which have great relevance for the contemporary environmental concerns. It is a principle of compassion and responsibility which should be practiced not only towards human beings, but towards all animals and nature. The message of ancient Indian seers and sages is clear that environment belongs to all living beings, so it needs protection by all, for the welfare of all. Ancient seers knew about the various aspects of environment, about cosmic order, and also about the importance of co-ordination between all natural powers for universal peace and harmony. It is ironic to note that such compassion, responsibility and love for Mother Nature is missing in the current era keeping in view the emergence of complex environmental problems *viz*., COVID-19 and Climate Change. These pandemics make us vulnerable to disasters and tragedies, now and in the future. Global conventions on biodiversity and climate change have been signed by 190-odd countries, earth summits have become common place, activism by international environmental NGOs is at its peak. But whether this approach alone will be enough to tackle the current environmental cataclysm is questionable. For Environment to be truly saved and revived, we have to return to the meanings and practices that infuse sacredness and reverence towards nature by describing it as Mother Nature. The withdrawal of the participation of the United States of America from the Paris Climate Accord as well as in helping WHO in its fight against COVID pandemic clearly proves that the agenda motivated by competitiveness and ego is failing to protect the environment and embracing the philosophy of "Vasudhaiva Kutumbakam" is the need of the hour.

KEYWORDS: Vedic scriptures, Indian traditions, Vasudhaiva Kutumbakam.

PEST AND DISEASE MANAGEMENT UNDER NATURAL FARMING

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ABSTRACT
In the green revolution era, the plant protection synthetic chemicals like fungicides, insecticides, and herbicides were used comprehensively to shield crops from pests and diseases. The justification behind using pesticides is that with the intensive agriculture, the problems of insect-pests and diseases are taking complex shape and posing serious challenges. So, the use of pesticides during last few decades has emerged as one of the indispensable agro-inputs to combat insect-pests and diseases and concurrently increase crop yields. But scientific surveys and evidences indicate a number of perils associated with the use of such chemicals. Their over and imprudent use lead to resistance in pests and pathogens, killing of various beneficial organisms like fishes, birds, wildlife, honey bees, pollinators and microbes, poisoning to agricultural farm workers associated with application and spraying of chemicals, contamination of soil, air, surface and ground water, biomagnification of toxicants in food chains, residues in food and feed stuffs and much more. To conquer the deleterious effects of chemical based farming, a more sustainable and innocuous system of farming is required which can reduce the reliance on external inputs and concomitantly take care of the ill effects of pesticides and enhance farm income. Natural farming as suggested by Shri Subhash Palekar, Padma Shri Awardee in 2016, is a viable and sustainable option. The idea is to let nature play a dominant role to the maximum extent possible. In natural farming, insect-pests and diseases on plants are managed by the farmers with natural products prepared easily by them from local resources at almost negligible cost. Palekar has emphasized two pronged strategy for plant protection, one of initial protection through seed treatment and second through their use as spray. The naturally prepared and nature-friendly mixtures or astras shall keep the crop free from insect-pests and diseases and also take cognizance of the venomous effects of pesticides.

KEYWORDS: synthetic chemicals, biomagnifications, sustainable option.

EVIDENT COVID 19 N SUSTAINABLE DEVELOPMENTS

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ABSTRACT
The outbreak of corona virus disease that originated in Wuhan china created havoc in whole world and was declared pandemic by WHO because it affected society & global economy n environment mercilessly. The world is facing an unavoidable n unprecedented global threat due to this pandemic and its effects on sustainable development are triggering concerns for all. This virus has resulted in global lockdowns, sharply curtailing economic activity.
It is a unique experiment with substantial impacts that will form the agenda for research. This pandemic is somehow a blessing for environment as we can see the planet earth healed a lot. There is low particulate matter in environment n ozone layer is filled to a greater extent .But the major concer is yet to be addressed which is economy, sustainable development, agriculture and other and other such activities

KEYWORDS: Pendedemic, Deveolopment , economic Lockdown-reg

COMMERCIAL PRODUCTION OF VETIVER (AROMATIC PLANT) IN BAG METHOD OF PLANTING – A NEW INNOVATION

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ABSTRACT

An experiment was carried out at Medicinal and Aromatic Plants Unit, Department of Horticulture, University of Agricultural Sciences, Dharwad, Karnataka to evaluate the effect of planting methods and nutrition on yield and quality of vetiver (*Vetiveria zizanioides* (L.) Nash). There were three main plots and six sub plots comprising of eighteen treatment combinations. Replications were two. The experiment was laid out in split plot design. The main plot (planting methods) consisted; P_1– Ridge and furrow method, P_2– Bed method and P_3– Bag method. The sub plot (fertilizer levels) consisted; F_1- 25:25:25 kg NPK/ha, F_2- 50:25:25 kg NPK/ha, F_3- 75:25:25 kg NPK/ha, F_4- 25:50:25 kg NPK/ha, F_5- 50:50:25 kg NPK/ha and F_6- 75:50:25 kg NPK/ha. For all the treatments, farm yard manure @ 10 tonnes per ha was applied. Among the method of planting, bag method (P_3) recorded significantly higher number of roots per plant (317.0), root length (50.1 cm), dry root yield (4085.8 kg/ha) and essential oil yield (85.3 kg/ha) compared to other planting methods. Among fertilizer levels, 75:50:25 kg NPK/ha (F_6) recorded significantly higher number of roots per plant (261.0), root length (46.0 cm), dry root yield (3686.5 kg/ha) and essential oil yield (78.4 kg/ha) compared to other fertilizer levels. Among interactions, the combination of P_3F_6 (Bag method with fertilizer levels of 75:50:25 kg NPK/ha) recorded significantly higher values compared to all other interactions. The planting methods, fertilizer levels and also their interactions did not result in any significant differences for the root diameter and essential oil content.

KEY WORDS: Innovation, Method of planting, Fertilizer levels, Root yield, Vetiver

ROLE OF SEED PRIMING IN RICE UNDER STRESSFUL CONDITIONS OF MEGHALAYA

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ABSTRACT

Even though the North Eastern Hill (NEH) region receives high rainfall, upland rice often experiences intermittent to intra-seasonal dry spells under changing climate along with inimical soil acidity induced low nutrient stresses affecting crop growth and productivity substantially. Seed priming is one of the simple and farmer friendly technologies for alleviating the impacts of several abiotic stresses. In the present study, microcosm experiments were conducted with rice cultivars (var. Bhalum 3, Shasharang, Hybrid rice) to examine the role of seed priming on seed germination and crop growth attributes. In the first experiment, seeds treated with GABA (500µM), GA (100ppm) and Melatonin (50µM) exhibited significantly enhanced seed germination whereas seeds exposed to pre-chilling, GA (100ppm) and GABA (500µM) have shown significantly increased shoot length. The extent of increase in shoot biomass was highest (43.7%) in GABA (500 µM). In the second experiment, seeds primed with salicylic acid (400ppm) and ascorbic acid (10ppm) have shown significantly increased number of tillers, root/shoot ratio, leaf chlorophyll *vis a vis* increased photosynthetic rates and panicle weight per plant. Salicylic acid (400ppm) increased photosynthetic rate by 42.1% in Arize 6444 bold whereas ascorbic acid (10ppm) has increased by 24.8 % in Arize 6444 bold. Panicle weight per plant has increased under ascorbic acid by 88.5% and 59.1% whereas salicylic acid has increased 63.7% and 59.1% in in Arize 6444 bold and Shasharang respectively. Therefore, seed priming with GABA (500µM), salicylic acid (400ppm) and ascorbic acid (10ppm) is promisingly beneficial for enhanced crop growth and productivity of rice under low nutrient soils of Meghalaya.

KEYWORDS: Moisture stress, Low nutrient soils, Photosynthetic rate, Root to shoot ratio and Seedling biomass

IMPROPER MANAGEMENT OF BIO-MEDICAL WASTE AND ITS IMPACT ON CLIMATE CHANGE AND ENVIRONMENT

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ABSTRACT
Waste, as we all know, is an inevitable product of human life, but how we manage it is the point of importance. Waste management, Climate change and Environment are all interlinked and affect one another. The most important factor that is harmful for environment is improper waste management which in turn can adversely affect climate change. The most dangerous of all kind of waste is bio-medical waste which if not managed properly can dangerously affect the environment and cause serious climate changes. Climate change being an important aspect of environment has the potential of disturbing environmental balance and civilization. There is a direct relation between global warming and environment change. The chemical composition of environment has undergone significant changes due to increase in greenhouse gases. Emissions including methane, carbon dioxide, nitrous oxide etc. due to our careless attitude towards improper bio medical waste management are recklessly destroying our fragile environment. Improper management of bio-medical waste can affect land, water and air equally. Bio- medical waste if burnt directly without any special treatment may contribute directly to the climate change by adding carbon based particles into the air, produced during burning of harmful waste. Bio-medical waste cannot even be dumped into a landfill without treatment nor can be mixed in water streams. In every way bio-medical waste is harmful if left untreated directly into the environment. In this paper the researcher has tried to highlight the impact of bio medical waste on environment and climate change. The emphasis is given on how mismanagement of waste can cause serious effects on Environment and how climate change is related to mismanagement of dangerous wastes.

KEYWORDS: Waste management, chemical composition, environment.

Section – III

Recent Trends in Human & Animal Health Management

EFFECT OF A NOVEL JUVENOID, FENOXYCARB ON THE PUPAE OF *Chrysomya megacephala*

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ABSTRACT

Chrysomya megacephala acts as a vector for many disease causing pathogens and also causes myiasis in human. We evaluated the effect of a Juvenile hormone analogue, fenoxycarb on the pupae (day 0 and 1) (1-2 hours) of this blowfly. Pupae were treated topically with 20 µg/µl, 40 µg/µl and 80 µg/µl of fenoxycarb. Effects include pupal mortality, pupal-adult intermediates, eclosion failure, low percentage of normal adult emergence and adultoid formation. Topical application of this juvenoid was more effective on day 0 pupae in comparison to day 1. Mortality increased according to concentration of dose applied. Complete normal adult emergence was inhibited in day 0 pupae at 80 µg/µl. These results demonstrate that this Insect growth regulator (IGR) was successful in inhibiting the pupal- adult transformation and thus it can be incorporated in integrated pest management program (IPM) for control of this notorious myiasis causing agent.

KEY WORDS: *Chrysomya megacephala*, myiasis, fenoxycarb, topical, juvenoid, insect growth regulator (IGR), integrated pest management program (IPM).

EFFECT OF MANGANESE ON THE HAEMOPOIETIC ORGANS OF *Garra gotyla gotyla.*

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ABSTRACT

In the present study, an attempt has been made to evaluate the various histopathological alterations in haemopoietic organs viz. liver, head kidney and spleen of *Garra gotyla gotyla* following an exposure to sublethal concentration of Manganese of 0.64mg/l for an experimental duration of 9 weeks. Various abnormalities observed in the liver were necrosis of hepatocytes, distension of sinusoids, vacuolation of hepatocytes, increase in melanomacrophage centres (MMCs) which resulted in the loss of normal cellular architecture and functioning of liver. Necrosis, vacuolation, deposition of haemosiderin pigments and proliferation of melanomacrophage centres (MMCs) were the conspicuous changes observed in the splenic tissue. Head kidney too demonstrates various degenerative changes which include necrosis of haemopoietic tissue, vacuolation of renal tubules and reduction in haemopoietic tissue.

KEY WORDS: Manganese, *Garra gotyla gotyla*, Haemosiderin, Melanomacrophage centres.

STANDARDIZATION OF FENUGREEK SEED SUPPLEMENTED SNACK FOR DIABETIC PATIENT

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ABSTRACT

Fenugreek is an important spice in Indian cooking occupies third place in area and fourth in production among all the major seed spices grown in our country. Over 80 per cent of the world's production of this seed is contributed by India and is one of the major producer & exporter of fenugreek in the world (Hooda and Jood, 2002). It is well known for its fiber, gum and other chemical and volatile contents. Its seeds have been reported to contain 25.2 to 30.1 % protein, 7.0 to 9.3 % lipids and substantial amounts of phospholipids, glycolipids, folic acid, linolic acid *etc*. It's seeds can be good supplements to cereals because of its high protein lysine, soluble and insoluble dietary fiber besides being rich in calcium, iron and beta carotene (NIN, 1987). Because of its diosgenin content fenugreek helps in reducing certain effects of menopause and for treating certain reproductive hormonal disorders. The use of fenugreek seeds have been reported very useful in maintaining the blood cholesterol and blood sugar levels (Anju, 2014). Therefore, considering the benefits of fenugreek seeds the present investigation was undertaken to standardize a steamed snack based on pearl millet containing fenugreek seed powder having different treatment like raw, roasted, germinated, germinated & roasted and supplemented with 0, 5,10 and 15 per cent fenugreek seed powder to add variety in the diet of diabetics. The nutritional composition, sensory evaluation and cost of the product were also determined. Supplementation with fenugreek seed powder was found to have no significant affect on energy and crude fat content. However crude protein, crude fiber, total ash, calcium and iron contents were significantly increased due to supplementation. Overall acceptability score of Bajra muthiyan was maximum in product supplemented with raw fenugreek seeds powder. Other processing treatment like, roasting, germination, germination and roasting significantly reduced the overall sensory score. Increase in the level of supplementation of fenugreek seed powder decreased the sensory score but still they were liked very much by the panel members. The cost of Bajra mutthiya control sample was Rs. 2.65/100 g. and it increased to Rs. 2.95/100 g in 15% supplemented fenugreek seed powder Bajra Mutthiya. Thus Bajra Mutthiya supplemented with raw fenugreek seed powder upto 10 % may be recommended as an ideal snack for diabetic patient. At this level of supplementation the product contained 448 Kcal energy, 12.76 % protein, 15.10 % fat, 1.08 % crude fiber, 2.47 % total ash, 44.84 mg/100 g calcium and 8.36 mg/100 g iron.

KEY WORDS: Fenugreek, beta carotene, phospholipids, glycolipids, dietary fiber.

IMPACT OF COVID-19 PANDEMIC ON AGRICULTURE AND ANIMAL WEALTH

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ABSTRACT

Agriculture has continued to be the main stay of Indian economy and nearly 70 % of the Indian population is associated with various agricultural based pursuits. On one hand the population of our country is increasing with every passing day imposing greater pressure on agriculture and on the other hand natural calamities have continued to impede our agriculture production in one way or the other. These unpleasant situations leave major part of the work force i.e farmers associated with agriculture distressed and over the period of time they have started showing reluctance with agriculture and even in some cases have committed suicides as there is a big gap between input and output cost. More so the erratic monsoons coupled with exorbitant cost of fertilizers are also creating stress among the farmers. It is also estimated that as much as one-fifth of the total agricultural output is lost due to difficulties in harvesting, storage of agriculture produce and its transport from one place to another. Recently Covid 19 pandemic has affected every sphere of life and agriculture is no exception to it and the farmers have suffered considerable crop losses on account of harvesting, transportation etc due to non availability of men and machinery. The growing level of concern on account of various advisories issued by government from time which include social distancing, reduced travel, avoiding crowds, closures, and other protective practices to slow the spread of COVID-19, have left consumers making tough choices about food, eating away from home, and overall spending. Concerns about the impact of the virus on the broader economy are likely to have an even larger impact on different agriculture components. As logistics are disrupted and efforts proceed to slow the spread of the virus, multiple connected industry sectors are already being impacted. With some products, "panic buying" is creating additional concern. Farmers are a relatively older population, as compared to the general worker population and their old age has imposed health concern. Even if the general population infection rate remains relatively low, it is likely that we will see some workers who end up sick. But, perhaps more importantly, even if the infection rate stays low, it is likely that workers will need to be out of work particularly with school and other amusements staying closed. Even some workers also need to stay home to care for sick or elderly family members. Owing to very least availability of PPE and other protective equipment vital for operating a farm safely and keeping workers and animals healthy situation gets further worsened. As a result of the current demands by the healthcare industry, N-95 respirator supplies are highly limited. Sparse populations and less frequent travel may provide a natural social distancing for rural communities but there are challenges that may be faced by rural residents. Only time will reveal the severity of the impacts on agriculture from the novel corona virus.

KEYWORDS: Indian economy, agriculture, fertilizer, home, rural farmer.

APPLICATION OF LIGHT BACKSCATTERING IMAGING TECHNIQUE IN QUALITY EVALUATION OF FOOD PRODUCTS

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ABSTRACT
Recent researches in machine vision is being concentrated more toward the ranges of light spectrum that are invisible to the human eye. Light backscattering imaging (LBI) is a developing technique, which uses principles of light backscattering and image processing in visible (VIS) and shortwave near infrared (SWNIR) range of light spectrum. When light or electromagnetic radiation, interacts with the turbid biological tissue, reflectance, absorption or transmittance may occur. Only 4–5% of incident light is reflected by both regular and external diffuse reflectance. The remaining part of the light is passed through the tissue skin and is distributed through the porous space of the tissue. Most of the passing light is reflected by internal contents of biological tissue and scattered toward the exterior tissue surface. Light scattering is a physical phenomenon and depends on the cell size and inter- and extra-cellular properties of tissue matrices. The joint surfaces of the cell wall are the most common cause of backscattering phenomenon in fruits and vegetables.
The applications of LBI can be divided in three categories: fruit quality inspection, postharvest process monitoring, and food quality control. Backscattering mainly detects the internal characteristics of agricultural and food products such as moisture content, firmness, SSC, acidity and the presence of external defects. The main challenge of this technique is to do continuous assessment in real time. However, backscattering imaging proves a high potential to provide a non-destructive low-cost technology with rapid evaluation for predicting the quality of agricultural and food commodities.

KEYWORDS: Image processing, backscattering, Non-destructive and Quality evaluation

EFFECT OF COVID-19 STIMULATED BY $PM_{2.5}$ IN HIGHLY EXPOSURE POPULATION

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ABSTRACT
Epidemiological studies have revealed increased risk for cardiovascular incidents and COVID-19 mortality related to short term and long-term exposure to ambient concentrations of particulate matter exposure. COVID-19 spreads and became a global pandemic after December 2019. Observation shows lower pollution level helped in improving quality of air which is directly having an effect on decline in $PM_{2.5}$. The aim of this study is to assess evidence on effects of cardiovascular disease induced by $PM_{2.5}$ and associated with COVID-19 mortality. The World Health Organization evaluated $PM_{2.5}$ cause approximately 800000 premature deaths in a year and having ranking as 13^{th} main reason of world-wide mortality. However, in comparison to earlier global pandemics, COVID-19 seems to be deadliest pandemics where more than 208 countries were severely affected.

KEYWORDS: COVID-19, $PM_{2.5}$, Pandemic, Cardiovascular disease.

IMPACT OF COVID-19 ON THE SERICULTURE PRODUCTION IN NAGALAND

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ABSTRACT
Like other sectors, Sericulture hold a special position in Nagaland's cultural heritage; sericulture and weaving being a source of livelihood for thousands of families. The crisis caused by COVID-19 has resulted in a sudden disruption of businesses across the globe and the Indian economy is not immune to this pandemic. The Sericulture sectors has also felt and witnessed the effect of the resultant downturn. Consequent upon this, the sericulture sector of the state has also been severely affected with their traditional and contemporary markets for artisans being totally closed. Prime hurdles that COVID-19 has caused disruption of the supply of the feed to the silkworm during its peak period resulting death of the worms. The cocoon buyers are not in a position to place orders which are planned much in advance as usual lead time required to complete a production cycle. Retail events through which artisans get cash sales may not happen for next few months. Market of the summer season when silk handlooms sell most will be entirely lost by the time things get back to normal. This not only will create a liquidity crunch, but also severely impact their ability to invest in yarns for creating products for festive seasons (August to November) and winter, spring (October and to February) which are the other 2 major selling seasons for handloom textiles.

KEY WORDS: Covid-19 pandemic, sericulture, production, Nagaland.

HOW TO STABLE YOUR MIND IN PANDEMIC COVID -19

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ABSTRACT
The economic effects and effects on daily life, as well as delays in academic activities were positively associated with anxiety. Social distancing and physical isolation produces acute stress, irritability in behaviours. The government implemented much public awareness. The meditation works positively during this time (COVID -19).

KEYWORDS: COVID-19, isolation, meditation

COVID-19 PANDEMIC: A MESSAGE FROM NATURE TO MANKIND

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ABSTRACT
The world is fighting a war against covid-19 pandemic. There has been effect on life and health of man over the globe. It has also created an opportunity for the scientists, for studying how humans are interacting and influencing the environment on a global scale. The pandemic is warning us to mend our strained relationship with nature. For decades our environmental activists have been trying to draw the world's attention towards rapid deforestation, urbanization and its effects on environment and society. The pandemic has caused huge loss of economy all over the world, which is less than the expenses that would be for protecting our nature from destruction. Huge losses have been due to transmission of diseases from wild animals to humans either directly or by contact with livestock, being eaten by humans in the past also and due to the habitat destruction of livestock. Timely actions need to be taken in the direction, before another pandemic comes. Some of the environmental quality parameters like Air quality index and Water quality parameters may seem to have improved due to lockdowns in the countries and decrease in production, but the situations will actually improve when the real balance is maintained in the near future. It's time to listen to the nature's voice, at the earliest for the safety of life on earth. How long lasting impact Covid-19 will have on the Environmental and ecological conditions of the globe will be more clear in the near future.

KEYWORDS: covid-19, pandemic, humans, interacting, environment.

AUTOMATED CONTROLLED COOLING TECHNIQUE FOR QUALITY IMPROVEMENT IN FERMENTED DAIRY PRODUCTS

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ABSTRACT
Dahi is the rich source of high quality fat, protein, vitamins and minerals like calcium and phosphorus as well as one of the most widely used indigenous dairy product. In India about seven percent of the total milk produced is used for dahi preparation. The transient cooling process of dahi was conducted in this experimentation process, to counter the problem of wheying-off in set-curd which occurs very often as and when they are shaken or vibrated during the transportation from the incubation room to the cold room for storage, since they got the mechanical disturbances in the shifting process. Recording of temperature of dahi-cups and cooling the supplied air were done at regular intervals of five minute until the temperature reached below 4 to 5 ^{0}C. The velocity of air in higher range was applied in forced cooling which is useful in reducing the overall cooling duration and also made it economical. Therefore, it can be concluded that to control the whey-off in set-curd, which is the main culprit of its poor texture and taste, it is required to incubate and store the dahi container/cups at the same place and change the temperature of dahi-cups after setting the curd. In the local markets, significant amount of dahi is produced mainly by local manufacturers at sweets shops and small and medium scale dairy farmers.

KEY WORDS: fat, protein, vitamins, minerals, dahi, dairy farmers.

IMPORTANCE OF LOW FAT FIBER ENRICHED PANEER IN DAY TO DAY LIFE

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ABSTRACT

Paneer (Cottage Cheese**)** also known as chenna, is a non-fermented cheese made from milk. Basically it is a fresh milk cheese, where the milk is coagulated with an acidic agent like lemon juice, curd, citric acid and vinegar. The whey is removed and the coagulated paneer is allowed to set for some time. Paneer is a popular indigenous dairy product of India and is similar to unripened soft cheese. It is used as a base material for the preparation of large number of culinary dishes and it is a popular food product at a household level. Paneer is marble white in appearance. According to PFA (1954)"Paneer means product obtained from cow or buffalo milk or combination thereof, by precipitation with sour milk, lactic acid or citric acid". Paneer has a fairly high level of fat, moisture, protein and low level of lactose and minerals. It contains approximately 53 to 55 per-cent moisture, 23 to 26 per-cent fats, 17 to 18 per-cent protein, 2 to 2.5 percent carbohydrate and 1.5 to 2.0 per-cent minerals (Kanawjia and Singh, 2000). Paneer is a rich source of animal protein available at a comparatively lower cost and form an important source of animal protein for vegetarians. Over and above its high protein content and digestibility, the biological value of protein in the paneer is in the range of 80-86 percent (Shrivastava and Goyal 2007). Whey is a valuable by-product obtained during manufacture of paneer. It contains precious nutrients like lactose, whey protein, minerals and vitamins. Paneer can be easily manufactured using locally available coagulants at household level.

Paneer (cottage cheese) has been reported to have many health benefits like it helps to regulate blood sugar level. It is rich in magnesium which can ensure better heart health and immune system. The high contentof protein in the paneer helps in slow release of sugars into the blood and prevents abrupt hike and decline in the blood sugar levels. Paneer contains potassium which plays an important role in maintaining fluid balance in the body and also helps to minimize the effect of excess sodium on our heart. The conventional paneer is quiet rich in fat content, which not only pushes up the price of the paneer but also makes it unsuitable to those consumers who are conscious of high fat as milk fat increases the risk of coronary heart diseases, obesity and hypertension etc.

Health conscious people generally do not like to consume conventional paneer because of its high fat content. Paneer is the first choice of vegetarians as a source of good quality protein but due to high amount of fat it is recommended to be used only in limited amounts by people suffering from diabeties, hypertension, and coronary heart diseases and obesity. Fibre intake provides many health benefits. A generous intake of dietary fibre has been reported to reduce the risk of developing the diseases like coronary heart disease(Liu et al.,1999), hypertension (Whelton *et al*., 2005), diabetes(Montonen et al.2003), obesity (Lairon et al., 2005) and certain gastrointestinal diseases(Petruzziello et al.,2006). The increased consumption of dietary fibre has been reported to improve serum lipid concentration (Brown et al.,1999), lower blood pressure(Keenan et al. 2002), improve blood glucose control in diabetes(Adderson,2004), aids in weight loss (Birketvedt et al.,2005) and to improve immune function (Watzlet al.,2005). With increase in the awareness about the health risks associated with consumption of dietary fat and cholesterol intake, there is an increased demand of fibre enriched low fat or non-fat products. The fiber besides improving the textural and sensory properties of low fat paneer improves the bowl movement and reduce the chancescolorectalcancer.

KEYWORDS: Cottage Cheese, health risks, sour milk, lactic acid, citric acid.

POTENTIAL EXPLOITATION OF DNA-BARCODING FOR IDENTIFICATION OF ANIMAL HOSTS OF CORONA VIRUSES TO FACILITATE BETTER UNDERSTANDING OF THEIR PATHOGENICITY IN MAMMALIAN SPECIES

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ABSTRACT

Corona viruses are group of RNA viruses causing series of respiratory complications in humans, they are primarily found in bats and has potential to be infectious in other mammals including. While some of its primary host has been reported, but there is need to identify its intermediate animal reservoirs transmitting the viruses from animals to human beings. Therefore, identifying these animals remains focal point suitable for overcoming the current pandemic as it could give clues on breaking the chain of their transmission. The use of DNA barcoding as a non-invasive method will enable identification of numerous wildlife and domestic livestock which could be essential for the understanding of the potential host-pathogen interactions of corona and other viruses. This paper presents an overview of the DNA-barcoding and a generic protocol that could be suitable for its use in Tropical wildlife and domestic animals with a view to understand pathogenicity of the viruses in mammalian species.

KEYWORDS: Corona virus, Mammals, DNA-barcoding, Pathogenicity

THE IMMUNE SYSTEM OF ECONOMICALLY AND SOCIALLY BACKWARD SECTOR OF CHILDREN WAS IMPROVED WITH CHEAP AND LOCALLY GROWN QUALITY PROTEIN BASED SUPPLEMENTARY FOOD: BEST MANAGEMENT PRACTICES CONDUCTED BY KVK, MUZAFFARPUR, DURING LOCKDOWN PERIOD OF COVID-19

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ABSTRCT

During COVID-19, it was instructed by medical team at central level that specially childrenand older people have to take more care due to their weak immune system. Keeping thisinstruction in mind KVK Saraiya initiated a step to boost the immune system of growingchildren specially of economically and socially backward class by providing training forformulation of HEALTH MIX by locally available cheap and nutritionally rich food sources.For this purpose Basochak village under Saraiya block was selected in which more than 50percent population are of schedule cast and under the low income group. This is one of theadopted village by KVK, Saraiya.So, Quality Protein maize based supplementary food (along with green gram, sesame,sugar and milk powder) was demonstrated among the mothers having younger children.Nineteen children of age group 6 months to 3 years were already benefitted by QPM basedsupplementary foods under OFT programme so it was easy to convinced other mothers alsobecause they have already seen the good result of QPM based health mix. The otheradvantage of this mix was – it can be consume in semi liquid form, solid form or addingdifferent taste by preparing ready to eat local dishes as sweet cheela, Halwa, Biscuits,Mathary etc. The vitamin A and Vitamin C of this health mix was improved by addition ofgreen leafy vegetable extract during feeding. In such way KVK, Saraiya involved inminimizing the effect of COVID - 19 among children

KEYWORDS: COVID-19, Health Mix, QPM

HYDROPONIC FOOD PRODUCTION SYSTEM: AN ANSWER TO FOOD INSECURITY IN COVID-19 PANDEMIC

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ABSTRACT

COVID-19 (corona virus disease of 2019) that is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and has been declared as global pandemic by WHO on March 11, 2020. It is considered as the most serious crisis since the Second World War. As living beings, we rely on food and water for basic survival. Access to an adequate supply of food is most basic need and right of the human being. The food we consume and the environment in which we eat needs to be of the highest quality in terms of hygiene. However, the crisis of CVID-19 has resulted sudden rise in food insecurity (*i.e.* the state of being without consistent access to a sufficient quantity of affordable and nutritious food) at national as well as Global level. Food security is not only the moral duty of Governments but it is also in their economic and political interest of the country. Hungry people cannot work while hungry children cannot learn. In addition, nutritious foods also boost our immunity system to fight against various diseases including COVID – 19. These facts necessitated to eat healthier and nutritious food and lead to Initiatives like "Eat Right and Smart Food". As such we need to ensure that our food should safe, accessible and affordable to all. Hydroponic food production system is an input efficient and capital intensive technology which provide maximum yield for improving food security and to cater the ever increasing demand of food in the present day world by using advanced agricultural technology. In this system, instead of soil, plants grow in a soilless medium. Examples of such mediums include Rockwool, coconut fibre, or other comparative choices. The hydroponic system of food production has added benefits of controlling and managing pH, CO_2, heat, air movement, nutrients supply, water needs, temperature and lighting scheme and help farmers boost production of their crops. It is not otherwise easy to handle such parameters in traditional farming. These artificially managed growing environment of hydroponic garden systems allow farmers to grow produce smarter and more efficiently. Some of these systems also come with the added advantage of growing vertically, which further minimize the footprint required to grow produce, while maximizing crop yields. In addition to enhanced yield and quality of food commodities, hydroponic system also offers less water, efficient supply of nutrients, no limitation of space or location, least use of pesticide and herbicide, environment-friendly and minimum post-harvest losses.

KEYWORDS: COVID-19, hydroponics, food quality, nutritional security

SCREENING OF FRUIT PEEL EXTRACT AS PHYTOCHEMICAL, ANTIBACTERIAL & ANTIOXIDANT

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ABSTRACT

In India several fruit and fruit wastes like peel have been a valuable source for maintaining human health. The use of fruit peels extracts for antimicrobial properties can be of great significance in therapeutic treatments. The dried powdered peel extract with in various solvent 2 polar and 2 non polar like methanol, ethanol, chloroform and hexane and their phytochemicals revealed the potency of methanol and ethanol extract being a rich source of extracting the Phytochemical for their antibacterial activity of Pomegranate peels, banana peels, custard apple Peels, sweet lime peels, Pine-apple leaves and corn husk. The antibacterial effect of methanol and ethanol extract of Pomegranate peels, sweet lime peels and banana peels against the bacteria 1 Gram-positive and 2 Gram-negative bacteria including *Escherichia coli*, *Bacillus subtilis* and *Pseudomonas aeruginosa* are carried out by the well-agar diffusion method. The methanol and ethanol extract of Pomegranate peels, sweet lime peels and banana peels showed a various inhibitory effect against various microbial isolates. Highest inhibitory effect against both *Escherichia coli*, *Bacillus subtilis* and *Pseudomonas aeruginosa* methanol and ethanol extracts of Pomegranate peels, sweet lime peels banana peels could be considered as a good antibacterial agent against both Gram positive and negative bacteria to replace the synthetic medicines in treatment of diseases caused by these bacteria. The Phytochemical test and antioxidant activity of sweet lime peels and banana peels are good source of bioactive compound.

KEY WORDS: Antimicrobial, Antioxidant, Phytochemical, Therapeutic Treatment

CODON USAGE PATTERN ANALYSIS AND COMPOSITIONAL FRAMEWORK OF HUMAN BOCAVIRUS 3 AND ITS ADAPTATION TO HUMAN HOST

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ABSTRACT

The usage of synonymous codons in coding sequences that translate to protein molecules is biased in nature and each gene has an unique pattern of synonymous codon usage that is framed by evolutionary forces and DNA compositional factors namely, base content, nucleotide skew properties, gene length and protein properties. In the present analysis, codon usage strategies of Human bocavirus 3 was analyzed and compared with its host human genes, as no work was yet reported. The magnitude of synonymous codon usage bias (CUB) in the virus was low with higher proportion of the base A. Notably, 13 more frequently used codons, 10 less frequently used codons and 4 underrepresented codons (TCG, CCG, CGT and GCG) were found to be similar in both virus and its host. Correspondence analysis depicted the variation in codon distribution across the genes. Neutrality plot analysis reported greater role of natural selection 98.4% over mutational pressure 1.61%. Base skewness and protein properties also influenced the CUB of genes. Further, codon usage analysis depicted, virus and its host had many similarities in codon usage patterns that might reflect viral adaptive features.

KEYWORDS: Human bocavirus 3, synonymous codons, nucleotide.

SCREENING OF VARIOUS BIVOLTINE HYBRIDS OF SILKWORM BOMBYX MORI L. FOR DISEASE SUSCEPTIBILITY DURING MONSOON SEASON IN UTTAR PRADESH

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ABSTRACT
Bombyx mori has long been reared as a beneficial insect in the sericulture industry and as an experimental laboratory insect. In tropical countries like India, grasserie, (BmNPV) spreads by the occultation bodies (OBs) in the blood cell of infected silkworm, usually high temperature and humidity prevalent in tropical regions is conductive to proliferation of polyhedrosis disease. It is known to occur in all larval instars during all seasons causing 20-50% cocoon crop losses in India. In the present study, four promising bivoltine hybrids will be screened for their susceptibility to BmNPV and BmIFV, Muscardine and other diseases and the susceptibility status has been compared across monsoon season of Uttar Pradesh. This will help in selecting most promising race for monsoon season of which will be least susceptibility to different Silkworm diseases Viz., Grasserie, Bacterial flacherie, Muscardine and % other diseases (DNV, CPV, IFV, Sotto disease) and farmer will face less difficulty during silkworm rearing and will have no fear of attack of diseases. It will lead to further adoption and spread of Sericulture in other districts of Uttar Pradesh.

KEY WORDS: Grasserie, Flacherie, Susceptibility, Muscardine and % other diseases (DNV, CPV, IFV, Sotto disease) breeds.

IMPACT OF COVID-19 PANDEMIC ON FISHERIES, POULTRY AND DAIRY

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ABSTRACT
In fisheries the implication can vary with restriction in transportation, border clouser and reduced demand in restaurants can generate significant market changes. The lockdowon has drastically reduced milk sales. People are hesitant to buy food items from shop due to covid-19. Due to rumours spreading that eggs and chicken are responcible for spreading covid -19 causing huge losses to poultry farmers.
The scenario appears bleak with covid-19 sprading around the globe. There are fears of food supplies beginning to run short. As a consequence of lost income from lockdown and other restrictions, there will be serious threats to proper communities access to food. The world needs solution.

KEYWORDS: Fisheries, Chicken, Food, Covid

FRONTIER ROLES OF ANTIOXIDANTS AGAINST HUMAN HEALTH HAZARDS: A REVIEW

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ABSTRACT
Antioxidants play a frontier role in combating with multifaceted health problems. They are the naturally occurring scavengers which reduce cell damage resulting from oxidative stress initiated by free radicals. They are water soluble or hydrophilic chemical compounds and are active in the blood plasma to protect the cell membranes. Antioxidants, such as, vitamin A, E, lycopene, lutein etc. fight against free radicals by donating electrons to protect living cells, DNA and proteins and results in a deceleration in the aging process. The imbalance between the concentration of free radicals and the antioxidant defense in our body causes oxidative stress. Antioxidants decrease the oxidative stress directly by reacting and by arresting free radicals generated through various intracellular enzymatic activities. Antioxidants play a significant role to prevent food stuffs from degradation resulting from prolonged exposure of oxygen as well as sunlight and thus are used as efficient food preservatives nowadays. Antioxidants are also used in industrial products as stabilizers in fuels and lubricants to prevent oxidation. Besides this, antioxidants are used as supplements in pharmaceutical products. Thus antioxidants turn out to be crucial to maintain our optimum health and well being. On the contrary, recent studies reveal that usage of antioxidants at higher concentrations can have potential threat to human health, like, heart diseases and serious skin problems. In present situation it is very relevant to improve the immunity of human body. In this present review, we focus on the versatile role and corresponding impacts of antioxidants on human health.

KEYWORDS: Types of antioxidants, Oxidative stress and free radicals, Prevention of diseases

EFFECT OF DIETARY MULBERRY SILKWORM (Bombyx mori L) PUPAE AND EXCRETA MEAL ON GROWTH PERFORMANCE OF KRUILOR BIRDS

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ABSTRACT
A total of 210, day- old Kruilor chicks were fed ad libitum from 8th to 42nd days of their age on Five isonitrogeneous and isoenergetic diets formulated by replacing dietary fishmeal (FM) with Silkworm pupae (SWP) and silkworm excreta (SWE) up to 42 days of age .Five Treatment diets ; T_1(10% FM), T_2(6% FM + 4%SWPM), T_3 (6% FM + 4% SWEM), T_4 (4% FM + 6% SWPM), T_5 (4% FM + 6% SWEM), were fed to observe the effect of dietary SWPM and SWEM on performance. The result showed that the waste silk reeling industry i.e. silk worm pupae meal (SWPM) has potential to replace the costly and contaminated fish meal, as the protein source, used in poultry industry.

KEYWORDS: Fish meal, Silkworm pupae, silkworm excreta and Kruilor

A RARE CASE OF CANINE DEMODICOSIS CAUSED BY SHORT-BODIED DEMODEX MITE (*DEMODEX CORNEI)* IN JAIPUR, RAJASTHAN

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ABSTRACT

Ectoparasites are important cause of pruritic and non-pruritic skin disorders in dogs and can cause hypersensitivity or death depending on the host nutritional and immunological condition and intensity of parasitic infestation. Canine demodicosis caused by mites in the genus *Demodex* is a major and common ectoparasitic disease of dogs. In this report, a case of Canine demodicosis is discussed. A white pomeranian female dog aged between 9 and 10 months was presented to the Veterinary Clinical Complex, PGIVER, Jaipur with a history of depression, anorexia, chronic dermatitis associated with pruritus. Upon clinical examination, dogs exhibited papules, pustules, erythema ,alopecia and scaling on the ventral aspects of the chest, all four limbs, the ventral aspect of the neck and around the eyes, erosions, lichenification and cellulitis. Distribution of lesions observed on face, around the eyes and ears, chin region, fore and hind limbs, neck and lateral abdomen. Skin scrapings and tape impression smears were collected from the lesions of affected dog for laboratory examination. By using tape impression smears examination large number of adult short-tail *Demodex* mites were found. *Demodex cornei* was identified by based on the morphological characters including short opisthosoma with blind and round terminal end. Dog was treated with daily oral ivermectin @ 500 µg/kg/day, external application of amitraz along with supportive therapy. After six weeks of treatment dog was recovered completely without any side effects.

KEYWORDS : Ectoparasites,Canine Demodicosis, *Demodex cornei*, ivermectin

IMPACT OF LOCKDOWN DURING COVID 19 PANDEMIC ON FISHERIES AND AQUACULTURE SECTOR OF NE REGION OF INDIA WITH SPECIAL REFERENCE TO ASSAM

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ABSTRACT

The North East Region of India, comprising of eight land locked states, is known for magnificent natural beauty, splendid natural wealth, rich biodiversity and enormous industrial potential. With a total population of 457,72,188 (Census 2011) comprising of around 220 ethnic communities, the region however portrays a paradoxical picture of low socio-economic condition amidst plenty of resources. Agriculture and allied activities including fisheries and aquaculture is the major economic activity of the states of the region. The region is blessed with suitable agro-climatic condition, vast and varied freshwater resources with rich fish biodiversity and ethnic population comprising of 90-100 percent fish eaters. The state of Assam has the distinction of having highest potential water area and of being the highest fish producer in the region. Horizontal and vertical growth of aquaculture through implementation of several developmental scheme including the Blue Revolution Mission has resulted in steady growth of fish production in the state during the last decade, marching towards achieving the goal of self sufficiency as well as emerging as the 'feeder state' for the whole region.

The lockdown imposed to control spread of Covid-19 pandemic from 25th March, 2020, has tremendous impact not only on different activities related to the fisheries and aquaculture sector resulting in livelihood crisis for fish farmers, fishers and retailers but also on day-to-day essential nutrition for the fish loving population of the region. Homestead small scale fish farming and fish farming with sustainable low cost technology is the effective option to cope with the kind of crisis brought by the lockdown situation in the region. This paper discusses the impact of the lockdown on different aspects vis a vis way forward to face the challenges and consequences of the impact of Covid 19 pandemic on the sector.

KEYWORDS: Covid 19, Pandemic, NE Region, impact, aquaculture, livelihood, nutrition, sustainable, way forward.

ACUTE BOVINE TROPICAL THEILERIOSIS – A CASE REPORT

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ABSTRACT

Hemoparasitic diseases are causing devastating losses to the livestock industry and thus pose major constraints to the dairy industry throughout the world . Bovine tropical theileriosis is an important haemoprotozoan disease of bovines , caused by *Theileria* annulata and transmitted by different species of *Hyalomma* ticks . It has serious economic impact in view of mortality, reduced milk yield, weight losses, abortions, and control costs associated with the disease. In present report, a case of acute bovine tropical theileriosis is discussed in a cattle with the objective of early diagnosis of Theileriosis infection on the basis of clinical findings collaborating with haematological alterations and presence of *Theileria* spp. parasite in the blood smear. A cattle was presented to the Veterinary Clinical Complex, PGIVER, Jaipur, exhibited prominent clinical signs like elevated body temperature, pale mucous membrane, presence of ticks on body of animal, anemia and mild enlargement of superficial lymph nodes. The blood sample was collected with EDTA vial from the same cattle . Confirmation of theileriosis was done by peripheral blood smear examination by Giemsa's staining method..On microscopic examination of blood smear, several piroplasms were noticed within the erythrocytes and schizonts in lymphocytes. The peripheral blood smear revealed higher parasitaemia. The cattle was treated with diminazine aceturate @5mg/kg, IM 2 doses on alternate day and oxytetracycline @ 20mg/kg, IV once daily for 5 consecutive days.along with supportive therapy .The cattle was successfully recovered after one week of treatment.

KEYWORDS : Bovine tropical theileriosis, Ticks, blood smear, diminazine aceturate.

AN IMPACT ANALYSIS OF COVID-19 ON PROFITABILITY OF SERICULTURE IN KARNATAKA

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ABSTRACT

The ongoing health crisis from the pandemic COVID19 has affected all the walks of human life. The nationwide lockdown was imposed to save the billions of lives. The lockdown from the viewpoint of economic growth and development has severe repercussions. All the sectors in the economy are hard hit by COVID-19 and sericulture is not an exception to this. In this connection, the study was attempted to assess the economic impact of COVID-19 on profitability of sericulture enterprise in Karnataka state. The primary data on mulberry cultivation and silkworm rearing were elicited from the sample farmers chosen randomly from major sericultural districts of Karnataka. Semi-structured schedule was used to collect the data over tele-conference discussion and secondary data on cocoon arrivals and prices of Ramanagara Market was also collected for the period January 2018-July 2020. The results from data analysis revealed that the expenditure on mulberry sericulture has remained same during pre-COVID-19 and COVID-19 periods while the gross returns accrued during the respective periods have exhibited drastic variation. It was because of drastic fall in price of mulberry cocoon from the reelers due to lock down. As a result, farmers have incurred double loss *i.e.,* they have not recovered cost of production of Rs. 29,066.50 and forgone the opportunity of getting usual net returns of Rs.18, 933.00 per crop of 150 dfls. Based on quantum of loss, the Governement of Karnataka should rescue the sericulture farmers through announcement of reasonable relief/ compensation which helps them to come out from COVID-19 shock.

KEYWORDS: COVID-19, Cocoons, Impact, Mulberry Sericulture, Prices, Market

LACTIC ACID BACTERIA AS BIOTECHNOLOGICAL TOOLS: ASSESSMENT OF PROBIOTIC ATTRIBUTES OF LACTIC ACID BACTERIAL ISOLATES FROM FERMENTED VADA BATTER

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ABSTRACT

Lactic acid bacteria (LAB) are a group of Gram positive, microaerophilic, nonspore forming rods or cocci which play a prominent role in the global food sector through the main bioconversions in the production of fermented dairy products, meats, and vegetables. They are also well recognized for their therapeutic potentials and are widely used in the form of probiotics. As exploration of LAB present from different niches can lead to the isolation of unique species or strains with relevant technological properties this study attempted to assess the probiotic properties of lactic acid bacterial isolates obtained from fermented vada batter. The isolates identified as *Lactococcus lactis (NCBI accession number* MN153524) and *Weissella confusa (NCBI accession number* MN153519) were studied for their tolerance to low pH, hydrogen peroxide, bile salt, hemolytic activity, adherence properties, antibiotic sensitivity and antimicrobial activity.One of the isolates namely *Lactococcus lactis* (MN153524) exhibited good adhesion properties and was found to be capable of tolerating low pH conditions (pH 3). Both the isolates were found to be nonhaemolytic and incapable of surviving in 0.3% bile salt condition. On assessing their antibiotic sensitivity *Lactococcus lactis* was found to be resistant to streptomycin whereas *Weissella confusa* was found to be resistant to streptomycin and vancomycin. Both the isolates exhibited antimicrobial activity against *E.coli* and *S. aureus.* The data generated could be effectively made use for further investigation and development of this *Lactococcus lactis* isolate as a potential probiotic in foods adding up to the ever growing pool of biotechnological interventions towards ensuring food security.

KEYWORDS: LAB, Gram positive, hemolytic activity, *Weissella confuse.*

STUDY ON GROWTH PERFORMANCE OF BLACK BENGAL KIDS THROUGH FEEDING OF HYDROPONIC MAIZE GREEN FODDER

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ABSTRACT
Goat farming is an important occupation as it sustains livelihood security of the farmers through commercial goat farming at presently. Black Bengal goat is the important breed of eastern region of India and famous for its meat and leather quality but poor in growth & survivality. Therefore, A study was conducted to know the growth performance of Black Bengal kids through feeding of hydroponic green maize fodder under intensive based –rearing system in Goat Research Farm, Animal Production Research Institute (APRI), Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur (Bihar). For this study 20 Black Bengal kids were used as experimental animals .The kids were feed with hydroponic maize green fodder adlibitum on 30^{th} days onward with maintaining the standard managemental practices. The average birth weight of Black Bengal kids was 1.42±0.17.The average body weight at 30^{th}, 60^{th}, 90^{th} ,120^{th} &180^{th} days was recorded 3.13±0.19, 4.91±0.22, 7.55 ±0.24, 9.12±0.29 & 12.54 ±0.43 kg respectively. The average daily weight gain(growth rate) of Black Bengal kids was recorded 65gm/day throughout the study with maintaining good health. It was concluded that hydroponic green fodder may have profitable application in intensive large scale Black Bengal goat farming with high value outputs, where no lands are available for grazing & produce green fodder and alternate feed costs are high.

KEYWORDS: Black Bengal kids, birth weight, growth rate, survivality, hydroponic maize fodder.

IMPACT OF URBANIZATION ON AVAIN COMMUNITY STRUCTURE IN INDIA: A REVIEW

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ABSTRACT
Urbanization contributes to the loss of the world's biodiversity and the homogenization of its biota. Urban avian communities have typically reduced species richness, while the density of a few successful species is often higher in cities than in adjacent more natural habitats. The major difference is the conversion of the land, from natural green areas to anthropogenic structures and impervious surfaces. To survive in the urban habitat, birds are forced to either accept or avoid the new conditions. In addition, the urban sprawl has led to a highly fragmented landscape, with islets of suitable bird habitat surrounded by highways and buildings that frequently act as barriers, to birds. These altered conditions have changed the avifauna intensely, with many species disappearing once an area is urbanized, thus resulting in a significant loss of local biodiversity. In a slight majority of studies, bird density increased, but richness and evenness decreased in response to urbanization. But it is less understood which mechanisms generate and uphold these community-level changes. In this review we discuss the most important components of the urban environment influencing birds' community structure and compile several recent studies to illustrate their effects.

KEYWORDS: Avian Community, Species Richness, Urbanization, Homogenization.

PLANT PARASITIC NEMATODES ASSOCIATED WITH MENTHA CROP FIELDS OF RAMPUR

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ABSTRACT

India being a second most populous country of the world contribution 17.5% of global population. But the production is not surplus to feed the massive population. There are many biotic and abiotic factors contributing for the loss and hindrance of the crops. One of the reasons, in this loss of yield may be due to a variety of genera of nematodes attacking crops. Nematodes alone or in combination with other soil microorganisms have been found to attack almost every part of the plant including roots, stems, leaves, fruits and seeds. Most species attack and feed on plant roots and underground plant parts by the help of specialized needle like structure called stylet.

Menthol mint (*Mentha arvensis* L.), an imperative aromatic herb which is broadly cultivated for its essential oils and is a impending source of terpenes, menthyl acetate, menthone and natural menthol. Different constituents of menthol mint oil are extensively used in pharmaceutical, perfumery in which around (40–90%) is an ingredient of many cosmetics, some perfumes and food all over the world. Mint was originally used as a medicinal herb to treat stomach ache and chest pains. There are several uses in traditional medicine and preliminary research for possible use in treating irritable bowel syndrome.

Keeping in view, Rampur district of Uttar Pradesh was systematically investigated to evaluate the plant parasitic nematode community associated with mentha crop fields *Tylenchohynchus,Eudorylaimus Eucephalobus,Cephalobus, Dorylaimus, Aphelenchus, Aporcellaimus* were found associated with menthe *crop.* . The findings of this study will help in planning the control measures in order to increase the profit margins of mentha growers

KEYWORDS: Mentha, Plant parasitic nematodes, District Rampur.

STUDY ON GROWTH PERFORMANCE OF BLACK BENGAL KIDS THROUGH FEEDING OF HYDROPONIC MAIZE GREEN FODDER

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ABSTRACT
Goat farming is an important occupation as it sustains livelihood security of the farmers through commercial goat farming at presently. Black Bengal goat is the important breed of eastern region of India and famous for its meat and leather quality but poor in growth & survivality. Therefore, A study was conducted to know the growth performance of Black Bengal kids through feeding of hydroponic green maize fodder under intensive based –rearing system in Goat Research Farm, Animal Production Research Institute (APRI), Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur (Bihar). For this study 20 Black Bengal kids were used as experimental animals .The kids were feed with hydroponic maize green fodder adlibitum on 30^{th} days onward with maintaining the standard managemental practices. The average birth weight of Black Bengal kids was 1.42±0.17.The average body weight at 30^{th}, 60^{th}, 90^{th} ,120^{th} &180^{th} days was recorded 3.13±0.19, 4.91±0.22, 7.55 ±0.24, 9.12±0.29 & 12.54 ±0.43 kg respectively. The average daily weight gain(growth rate) of Black Bengal kids was recorded 65gm/day throughout the study with maintaining good health. It was concluded that hydroponic green fodder may have profitable application in intensive large scale Black Bengal goat farming with high value outputs, where no lands are available for grazing & produce green fodder and alternate feed costs are high.

KEYWORDS: Black Bengal kids, birth weight, growth rate, survivality, hydroponic maize fodder.

IMPACT OF ENVIRONMENTAL CONTAMINATION ON FISH: A SHORT REVIEW

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ABSTRACT
Environmental pollution has a very huge impact on fish diversity. Most of the environmental contaminants such as pesticides (herbicides, fungicides and insecticides), heavy metals (Mercury, Copper, Zinc, Cadmium) and anthropogenic activities affect the fish fauna in various ways. The environmental contaminations mostly affect the larval and fingerling stages of fishes. The organs such as gills, kidneys and liver of fishes are affected by heavy metals and pesticides. The alteration caused in the histopathological of these vital organs could affect the reproductive behaviour, osmoregulation and survival rate. The environmental contaminants elevate through the food chain and the fish species are badly affected as the fishes being the top consumer in the aquatic habitats. The environmental pollution also affects the physicochemical characteristics of the water, causes poisoning, diseases and even death to the fishes. So, in order to avoid the effects of heavy metal and pesticides pollution effluents discharged from the industries and other sources should be properly treated. Also, there should be the enforcement of laws and legislation regarding the protection of aquatic ecosystems must be taken into consideration.

KEYWORDS: Environmental Contamination, Heavy metals, Pesticides, Histopathology

LIVESTOCK MANAGEMENT AMID COVID-19 PANDEMIC

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ABSTRACT
COVID-19 has a substantial impact on many sectors at global, regional and national levels, including the livestock sector. It is an infectious disease of humans caused by a newly discovered virus (SARS-CoV-2). For the first time in December 2019, human cases of pneumonia were reported in Wuhan City, Hubei Province of China due to the infection of this virus. Many actions have been taken in different countries such as lockdown, travel restrictions and border control to check the spread of virus. However, this has resulted in unintended or negative consequences on the livestock sector. Reduced access to animal feeds, hampered inputs and services, compromised processing capacity, shrunken market and modified sales and consumption are various reasons causing a challenging impact on the growth of livestock sector. The farmers are uncertain about management of livestock actions because of consumers fear on consumption of non-vegetarian foods due to fake rumors, resulted in declined demand of livestock commodities all over India. Furthermore, people engaged in medication, veterinary services and management of animal husbandry, fisheries and poultry are likely to be affected the most due to lockdown. Implementation of practical bio-safety and security measures, including routine cleaning and disinfecting barns, pens, rooms, and other facilities to reduce the pathogen loads is the need of hour in present scenario to bring the faith of consumers back towards livestock and their products. Government is also continuously trying to ensure minimum losses to the farmers and special steps are undertaken to fight against the socio economic implications of lockdown on agribusiness and livestock sector by launching various schemes under Atam Nirbhar Yojna 2020. Such initiatives will definitely play an immense role in overall enhancement of socio economic status of farmers, and allied sectors in terms of employability, efficiency, health, and well-being of mankind.

KEYWORDS: SARS-CoV-2, livestock commodities, Atam Nirbhar Yojna.

THE ROLE OF NANOPARTICLES IN TREATING AND DIAGNOSING THE OUTBREAK COVID-19

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ABSTRACT
The ongoing outbreak COVID-19, a respiratory disease caused by the SARS-CoV-2 virus, declared a pandemic disease by the World Health Organization (WHO) in March 26th, 2020. The COVID-19 that found in Wuhan, China, has constituted a Public Health Emergency of International Concern, with cases confirmed in multiple countries. It is spread by human-to-human transmission via droplets or direct contact, and infection has been estimated to have mean incubation period of 6.4 days and a basic reproduction number of 2.24–3.58. The primary cause of SARS-CoV-2 mortality is acute respiratory distress syndrome initiated by epithelial infection and alveolar macrophage activation in the lungs. The computed tomography scanning and reverse transcription polymerization chain reactions (RT-PCR) are used to diagnose COVID-19. The nanotechnology intervention is discussed in terms of designing effective nanocarriers to counter the conventional limitations of antiviral and biological therapeutics. Due to high rate of mortality and rapid global transmission of corona viruses, this review discussed the use of nano-sized materials for detection and antiviral activity against COVID-19. The nanoparticles also play the role in diagnosing and develop drug against COVID-19.

KEYWORDS: SARS-CoV-2, WHO, RT-PCR, nanocarriers.

IMPACT OF ENVIRONMENTAL CONTAMINATION ON FISH: A SHORT REVIEW

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ABSTRACT
Environmental pollution has a very huge impact on fish diversity. Most of the environmental contaminants such as pesticides (herbicides, fungicides and insecticides), heavy metals (Mercury, Copper, Zinc, Cadmium) and anthropogenic activities affect the fish fauna in various ways. The environmental contaminations mostly affect the larval and fingerling stages of fishes. The organs such as gills, kidneys and liver of fishes are affected by heavy metals and pesticides. The alteration caused in the histopathological of these vital organs could affect the reproductive behaviour, osmoregulation and survival rate. The environmental contaminants elevate through the food chain and the fish species are badly affected as the fishes being the top consumer in the aquatic habitats. The environmental pollution also affects the physicochemical characteristics of the water, causes poisoning, diseases and even death to the fishes. So, in order to avoid the effects of heavy metal and pesticides pollution effluents discharged from the industries and other sources should be properly treated. Also, there should be the enforcement of laws and legislation regarding the protection of aquatic ecosystems must be taken into consideration.

KEYWORDS: Environmental Contamination, Heavy metals, Pesticides, Histopathology

SEASONAL EFFECT ON SEX AND BIRTH WEIGHT OF FRIESWAL CALVES IN KERALA

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ABSTRACT

Season plays an important role in the productive and reproductive life of cattle. Even though, the seasonal influence on sex and birth weight of Frieswal calves have been reported, the related studies are meager in Kerala. Hence, the data on seasons of conception and calving, birth weight and sex of 761 Frieswal calves from the years 2008 to 2017 were collected from Cattle Breeding Farm, Thumburmuzhy, Kerala. Divided the seasons in to three *viz*. summer (February, March, April and May), monsoon (June, July, August and September) and post monsoon (October, November, December and January). The effect of season of conception on the sex ratio of calves were analyzed using independent samples t- test, while mean is used as the statistical tool for assessing the relationship between calving season and season of conception on the birth weight of calves. It is found that the season of conception has no significant effect on sex of calves ($p>0.05$). Similarly no significant biased relationship could be observed towards season of conception and calving, on birth weight of Frieswal calves. Since, the seasonal effects on sex and birth weight of Frieswal calves are insignificant in Kerala, selective breeding of animals with high genetic potential and scientific care and management will results in better performance of Frieswal calves in Kerala

KEY WORDS: Season, sex, birth weight, Frieswal calves, Kerala

INCIDENCE OF PATHOGENIC FACTORS AND THEIR POSSIBLE ASSOCIATION WITH DRUG RESISTANCE OF DIFFERENT WATER SOURCES IN AND AROUND THE CITY NAINITAL, UTTARAKHAND: A COMPARATIVE STUDY OF THREE THROUGH ISOLATING COLIFORM BACTERIA

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ABSTRACT

The occurrence of *Escherichia coli* and their antibiotic profile was investigated in different water sources in Nainital city Uttarakhand, from March 2018 to February 2019. A total of 30 samples were collected aseptically in sterilized glass water bottles from tap water, springs water and lake water sources. Samples were analyzed for microbiological content following standard procedures. We used most probable number method (MPN) in different water samples to detect total coliform bacteria, presence of *E. coli* was determined by using EMB agar media and their antibiotics susceptibility patterns was evaluated by Disk diffusion method against fourteen commonly prescribed clinically-significant antibiotics. Out of the total samples evaluated 3 samples of spring's water and all the samples of Naini-lake were contaminated with coliform bacteria and no coliform cell found in tap water samples. The indicator bacterium *E.coli* was detected in all the samples of lake water confirmed by the several biochemical tests. The antimicrobial resistance test revealed that Cefotaxime was found to be most inert antibiotic as it was not effective against 90% of *E. coli* isolates and 90% isolates were shown to be sensitive against Norfloxacin making this antibiotic more promising. Out of the 10 confirmed isolates of *E.coli* 8 were resistant to two or more antibiotics having multiple antibiotic resistances (MAR). All the isolates of E.coli were positive for extended spectrum B lactamase. Of the 10 isolates 5 isolates were positive for *blaTEM,* two were positive for *bla CTX-M and bla OXA.* On the other hand, none of them was positive for *blaSHV* gene. Out of 10 isolates, 4 isolates possessed st gene and 2 were lt gene and two isolates were positive both st and lt genes thus belonged to ETEC and two were positive for both bfp and eae genes i.e., EPEC. Presence of these virulence and drug resistant E. coli in water sources is alarming and a sign of potential health with therapeutic problems.

KEYWORDS: Antimicrobial resistance, Coliform, β- lactamase, Pathogenic

MORPHOLOGICAL DIVERSITY AND AGRONOMIC TRAIT EVALUATION OF SOME COMMERCIALLY IMPORTANT BANANA CULTIVARS OF ASSAM

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ABSTRACT
The occurrence of high diversity of *Musa species* (Musaceae) has been revealed in North-Eastern India. The experiment was conducted based on the banana accessions collected from different agroclimatic zones of Assam. The present investigation provided reliable information on morphological diversity of different banana cultivars in Assam. This study consisted of ten banana cultivars viz., *Bor Jahaji, Saru Jahaji, Bejia Manohar, Malbhog, Kach Kol, Honda, Bhim Kol, Bawali Manohar, Cheni chompa and Thailusa* for various morphological parameters. The morphological descriptors used in the study consist of leaf length, leaf width, petiole length, variation height of pseudostem, girth of pseudostem, peduncle length, peduncle *etc*. The number of days taken from planting to inflorescence emergence days taken from inflorescence emergence to harvesting and total crop duration was also recorded during crop cycle of banana plant. The yield attributing characters viz. weight of bunch, hands per bunch, fruits on 2nd hand, hand weight per bunch, fruits per bunch length and girth of fruit, fruit pedicel length, fruit pedicel width, fruit weight was recorded. A wide range of variation was observed at various growth periods; this study also gives a promising idea about the agronomic traits of experimental commercially important banana cultivars.

KEYWORDS: Banana; Musaceae; morphological; agronomic

ROLE OF WATER, SANITATION AND HYGIENE MEASURES IN NCOV2019- OUTBREAK

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ABSTRACT
On 11 March 2020 COVID-19 was declared a global pandemic by the WHO. Health care and medical personnel at all levels work tirelessly to find effective therapies and 'vaccine-prevention' steps to combat this deadly pandemic. Everyone should obey government guidelines – such as washing their hands, using tissues to catch coughs and sneezes, and avoiding crowds – to stop the infection from spreading. Practices in hand hygiene are critical in curbing the ongoing transmission of infectious diseases caused by viruses, parasites and bacterias. Water, sanitation and hygiene (WASH) intrusions remain to be important in the prevention of further spread of coronavirus disease-2019 (COVID-19). Basic hygiene interventions such as hand washing with water and soap when applied consistently will deactivate and remove the virus particles from the hands. Realizing the efforts that have been made by countries world over in controlling the COVID-19, this paper seeks to discuss how the available WASH services can be used in the fight against further spread of COVID-19. The paper highlights the challenges that can be employed to strengthen the WASH services in this period of the COVID-19 pandemic.

KEYWORDS: 'vaccine-prevention, steps, strengthen ,WASH.

Section – IV

Allied Sciences, Environment, Engineering, Innovations in ICT

SOCIAL MEDIA NETWORKING SITES: RECENT TREND IN RECRUITMENT

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ABSTRACT
The use of Internet Technology has changed many areas, whether e-commerce, tourism or human resource management, with the internet now not only the candidates or prospect employee search the suitable jobs using the web portals and now with the active use of social media, job web portal job search has been taken by social media sites, such as Facebook, LinkedIn etc. This scenario is not only found in prospect employees but also the employers, who also seek for their employees through the use of social media, rather than using the traditional method of posting job, employers are seeking right candidate at the right place in the social media applications. This study aims at finding out what kind of recruiters uses the social media for their recruitment, training, staff/selection. It also aims at finding the usefulness of this social media sites and their validity for the employers as well as employees during recruiting process. It studies about the perception of employers and employees while posting and searching for job. For this study the researcher will analyse two social media sites that is Facebook and LinkedIn. The study will describe about the issues and benefits related with the online job posting and job searching and even recruiting, the researcher will try to provide recommendation for future research studies and will deliver the pros and cons of the online recruitment, both for employee and employer.

KEYWORDS: Social Networking Sites, Internet, online Recruitment, Facebook, LinkedIn, Online Job posting, Online job search

IMPACT OF FAST FOOD ON HEALTH MANAGEMENT OF TEENAGERS

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ABSTRACT
A study on emerging fast food culture and its effect on teenagers or college students. Today fast food consumption becomes popular and increasing fast from the last decade. This fast food has low nutritive value causing ill effects on the health management of the teenagers. Moreover lack of knowledge about nutritious food can affect the growth period of adolecents. In the present study, To assess the effect of fast food consumption on health management of young college students of Beed district. For the above study hundred and fifty college students of 16-20years of age group were selected randomly from Beed district. For data collection questionnaire cum interview schedule was used. All socioeconomic information, type and frequency of fast food consumption indigestion, Acidity, Menstrual problems, Leucorrhea, weakness, Hair loss, tiredness & obesity. The girls were taken fast food less time than boys. 90% of boys and 10% girls were taking fast food daily. The selected sample's who were taking daily or 2-3 times a week considered as high consumption group &who taking weekly fortnightly were considered as low consumption group. The results show that most of the students were having complains of 3to4 health problems. It was concluded that the fast food consumption was highly prevalent among teen agers and they had associated health problems.

KEYWORDS: Fast food, health Management, teenagers.

MARKETING IN THE AGE OF INTERNET: A SEMIOTIC STUDY OF ONLINE ADVERTISEMENT IN INDIA

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ABSTRACT
Everyday consumers are exposed to different kinds of advertisements. These advertisements vary according to the different communication channel they are delineated with, these mediums include print (newspaper, magazines, journals etc.), electronic (television, radio) and convergence (internet/ digital media). With the advent of digital media or convergence media, the reach of the advertisement has increased by par and also has led to the immense changes occurred in the type of advertisement. With the changing perspective of the consumers towards advertising, representation of sign, symbol as a communicative behavior called semiotics is becoming an important part of advertisement. These signs and symbols in terms of perceiving by the consumers changes accordingly among individuals. India is a country with different cultures and accordingly divided into different segmentation. As because of this different type of customer and culture, advertisers face defiance to find out right target customer and attract the buyers to purchase the product they advertise. The study also includes hofstede's cultural dimensions as individualism/collectivism, uncertainty avoidance, power distance, masculinity/femininity and long-term orientation. In this circumstance it became difficult for the advertisers to select type of customer and to understand their choices and also to understand the language and impact of semiotics among customers.

KEY WORDS: semiotics, India, communication tools, advertising, hofstede's cultural dimension.

EFFECTS OF COVID-19 ON SPORTSPERSON

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ABSTRACT
As we know that Covid-19 pandemic has spread in almost all countries of world in last few months resulting in infection and Casualties of many peoples. The virus infected peoples are likely to spread infection to the peoples who come in contact with them. Every country tries to slow down the spread of Covid-19 by using preventive measure. As for as India is concern Government order Lockdown in the whole country, Instruct people about social distancing, wearing mask in crowded area, washing hands properly and regularly but the virus is frequently spread in whole country. Almost every area of the country is effected with Covid-19 outburst i.e. Economy, Business, Laborer, Education system etc. Due to Covid-19 Sportspersons also suffer a lot as they no longer able to active participate in physical activity as all Sports stadium, playground gyms, pools, parks etc are closed resulting in lack of workout which cause health related problems ,lack of physical fitness ,gain in weight ,effect on emotions etc for sportspersons due to stay at home. Many sports organization starts online classes for players to educate them about the specific sports discipline, Many Coaches/Instructor share videos about fitness at home with limited space by performing Yoga and asana ,aerobics exercises, dance, strengthening exercise with own body weight, exercise with gym items available at home with own body weight.

KEYWORDS: Covid-19, Lockdown, Sportsperson, Fitness, Aerobics

IMPACT OF COVID-19 LOCKDOWN ON FISHERIES AND AQUACULTURE OF NE REGION OF INDIA WITH SPECIAL REFERENCE TO ASSAM

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ABSTRACT
The North East India, comprising of eight states, is known for magnificent natural beauty, splendid natural wealth, rich biodiversity and enormous industrial potential. With a total population of 457,72,188 (Census 2011) comprising of around 220 ethnic communities, the region however portrays a paradoxical picture with socio-economic backwardness amidst plenty of resources. Agriculture and allied activities including fisheries and aquaculture is the major economic activity of the eight land locked states of North East Region of India. The region is blessed with unique agro-climatic condition, vast and varied freshwater resources with rich fish biodiversity and ethnic population comprising of 90-100 percent fish eaters. The state of Assam has the distinction of having highest potential water area and of being the highest fish producer in the region. Horizontal and vertical growth of aquaculture through implementation of several developmental scheme including the Blue Revolution Mission has resulted in steady growth of fish production in the state during the last decade, marching towards achieving the goal of self sufficiency as well as emerging as the 'feeder state' for the whole region.
The lockdown imposed to control spread of Covid-19 pandemic from 25th March, 2020, has tremendous impact not only on different activities related to the fisheries and aquaculture sector resulting in livelihood crisis for fish farmers, fishers and retailers but also on day-to-day essential nutrition for the fish loving population of the region. Homestead small scale fish farming and fish farming practices following sustainable low cost technology is the effective option to cope with the kind of crisis brought by the lockdown situation in the region. This paper discusses the impact of the lockdown on different aspects vis a vis way forward to face the challenges and consequences of the impact of Covid 19 pandemic on the sector.

KEYWORDS: Covid 19, Pandemic, NE Region, impact, aquaculture, livelihood, nutrition, sustainable, way forward.

DIGITIZATION OF RURAL INDIA: PROMISES AND CHALLENGES

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ABSTRACT
The scope of the mission "Digital India" for rural India is immense. From the thrust in agriculture, to the support in the health care services to the transparency in the monetary transactions- all these initiatives are bound to improve the living conditions of the majority of the population. The planning stage has laid down the objectives to be accomplished and it clearly reflects the intention of the policy makers when they envisage an inclusive and sustainable growth model for the country. With the vast applications of the digital media to boost agriculture, it provides avenues to bridge the rural urban gap in terms of availability of basic facilities. It provides immense opportunities for enhancing the rural productivity and thereby augmenting the household incomes. With opportunities and facilities provided in the rural setup, a sense of security may blossom so as to prevent migration to the towns and cities. In India, agriculture contributes about 14% to the GDP; and the aspiration to become $5-trillion economy by 2024 needs roughly 20% contribution of agriculture. To achieve this, we must recalibrate our agriculture policy or in simple words prepare for another green revolution. The current paper gives an overview of the role played by IT in the rural setup. The implementation of the different schemes requires a synergistic approach of all the stake holders ranging from the Central government, the State government to the Gram Panchayat levels, notwithstanding the role of different NGOs and the local population. All these bodies need to play their roles as effective change agents in fostering sustainable and inclusive development of the nation.

KEYWORDS: digital literacy, sustainable, agriculture, rural economy, government

ENTREPRENEURIAL MODELS OF INCLUSIVE CIVIL CULTURE: THE CASE OF ZAPOPAN AGRO ECOLOGICAL PARK

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ABSTRACT
This research aims to analyze the model of entrepreneurial inclusive civic culture created and developed in the Zapopan Agro ecological Park (PAZ). Based on the need to rescue vacant urban land use with the participation of residents residing in the surrounding colonies, social movements, civil society and local government, they have designed and implemented actions to create PAZ (PEACE). The Zapopan Agro ecological Park is an area of green innovation where in addition to the cultivation of vegetables, vegetables, medicinal plants and decoration under relations of cooperation, trust and community support, the formation of social capital that sustains a culture of peace based on environmental sustainability activities. The results of the implementation of this project, born from bottom of the social and power structures, constitute a significant experience in the regeneration of public spaces and green areas that provides greater economic efficiency in terms of family income, a greater relevance of equity, inclusion and social justice and improvement of environmental sustainability. It is concluded that Zapopan Agro ecological Park is a model of entrepreneurial inclusive civil culture. This park marks a milestone in the regeneration of public spaces with a project of social and environmental relevance.

KEYWORDS: Inclusive civic culture, agro ecological park, environmental sustainability, Zapopan.

COVID -19, AND THE EMERGING NEW WORLD ORDER

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ABSTRACT
The great sage Adishankeracharya in one of his verses said,"the day is followed by night, one season is followed by another, the wheel of time rolls by consuming all life yet the hope for survival never dies in his famous charpatAshtkam.The perennial flow of life continues unabated with a hope to sustain even amidst worst crisis. The pandemic Covid -19 has shaken all the continents of the world by its spread without discriminating between rich and poor black and white, all have come under the awful sway of corona virus. Covid -19pandemic has consumed lakhs of people in the world so for, the infection and death toll is on immense increase day by day. The situation all around in the world is dark and grim. All the world powers look powerless, helpless and hopeless before this Chinese virus that has its origin in Wuhan city of China.It is widely said in the world that there was leakage of this virus from the Wuhan lab. Whereas china has refuted this argument and says that origin of corona virus is from wet market of Wuhan through bats. There is another theory floating in the world that china in its mad race of supremacy has attacked America, Europe and all other coastal cities of the world with biological weapon I.e.Covid 19 in order to establish it's hegemony in the comity of Nations and acquire status of only super power superseding US. Subsequently the corona virus has spread all over the globe and has put every nation on guard and halt i.e stand -still. The mighty U.S with its economic, military, scientific and technological might is struggling hard to survive as till date maximum casualties and infected people are in U.S.A followed by Spain, Italy, Britan, France and other European countries. The capitalist brand of world order shaped by U.S and its allies in the Europe and elsewhere in the world has fallen like a pack of cards before this pandemic. U.S,Itlay, Spain,France,Germany and UK are the worst victims of Covid -19.Their booming economies, cultural superiority and advances in science and technology, extraction and exploitation of world resources in greed to control whole of the mankind have finally landed them nowhere and are constrained to revisit and re shape their exploitative and capitalist ideology. After the collapse of Soviet Union the mantel of communism has passed on to china.

KEYWORDS: Covid-19, Economies, Exploitation

IMPORTANCE OF YOGASANS IN COVID-19 PANDEMIC

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ABSTRACT
Yogasana is being practice from the ancient time and it is the precious gift of Indian tradition, Yogasana is not religious and not belongs to any religion. Human being made many progress in present time, scientists and researchers have changed the life style. Almost every work in the present time is done with machines. All Pollutions i.e. air pollution, water pollution, noise pollution are also results of new scientific inventions. Human values are declining there is stress, strain jealously, aggression in persons which is resulting in many Physical and Psychological problems. Covid-19 pandemic has spread in almost all countries of world in last few months resulting in infection and Casualties of many peoples. The virus infected peoples are likely to spread infection to the peoples who come in contact with them. During this time of pandemic all stay at home as safety measure. Daily Yogasana at home is the surest remedy of all problems it controls our mind and body, it helps body to acquire strong immune system to make resistance against disease so one can live long life. Research has shown that yogasana helps in curing health related problems like asthma, diabetics, constipation, gastric problem, blood pressure, thyroid, ENT problems, headache, fatness and many more. In present time when Covid-19 Pandemic effects all over the globe practice of yogasana in daily routine is also one of the immunity boosters for humans to fight against Covid-19 as it fatal for the persons who are already suffering from asthma, diabetics, blood pressure, high cholesterol etc.

KEYWORDS: Yogasana, Aggression, Psychological, Immune, Covid-19.

STATUS OF HUMAN RIGHTS DURING PANDEMIC COVID -19

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ABSTRACT
Corona Viral disease first emerged in Wuhan region of China in the month of December 2019 .Explaining concerns World Health Organization called for various concerned authorities to take immediate action to stop the spread of the virus. International human rights law guarantees everyone the right to the highest health standards and to provide medical care to those who need it. Human rights law also recognizes the serious public health threats and public emergencies threatening the life of the people. The restrictions on some rights can be justified when they have a legal basis, based on scientific evidence and neither arbitrary nor discriminatory in application, of limited duration, respectful of human dignity, subject to review, and proportionate to achieve the objective. The scale and severity of the COVID-19 pandemic clearly rises to the level of a public health threat that could justify restrictions on certain rights, such as those that result from the imposition of quarantine or isolation limiting freedom of movement. At the same time, careful attention to human rights such as non-discrimination and human rights principles such as transparency and respect for human dignity can provide an effective response during this turmoil. Under international human rights law, governments have an obligation to protect the right to freedom of expression, including the right to seek, receive, and impart information of all kinds, regardless of frontiers. Permissible restrictions on freedom of expression for reasons of public health, noted above, may not put in jeopardy the right itself. Concerned authorities are responsible for providing information necessary for the protection and promotion of rights, including the right to health. The Committee on Economic, Social and Cultural Rights provides education and access to information concerning the main health problems in the community, including methods of preventing and controlling them. It is of dire need to ensure accurate and up-to-date information about the virus as well as access to services.

KEYWORDS: health standards, Viral disease,, scale and severity

EFFECT OF SMOKING ON LOCAL ANAESTHESIA – A REVIEW

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ABSTRACT
Smoking is the primary cause of preventable illness and premature death, accounting for almost 100,000 deaths per year and 6 million deaths per year worldwide. In 2013, the World Health Assembly, under a United Nations mandate, set a global voluntary tobacco target to help reduce and prevent premature and avoidable mortality from smoking. The agreed target is a 30% relative reduction in the prevalence of tobacco use. Cigarette smoke contains over 4000 substances, some of which are harmful to the smoker. These constituent results in high risk of getting heat disease, respiratory disorder and vascular disorders. Patients who are chronic smokers should be counselled and explained about the effects. Best is to stop smoking for at least 8 weeks prior to surgery or, if not, at least for 24 hours before surgery. Quitting smoking before surgery leads to a reduced incidence of postoperative complications. The longer the period of cessation before surgery, the greater the benefit.

KEYWORDS: Anaesthesia, Cigarettes, Smoking.

A BREATH OF CLEAN AIR: A TINY SILVER LINING AMID COVID-19's DARK CLOUDS

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ABSTRACT
No doubt the ongoing COVID- 19 pandemic is impacting millions across the world but there is a lot of talk about how emissions from fossil fuel combustion have declined radically in many countries. Reduced anthropogenic activities during this period were a big reason behind this phenomenon. As per the WHO estimates, by reducing the burning of fossil fuels, we could avoid 2.5 million premature deaths each year by 2050. A recent research from Harvard University suggests that the corona virus patients from areas which had high levels of air pollution are more likely to die than patients from cleaner parts of the country. Most notably, recent research revealed that particulate matter could possibly act as carriers of the covid-19 virus and contribute to its spread. Traces of the virus, for instance, were discovered on PM10 particles from an industrial site in northern Italy. Thus high pollution levels also increase the risk of contracting COVID-19. No doubt there is a sharp decline in the incidence of air pollution across the world due to ongoing pandemic but the worry is that air quality will deteriorate again when economies start opening up and lockdowns are completely lifted across different parts of the world. It is high time to understand that the pandemic has given us an opportunity to plot a different and cleaner future. Apart from the need to enact more stringent laws and/or regulations on air quality, there is also a need to redesign city streets to promote walking spaces, parking facilities, organized public transport mechanism, healthy lifestyle choices and incentivising individual and corporations adopting clean and green technologies. Governments should also collaborate to tackle transboundary pollution. After all, just like the covid-19 pandemic, air pollution does not really know any boundaries.

KEYWORDS: Clean Air, COVID-19, Anthropogenic activities, Laws, tansboundary pollution.

SILVER HYDROGEN PEROXIDE- A NOVEL TOOL FOR SOILBORNE PATHOGEN MANAGEMENT

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ABSTRACT

Soilborne pathogens are the major threat to commercial crop production in worldwide includes reduced crop establishment, increased cost of production and lesser productivity. Soilborne pathogens survive for many years on plant debris or in soil by producing various resting structures in the absence of their host plant. Identification of resistance source is very difficult for the management of soilborne plant pathogen and application of soil fumigants had adverse effect on the beneficial soil microorganism. The present investigation aims to identify the ecofriendly management of soilborne pathogens. Silver hydrogen peroxide (Silvox) was evaluated against two fugal and three bacterial plant pathogens under *in vitro* conditions. Complete radial growth mycelium inhibition (100%) was noticed against *Pythium aphanidermatum* and *Fusarium solani* at 5000 ppm and above concentrations. In case of bacterial pathogens, maximum zone of growth inhibition of *Xac* (39.67 mm), *Xap* (39.00 mm) and *Rs* (36.67 mm) was recorded at 500 ppm concentration. Silver hydrogen peroxide was on par with standard antibiotic streptocycline even at 100 ppm concentration with respect to antibacterial activity against *Xac* (25.33 mm) and *Xap* (22.67 mm). Among tested concentrations (0.10 to 5.00%), at 1.00 % phytotoxicity symptoms (leaf necrosis) were noticed on cotton leaves at 4 days after spotting. Hence, silver hydrogen peroxide can be used against both fungi as well as bacteria, which can be used for plant disease management either as spray or soil fumigation.

KEYWORDS:

UNDERSTANDING THE IMPACT OF COVID-19 ON THE INDIAN COMMUNITY: AN ONLINE SURVEY

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ABSTRACT

The pandemic of Corona Virus (COVID-19) hit India recently; and the associated uncertainty is increasingly testing psychological resilience of the masses. When the global focus has mostly been on testing, finding a cure and preventing transmission; people are going through a myriad of psychological problems in adjusting to the current lifestyles and fear of the disease. Since there is a severe dearth of researches on this issue, we decided to conduct an online survey to evaluate its psychological impact.

KEYWORDS: Pandemic, Psychological impact, psychological problems, testing,

CORROSION INHIBITION BEHAVIOUR OF N'- [(E)-4METHOXYPHENYLMETHYLIDENE] PYRIDINE-3-CARBOHYDRAZIDE ON MILD STEEL IN TRICHLOROACETIC ACID

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ABSTRACT

The Schiff base N'-[(E)-4-methoxyphenylmethylidene] pyridine-3-carbohydrazide was synthesized and has been evaluated for the inhibitive properties of the corrosion of mild steel in 1.0M trichloroacetic acid at different temperatures. The results from weight loss, electrochemical, electrochemical impedance spectroscopy was observed at different concentrations of the inhibitor. The electrochemical data showed that the inhibitor is a mixed type inhibitor and work by dominating at cathodic control[1]. The change in the impedance parameters indicated that the adsorption of the inhibitor take place on the metal surface and it was confirmed by SEM images[2]. The various methods are in agreement that inhibitor follows adsorption process and Langmuir Adsorption isotherm is applicable[3]. It is anticipated that inhibition results from geometric block due to chemisorption of inhibitive species at the active metal sites.

KEYWORDS: Mild Steel, N'-[(E)-4-methoxyphenylmethylidene] pyridine-3-carbohydrazide, trichloroacetic acid.

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INTERMOLECULAR INTERACTIONS BETWEEN *P*-CYMENE AND *HALOBENZENES*: A COMPUTATIONAL STUDY

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ABSTRACT
Density functional theory (B3LYP) computations were performed on *p*-Cymene and Halobenzenes (fluorobenzene, chlorobenzene, bromobenzene) in gas phase. The geometry of *p*-Cymene and Halobenzenes were optimized using 6-31+G(d,p) basis set using Gaussian 16 program. The structure of *p*-Cymene was optimized with fluorobenzene, chlorobenzene and bromobenzene to study the intermolecular interaction between these molecules. Two interaction sites were selected to study the intermolecular interaction between hydrogens of *p*-Cymene and halo atom of halobenzenes. Single point energy and Natural Bonding Analysis (NBO) were performed between the unlike molecules. The values of bond length, Mulliken charge and NBO analysis indicate that there is a delocalization type of interaction between these unlike molecules.

KEYWORDS: Intermolecular interaction, Theoretical study, *p*-Cymene, Density functional study

IMPACT OF COVID-19 PANDEMIC ON AGRICULTURE AND ALLIED SCIENCES

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ABSTRACT
The ongoing corona virus pandemic is a public emergency with gave multiplications for population of the world. The corona virus pandemic may likely have an extensive and long term influence on the agriculture industry and on its extension activities.
India needs about 250 lakh quintal of seeds for the kharif season. The preparation and distribution of seeds happen between March & May. It began form the farmers field and after drying and selection seeds are sent to processing plants. After that they are sent to labs for testing and finally packed for supply. But due to covid-19 pandemic all these activities are badly affected.

KEYWORDS: Pandemic, Testing, Seeds, Farmers

REPERCUSSION OF COVID-19 ON INDIAN AGRICULTURE AND ALLIED SECTORS

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ABSTRACT
The outbreak of corona virus disease (COVID-19), remains a significant issue for global health, economics and society. Agriculture being the backbone of our country and the GDP has been impacted in a negative way with enormous disruption in the provide series and cropping decisions for imminent agricultural seasons. All these have a negative implication on the farming group of people that is and will be undergoing serious inimical and mind losses Corona virus disease caused by severe acute respiratory syndrome (SARS), were first reported on December 30, 2019, from Wuhan, China. By January 7, 2020, a novel beta corona virus, severe acute respiratory syndrome corona virus 2(SARS-CoV-2), was identified, while the disease has been named COVID-19. After the few weeks, it spread to 18 countries (excluding china), and on January 30, 2020, the World Health Organization (WHO) declared the outbreak to be a Public Health Emergency of International Concern (PHEIC). Subsequently, on March 11th, it was declared a pandemic as it had spread to 113 countries. At first, the mode of transmission of infection was animal–to–person, but person-to-person and community transmission of virus has been confirmed in many parts of the world. With an incubation period of 2-14 days, signs and symptoms of infection are mild to high respiratory illness, characterized with cough, breathing problems (shortness of breath), high temperature (fever), tiredness (fatigue) and nausea. Presently, no vaccine or specific treatment is available for COVID-19.

KEY WORDS: COVID-19, PHEIC, WHO, SARS-CoV-2, SARS, Transmission, GDP

RECENT TRENDS IN INFORMATION COMMUNICATION TECHMNOLOGIES

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ABSTRACT
Agriculture is facing various types of problems due to lack of information and knowledge on various aspects. Use of Information and Communication Technologies (ICTs) can be a major intercession for efficient agriculture. The main objective of farmer's concern has shifted from high production to high returns, and hence issues like quality, timeliness and postharvest technology are gaining prominence in the farmers' queries. The main objective of farmers concern has been shifted from high production to high returns. Researches represents that farmers are suffering from various types of problems due to lack of knowledge, information and education on various aspects. At the same time new Information Communication Technologies is recognized as a key imperative in achieving the objectives of enhanced rural farm income. Present paper aim is to discuss the role of Information Communication Technologies for the development of farmers.

KEYWORDS: Agriculture, Farmers, ICTs

IMPACT OF THE COVID-19 PANDEMIC ON EDUCATION SYSTEM IN POONCH (JAMMU AND KASHMIR)

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ABSTRACT

The Covid-19 pandemic has affected educational systems worldwide, leading to the near-total closures of schools, universities and colleges. Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of COVID-19.

As we know that due to corona virus pandemic across the country temporarily started shutting down schools and colleges. During the covid-19 period Education Department started online classes but due to poor internet facility in District Poonch all the children of Poonch not received online classes As per the present situation, there is an uncertainty when schools and colleges will reopen. No doubt, this is the crucial time for education sector because entrance tests of several universities and competitive examinations are held during this period.

KEYWORDS:

AN a-L- RHAMNOSIADASE FROM *ASPERGILLUS ORYZEE* NAIMCC-F-02469 ACTIVE IN NEUTRAL pH RANGE

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ABSTRACT

Aim: To purify, characterize and assess the biotechnological application of α-L rhamnosiadase of *Aspergillus oryzee* NAIMCC-F-02469.

Methods and Results: The fungal strain *Aspergillus oryzee* NAIMCC-F-02469 has been isolated from damage rice grain and grown in the liquid culture growth medium using rice grain as an inducer for screening of α-L rhamnosidase. The enzyme has been purified from the culture filtrate of the fungal strain by ammonium sulphate precipitation and cation exchange chromatography on carboxymethyl cellulose. The purified enzyme gave single protein band in both sodium dodecyl sulphate and native polyacrylamide gel electrophoresis indicating that the enzyme was pure. The K_m and k_{cat} values for the enzyme using p- nitro phenyl- α-L rhamnopyranoside were 0.63 m mol l^{-1} and 21.1 s^{-1}, respectively, at optimum pH 7.0 and optimum temperature 60°C. The purified enzyme cleaved L- rhamnose from extract of fresh orange peel.

Conclusion: This communication reports a simple procedure for the purification and application of an α-L-rhamnosidase from the culture filtrate of a fungal strain isolated from decayed rice grain.

Significance and impact of the studies: The purified enzyme can be used for specifically cleaving terminal α-L-rhamnose from the natural products for the preparation of pharmaceutically important compounds like prunin, α-L- rhamnose from citrus fruit waste.

KEYWORDS:

ASSESSMENT OF GINKGOLIDES FOR INHIBITORY ACTIVITY AGAINST NOVEL COVID-19: A COMPUTATIONAL STUDY

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ABSTRACT

COVID-19 is a new coronavirus originated from Wuhan, Chinain 2019[1]. Ginkgolide bioactive compounds (namely Bilobalide, Ginkgolide A, Ginkgolide B, Ginkgolide C, Ginkgolide J, Ginkgolide M, and Ginkgolide K) are optimized on the basis of DFT theory and calculated at B3LYP/6-311+G*(d,p) basic set level using Gaussian 16W [2]. For computational theoretical calculations and for molecular docking study the crystal structure of COVID-19 Main Protease 6LU7 and COVID-19 chymotrypsin-like protease Kinase- 2GTB are selected [3]. Lipinski's rule of five for drug likeness is applied to these bioactive moleculesto consider them as potential drug molecule [4]. The interaction study is carried to assess the deactivation progress of COVID-19 using Auto Dock (4.2) tool. Calculations are carried out on efficient shape-based search Lamarckian genetic algorithm principle and a score base function. The data shows that all these ginkgolides are druglike molecules on the basis of Lipinski's rule of five and show selective interaction with COVID-19 Main Protease 6LU7 and COVID-19 chymotrypsin-like protease Kinase- 2GTB.

KEYWORDS: Molecular Docking; COVID-19; Ginkgolides; Binding Energies; Inhibition; Drug Likeness

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EFFECT OF THE COVID 19 PANDEMIC ON THE ENVIRONMENT

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ABSTRACT
Positive and negative indirect effects of COVID-19 on the environment are presented. Contingency policies are linked to improvements in air quality, clean beaches and less environmental noise. Increased waste and the reduction of recycling are negative side effects of COVID-19. There is no evidence of a direct connection between climate change and the emergence or transmission of COVID-19 disease. As the disease is now well established in the human population, efforts should focus on reducing transmission and treating patients.
However, climate change may indirectly affect the COVID-19 response, as it undermines environmental determinants of health, and places additional stress on health systems. More generally, most emerging infectious diseases, and almost all recent pandemics, originate in wildlife, and there is evidence that increasing human pressure on the natural environment may drive disease emergence. Strengthening health systems, improved surveillance of infectious disease in wildlife, livestock and humans, and greater protection of biodiversity and the natural environment, should reduce the risks of future outbreaks of other new diseases.

KEYWORDS: Contingency policies, Transmission, Patients, Strengthen

CHANGES IN THE ORGANIZATION AFTER IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT (TQM)

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ABSTRACT
The investigation centres on looking at the Total Quality Management (TQM) and association result. TQM is generally centres around dealing with the workers of the association, building authority, improving item or administration quality and improving or surpassing consumer loyalty. The paper has demonstrated the execution of TQM in the clinical gadget area in India. The degree of execution has been examined in this paper the positions were quality control, quality affirmation and consistent impartments. The adjustments in the association after execution of Total Quality Management apparatuses were talked about. The favourable position association have accomplished after TQM execution in immediate or aberrant manner has been examined.

KEYWORDS: Customer satisfaction, Organizational performance, Quality Control, Quality Assurance, Total Quality Management, Continual improvement.

EFFECT OF THE COVID 19 PANDEMIC ON THE ENVIRONMENT

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ABSTRACT
Positive and negative indirect effects of COVID-19 on the environment are presented. Contingency policies are linked to improvements in air quality, clean beaches and less environmental noise. Increased waste and the reduction of recycling are negative side effects of COVID-19. There is no evidence of a direct connection between climate change and the emergence or transmission of COVID-19 disease. As the disease is now well established in the human population, efforts should focus on reducing transmission and treating patients.
However, climate change may indirectly affect the COVID-19 response, as it undermines environmental determinants of health, and places additional stress on health systems. More generally, most emerging infectious diseases, and almost all recent pandemics, originate in wildlife, and there is evidence that increasing human pressure on the natural environment may drive disease emergence. Strengthening health systems, improved surveillance of infectious disease in wildlife, livestock and humans, and greater protection of biodiversity and the natural environment, should reduce the risks of future outbreaks of other new diseases.

KEYWORDS: Contingency policies, Transmission, Patients, Strengthen

COVID 19 PANDEMIC: CONSEQUENCES AND OPPORTUNITIES FOR ICT INDUSTRY

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ABSTRACT
Covid-19 pandemic affects virtually every aspect of life. The unprecedented outreach of COVID-19 pandemic is causing the global problems and unprecedented implication for local & global business. Some industry verticals have hard-hit areas such as travel and the hospitality industries. Business Leaders of the industry have to think about the impact and unique requirements of people and businesses to its sector and find the insights and latest perspectives or opportunities that help organizations to sustain and grow during the pandemic and beyond. Pandemic also ordered to practice social distancing hence businesses are more inclined toward online mode rather than off-line. In terms of the pandemic impact on ICT market, there are major challenges and opportunities as well as substantial short-term and long-term changes expected to occur within the telecommunications and IT industry. These changes involve investment in latest technology, technological infrastructure development and deployment, solution strategy and their planning. Some of these changes will have a long-lasting effect upon applications and services as well as product lifecycles. The pandemic is forcing questions about what kind of future do we want and what it will take to make a healthy society. People are forced to cope with an abstract threat without any preparation for such a context.

KEYWORDS: pandemic, social distancing, , IT industry, online business, ICT market, technology investment

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