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Review Article

Immunological Aspects of Cytokine Therapy, Signalling Pathway and its Molecular Mechanisms in the Fight Against SARS-CoV-2

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Abstract

The COVID-19 is a pandemic caused by SARS-CoV -2 virus has presented a striking challenge into the health care systems (HCSs) around the World and currently is the source of public health concern globally. The treatment of this disease has remained challenging as there are no proven effective vaccines or therapeutic agents against the virus. Cytokine Storm Syndrome (CSS) is an unregulated inflammatory process response arising from immune effector cells (IECs) releasing proinflammatory cytokines. That occurs as a result of the overproduction of pro-inflammatory cytokines. CSS is a frequently occurring feature of severe infections with COVID-19 pneumonia and violent inflammatory immune response (VIIR) is stimulated by cytokine storm syndrome (CSS) is misleading into the development of symptoms such as fever, throat infections, headaches, dizziness, fatigue, cardiomyopathy, lung injury, acute respiratory distress, multiple organ failure, and subsequent death of the majority of the patients. The new therapeutic strategies under investigation are targeting to the overactive cytokine response (OCR) within the anti-cytokine therapies and immunosuppressive agents. CSS helps to down-regulate and dampen the aberrant pro-inflammatory response of the host and may bring an understanding and insights into the treatment of the SARS-CoV-2 virus. In this review, we have outlined and discussed the different types of cytokines therapies and their mechanism of actions. Currently, being explored and evaluated those that are not yet evaluated for their efficacy and safety in the treatment of COVID-19 and associated with the cytokine storm syndrome (CSS). We suggested that the clinical trials should be initiated for those are new therapies that are not yet explored to evaluate their efficacy and safety in the management and treatment of COVID-19 pneumonia and the SARS-CoV-2.

Keywords: SARS-CoV-2; Cytokine Therapy; Therapeutic Targets; Cytokine Storm Syndrome

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Review Article

Immunological, Pharmacological, Pharmacokinetics, Therapeutic Targets and Various Therapy for SARS-CoV-2: Recent Advancement and Future Prospective

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Abstract

Severe acute respiratory syndrome 2 (SARS-CoV- 2) is a novel coronavirus that causes coronavirus disease 2019 (COVID-19), an infection characterized by flu-like symptoms, progressing in some cases to acute respiratory distress syndrome (ARDS). That WHO to declare it as global pandemic. Based on the information gained from the responses to other RNA coronaviruses, including the strains that cause severe acute respiratory syndrome (SARS)-coronaviruses and Middle East respiratory syndrome (MERS), effort are put in place to develop effective therapeutic agent against the COVID-19. Currently, there is no therapeutic candidate for this virus but the United States Food and Drug Administration (FDA) has provided emergency authorization for the use of chloroquine and hydroxychloroquine and other promising antiviral drugs. Although the result of ongoing clinical trials are not out, but some provide promising result *in vitro*. The most important factor associated with pathophysiology of SARS-CoV-2 is the host immune response which results due to binding of spike glycoprotein to its receptor angiotensin-converting enzyme 2 (ACE2) but concerned has arose for the continuous expressing of ACE in affected patient especially patient with pregnancy as this might increase the susceptibility of the patient although there is no strong evidence for it involvement for susceptibility of the affected patients. Despite the continuous evolving and dynamics on the literature of COVID-19, using the existing knowledge, possible drug target have been identified for the development of the effective vaccine. Since there is no effective therapeutic drug for the current pandemic, drug repurposing might be a viable strategy and specific prophylaxis regimen should be provide to reduce the toxicity on the affected patients and the clinical trial should be based on the specificity and efficacy of the drug. This review provide information on the Novel invention and new guidelines or protocol for SARS-COV-2.

Keywords: Immunological; Pharmacological; Theraputics Targets; Recent Advancements; SARS-CoV-2

ACTA SCIENTIFIC COMPUTER SCIENCES

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Research Article

Impact of Media and Protocol on SARS-CoV-2: Statistical Analysis

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Abstract

The current global pandemic of SARS-CoV-2 is a great challenge to the man, the virus has affected over 7 million people globally as of 12th June 2020. Also Nowadays, Media has become an essential part of human life. This research entails finding out how these two are going that is how media is affecting the current pandemic and also to find the role media plays in controlling the situation or helping the public to overcome the current situations. Reliability analysis was used to measure how reliable the questions carried in the research are, descriptive statistics were used to find out which among the subgroups of media is inflicting fear in the mind of public and correlation analysis was used to find how the variables are related using the collected data obtained through research questionnaire. The results obtained shows that public media (Television, Radio, and Newspaper) are doing their best in making people less afraid by broadcasting positive news, whereas, social media (Facebook, Twitter, and Instagram) platforms are contributing in making people very afraid due to the habit of a share as you received.

Keywords: Media; Protocol; SARS-CoV-2; Reliability Analysis; Cronbach's Alpha; Correlation analysis; ANOVA

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Inhibition of multidrug resistance property of *Candida albicans* by natural compounds of parthenium hysterophorus L. An *In-Silico* approach

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Abstract
Objectives: In this study, we targeted enzymes (Erg11, Erg5, Erg3), transporters (CDR1, CDR2), and cytochrome 450 (CaALK8) involved in MDR of Candida albicans, which caused fungal disease. ATP-binding cassette (ABC) and some other major facilitator superfamilies (MFS) of transporters are responsible for MDR in Candida Albicans.
Material and methods: The compounds present in Parthenium hysterophorus L. were docked against the proteins involved in MDR of Candida Albicans. PyRx-Python prescription 0.8. was used to identify binding affinities of compounds against the proteins.
Result and Discussion: Erg11, Erg5, Erg3, CDR1, CDR2 and CaALK8 proteins docked with β-Sitosterol (-10.6, -9.6, -9.6, -9.6, -9.6, and -8.5) ç-Sitosterol (-9.9, -9.2, -9.3, -9.4, -9.6, and -8.5). Piperine (-10.0, -8.3, -9.3, -8.4, -8.5, and -8.4) Kcal/mol respectively and found to show good hydrophobic interactions.
Conclusion: In this study, we may conclude that compounds isolated from parthenium hysterophorus might be effective against the fungal disease caused by Candida Albicans.

Keywords: Parthenium hysterophorus, Candida Albicans, MDR, *in silico*

Introduction
According to a rise in the number of patients used in patients undergoing organ transplants, anticancer chemotherapy, and Hiv patients, the incidence of widespread fungal infection has risen significantly in recent years.
Candida infections are significant, morbidity and death effects and are related to a wide variety of clinical symptoms to the surface and mucosal infections are common; and also bloodstream infections. Candida albicans a leading source of candidemia, but also Candida species (non-albicans) account for >50 percent of blood disease in many parts of the world [Kullberg *et al.,* 2015]. Global estimates suggest that, in population-based trials, invasive candidiasis occurs in over a quarter of a million patients each year with incidence rates of 2–14 candidates per 100,000 inhabitants [Bitar *et al.,* 2014; Cleveland *et al.,* 2012; Magil *et al.,* 2012]. Resistance to antifungal agents is less common in C. Albicans with long-term anti-mucosal usage and recurring disease, such as persistent mucocutaneous candidiasis or recurring oropharyngeal candidiasis, have been identified in patients with unregulated HIV infection. Resistance to > 1 class of drugs (multidrug resistance) remains rare but has been slowly reported, for example in Candida Auris. Genetic and molecular resistance mechanisms have been identified for many

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Management of sugarcane trash and coal fly ash through vermi biotechnology

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Abstract
In India, coal fly ash and sugarcane trash are produced in large quantities and the storage or spreading of this waste on land causes contamination of the atmosphere, soil and water. The aim of this study was to convert (CFA) and sugarcane trash (ST) mixed with cow dung (CD) into vermicompost using an epigeous earthworm *Eisenia fetida* (red worm). Five treatments containing CD, CFA and ST in different ratios namely CFA: ST: CD in 1:1:8 ratio (T_1), CFA: ST: CD in 2:2:6 ratio (T_2), CFA: ST: CD in 3:3:4 ratio (T_3), CFA: ST: CD in 4:3:3 ratio (T_4) and CFA: ST: CD in 3:4:3 ratio (T_5) were run under laboratory conditions. The physicochemical changes of substrate materials in different treatments were measured at the end of vermicomposting (90 days). The vermicompost material showed decrease in Total Organic Carbon (TOC) (10.8-28.3g kg^{-1}), pH (9.2-11.6) and Total Potassium (TK) (9.0-22.5g kg^{-1}) and increase in Electrical Conductivity (EC) (12.6-14.1mS cm^{-1})), Total Kjeldhal Nitrogen (TKN) (33.3-95.2g kg^{-1}) as well as Total Phosphorus (TP) (56.5-87.8g kg^{-1}) contents. *Eisenia fetida* showed better growth performance in T1 treatment also worms grew favourably in T_2 and T_3 treatment. Greater proportion of CFA and ST in T_4 and T_5 treatment significantly reduces (p<0.05) the growth and reproduction rate of *Eisenia fetida* during experimentation. This study clearly indicates that CFA and ST could be potentially used as raw substrate in vermicomposting if mixed with CD in 1:1:8, 2:2:6 and 3:3:4 ratios, respectively. It was further found that vermicompost obtained by below method was rich in Sodium, Calcium, Magnesium content i.e. 33.5, 23.3 and 19.9 (g kg^{-1}) respectively, while it was also rich in some micronutrients i.e. Iron, Zinc, Manganese (Mn), Copper (Cu), and content i.e. 1064, 169, 402and 165 ppm respectively. Thus, vermicomposting of coal fly ash and sugarcane trash is a cheap, excellent and ecofriendly method of sugarcane waste management.

Keywords: Sugarcane trash, coal fly ash, earthworm, nutrient changes growth, micronutrients

Introduction
The protected transfer and natural well-disposed administration of natural strong squanders have become a worldwide need. In India, around 80 million metric huge amounts of coal fly debris is created yearly from warm-power stations with just a minor part utilized now for getting ready blocks, pottery and concretes. Unclaimed coal fly debris involves an extra 100 ha of land every year. Through wastes of time in each blustery season adjoining regions, including rice fields, unavoidably become defiled, and in this manner potentiating grave issues (Mishra *et.al.* 2007) [1]. Coal fly debris, contains silica, aluminum, oxides of iron, magnesium, calcium, chromium, arsenic, lead, zinc, nickel and other dangerous metals (Gupta *et al.* 2005; Pandey *et al.*2010) [2, 3]. Some conceivable agronomic employments of coal fly debris as, a compost (Giedrojc *et al.*1980; Pandey et.al. 2009) [4, 5], a liming material (Hoodgsen *et.al.* 1982) [6] and as a physical correction (Campbell *et.al.* 1983) [7] have been demonstrated. Lower revision levels of coal fly debris caused improvements of both development and yield while antagonistic impacts at elevated levels were watched (Mill operator *et al.* 2000). As indicated by Division of Agribusiness and co-activity, sugarcane generation in India was assessed at 232.3MT during 2004-2005. During the generation procedure significant measures of items, for example, sugarcane junk, bagasse and pressmud are delivered. Sugarcane processes principally utilize actuated ooze process for squander water treatment, which creates colossal amount of slime regularly known as pressmud, (Sangwan *et.al.* 2008) [9]. (Parthasarathi *et al* 2006) [10] has detailed roughly 12 million tons sugarcane refuse is delivered in India yearly. Pressmud, produces extraordinary warmth (65 °C), foul scent and sets aside long effort for normal deterioration (Sen *et al* 2007) [11] and its high pace of utilization to soil prompts soil

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Research Article

Molecular Screening and Diagnosis of SARS-CoV-2: Recent Advances and Future Prospective

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Abstract

Background: COVID-19 is a new form of Coronavirus which is resembling the same as SARS-CoV-2. This virus leads to cause severe respiratory diseases among the people. Coronavirus is declared as the pandemic by the WHO on March 11, 2020. Transmission of the disease is mainly due to the person to person contact by any means.

Materials and Methods: We detect the disease primary screening is necessary for a speedy recovery. PCR and other nucleic acid amplification are mainly used to diagnose the Covid-19. For the detection of the SARS, its gene is targeted in the amplification. The genes which are targeted are E, N, S, RdRp and ORf. Mutation in the SARS-CoV-2 genome is also detected by the various nucleic acid detection tests. We improve the detection of this pandemic, the only thing is to increase the involvement of Serological testing and molecular methods.

Results: The majority of 85-95% factor becomes useful to overcome this disease is early detection rate of the disease SARS-CoV-2. Molecular and serological findings should need to work simultaneously for the improvement in the diagnosis and the treatment approximately 85% laboratory.

Conclusion: The only factor which becomes useful to overcome this disease is early detection of the disease.Molecular and serologicalstudyshould need to work simultaneously for the improvement in the diagnosis and the treatment. The need of the hour is to maintain and introduced laboratory networking and its application.

Keywords: COVID-19; SARS-CoV-2; Laboratory Diagnosis; Molecular Method; Serological; Patients Management

ACTA SCIENTIFIC PHARMACEUTICAL SCIENCES (ISSN: 2581-5423)

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Short Communication

Natural Compounds against the Main Protease (Mpro) SARS-CoV-2 through *In Silico* Approach

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Currently, coronaviruses are contagious pathogens and primarily responsible for respiratory and intestinal infections (RIIs). Research on progress to develop antiviral agents (AVAs) against these coronavirus. Researcher had been demonstrated that the main protease (Mpro) protein may represents an effective drug target (EDT) [1]. The novel Corona-virus (n-CoV), recently called as the severe acute respiratory syndrome coronavirus (SARS-CoV-2). The need of the hour is required progress on research into drugs to treat this infection. SARS-CoV-2 remains essential in several research laboratories among the both (national and international).

Natural herbal remedies (NHRs) have long been associated with the oral tradition for treating illnesses. Modern medicine has potential effects thanks to traditional medicine, the effectiveness of which derives from medicinal plants including with herbs and shrubs [2]. Objectively this study is to determine the components of the natural origin compounds (NOCs) have an anti-viral effect (AVE) and capable to prevent the humans from viral infection SARS-CoV-2. This coronavirus SARS-CoV-2 is using the most reliable method is suitable for molecular docking. We used to find out the interaction study between the molecules and the protein. In our study based on the inhibitor of Coronavirus (nCoV-2019) main protease enzyme. We performed *in silico* method for screening of all the compounds from *Curcuma longa L.* (*Zingiberaceae* family) against Mpro protein inhibition.

viridae. Researcher distributed in humans [3] and the subfamily Orthocoronavirinae, order *Nidovirales*, and realm *Riboviria*.

According to the centers for disease control and prevention (2020), there are major seven types of genera in the coronaviruses are 229E (alpha coronavirus), NL63 (α coronavirus), OC43 (β coronavirus), HKU1 (β coronavirus), MERS-CoV (the β coronavirus that causes Middle East Respiratory Syndrome (MERS), SARS-CoV (the β coronavirus that causes severe acute respiratory syndrome, or SARS and SARS-CoV-2 (the novel coronavirus that causes coronavirus disease 2019, or nCoV-19) [4]. In humans, these viruses are the causal factor of the respiratory tract infections (RTIs) that ranges from mild to the lethal category. Mild illnesses are noticed with new cases of the common cold and throat infections.

Although, two zoonotic coronaviruses are located in the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) which viruses are especially affect to the respiratory system through serious infections. The major characteristics of this group is production effects (PEs), nosocomial transmission (NCT), replication in the lower respiratory tract (LRT), and viral immunopathology (VIP). MERS-CoV and SARS-CoV is obtaining from the serious public health problems (SPHPs) lead to epidemics resulting in significant loss of the life values ultimately [5].

ACTA SCIENTIFIC PHARMACEUTICAL SCIENCES (ISSN: 2581-5423)

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Editorial

Pathogenesis, Epidemiology, and Clinical Features among SARS-CoV-2 and Associated Diseases: An Editorial

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A new human coronavirus virus emerged in Wuhan, the city of China in December 2019 named novel coronavirus (SARS-CoV-2). Currently, this coronavirus becomes a pandemic and affects most of the countries worldwide. Presently (as of 3 June 2020) 6287771 confirmed cases and 379941 deaths have been reported globally according to WHO data [1]. The clinical syndrome of coronavirus associated with SARS-CoV-2 infection; is categorized by respiratory illness ranging from upper respiratory tract from the common cold to fatal pneumonia and severe acute respiratory distress syndrome (ARDS) [2].

In this editorial, we aim to analyses the differences or character regarding theses following features (pathogenesis, epidemiology, and clinical features) among COVID-19, SARS-2, and other associated diseases.

From the total 7 coronaviruses, 4 human coronavirus produces mild symptoms, and 3 of them produce symptoms which are potentially severe in humans, caused major outbreaks of respiratory syndrome globally in 21st century [3]. First is SARS-CoV2, β-CoV is a novel coronavirus identified as the cause of coronavirus disease 2019 (COVID-19) was reported in Wuhan, China in late 2019 and on 31 December 2019, the outbreak found to a novel strain and later become a pandemic. Second, the MERS-CoV (Middle East respiratory syndrome) was identified in September 2012 in Saudi Arabia as the cause of (MERS) [3]. The third one is SARS- CoV was identified in 2003 as the cause of an outbreak of severe acute respiratory syndrome (SARS) that began before Asia [4].

Even though SARS-CoV-2 belongs to the same genus Betacoronavirus as the coronaviruses responsible for the severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) also belongs to the same genus but (SARS-CoV and MERS-CoV, respectively), this novel coronavirus resembles to be associated with milder infections. Furthermore, SARS and MERS were viruses associated mainly with nosocomial spread, whereas SARS-CoV-2 or novel coronavirus is extensively transmitted in the community [5].

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Cosmetic Science: An Overview

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ABSTRACT

Cosmetics are defined as "items with mild action on the human body for the purpose of cleaning, beautifying, adding to the attractiveness, altering the appearance, or keeping or promoting the skin or hair in good condition" while functional cosmetics, even if falling under the cosmetic definition, are designated as "items fulfilling specific actions like skin whitening, minimizing the appearance of lines in the face and body, protecting from the sun and sun tanning".

KEYWORDS: *Skin Cosmetic, Hair Cosmetic, Face Cosmetic, Eye Cosmetic, Lip Decorators & Cares, Nail Cosmetic.*

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INTRODUCTION

Cosmetic is a Greek word which means to 'adorn' (addition of something decorative to a person or a thing). It may be defined as a substance which comes in contact with various parts of the human body like skin, hair, nail, lips, teeth, and mucous membranes etc. Cosmetic substances help in improving or changing the outward show of the body and also masks the odor of the body. It protects the skin and keeps it in good condition. In general, cosmetics are external preparationswhich are applied on the external parts the body.

Even in earlier days, men and women used to decorate their bodiesfor improvement of appearance. Men used leaves of vegetables and parts of animals whereas women use to wear colored stones and flowers round their neck and wrist.

SKIN COSMETIC

MOISTURIZERS:

Skin Care Products (Creams, Lotions, Powders and sprays)

Moisturizers are products that are intended to hydrate the skin. Another related topic of interest includes parabens. They also increase the water content of the skin, giving it a smooth appearance. They also provide a barrier against the loss of water from the skin. Moisturizers contain specialingredients that help to replace the oils contained in the skin or to protect against the loss of moisture from the skin.

The safety of Moisturizers is established by selection of ingredients that are safe and suitable for this purpose. In addition, Moistarizers are assessed for their potential to cause skin irritation or cause allergic reactions. Product safety is also established though strict adherence to theprinciples of Quality Assurance and Good Manufacturing Practices.

Foot Powders and Sprays

Foot Powders and Sprays are products applied to the feet to reduce the odour caused by the bacterial breakdown of perspiration. Foot Powders and Sprays work either by using fragrance to cover up malodor or by absorbing perspiration that leads to formation of malodor.

The safety of Foot Powders and Sprays is established by selection of ingredients that are safe and suitable forthis purpose. In addition, Foot Powders and Sprays are assessed for their potential to cause skin irritation

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Editorial

Pharmacological Treatments and Development of SARS-CoV-2

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Currently, the FDA for the treatment of COVID-19 pneumonia has approved no drugs or therapeutics vaccines. Some pharmacological treatment has gained emergency use authorization from FDA based on preliminary data displaying a faster time to recovery of hospitalized patients with severe COVID-19 infection. In this editorial, different pharmacological treatment that have been adopted for the management and treatment of COVID-19 pneumonia.

Remdesivir is a nucleoside analog prodrug that can competitively incorporates with viral RNA dependent RNA polymerase (RdRp), resulting in RNA synthesis inhibition. Remdesivir binds to RNA-dependent RNA polymerase and acts as an RNA-chain terminator and it displays potent *in vitro* activity against SARS-CoV-2 with an EC_{50} at 48 hours of 0.77 μM in Vero E6 cell. The drug also displays a high genetic barrier to resistance in coronaviruses and

tumor necrosis factor (TNF) and interleukin 6 (IL-6), which mediate the inflammatory complications of several viral diseases. Several clinical trials have been conducted to evaluate the efficacy of Chloroquine and hydroxychloroquine in management of COVID-19 and has produced a positive result.

Lopinavir/ritonavir can inhibit the SARS-CoV-2, 3C-like protease (3CLpro) *in vitro* (IC50 50 μM) resulting in termination of viral replication. Efficacy and safety of lopinavir in combination with ritonavir have examine and promising results have being achieved. Lopinavir/ritonavir has demonstrated *in vitro* activity against other novel coronaviruses via inhibition of 3- chymotrypsin-like protease. *In vitro* antiviral activity against SARS-CoV-2 associated coronavirus was demonstrated for lopinavir and ribavirin at concentrations of 4 μg/ml and 50 μg/ml, respectively, only at 48

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Research Article

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Tourism in Kashmir Valley: Growth, Environmental Impacts and Sustainability

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ABSTRACT

In the recent past, tourism industry has witnessed a tremendous surge worldwide and has become an integral part of human leisure and expedition, thus contributing to the growing global economy. Kashmir valley, also referred as "Paradise on Earth" is rich in picturesque scenes, snow clad mountains, lush green meadows and high altitude lakes, hence attracting tourists from all over the world. Although, tourism plays a vital role in the upliftment of a region, by creating employment opportunities and improving infrastructural facilities but it can also have deteriorating impacts on the environment, if not properly managed. Present state government policies are not adequate to properly manage tourism in the region. The study was aimed to assess the environmental impacts of tourism in Kashmir valley. Data collected from various secondary sources were assessed and it was observed that most of the popular destinations in Kashmir are being thronged by tourists above their respective carrying capacities. This has put enormous pressure on the natural resources in the form of over-production of sewage, litter, loss of animal habitats, deforestation and pollution of almost all forms. This study can thus serve as a wake-up call for all the stakeholders who can make a change in proper management of tourism in the region, so that the sustainability of natural resources is ensured.

Key words: *Kashmir, Tourism, Environment, Sustainability.*

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Antibacterial activities of the combined extracts of *Eucalyptus grandis*, *Moringa oleifera*, *Punica granatum* and *Syzgium aromaticum* against pathogenic organisms and formulation of sanitizer

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ABSTRACT: ***Plants have been known for their ability to synthesize a wide variety of chemical compounds long before recorded history. These bioactive compounds defend plants against attack from predators such as insects, fungi and herbivorous animals. In traditional medicine, plants have been used to prevent and cure infectious conditions and diseases caused by pathogenic microorganism. Therefore this study aimed to investigate the combined effect of Eucalyptus grandis* (Eu, E), *Moringa oleifera* (Mo, M), *Punica granatum (*Po, P) *and Syzygium aromaticum (*Cl, C) *crude plant extracts against pathogenic organisms and using the extract with the highest synergistic or additive effect against the selected bacteria strains to formulate sanitizer as a preventive measure against the spread of disease resulting from these bacteria. This study was conducted against four bacteria strains, Klebsiella pneumonia* (KP), *Proteus mirabilis* (PM), *Staphylococcus aureus (SA) and Staphylococcus epidermidis (SE) using disc diffusion method.* **The interaction between the two and three combination extracts revealed that they were synergistic, additive and antagonistic against the four selected strains of bacteria. The highest additive effect was observed in KP and PM when there was a combination of PCE while a synergistic effect was observed in KP when there was a combination of Po & Mo. Staphylococcus epidermidis showed significant inhibitory effect to all the single extract used but displayed antagonistic effect to all the two and three combination extracts. Combination of Eu & Cl and the single extract of pomegranate showed indifferent effects against Staphylococcus aureus. The formulated sanitizers, however, were effective against the hand microbiome in volunteer samples with no side effects on human tissue.**

Keywords: Plant extracts, Disc diffusion, Bacteria, Antimicrobial testing, Sanitizer.

Quantitative and Qualitative Analysis of *Eucalyptus grandis*, *Moringa oleifera* Leaf, *Punica granatum* Pericarp and *Syzygium aromaticum* Dried Bud

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ABSTRACT

Phytochemical compounds produced in plants are responsible for their biological activities. Medicinal plants have been known to be the backbone of traditional medicine long before recorded history and have been used as supplements to improve health and also wellbeing. In traditional medicine, plants have been used to prevent and cure infectious conditions and diseases caused by pathogenic microorganism.Therefore this study aimed to investigate the phytochemicals present in the leaves of *Eucalyptus grandis* and *Moringa oleifera* pericarp of *Punica granatum* and dried bud of *Syzygium aromaticum* crude plant extract.Oualitative and quantitavie phytochemical screening of aqueous and methanolic crude extract of four selected plant material were carried out using standard procedure with little or no modification.Result shows that phytochemicals such as tannins, terpenoids, phenols, steroids and anthocyanin were present in both aqueous and methanolic crude extracts of the plant materials. Maximum amount of carbohydrate (761µg/ml) and flavonoids were noted in methanolic extract of *P.granatum* pericarp. Total tannins (633µg/ml), proteins (323µg/ml) were noted in the aqueous extract of *S.aromaticum*. Highest amount of phenols (494µglml) were noted in aqueous extract of *M.oleifera.*This finding concluded that the selected plants materials consist of many useful bioactive compounds which are principal reason for a plant to possess medicinal properties.

Keywords: Phytochemical analysis, *Eucalyptus grandis, Moringa oleifera,Punica granatum, Syzygium aromaticum*

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An Overview of the Adverse Effects of Renewable Energy Sources

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Abstract: ***Growing human population requires an increase in energy production that will satisfy the daily needs and demands. Conventional energy sources are finite, and as such they are exhaustible which implies that, man requires an alternative sources of energy that are inexhaustible and clean. Renewable or alternative energy source is a term used for any energy source that is an alternative to fossil fuel i.e. electricity or heat generated from solar, hydro, wind, geothermal, biomass or biogas energy. These energy sources are considered to be clean. Despite the fact that renewable energy sources are assumed to be clean, they pose a significant risk to the environment and well-being of the populace. Pending on the source and the technique use for harnessing, these energies may affect the environment at different stage of their life cycle. The effects ranges from exploitation and processing of the raw materials, to the construction of the plant, to its operation and finally to demolishing when the need arise. In addition, the energy input and output is also an interesting matter to be considered when dealing with renewable energy. Other issues of land clearing, biodiversity and habitat loss, emission of some greenhouse gases in terms of hydro power and biomass, use of toxic chemicals in construction of photovoltaic panels, the amount of energy consumed during the construction and west generated need to be considered as well. This paper aimed to review and highlight the adverse effects associated with harnessing and processing of renewable energy sources.***

Keywords: Renewable, Energy, Solar, Biomass, Power, Impact

I. INTRODUCTION

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Analysis of New Potent Anti-Diabetic Molecules from Phytochemicals of *PistiaStrateotes* with Sglt1 and G6pc Proteins of *Homo Sapiens* For Treatment Of Diabetes Mellitus. An *In Silico*Approach

*Mudassir Lawal[1], Abhishek Kumar Verma[1], Ismaila A. Umar[3], Aisha Muhammad Gadanya[4] , Bashir Umar[1], NajibLawan Yahaya[2], Bello Auwal Balarabe[1], ZainabAbdullahi Usman[1], MaimunaAliyu Adam[1],

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Abstract:
Background: *Diabetes mellitus is a chronic metabolic disorder affecting many people all over the world. The disease is associated with long-term dysfunction, failure and damage of various organs thus, affects virtually every physiological system of the body. The chronic insulin resistance, progressive decline in β-cell function or increased rate of cell death results decreased insulin production and finally leads the disease. Some therapeutic plant have showed hypoglycemic activities but the precise mechanism of action of these drugs at cellular level is yet not known and thus no better formulation of indigenous medicine could be developed till date for the treatment of the disease. In this study, we targeted enzymes (G6PC), and transporter (SGLT-1) that involved in Diabetes mellitus, we studied molecular interactions of 19 bioactive compounds in PistiaStratiotes leaves against diabetic targets namely: Glucose-6-phosphatase (G6PC, PDB ID: 1VNF) and Sodium-Glucose transporter-1 (SGLT1, PDB ID: 3DH4) were assessed.*
Material and Methods: *Molecular docking studies were performed using screening tool AutoDock 4.2.6 and the program PyRx v 0.8 docking softwares respectively.Pharmacophore analysis andthe PDB structures of bioactive compounds, Enzymes and the Enzyme-ligand interaction were visualized using Discovery Studio 4.5 and PyMOL Molecular Graphics System 1.3. The Swiss ADME was used to assess other physiochemical properties of these hit compounds*
Result: *The docking studies of multifarious ligands with the target proteins showed good inhibitory activity, amongst the compounds screenedStigmasterol (Binding energy; 3DH4: -9.7 kcal/mol, 1VNF: -6.9 kcal/mol), Phytol acetate (Binding energy; 3DH4: -9.1 kcal/mol and 1VNF: -7.2 kcal/mol), Tetracosahexaene(Binding energy; 3DH4: -8.4 kcal/mol and 1VNF: -7.3 kcal/molGlycerol-1-Palmitate (Binding energy; 3DH4: -7.4 kcal/mol and 1VNF: -6.9 kcal/mol) Diisooctyl phthalate (Binding energy; 3DH4: -7.4 kcal/mol and 1VNF: -*

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Review Article

Fisheries and Climate Change in Tropical Rivers: Challenges and Adaptation Strategies: A Review

Mubarak Ismail Shitu[1], Mahadi Danjuma Sani[2], Satish Kumar Ameta[2], Pankaj Kumar Teli[1], Saminu Muhammad Abdullahi[1], Rabi Aliyu Ismail[1], Abhishek Kumar Verma[1*]

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ABSTRACT

Every ecosystem is affected by climate change day by day. The decline in fish catch in tropical rivers, changes in species distribution, spawning time, mortality, and loss of habitat, as well as falls in productivity in developing countries, is an alarming phenomenon that needs quick intervention. Tropical species are amassed differently across the various region, they also possess diverse life history physiologies and ecological communities. Thus, in contrast to polar and temperate regions, different responses to climate change might be exhibited by tropical species and their communities. This review provides a critical summary of the effect of climate change on fisheries in tropical regions and the current state of knowledge on the challenges faced. It discusses research priorities to understand better the ways of adapting to such challenges by browsing how species and ecological communities are acclimatizing to climate change in the most biodiverse places in such regions. Other strategies for managing climate change were also considered to be of relatively much importance. This paper suggests other important strategies for mitigating the effects of climate change, considering the social and economic outlays.

Nanochem Res 7(2): 135-142, Summer and Autumn 2022

RESEARCH PAPER

Eco-Friendly Synthesis and Characterization of Iron Nanoparticles Using Crude Extract from Eucalyptus Globulus Leaves as Reducing and Capping Agents

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ABSTRACT

In this work, Eucalyptus leaf extract was used as a reducing and capping agent to synthesize Iron nanoparticles (Fe-NPs) using iron (III) chloride as a metal iron salt. The synthesized nanoparticles were later characterized using various techniques. UV-Visible spectroscopy results show that Fe^{3+} was successfully reduced to Fe^{o}/Fe-NP with high absorption at a range of 217-300nm. In addition, FESEM/EDS results indicate that the particles possess irregular shapes together with a few spherical and cubic shapes of various sizes with an average diameter of about 70nm. Further, the EDS result confirms the chemical composition and stoichiometry of the particles. For example, iron was found to be in higher quantity together with oxygen, carbon and chloride. The FTIR results indicate most prominent peaks of functional groups belonging to important phytochemicals which serve as reducing and capping agents. The peaks

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Research Articles

Molecular docking and simulation studies of flavonoid compounds against PBP-2a of methicillin-resistant *Staphylococcus aureus*

Abhishek Kumar Verma, Sk. Faisal Ahmed, Md. Shahadat Hossain, Ali Asger Bhojiya, Ankita Mathur, Sudhir K. Upadhyay, ...show all

Pages 10561-10577 | Received 04 Feb 2021, Accepted 14 Jun 2021, Published online: 09 Jul 2021

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Abstract

Methicillin-Resistant *Staphylococcus aureus* (MRSA), a pathogenic bacterium that causes life-threatening outbreaks such as community-onset and nosocomial infections as emerging 'superbug'. Time and motion study of its virulent property developed resistance against most of the antibiotics such as Vancomycin. Thereby, to curb this problem entails the development of new therapeutic agents. Plant-derived antimicrobial agents have recently piqued people's interest, so in this research, 186 flavonoids compound selected to unmask the best candidates that can act as potent inhibitors against the Penicillin Binding Protein-2a (PBP-2a) of MRSA. Molecular docking performed using PyRx and GOLD suite to determine the binding affinities and interactions between the phytochemicals and the PBP-2a. The selected candidates strongly interact with the different amino acid residues. The 30 ns molecular dynamics (MD) simulations with five top-ranked compounds such as Naringin, Hesperidin, Neohesperidin, Didymin and Icariin validated the docking interactions. These findings are also strongly supported by root-mean-square deviation, root-mean-square fluctuation and the radius of gyration. ADME/T analysis demonstrates that these candidates appear to be safer inhibitors. Our findings point to natural flavonoids as a promising and readily available source of adjuvant antimicrobial therapy against resistant strains in the future.

Communicated by Ramaswamy H. Sarma

Keywords: Penicillin Binding Protein-2a | flavonoids compounds | methicillin-resistant staphylococcus aureus | molecular docking | molecular dynamic simulation | ADME/T properties

Outline

ELSEVIER

Current Research in Green and Sustainable Chemistry

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Modulation of Biofilm with synthesized silver nanoparticles from *Azadirachta indica*

Zaharaddeen Umar [a], Usman Rabiu Bello [a], Ankita Mathur [a], Giriraj Tailor [b], Jyoti Chaudhary [c], Saurabh Singh [d]

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Efficiency of vitamin B6 (Pyridoxine HCl) on production of Endogenous IAA for growth promotion in *Zea mays* varieties (Azam & Jalal)

Isyaku Ibrahim Muhammad[1], Syed Khalil Ullah[2], Naresh Kumar[3], Habiba Ali Bala[1], Ankita Mathur[3*]

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Abstract

Vitamin B6 act as a versatile cofactor for many enzymes catalyzing important biochemical reactions, it has also been shown to function as a potent antioxidant molecule.B6 Vitamers is essential for plant development and their metabolism by modulating the endogenous phytohormone production, such as auxin (IAA). The recent explanation of the vitamin B6 biosynthesis pathways in plants provides opportunities for characterizing their importance during developmental processes and contact to stress. In plants, vitamin B6 are biosynthesized through salvage pathway is very similar to the bacterial variant. Pyridoxine, pyridoxal and pyridoxamine are inactive forms of vitamin B6 by the process of phosphorylation converted to active coenzymes forms pyridoxine 5' phosphate (PNP) Pyridoxal 5' phosphate (PLP) and pyridoxamine 5' phosphate (PMP) respectively. This research was performed on different varieties (Azam & Jalal) of *Zea mays* to check the natural variation response of various *Zea mays* varieties (Azam & Jalal) for efficacy of exogenously supplied pyridoxine-HCl to induce endogenous (IAA) production for growth promotion. Moreover, it is revealed that increased level of pyridoxine-HCl in *Zea mays* varieties (Azam & Jalal), differentially promoted the (IAA) level in plants in comparison to control. This research demonstrates an important link between vitamin B6 homeostasis and (IAA) biosynthesis in *Zea mays*.

Keywords: pyridoxine HCl, IAA, azam and jalal *Zea mays* varieties, chlorophyll a and b, anthocyanin, carotenoids

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A hypothesis for survival on the planet earth in present: Fittest and most aware ones

Author(s):

Satish Kumar Ameta, Mahadi Danjuma Sani, Suresh C Ameta, Mudassir Alam, Naresh Kumar, Pankaj Kumar Teli and Abhishek Kumar Verma

Abstract:

The hypothesis of "Survival of the fittest", which was linked with Darwin's natural selection has been in existence for several decades and had been challenged by various scholars from different schools of thought. Although it was accepted too at a particular time in evolution, as it lacks some basis for as long as today's world is concerned. If technologies, economies, environmental problems and diseases are evolving and transforming, so do we have sufficient knowledge that who will be fit to survive in such a situation? Nobody has ever thought that the whole world will stop one at a particular time or day, but you could witness the helplessness of humankind within this year 2019 - 2020 as a result of COVID-19. Several questions have been raised in order to know that who is responsible for this and what should be done? How to tackle with the situation and many other problems are yet to address including climate change which is of utmost importance in present scenario As a result of these and many other reasons, it is important to reevaluate the hypothesis of survival of the fittest to be fit in our present world. Incorporating awareness in the hypothesis may bring about several aspects which seem to be excluded in the previous hypothesis. Awareness may include but not limited to one's own life style (i.e. consciousness of the impact of their actions or activities on the environment), access to information, knowledge of current world trends and happenings and their timing. Here we represent an improved hypothesis of "Survival of the Fittest and tried to explore current aspects that suits in ongoing conditions.

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VIRTUAL SCREENING, MOLECULAR DOCKING, PHARMACOKINETIC, PHYSICOCHEMICAL AND MEDICINAL PROPERTIES OF POTENTIAL CURCUMIN DERIVATIVES AGAINST SARS-CoV-2 MAIN PROTEASE (Mpro)

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ABSTRACT

Coronaviruses are one of the transmissible viruses that are mostly reliable for respiratory, intestinal and urogenital tract infections. Various researchers demonstrated that the main protease (MPRO) protein might be an important drug target for SARS-CoV-2. The treatment of illnesses by the oral tradition have long been associated with Natural herbal remedies (NHRs). Modern medicine has potential effects, thanks to traditional medicine, the effectiveness of which derives from medicinal plants including with herbs and shrubs. Objective of this study is to confirm the ingredient of the natural origin compounds (NOCs) which have a potential of anti-viral effect (AVE) and can prevent the humans from SARS-CoV-2 infection. We are interested to figure out the interaction study between the molecules of natural origin compound and the protein of SARS-CoV-2 through molecular docking. The inhibition of Coronavirus (nCoV-2019) main protease enzyme is an important target of our study. All the compounds from *Curcuma longa L.* (Zingiberaceae family) had been screened for the inhibition of MPRO protein through *in silico* methods. From molecular docking report the results we obtained that is out of 235 molecules of natural origin the derivative of Curcumin are one of the best compounds determined through molecular docking and hydrogen bonding with interaction are proposed as the may be novel inhibitor for the SARS-CoV-2 main protease. We demonstrate using Swiss ADME online server tools that all sixteen molecules have better "drug-likeness" than control and does not violate any Ghose, Lipinski, Egan, Veber or Muegge rules. Importantly, all sixteen compounds may be more potent than chloroquine in treatment of COVID-19 according to Molecular docking, interactions and ADME Properties.

KEYWORDS

Molecular docking, ADME properties, *Curcuma longa L,* Inhibitor, Main protease, SARS-CoV-2.

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Research Article

Virtual Screening, Molecular Docking, and ADME/T Analysis of Natural Product Library against Cell Invasion Protein SipB from *Salmonella enterica serotype typhi: In Silico* Analysis

Aminu Ibrahim Danyaya[1*], Abhishek Kumar Verma[3], Avinash Kumar[2*], Binta Sunusi Shuaibu[1], Umar Adamu Hamza[1], Najib Lawan Yahaya[1], Usman Rabi'u Bello[1], Zaharaddeen Umar Na'abba[1] and Abubakar Dabo Dalhat[1]**

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Abstract

Background: The most dangerous issue in the healthcare arises is outbreak of the antibiotic-resistant bacteria worldwide. The randomness of *Salmonella* infections rely on its serotypes and the immune response of the host. Children up to age of 5 years and patients of older age are prone to the *salmonella* infections. The virulence genes of Salmonella encodes five different groups of Cell invasion proteins (CIPs), including Sip A, B, C, D and E. Upon contact with the target cell, SipB undergo 'type III' export from the bacterial cytoplasm and translocate into the cell membrane. Caspase-1 activity is essential for the cytotoxicity, and it has been proven that binding of SipB to caspase-1 induces macrophage apoptosis, so functional inhibition of caspase-1 blocks macrophage cytotoxicity.

Methods: This study is to determine the components of the natural origin compounds (NOCs) have an anti-bacterial effect (ABE) and capable to prevent the humans from bacterial infection *Salmonella enterica serotype typhi*. This *Salmonella* is using the most reliable method is suitable for molecular docking. We used to find out the interaction study between the molecules and the protein. In our study based on the inhibitor of Cell Invasion Protein SipB from *Salmonella*. We performed *In Silico* method for screening of all the natural compounds against Cell Invasion Protein SipB inhibition.

Results and Discussion: The results we obtained from molecular docking shown that among 2228 molecules of natural origin from natural product compounds library (20200427-L1400) was retrieved in SDF format from Inhibitor Expert (Selleckchem.com). Fifteen molecules are the best compounds observed through molecular docking and hydrophobic interactions and hydrogen bonding with interaction are proposed as the novel inhibitors against the Cell Invasion Protein SipB from *Salmonella*. We demonstrate using SwissADME online server tools and DruLito that all fifteen natural molecules has better "drug-likeness and does not violate any Lipinski, Ghose, Veber, Egan or Muegge rules.

Conclusion: Importantly, all fifteen natural compounds are more potent in treatment of against Cell Invasion Protein SipB in *Salmonella typhi* but needs further experimental research.

Keywords: *Salmonella enterica; Serotype typhi*; Cell Invasion Protein SipB; Natural Product Library; Molecular Docking

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JUST AGRICULTURE
multidisciplinary e-Newsletter

"Tree Transplantation Policy: Go Clean, Go Green"

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Introduction

Tree transplantation policy became known recently when the Delhi cabinet has given its nod and with this, Delhi has become the first state in India to enact this policy. This transplantation policy is a ray to save the environment as we are seeing the current scenario of a world where climate change is on-trend. We must say, this is a very much-needed policy to stop deforestation and restore cutting trees. In this article, we are going to discuss about tree plantation policy, what is the importance of this policy, and its drawbacks.

Delhi Chief Minister Shri Arvind Keiriwal recentlv launched a **Tree Transplantation**

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Plantextracts modulate the expression of neurotrophic factors in the brain: A review

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Abstract: *Neurotrophic Factors (NTF) are a family of biomolecules consist of small proteins and peptides identified as Nerve Growth Factor (NGF), glial cell line–derived neurotrophic factor (GDNF) family ligands, brain-derived neurotrophic factor (BNDF), and neuropoietic cytokines. They are essential for the differentiation, survival, and growth of neurons and glia cells in all stages of brain development dendrittic pruning, , patterning of innervations, axon growth and induction of the proteins vital for normal functioning of ion channels and neurotransmitters. Neurotrophic factors promote the development and initial growth of neurons in both nervous systems-the central nervous system (CNS) and the peripheral nervous system (PNS)s. They have regenerate and repair neurons in lab and in situ experiments. Neurotrophic Factors also promote and induce synaptic plasticity, and modulate the creation of the long-term memory. They have been also implicated potentially in the treatment neurodegenerative diseases such as MS (Multiple sclerosis), AD (Alzheimers disease) and PD (Parkinson's disease). Application of herbal drugs. In the present review effects of plant products on neurotrophic factors is discussed. The experimental evidences reported strengthen the hypothesis that plant extracts are useful modulators of neurotrophic factors and thus could be useful in treatment of CNS diseases, without high side effects. Further clinical studies are mandatory to confirm these studies.*

Key words: Neurotrophic factors, Plant extracts

ORIGINAL RESEARCH ARTICLE

Int J Pharm Bio Sci Volume 12 Issue 1, 2021 (January-March), Pages:66-72

Assessment of Hepatoprotective Activity of *Justicia adhatoda L.* Herbal Extracts Using Carbon Tetrachloride Influenced Hepatotoxicity in Rats Model.

*Gaurav Kumar Sharma*and Sarita Sharma*

DOI: http://dx.doi.org/10.22376/ijpbs.2021.12.1.p66-72

Abstract:

The home grown medications, utilized in Indian frameworks of meds, are, in any case, being professed to be compelling and good for liver infection. The current examination has endeavored to exhibit the hepatoprotective movement of different natural concentrates of *Justicia adhatoda* L. by CCl_4 incited hepatotoxicity in the Albino rats (Wister strain). The parameter like enzyme study (SGOT, SGPT, SALP, Serum bilirubin (total and direct) with histopathological studies have been carried out and the extent of regenerative changes have been observed. It was observed that the Chloroform concentrate of *Justicia adhatoda* L. at 200mg/kg of body weight indicated a critical decrease in raised degree of SGOT, SGPT, SALP and bilirubin. While the Petroleum ether and Aqueous concentrate showed moderate decrease in catalyst level. Ethanol concentrates did not show any huge decrease in protein level, demonstrating no movement. The hepatoprotective movement was upheld by minuscule histopathological assessment of liver tissue. Since after effects of biochemical investigations of blood tests of carbon tetrachloride rewarded rodents indicated critical increment in the degrees of serum compound exercises, mirroring the liver injury brought about by CCl_4 and blood tests from the creatures rewarded with the Chloroform concentrate of *Justicia adhatoda* L. have demonstrated critical abatement in the degrees of serum markers, showing rewarded liver have been found to have noticeable hepatocytes with increasingly regenerative movement, which implies better hepatoprotective action when contrasted with different gatherings. Though Petroleum ether and Aqueous concentrate of *Justicia adhatoda* L. rewarded liver found to have the moderate level of greasy changes, which demonstrated moderate hepatoprotective action when contrasted with different gatherings. Considering the eventual outcomes of various biochemical boundaries, all the arrangements have demonstrated important hepatoprotective development for all intents and purposes indistinguishable with LIV-52.The best hepatoprotective activity was found with Chloroform concentrate of *Justicia adhatoda* L.

Keywords: Hepatoprotective activity, Carbon tetrachloride (CCl4), LIV-52, Justicia adhatoda L.

Full HTML:

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Assessment of Chemoprotective Potential of Curcumin against DMBA-Croton Oil Induced Skin Cancer in Mice

Sarita Sharma[1*], Raju Koneri[2], Gaurav Kumar Sharma[1] and Kaushal K. Chandrul[1]

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[2]Karnataka College of Pharmacy, Bangalore, 560054, Karnataka, India.

Authors' contributions

This work was carried out in collaboration among all authors. Author RK has designed the study. Author SS has performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors KKC and GKS have managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Background: Skin cancer is the most aggressive form of cancer with a high mortality rate. Different medications of skin cancer are accessible, yet because of improvement of multi-drug resistance, flow and rising chemotherapies have a generally low achievement rate. This emphasize the importance of discovering new compounds that are both safe and effective against skin cancer. This study used and compared different routes of administration of a natural compound curcumin to investigate the anti-cancer effect.

In this investigation it has been resolved that the curcumin expands CAT and SOD levels alongside decline in the TBARS levels.

Methods: The hindrance of tumour rate Curcumin was assessed in mice on two phase procedure of skin carcinogenesis incited by single utilization of DMBA/7,12-Dimethylbenz[a]-anthracene (100

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An Exploration for Protective Effect of Rhizome Extract of Iris pseudacorus L. and Seed Extract of Dolichos biflorus L. in Sodium Oxalate Induced Urolithiasis in Rat Model

Sarita Sharma, Dr. (Prof) Amit J. Raval, +1 author Dr. Gaurav Kumar Sharma • Published 15 May 2022 •
International Journal of Pharmaceutical Sciences Review and Research

The aim of our presented study is to assess the effect of Rhizome extract of Iris pseudacorus L. and seed extract of Dolichos biflorus L. as preventive agent in experimentally induced urolithiasis model in rats. Rats were administered Sodium Oxalate (70 mg/kg, i. p.) in drinking water for 28 days in drinking water. In addition to this, Saponin extract of Iris pseudacorus and Dolichos biflorus of low dose and high dose were administered along with Sodium Oxalate on 14-28th day. After the experimental period, blood samples were collected by cardiac puncture to analyse for Creatinine, Calcium, Blood Urea Nitrogen (BUN), Phosphorus, Uric acid, Alkaline Phosphate, Potassium, and Alanine Amino Transferases followed by various antioxidants and kidney histopathology. The ethylene glycol feeding resulted in an increased level of all parameters evaluated compared to normal rats. All these conditions were reversed with plant extract treatment. Histopathological analysis also showed that rats treated with Sodium Oxalate had large deposits of calcium oxalate crystals, and that deposits were reduced in rats treated with plant extract. Results were also compared with the marketed product cystone as a standard. These data suggest that Iris pseudacorus and Dolichos biflorus Saponin extracts has a protective activity against urolithiasis. Collapse

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Journal of Drug Delivery and Therapeutics

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Review Article

A Synopsize Report of the Various Perspectives of Urolithiasis and its Ethno-Medical Future

Sarita Sharma[1]*, Amit J. Raval[2], Raju Koneri[3], Gaurav Kumar Sharma[4]

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Abstract

Kidney stone formation or urolithiasis is a complex process that results from a series of physicochemical events, including supersaturation, nucleation, growth, aggregation, and retention in the kidney. Urolithiasis affects about 10% of people in the Western world in their 70s. Epidemiological data show that calcium oxalate is the major mineral in most kidney stones.

To date, great progress has been achieved in identifying metabolic risk factors that predispose to this complex condition, the most prominent of which is hypercalcemia. The unique genetic and epigenetic elements concerned in urolithiasis have remained largely unknown, thanks in part to the candidate gene and linkage techniques that have been available to date, which are inherently low in terms of their decision-making power and ability to assess modest outcomes in complicated traits.

However, when combined with studies of rare Mendeliantypes of urolithiasis linked to various metabolic danger factors, those methodologies have shown organic pathways that appear to underpin the improvement of stones in the urinary system. Furthermore, despite substantial improvements in research into the biochemical and physical signs of kidney stones, therapeutic therapy medications are in short supply. Phytotherapy may be effective as an alternative or adjunctive therapy in the treatment of urolithiasis, according to data from in vitro, in vivo, and clinical investigations. This

Paper Details

A REVIEW ON CARDIOVASCULAR DISEASE EFFECT IN CORONA PATIENTS

*Md. Zulphakar Ali, Pankaj Chasta, Dr. Gaurav Kumar Sharma and Dr. Kaushal Kishore Chandrul

Journal Title: World Journal of Pharmacy and Pharmaceutical Sciences

Abstract

Cardiovascular disease (CVD) is a hearts cardiovascular disease includes coronary artery such as angina heart attack cardiomyopathy co morbidities, hypertensive disease. Cardiovascular disease effect in covid-19 many patients with corona virus disease have underlying cardiovascular disease or develop acute cardiac injury during the large of the illness adequate underlying of the interplay between covid-19 (CV) disease is required for optimum management of these patients, cardiovascular disease is responsible of more number of death world-wide, the muscle and vessels of heart and blood transporting roods become vulnerable patients in most of the (CVD) the role of hypertension and cholesterols of different density triglycerides in induction and progression of cardiovascular disease, Besides this the patent biomarkers such as mono cytosine, fibrinogen, D-dimmer and thrombin/ anti thrombin interleukin, severe acute respiratory syndrome-corona virus (SARS-CoV-2) can manifest acutely and persist into convalescence and possibly beyond. Coronavirus disease 2019 (COVID-19), caused by a strain of corona virus known as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), has become a global pandemic that has affected the lives of billions of individuals. Clinical studies have also reported an association between COVID-19 and cardiovascular disease. Pre-existing cardiovascular disease seems to be linked with worse outcomes and increased risk of death in patients with COVID-19, whereas COVID-19 itself can also induce myocardial injury, arrhythmia,

Open Journal of Medical Microbiology > Vol.10 No.2, June 2020

Possible Mechanical Transmission of SARS-CoV-2 Causing COVID-19 by Insects: Infection, Prevention, Implications, and Control

Mubarak Ismail[1], Abhishek Kumar Verma[1], Adamu Abdulkadir[1], Avinash Kumar[2], Dinesh Kumar Dhawan[3], Kinjal Bolya[1], Mayadhar Barik[2*]

[1]Department of Life Sciences, Mewar University, Chittorgarh, India.

[2]Department of Paramedical Sciences, Mewar University, Chittorgarh, India.

[3]Department of Microbiology, Central University of Punjab, Bathinda, India.

DOI: 10.4236/ojmm.2020.102008 PDF HTML XML 836 Downloads 2,664 Views Citations

Abstract

The new coronavirus called SARS-CoV-2 is a new type of virus named as COVID-19. Although, it has few similarities with pandemic flu viruses, the respiratory system and immune system are damaged through the viruses infected the population who has weakened immunity. SARS-CoV-2 spreads when people don't have the sign and symptoms. This virus COVID-19 appears to spread more easily than the flu, and asymptomatic transmission may account for a greater proportion of COVID-19's spreader over the World. In inundation of the current understanding, the roles of insect vectors are helping in the transmission of viral pathogens as well and the possible roles of some newly joined insects in the mechanical transmission of COVID-19. We also specifically provide the prevention and control methods related to contamination, disease burden, risk pattern in the family, near and dear to maintain the precision of social distancing and development of the immune system to fight against SARS-CoV-2.

Keywords

SARS-CoV-2, Insects, Prevention, Control, Mechanical Transmission

J Pediatr Neurosci. 2018 Jan-Mar;13(1):46-57. doi: 10.4103/JPN.JPN_124_17.

Missing Links Between Genetically Inherited Molecules in Split Cord Malformation and Other Anomaly: A Bench to Bedside Approach

Mayadhar Barik [1], Pravash R Mishra [2], Ashok Kumar Mohapatra [3]

Affiliations + expand

PMID: 29899771 PMCID: PMC5982492 DOI: 10.4103/JPN.JPN_124_17

Free PMC article

Abstract

Aim: Split cord malformation (SCM) is associated with extensive vertebral fusions (Klippel-Feil anomaly). In light of previous embryological theories and recent research findings, we attempt to document the origin of split cord, and vertebral fusions involvement of spectrum of genes is necessary to know better the etiopathogenesis of SCM and its associated diseases.

Materials and methods: We used the various databases such as PubMed/MEDLINE, Cochrane Review, Hinari, and Google Scholar for the recently published medical literature. The women had been living and still born infants had SCM. The relative risk (RR) and possible molecular mechanism are described details of major genes and its variants in details. Although molecular genetics involvement including with recent advances of study add an evidence of both Mendelian and Non-Mendelian fashion is discussed with all genetic components. We mentioned our earlier experience and responsibility of SCM and its associated diseases.

Results: Although different mechanisms are suggested for the development of SCM observed in our experience, there is a midline lesion bisecting the neuroepithelium and the notochordal plate, which is responsible for complete splitting of the cervical cord with anterior bony defect. The localized disturbance of cervical neural tube closure accounts for SCM with partial dorsal splitting of the cord with posterior vertebral defect and associated diseases.

J Pediatr Neurosci. 2017 Jan-Mar;12(1):7-14. doi: 10.4103/1817-1745.205652.

Effect of Nimodipine on Morphine-related Withdrawal Syndrome in Rat Model: An Observational Study

Pravash Ranjan Mishra [1], Mayadhar Barik [2], Subrata Basu Ray [3]

Affiliations + expand

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Abstract

Objective: To observe the effect of L-type calcium channel blocker like nimodipine on morphine's withdrawal when it was administered continuously along with morphine versus a single bolus dose of nimodipine, which was administered at the end of the experiment before the precipitation of withdrawal reaction in morphine-dependent rats.

Materials and methods: Four groups of adult male Wistar rats were rendered morphine dependent by subcutaneous injections of morphine at a dose of 10 mg/kg for 10 days. Nimodipine 10 mg/kg intraperitoneally (ip) administered to one group once daily before morphine administration in the entire experimental period, and another group received nimodipine only once at the end of the experiment as a single bolus dose 2 mg/kg before the administration of naloxone. Naloxone 3 mg/kg was administered ip to all the groups to precipitate withdrawal reactions. The withdrawal reactions were evaluated and scored as per the Gellert and Holtzman global withdrawal rating scale.

Results: Nimodipine when administered as a single bolus dose before naloxone administration in morphine-dependant rats reduced the features of withdrawal reactions more effectively than continuous administration of nimodipine along with morphine throughout the experimental period.

Conclusion: We discovered that nimodipine helps in attenuating the severity of morphine withdrawal having potential role encountered during pharmacotherapy with morphine management of opioid dependence, well memory, impairement, cell signaling and phosphorylation of neuron.

Keywords: Dependence and withdrawal reactions; morphine; naloxone; nimodipine.

Neurol India. 2020 Sep-Oct;68(5):1144-1150. doi: 10.4103/0028-3886.299136.

Molecular Genetics involved in Neural Tube Defects: Recent Advances and Future Prospective for Molecular Medicine

Pravash R Mishra [1], Mayadhar Barik [2], A K Mahapatra [1]

Affiliations + expand

PMID: 33109865 DOI: 10.4103/0028-3886.299136

Free article

Abstract

Background: Folic acid and multivitamin supplements ((FAMVS) and genetics involvement is one of the major roles in the development of neural tube defects (NTDs).

Objective: Our prior aim and objective is to establish an unique guideline and helps the policy decision making for our country India and the World.

Materials and methods: We have collected the data through the literature from the World for their necessary action, rehabilitation part all objectively in PubMed/Medline, Scopous, Embase, Cochrane Review, Hinari, and Google scholar.

Statistical analysis: Statistical analysis was performed with very simple and logistic statistics, percentage, mean, total as collection through the available software SPSS with new version 17.0.

Results: The overall (70-95%) we find out those infants with neural tube defects (NTDs) associated with genes involvement and maternal vitamin intake (MVI). Before pregnancy relative risk (PRR) prior to non intake noted as 90% significantly reduced their risk of the NTDs. Now (40-60%) of the women of child-bearing age (CBA) don't use the folic acid intake and supplements (FAISs) in proper way in villages, urban, industrial and sewage areas. We find out that the genetic variants of the fourteen special reported genes, had the major risk factor (MRF) for the (NTDs) and associated abnormalities rate (AAR) within the developmental process in the human brain.

Journal of Pharmacognosy and Phytochemistry

Vol. 9, Issue 3 (2020)

Inhibition of multidrug resistance property of *Candida albicans* by natural compounds of parthenium hysterophorus L. An *In-Silico* approach

Author(s):

Abhishek Kumar Verma, Santosh K Maurya, Avinash Kumar, Dr. Mayadhar Barik, Dr. Vipin Yadav, Bashir Umar, Mudassir Lawal, Zainab Abdullahi Usman, Maimuna Aliyu Adam and Bello Awal Balarabe

Abstract:

Objectives: In this study, we targeted enzymes (Erg11, Erg5, Erg3), transporters (CDR1, CDR2), and cytochrome 450 (CaALK8) involved in MDR of Candida albicans, which caused fungal disease. ATP-binding cassette (ABC) and some other major facilitator superfamilies (MFS) of transporters are responsible for MDR in Candida Albicans.

Material and methods: The compounds present in Parthenium hysterophorus L. were docked against the proteins involved in MDR of Candida Albicans. PyRx-Python prescription 0.8. was used to identify binding affinities of compounds against the proteins.

Result and Discussion: Erg11, Erg5, Erg3, CDR1, CDR2 and CaALK8 proteins docked with β-Sitosterol (-10.6, -9.6, -9.6, -9.6, -9.6, and -8.5) ç-Sitosterol (-9.9, -9.2, -9.3, -9.4, -9.6, and -8.5). Piperine (-10.0, -8.3, -9.3, -8.4, -8.5, and -8.4) Kcal/mol respectively and found to show good hydrophobic interactions.

Conclusion: In this study, we may conclude that compounds isolated from parthenium hysterophorus might be effective against the fungal disease caused by Candida Albicans.

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Research Articles

Molecular docking and simulation studies of flavonoid compounds against PBP-2a of methicillin-resistant *Staphylococcus aureus*

Abhishek Kumar Verma, Sk. Faisal Ahmed, Md. Shahadat Hossain, Ali Asger Bhojiya, Ankita Mathur, Sudhir K. Upadhyay,
... show all

Pages 10561-10577 | Received 04 Feb 2021, Accepted 14 Jun 2021, Published online: 09 Jul 2021

Download citation | https://doi.org/10.1080/07391102.2021.1944911 | Check for updates

Abstract

Methicillin-Resistant *Staphylococcus aureus* (MRSA), a pathogenic bacterium that causes life-threatening outbreaks such as community-onset and nosocomial infections as emerging 'superbug'. Time and motion study of its virulent property developed resistance against most of the antibiotics such as Vancomycin. Thereby, to curb this problem entails the development of new therapeutic agents. Plant-derived antimicrobial agents have recently piqued people's interest, so in this research, 186 flavonoids compound selected to unmask the best candidates that can act as potent inhibitors against the Penicillin Binding Protein-2a (PBP-2a) of MRSA. Molecular docking performed using PyRx and GOLD suite to determine the binding affinities and interactions between the phytochemicals and the PBP-2a. The selected candidates strongly interact with the different amino acid residues. The 30 ns molecular dynamics (MD) simulations with five top-ranked compounds such as Naringin, Hesperidin, Neohesperidin, Didymin and Icariin validated the docking interactions. These findings are also strongly supported by root-mean-square deviation, root-mean-square fluctuation and the radius of gyration. ADME/T analysis demonstrates that these candidates appear to be safer inhibitors. Our findings point to natural flavonoids as a promising and readily available source of adjuvant antimicrobial therapy against resistant strains in the future.

REVIEW ARTICLE

MULTIFARIOUS SCOPE OF AGRO-FORESTRY

Vijay Upadhyay, Abhishek Raj*, Neelu Jain and Brijesh Kumar Meena

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Received-08.02.2020, Revised-26.02.2020

Abstract: Agroforestry is an ecologically sustainable land use system that maintains increase total yield by combining food crops (annuals) with tree crops (perennials) and/or livestock on the same unit of land. A large hectare is available in the form of boundaries, bunds, wastelands where this system can be adopted. Farmers retain tree of *acacia nilotica*, *acacia catechu*, *Dalbergia sissoo*, *Mangifera indica*, *Zizyphus mauritiana* and *Gmelina arborea* etc in farm land. Agroforestry-the deliberate combination of woody perennials on the same piece of land with agricultural crops and/or animals, plays a crucial role in climate change mitigation especially due to its tree component. Trees accumulate CO_2 (which is the most predominant GHG) in their biomass. Agroforestry not only helps in climate change mitigation but also climate change adaptation. It is an established fact that despite our present effort at climate changes mitigation (GHG reduction), there is a more pressing need to cope with the impact of climate change (adaptation). For instance, the trees in agroforests provide shade for both companion crops and the farmer against the rising temperatures, and also shelter the crops against the harmful effect of raging storms. The presence of trees on the farms ensures income diversification through the provision of additional resources like fruits, nuts, timber, vegetables, fodder, etc. People should be aware about the scope and benefits of Agroforestry and they should participate in implementation and development of Agroforestry in India. Therefore, agroforestry system is economically and ecologically sound practices with enhancement of overall farm productivity, soil enrichment through litter fall, maintaining environmental services such as climate change mitigation (carbon sequestration), phytoremediation, watershed protection and biodiversity conservation.

Keywords: Agroforestry, Biodiversity, Bund, Climate change, Phytoremediation

INTRODUCTION

interactions. It can yield positive results only if positive interactions outweigh the negative

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Effect of Indian mustard to various organic and inorganic sources of nutrient on yield, available soil p balance and p recycling through residues

Gautam Singh Dhaked, Vikas Tomer and Narinder Panotra

Abstract
A study was conducted at agronomy farm Mewar University Gangrar, Chittorgarh, Rajasthan, which are four treatment combinations of 75 and 100% recommended dose of fertilizers (RDF) and their combinations with 5 t farm yard manure ha^{-1} (FYM) were evaluated on medium clay loam soils of chittorgarh during winters of 216 in a Randomized Block Design replicated thrice. Results illustrate that among nutrient treatments, 100% RDF + 5 t FYM registered significantly higher seed and stover yield (3231 and 13604 kg ha^{-1}, respectively), crop phosphorus uptake (52.71 kg ha^{-1}), available soil P at crop harvest (23.35 kg ha^{-1}), gain in available soil P (3.21 kg ha^{-1}) and dry biomass of residues (4649.1 kg ha^{-1}) and P recycled (11.56 kg ha^{-1}).

Keywords: Available soil P, Indian mustard, soil phosphorus balance.

Introduction

Journal of Pharmacognosy and Phytochemistry

Vol. 9, Issue 2 (2020)

Effect of different herbicides and planting techniques on yield and yield components of in late sown wheat (*Triticum aestivum* L.)

Author(s):

Vikas Tomar, Narinder Panotra, Ravindra Tomer and Gautam Singh Dhaked

Abstract:

An experiment was conducted at C S Azad University of Agriculture and Technology, Kanpur District of Uttar Pradesh during *rabi* seasons of 2015-16 and 2016-17 to find out the effect of different herbicides and planting techniques on yield and yield components of in late sown wheat (*Triticum aestivum* L.). The treatments consisted three planting techniques and five weed management practices. The experiment was laid out in split plot design with three replications. Planting method plays an important role in the placement of seed at proper depth, which ultimately affects crop growth. The selection of suitable planting method for wheat is dependent upon the time of planting, availability of soil water at planting time, amount of residue in the field. The results showed that plant height was increasing with increasing days after sowing in the

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Journal of Pharmacognosy and Phytochemistry

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Genetic diversity analysis in rapeseed (*Brassica juncea* L.)

Author(s):

Brijesh Kumar Meena, Gautam Singh Dhaked, Abhishek Raj and Vijay Upadhyay

Abstract:

The Present investigation were conducted during 2010- 2011 at the Research Farm of Janta Vedic College, Baraut, Baghpat (U.P.). The thirty nine genotypes of Indian mustard (*Brassica juncea* L. Czern and Coss) were shown in a Randomized block Design (RBD) with three replication at the Research Farm. Five Competitive plants from each plot were randomly selected from all three rows for recording data. Observations of all the characters were recorded on single plant basis except for days to flowering and days to maturity. Average of these selected five plants in respect of different plant characters were used for statistical analysis. The data were recorded for the following characters namely, Days to 50% flowering, Days to 80% maturity, Plant height (cm), Number of primary branches per plant, Number of secondary branches per plant, Length of siliqua (cm), Number of seeds per siliqua, 1000-seeds weight (gm), Biological yield per plant(gm), Harvest index (%), Oil content and Seed yield per plant (gm). All the 39 genotypes were classified in to five clusters. Clusters II had maximum number of genotypes (14) and second larger group of genotypes was in cluster III and V with (9) genotypes each. The cluster I had genotype (6) and minimum genotypes (1) in cluster IV.

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Indian Journal of Ecology
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Asiatic black bear (ursus thibetanus) activity pattern and human-black bear conflict in the nanda devi biosphere reserve, western Himalaya, India

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Online Published on 02 April, 2022.

Abstract

Asiatic black bear (*Ursus thibetanus)-human* conflicts and its activity in buffer and transition zone of Nanda Devi Biosphere Reserve (NDBR), Uttarakhand, India was assessed, based on semi-structured interviews with villagers during 2016–2018. The 65% of villagers depended on forest products and 80% crop depredation was by black bear agricultural field situated near to bear habitat. The three types of black bear-human conflicts recorded from NDBR were crop depredation, livestock depredation and attacks on humans. From these crop depredations (80%), most of the crop depredations were on maize (91%) in agricultural crops and apple (88%) in orchard crop. Maximum observations were recorded for prematurity stage (69.23%) and followed by maturity stage (23.08%). A total of 82 cases of attacks by black bear on livestock were reported, of these, 57 (49 on cattle and 8 on sheep/goat) were killed in the night shelters, 16 were killed in the forest while grazing. The 24 attacks were on humans, out of them mauling was 87% and rest were killed and maximum attacks were in autumn season (62.50%), dawn and dusk time (58.33%), in agricultural fields (58.33%), on head and face (37.50%) of body. The improvement in traditional crop protection measures, improvement in night shelters and proper disposal of home waste material and regular monitoring of high conflict zone with wildlife management team is recommended. These protection measures will improve problem with black bears and to get in local villagers support for black bear conservation.

Top

Keywords

Asiatic black bear, Conflict, Livestock depredation, Management, Protection.

Top

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Research Article | Open Access

Phenetic Characterization of Nitrogen Fixing *Azotobacter* from Rhizospheric Soil of Southern Rajasthan

Devendra Jain[1], Gunnjeet Kaur[1,2], Ali Asger Bhojiya[1,3], Surya Chauhan[1], S.K. Khandelwal[1], R.H. Meena[4], Deepak Rajpurohit[1] and Santosh Ranjan Mohanty[5]

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Research Article

Phenetic and Molecular Diversity of Nitrogen Fixating Plant Growth Promoting *Azotobacter* Isolated from Semiarid Regions of India

Devendra Jain,[1] **Jyoti Sharma**,[1] **Gunnjeet Kaur**,[1,2] **Ali Asger Bhojiya**,[1,3] **Surya Chauhan**,[1] **Vimal Sharma**,[1] **Archna Suman**,[4] **Santosh Ranjan Mohanty**,[5] **and Elina Maharjan**[6]

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In the present study, 24 *Azotobacter* strains were isolated from soils of different areas of southern Rajasthan and characterized at biochemical, functional, and molecular levels. The isolated *Azotobacter* strains were gram negative and cyst forming when viewed under the microscope. These strains were also screened for their plant growth promoting activities and the ability of these isolates to survive under abiotic stress conditions viz. salt, pH, temperature, and drought stress. All the isolates showed IAA, siderophore, HCN, and ammonia production, whereas seven *Azotobacter* strains showed phosphate solubilization.

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Microbiological and enzymatic properties of diverse *Jaivik Krishi* inputs used in organic farming

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Jaivik Krishi is a system of production and natural agriculture free from all fertilizers, pesticides, herbicides and synthetic harmful substances. Organic Farming is a method which forbids the application of synthetic inputs (such as chemical fertilizers, pesticides, feed additives, hormones, etc.) *Jaivik krishi* products (organic inputs) are organic formulations that boost the biological productivity of crops and the nutritional quality of vegetables and fruits. The use of *Javik Krishi* inputs helped in sustaining crop yields in organic nutrient management system. In the present study, various organic formulations were prepared from the various indigenous cow-products and plant based waste materials. Microbial count viz., total bacteria, fungus and actinomycetes count, and enzymatic activities viz., acid phosphatase, alkaline phosphatase and dehydrogenase were also evaluated in different organic liquid formulations. The average microbial count of Panchgavya ($14.9x10^8$, $5.8x10^5$, $8x10^5$ cfu/mL for total bacteria, fungus and actinomycetes count respectively) was highest among various *Javik Krishi* inputs studied followed by Dasparni. In present study, enzymatic activities of *Javik Krishi* inputs was directly related and corresponded to the microbial count. The enzyme activities of Panchgavya was highest (29.97, 52.10 and 66.64 µg/mL for acid phosphatase, alkaline phosphatase and dehydrogenase respectively) followed by Dasparni. These *Javik Krishi* inputs will benefit in enhancing the soil carbon content of soil and improving the soil fertility and micro-fauna.

Keywords: Acid Phosphatase, Alkaline phosphatase, Dehydrogenase, *Jaivik Krishi,* Microbial count, Organic farming

IPC Code: Int. Cl.[21] C12Q 1/42, C05B 11/16, C12Q 1/32, C12N 11/098, A61K 9/30

Organic farming is a method of farming that emphasizes primarily on cultivating the land and fertilizers and pesticides by replacing traditional Indian methods lead to high crop yield with adverse

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Zinc tolerant plant growth promoting bacteria alleviates phytotoxic effects of zinc on maize through zinc immobilization

Devendra Jain, Ramandeep Kour, Ali Asger Bhojiya, Ram Hari Meena, Abhijeet Singh, Santosh Ranjan Mohanty, Deepak Rajpurohit & Kapil Dev Ameta

Scientific Reports **10**, Article number: 13865 (2020) | Cite this article

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Abstract

The increasing heavy metal contamination in agricultural soils has become a serious concern across the globe. The present study envisages developing microbial inoculant approach for agriculture in Zn contaminated soils. Potential zinc tolerant bacteria (ZTB) were isolated from

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Sections | Figures | References

Abstract

Introduction

Results

Discussion

Conclusion

Methods

ORIGINAL RESEARCH article

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This article is part of the Research Topic
Microbial Fabrication of Nanomaterials and Their Applications
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Microbial Fabrication of Zinc Oxide Nanoparticles and Evaluation of Their Antimicrobial and Photocatalytic Properties

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Zinc oxide (ZnO) nanoparticles have attracted significant interest in a number of applications ranging from electronics to biomedical sciences due to their large exaction binding energy (60 meV) and wide bandgap of 3.37 eV. In the present study, we report the low-cost bacterium based

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Response of Organic Manures, Inorganic Fertilizers and Bio-fertilizers on Growth and Yield of Field Pea (Pisum sativum L.)

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ABSTRACT

A field experiment was carried out in Agriculture farm, Department of Agronomy, Mewar University, Chittorgarh, Rajasthan, during the Rabi season of 2021-2022 to find out the "Effect of Organic Manures, Inorganic Fertilizers and Bio-Fertilizers on Growth and Yield of Field Pea (Pisum sativum L.)". The experiment was laid out in Randomized Block Design (RBD) comprising of 9 treatments with three replications. The results revealed that the treatment T_6 ((55:90:40) NPK + Rhizobium + PSB) was found to be the most suitable for various parameters; days to germination (9.08), number of days till the first bloom appears (44.42), days to pod

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Effects of organic manures and inorganic fertilizers on growth and yield of wheat (*Triticum aestivum* L.)

Mohd Ali and Dr. Gautam Singh Dhaked

Abstract
The present study was conducted on loam soil at Agronomy Farm, Mewar University, Gangrar, during the *Rabi* season of 2021-22. Ten treatments consisting of Control, 100% recommended dose of nitrogen (RDN) + 25% N through FYM, 100% T3- 100% RDN + 25% N through vermicompost, 75% RDN + 25% N through FYM, 75% RDN + 25% N through vermicompost, 50% RDN + 50% N through FYM, 50% RDN + 50% N through vermicompost50% RDN + 50% N through vermicompost, 25% RDN + 75% N through FYM, 25% RDN + 75% N through vermicompost and 100% RDN through chemical fertilizer in Randomize Block Design with three replications. The wheat cultivar of Raj-3077 was grown in the experiment. The highest yield attribute and yield were recorded with 100% RDN + 25% N through vermicompost through compost which was statistically similar to the treatment of 100% recommended dose of nitrogen (RDN) + 25% N through FYM and significantly higher than the 100% RDN through chemical fertilizer and control. Among the different combinations of organic manures with compost of nutrients, the replacement of 100% RDN through chemical fertilizer recorded significantly higher yield attributes and yield along with higher net return and B: C ratio. The treatments with compost of nutrients recorded higher nutrient content and nutrient uptake over 100% RDN + 25% N through vermicompost with inorganic fertilizer. On the basis present study, it may be conducted that the integrated use of the organic source of nutrients can enhance the productivity of the wheat system.

Keywords: Wheat, organic, inorganic, vermicompost, fym

Introduction
Wheat (*Triticum aestivum* L.) is *a* very important staple and remunerative *rabi* crop, cultivated in almost all the countries of the world. Among major wheat-producing countries, India ranked second next to China concerning its production in the world (Agriculture Sectors National Portal). It is the second most important cereal crop after rice in India and is grown under diverse agro-climatic conditions.

India has the largest area under wheat (29.14 million hectares) but ranks second in production (102.19 million tonnes) after China with average productivity of 3154 kg/ha (GOI, 2019). It is cultivated mainly in the states of Uttar Pradesh, Madhya Pradesh, Punjab, Rajasthan, Haryana, Bihar, Gujarat, and Maharashtra. Among the different states of India, Uttar Pradesh ranks first in both area and production, while Punjab ranks first in productivity. In Rajasthan, the crop occupies an area of 3.4 million hectares and production

Impacts of NPK consortia biofertilizer and mineral fertilizer on growth and yield of two maize (Zea mays L.) hybrids in Rajasthan-India

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pdf

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Keywords: Maize-Hybrids, Chemical fertilizers, Consortia biofertilizer, Growth-parameters, Yield-parameters.

Abstract

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JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Study about Berberry (*Berberis vulgaris)*, their development, collection, Hepatic treatment, and therapeutic Studies.

Waseem Akram Khan[1], Widunbiliu[2], Om Prakash Gurjar[3]

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Faculty of Agriculture, Mewar University, Chittaurgarh (RJ.)- 312901

Abstract

The Berberry or ***Berberis vulgaris*** has a spot with the Berberidaceae family which is red concealed natural items created in Europe and Asia. These sorts of normal items should contain trimmings, for instance, berberine, berbamine, palmatine, oxycanthine, malic destructive berberubin. The principal worsens that should be found including the plant of Berberry are berberine and berbamine. Building up to the phytochemical examination of significant sorts of this assortment revealed the closeness of alkaloid tannins phenolic compound, sterol, and triterpenes Including to the class of the berberis around 500 species, by and large, some of the plants which are for the most part evolved in the method of northeastern areas of Iran. The advancement methodology of seedless berberine in the south zone gets back to 200 years back. The

Cuscuta reflexa: A critical review on the medicinal plant used in homeopathy

Waseem A K R A M Khan

2022, International journal of Research in Agronomy

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2022, Vol. 5, Issue 2, Part A

Remedial merit of rhododendron (*Rhododendron arboretum*)

AUTHOR(S)

Waseem Akram Khan and Anzar Ahmed Khoker

ABSTRACT

Rhododendron arboretum is a woody plant with a gaudy showcase of dazzling red blossoms has a place with Ericaceae typically develops on North Temperate Zone particularly in the sodden corrosive soil of the Himalayas, South East Asia. The plant is tracked down in the Himalayas from Jammu & Kashmir eastwards to Nagaland and generally fills in Bhutan, China, Myanmar, Nepal, Sri Lanka, Pakistan and Thailand. Usually it is utilized in gardens, estates because of its tasteful worth of alluring bloom tree plant. It assumes a significant part in Traditional solutions for various sicknesses because of its phytochemical potential. This audit center around therapeutic properties of various pieces of *Rhododendron arboretum*.

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2023, Vol. 3, Issue 1, Part A

Parthenium hysterophorus (congress grass) a unwanted plant & its uses

Author(s): Waseem Akram Khan and OP Gurjar

Abstract: In right now we are confronting the pervasion of Parthenium hysterophorus all over the place. It is accessible in stocks around the rail route tracks, in exposed lands, in farming fields, in plantations and in backwoods, it attacks significant part of Indian mainland. We are knowing all about Parthenium hysterophorus poisonous properties and need to control its invasion. Nonetheless, just controlling its isn't an answer eliminate it however it very well may be overseen by means of its use for various purposes. As of late a ton of exploration has been proceeding to investigate the use properties of Parthenium. This survey article presents a few properties and utility capability of Parthenium finished up by different scientists.

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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FERTILIZER APPLICATION AND NON-CONVENTIONAL WEED MANAGEMENT IN MEWAR UNIVERSITY

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Rabindra Kumar [2]

Assistant Professor (Agriculture), Mewar University, Gangrar, Chittorgarh

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ABSTRACT

Maize is India's third-largest cereal after rice and wheat, which makes almost 9% of the domestic food basket. It also serves as the raw material for the industry for starch production in textiles, pharmaceutical and cosmetic industries, high quality maize oil, protection, alcoholic drinking, food sweeteners and others, aside from the Man's staple food and animal and high quality feed. In over 3000 products it is used as an ingredient. The growth rate for maize (4.5 percent) has been satisfactory and the largest among food grains. Since 1970, area, maize productivity and production has increased by 36, 148 and 80% respectively and by in 2019–20, 7.89 metres ha. 18.54 metres ha. 2350 kg/ha. Maize is also grown for other purposes, such as QPM, malnutrition and quality nutrition, sweet maize and other table products, such as pickles, soups, maize pakora, kheer, etc., soup and other sweet maize.

Keywords: Maize, QPM

INTRODUCTION

Corn, leaves and stalks, tassels and cob are largely produced as food or feed crops throughout the globe, and each part of the corn crop has an economical value, and wide range of food or other non food products is produced for each part. Maize (Zea mays L.) Maize can fabricate the financial item at various phases of its lifetime that presumably can't coordinate with other cereal harvests. Maize (Zea mays L.)In her vegetative stages Maize can be used in the form of a nourishing green fodder. it can be used as a baby maize, in its silking stage a nutritious plant and prematurely harvested as green cups, a nutritious vegetable/snack that is finally used as a grain that has a variety after maturity. Commercial maize cultivation was used for cereals in the past, but farmers began to grow for different purposes following production of their various economic products. Maize is also very complex and diverse in genetic engineering and has developed to various maize types such as sweet maize, non-

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INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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Fertilizer application and non-conventional weed management strategies in maize crop": a review of cultural farming practices of Mewar University, Gangrar, Chittorgah

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Rabindra Kumar [2]

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Dr. Vikas Tomar [3]

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ABSTRACT

maize consumption in India and worldwide. The current pattern of use in the field of maize in India shows that 63 per cent, for starch and brewery 12 per cent, are used for foodstuffs of only 24 per cent, for poultry, animals, fish, pig and cod etc. and for seed 1 per cent. Maize feed demands from different sectors worldwide

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Original Research Article

Study of Correlation and Path Coefficient Analysis in Indian Mustard (*Brassica juncea* L.)

Brijesh Kumar Meena[1*], Vijay Upadhyay[2], Neelu Jain[1], Gautam Singh Dhaked[1], Devendra Kumar[3], Rakesh Jhanwar[1] and Shobhit K. Singh[4]

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Keywords

Indian mustard, Correlation,

ABSTRACT

The present investigation entitled "Study of correlation and path coefficient analysis in Indian mustard (*Brassica juncea* L.)" was conducted during 2010-2011. Observations of all the characters were recorded on single plant basis. Average of these selected five plants in respect of different plant characters were used for statistical analysis. In this studies, various traits were used and these are Days to 50% flowering, Days to 80% maturity, Plant height (cm), Number of primary branches per plant, Number of

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Assessment of pharmacognostic parameters and antioxidant potential of bitter melon or karela (*Momordica charantia* L.) fruits by DPPH method

Sharma Gaurav Kumar*, Sharma Sarita, Chasta Pankaj, Joshi Rishi Kumar, Tiwari Atul, Chandrul Kaushal K.
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Online published on 22 April, 2021.

Abstract

The aim of the present study was to investigate the different pharmacognostic parameters and to evaluate the antioxidant activity of the fruits of *Momordica charantia* L. by the DPPH method. Aqueous, ethanol, petroleum ether and chloroform extracts of the *Momordica charantia* L. fruits were prepared and subjected to determine physical constants and phytochemical screening (Qualitative Chemical Tests), which revealed the details of loss on drying, ash values, extractive values, fluorescence analysis and presence of phytoconstituents such as carbohydrates, proteins, steroids, terpenoids, glycosides, flavonoids, and lipids. The antioxidant activity of the *Momordica charantia* L. fruit extracts was also determined by the DPPH method using ascorbic acid as standard. The results obtained in this study support the use of *Momordica charantia* L. in herbal medicine and it can be used as a potent antioxidant in the treatment of many diseases resulting from more reactive oxygen species (ROS) presence.

Top

Keywords

Herbal medicine, *Momordica charantia* L., Antioxidant, Ascorbic acid DPPH, ROS.

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Analysis of Water Quality Parameters during Immersion of Lord Ganesh Statues in Hadoti Regions

Author(s):

GOVIND SINGH CHAUHAN

Keywords:

BOD, DO, COD, TDS, Heavy metals.

Abstract

Since water contamination of a growing city is always in the rising trend. its effect on the environment has been studied. Considering the above factors an attempt has been made to assess the water quality of Hadoti region of Rajasthan during Ganesh Pooja (Murtivisarjan). Idol is an image of a god which is used as an object of worship. After worshipped, these idols are immersed into water bodies. Idols are constructed by plastor of paris, clay, cloths, small iron rods, bamboo and decorated with different paints such as varnish, water colors etc. which can lead to significant alteration in the water quality after immersion. Paints which are used to colour these idols contains various heavy metals such as Mercury, Cadmium, Arsenic, Zinc, Chromium and Lead. Particularly, red, blue, orange and green colours contain mercury, zinc oxide, chromium and lead, which are potent carcinogens.The study on water quality assessment during Ganesh Pooja in Rajasthan comprises four districts of Hadoti region namely Kota ,Baran, Jhalawar and Bundi To compare the effect of Immersion on Ganesh Pooja on various water resources of Hadoti region samples have been collected a day before, after and during immersion in all four districts. The parameters in the study are pH, COD, BOD, DO, Conductivity, Turbidity, TDS and heavy metals Zinc and Iron. The maximum value and variation in pH and turbidity (only value)

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ASSESSMENT OF FLY ASH IN THE CONSTRUCTION OF RIGID PAVEMENT

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Abstract

Fly ash is a waste material which is generated in huge quantities every day in thermal power stations. Fly ash can be utilized as replacement of cement content. Utilization of fly ash in cement will not only solve the disposal problem, this would results in lowering of cost of construction without any loss in strength. Now these days, concrete pavements are achieving more popularity due to durability, stability and operational comfort for road users. As demand for cement concrete road increases, requires more amount of cement. Every ton of production of cement releases 7% carbon dioxide approximately to the environment. In many industries, including power plants, coal is used as fuel. This produces tons of coal ash, which is very difficult to dispose of, which in turn cause pollution. In this study an attempt is being made to reduce the amount of this pollution causing material and utilize it for the betterment of humankind and environment as well.

In this investigation experimental program was carried out to study the utilization of fly ash for enhancement in properties of materials and technology. Cement content is replaced by fly ash according to the range of 0%, 10%, 20%, 30%, 40% and 50% by weight of cement for M-35 design mix with 0.43 water cement ratio and analyzed on different parameters. The experimental results show that the use of 30% fly ash and 70% of cement provides a good

INFLUENCE OF ZYCOTHERM ON PROPERTIES OF BITUMINOUS CONCRETE MIX

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Abstract: Bituminous concrete mix is commonly used as a surface course in India. Use of chemical additives in the conventional mix helps to improve the pavement performance. This research paper attempts to compare the use of Nanomaterials in form of Zycotherm and Nano clay as an admixture in bituminous concrete mix against the orthodox design mix. Initially optimum bitumen content was determined by plotting graphs for stability value, flow value, air voids and bulk unit weight with respect to bitumen content percentage by weight. Different samples with quantity of Zycotherm corresponding to 0.1 % 0.2% and 0.5% by the weight of bitumen (Optimum Bitumen Content 5.5%) were made. The laboratory study concludes that the stability value was improved upon the addition of the additive and optimum Zycotherm content was also determined. Nano clay was also added similarly to the conventional mix and was tested for Marshall Stability and Stripping test. The addition of only Nano clay to the bitumen mix indicates a reduced Marshall Stability value while the Stripping resistance was increased considerably.

Index- Nano clay, Nanomaterial, Stripping resistance, Zycotherm

I. Introduction

Bituminous surfacing or simply flexible pavements find their use mostly in the developing parts of the world. These bituminous surfaces do not generally have great life span and maintenance is needed after duration of time. Distress in the pavement is caused due to damage by heavy vehicles and seasonal temperature changes in the pavement. Water also has many adverse effects on pavement performance and leads to loss of strength and durability in the bituminous mix. This parameter thus leads to increase in cost for maintenance. However consequent researches

MECHANICAL PERFORMANCE OF LEAN MORTAR MIXES COMPRISING GLASS POWDER AS CEMENT REPLACEMENT

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Abstract: *In day-to-day life, glass is used in construction, soft-drink bottles, medicinal bottles, automobiles, mirrors, windscreen, doors, windows, decorative items, tube lights, bulbs and other electronics items etc. Glass has limited life span, so after completion of its utility period it is either stock piled or sent to landfills without being recycled. In 21st century non- degradable wastes has been a major issue. But glass is non-biodegradable waste, so land filling of waste glass is not providing an environment friendly solution. Hence, utilization of waste glasses is strongly needed.*

The aim of this work was to use the waste glass powder as a partial replacement of cement for making mortar and compare its performance with normal cement mortar mix of ratio 1:3. In this research various types of waste colored glasses and cleared glasses were used for making glass powder [1]. Glass powder was obtained from grinding of waste glass. This research deals with the study on the utilization of waste glass powder as a partial replacement of cement which is used in mortar.

In this research cement mortar cubes were used to understand the influence of the waste glass powder on the compressive strength. A series of tests were conducted to study the effect of 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35% and 40% replacement of cement by waste glass powder on compressive strength test at 7 days and 28 days. And also the particle size effect was evaluated by using glass powder of size 75μm-90μm and glass powder of size less than 75μm [9]. A total of Seventeen trial mixes were prepared for both sizes of glass powder. The tests for compressive strength were conducted for each mix at 7 and 28days [2].

Test results indicated significant increment in the strength of mortar with addition of waste glass powder up to 30 percentage replacement of cement. However after further increasing the percentage of waste glass powder, a drop in strength of mortar was noted. The present study shows that waste glass powder, if particle size is less than 75μm shows the higher compressive strength compare to normal mix.

Keywords: **Waste Glass Powder, Ordinary Portland cement, Mix of Cement and Glass Powder, Compressive Strength, Consistency, Setting Time, CTM**

1.0 Introduction

The main focus of research has been the use of waste glass powder as partial replacement of cement in mortar. Only a few studies have focused on the use of waste glass powder as cement replacement in mortar for structural purposes.

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Appraisal of Rajasthan Ambient Air Quality During Covid 19 Pandemic Lockdown

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ABSTRACT

This research encompasses on assessing the air quality of Rajasthan state in India during Pre-Covid_19 And Covid_19 pandemic lockdown periods, the urban centers of the Rajasthan are faces with continues rise of air pollution due the urban and industrial development which need to be checked and controlled periodically to avoid its danger to human health and environment. The data of Ambient Air Quality Index, and prominent pollutants i.e. particulate matters($PM_{2.5}$, PM_{10} and NO_2 were collected from Rajasthan State's Pollution Control Board Central Laboratory recorded from network of ten (CAAQMS) Stations and (CPCB), the data was compiled andanalyzed appropriately, the result shows that the average Air Quality Index of Bhiwadi has moved from Poor to moderate levels, whereas city of Jodhpur maintains the satisfactory level but stations of Pali and Jaipur (Police Commissionerate)have moved from Moderate to Satisfactory levels, Rest of the monitoring stations of Alwar, Ajmer, Jaipur

Use of Locally Available Sugarcane Bagasse Ash & Latex Polymer for the Partial Replacement of Cement & Fine Aggregate in Concrete

Tekram Bais, Mr. Shashivendra Dulawat

PDF

Issue
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Section
Articles

Abstract

There are lots of environmental impacts of cement on our ecology. Cement industry creating environmental problem by emission of CO_2 during manufacturing of cement. Today researchers are more focusing towards the environment issue globally. Portland cement is the conventional building material that actually is responsible for about 5%-8% of global CO_2 emissions. On the other side Sugar cane bagasse ash generated in sugar mill creating environment issue as most of the part is used as a land fill. In this work sugar cane bagasse ash which is taken from one of the sugar mill of Balod district of Chhattisgarh state and used in M-25 grade of concrete by replacing cement and fine aggregate in percentage by weight and compare with conventional concrete to check the feasibility of locally available sugar cane bagasse ash in concrete.

The addition of complex chemical compound in form of polymer in the form of binding and plasticizing agent, to the concrete mix also introduces the desired plasticity and strength to enhance the property of concrete w.r.t. the normal conventional concrete.

Fresh concrete tests like compaction factor test and slump cone test was examined as well as hardened concrete tests like compressive strength, rebound hammer test and flexural strength at the different ages of days is obtained according to feasibility. Results shows that there is decrease in slump value and compaction factor. Compressive strength and flexural strength of concrete decreases initially with the inclusion of SBA.

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CFRP Enabled Novel Approach to Strengthen the Concrete Structures

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ABSTRACT

Concrete structures are popular infrastructure past few decades. A large number of concrete structure is constructed annually all over the world. After a certain period of time these structures get deteriorated. Rehabilitation or restoration required strengthening of these structures for safe usage. There are various materials and technique available in the market for restoration work, but these methods increases structural load and reduces clear space. It is a great invention of Carbon Fiber Reinforced Polymer (CFRP) material to repair the old structure. It increases the life of the structure. CFRP contain properties like high tensile strength, light weight and flexible. In this paper we inspect the performance of CFRP wrapped concrete with conventional concrete. CFRP wrapped to concrete grade M25 & M30 in the form of strips at 20, 40, 60, 80 and 100 percent of the applicable area of structure. Various test like Compressive test, Split tensile test and Flexural test were conducted and properly analyzed for better results. Various strength parameters are examined of prepared samples. By these results it can conclude that wrapping CFRP over deteriorated structure also increase their strength in a similar manner without increasing self-weight of structure.

Keywords
CFRP, Flexural Strength Failure, Textile Reinforced Mortar, Reinforcement.

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Original Article

STRENGTH EVALUATION OF CLAYEY SOIL STABILIZED WITH MARBLE SLURRY USED AS SUBGRADE SOIL MATERIAL

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ABSTRACT

This research work focuses on evaluating the effect of marble slurry wastage in stabilizing clayey soil. Normally, Clayey soil expands with the presence of water and shrinks when the water is expelled out of it under load. Therefore, utilizing marble slurry would improve the soil properties, reduce the cost of transportation, minimize and environmental pollution. The work entails treating clayey soil with 0%, 2%, 4%, 6% 8% and 10% replacement of marble slurry. The result shows that the soil is clayey gravel using both AASHTO and USCS with specific gravity 2.74 and a liquid limit of 21%. The MDD was 1.804g/cm³ at OMC of 16.40% and the soaked CBR is 11.56% all at 10% marble slurry replacement. The optimum marble slurry to be used for stabilizing the clayey soil is 10% for the subgrade construction if it can be properly compacted and covered by an adequate thickness of the pavement.

KEYWORDS: Marble, Strength, Percentage, Replacement & Optimum

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1. INTRODUCTION

Nowadays road constructions are faced with several hindrances such as shortage or unavailability of material with desired properties in nearby proposed constructions site, weaker in-situ materials, etc. It is also time-consuming and costlier to transport such construction materials with the desired properties to the proposed construction site. Removing the weaker materials found in place is also problematic. However, most of these explored suitable alternative materials used for stabilizing weak soil are of higher cost and limited in production than the natural soils (Rehana & Kshipra, 2017) Ecosomic and environmental factors need to be considered when selecting a particular admixture for stabilization (Bernardo, *et al.*, 2020). Therefore, utilizing industrial waste products produced in tons as an admixture to improve the soil properties is of great importance. As it will reduce the cost of transportation and avoid deflation of the natural content of the soil (Rehana & Kshipra, 2017; Manohar, *et al.*, 2019; Shrasvan & Needhidasan 2018; Serife & Huriye 2016). Another advantage of using these industrial wastes is the issue of waste disposal and environmental pollution would have been reduced Clayey soils or expansive soils are rich in clay minerals (Patil, 2013). It normally causes a devastating problem to general civil engineering constructions, particularly rural road construction (Sreekumar & Mary Rebekah, 2017). Clayey soil exhibits large changes in volume on variations of moisture content under loading conditions (Nikhil, 2014).

The main purpose of soil stabilization is to mainly increase the strength of the weaker soils and at the same time to reduce its permeability and compressibility. These techniques of stabilization can be mechanical, chemical, electrical or thermal (Rehana & Kshipra, 2017). The choice of the stabilization techniques depends upon many factors such as the type of soil to be stabilized, the completion period of the project, location of the project, cost of the project, cost of transporting borrowed materials. Marble originated from the metamorphic rock which possesses

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Frequent Crisis and Modern Trends Associated with HAZOP Study in Plants and Industrial Units

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ABSTRACT

Hazard and operability (HAZOP) analysis has a well-deserved reputation for systematic and thorough evaluation of process hazards in industrial units. The method is now widely known and is in prevalent use in the chemical processing industries; so much so that in many industries performing a HAZOP has become a legal requirement for new or modified industrial units. A number of guides exist for conducting HAZOPs, the most recent being the IChemE guidelines on finest practice – second edition, published in the year 2008. In exercise however, following best practice is not that easy and many compromises have to be made in order to finish the task an added hurdle occurs when the HAZOP is led by a self-governing leader from an external company or third party as is increasingly the case. In this circumstance the person in charge also has to satisfy the customer or customer's requirements which do not always match to the best custom.

Design and Implementation of Gigabit Passive Optical Network

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Abstract: *The steady increase in the digitisation of every field created a desperate demand for broadband services and the consequent increase in the volume of generated traffic in our communication networks have motivated the need to make access networks in our rural territories too. This paper aims to explain the design and implementation of a passive optical network. The main idea of this paper is to build an optical fiber based access network for broadband connectivity to the rural areas. This will allow us to implement this network model for expansion of reach of high speed broadband services in future.*

Keywords: *Fiber to the Home (FTTH), Passive optical network (PON) , Optical network terminal (ONT), Optical line terminal (OLT), Gigabit Passive optical network (GPON), broadband, OTDR*

I. INTRODUCTION

The optical fiber is the most advanced transmission medium and the only one capable of supporting next generation networks and services. The main advantages of having a last mile of optical fiber are many: greater speed, higher bandwidth, and longer distance from the central to the subscriber, resistance to electromagnetic interference, higher security and reduced signal attenuation. Moreover, the fact of using PON technology assumes the elimination of active components outside the plant such as repeaters and optical amplifiers and therefore decreasing the initial investment, reducing power consumption, lesser points of failure

Passive optical network (PON) access network is a point-to-multipoint, fiber to the home network architecture in which unpowered optical splitters are used to make a single optical fiber to serve multiple customers, typically 32–128 [1]. PON networks exploit the low attenuation of optical fiber cable (0.2–0.4 dB/km) and high bandwidth (>30,000 GHz) of single mode optical fibers [2]. These capabilities of PON give commonly more data transmission than as of now accessible networks with existing broadband advances. Also, PON based FTTH networks can give different communication services viz. voice, information and video from one platform [3]. Due to these advantages now most of the telecom operators use FTTH network as optical fiber access network. For a GPON based network maximum of 128 ONTs (Optical Network Terminal) can be included with maximum reachability of 60 km and maximum distance between two consecutive ONTs (Differential fiber distance) of 20 km as per G.984.6 ITU-T specification [4]. GPON uses data transmission speed of 2.44 Gbps in downstream and 1.24 Gbps in upstream. Broadcasting or continuous transmission for downstream and TDM technique for upstream are used as transmission method.

In this paper, the approval of proposed design of network is done on the bas is of Link loss Budget and cost. The results shows that the continuity of newly laid optical fiber cable from OLT to ONTs and received power levels falls within optical power loss plan and the cost is lowest.

This paper organized with different sections like Basic Components of GPON access network, design and Implementation with flowchart, results, and finally with the conclusion.

II. BASIC COMPONENTS OF GPON ACCESS NETWORK

A Gigabit Passive Optical Network (GPON) is generally having P2M (point to multipoint) network topology with active and passive components. Optical splitter or coupler along with every component in the transmission section outside the plant is passive component. Active components are only at CO and at ONTs locations. Fig 1 shows GPON access network architecture depicting its components.

A. Optical Line Terminal OLT

The Optical Line Terminal (OLT) is the most important element of the network and Master of the access network and it is generally placed in the Local Exchange where already optical fiber based backbone network available [5]. The important functions that OLT delivers are traffic scheduling and control, buffer control and dynamic bandwidth allocation [6]. OLTs operate using redundant DC power supply (-48VDC) and have at least 1 Line card for connecting the access network to backbone network , 1 System Card for on-board configuration, and 1 or more GPON cards. GPON cards includes a number of

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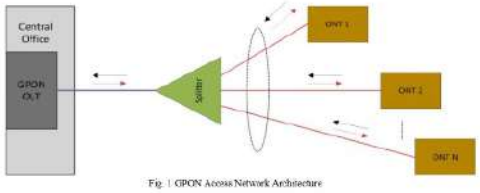

Fig. 1 GPON Access Network Architecture

GPON ports. Ports are connected with input of splitters in P2M topology. The transmission mode from OLT to ONT is broadcasting [4].

B. Optical Splitter

In order to expand the access network, it will used optical splitters or dividers. Splitters can split one or two fibers into N number of outgoing fibers uniformly or combine light from N number of fibers to one or two over a broad spectral range. This enables feeding of each fiber by many fibers and finally many more users. Since the splitters involve a significant loss of Optical power in relation to other network components, the design of a network must be carefully balanced between high branching fibers, distances to customers and powers managed by equipment so that meet the main specifications. Splitters need to have characteristics like: Wide spectral range, minimum insertion loss and uniformity, smaller dimension, and high reliability.

C. Optical Network Terminal ONT

The ONT (Optical Network Terminal) is the last element of our network. This in-charge of optical-electrical conversion oriented to the subscriber obtains the required services. It will be placed in user's home ending the optical fiber and provides the user interfaces. ONTs are connected to the OLT by optical fiber cable and no active elements are present in between the link. As it has talked about, the ONT is an active device, in general, it must be the same manufacturer as the OLT, although it is working to achieve interoperability between manufacturers, which would open the market and lower prices.

The transceiver in the ONT is the physical connection to communicate between the customer and the OLT. Media Access Controller (MAC) controls the burst mode upstream traffic in an systematic manner and enables that no collision occur in data transmission from different ONTs in Upstream mode[5]. ONTs are basically optical to electrical signal converters that offer RJ11, RJ45, and F-Series connectors to provide connection to many devices. Those devices are available in many configurations up to 24 ports. ONTs are available with AES encryption, and batteries for operability in the event of a mains power failure. GPON uses Dynamic Bandwidth Allocation that is it dynamically allocates the bandwidth on the basis of traffic available in the T-CONT. If the ONT requests for the number of packets waiting in T-CONT, OLT assigns the bandwidth. If there are no requests from ONT, then OLT assigns the bandwidth to other T-CONT which have packets waiting in T-CONT. If an ONT has a high traffic OLT can assign multiple T-CONTS to that ONT [7].

III. DESIGN

To design the OFC Link, By Software and Sitting in AC room planning does not work, each root and ONT locations is surveyed physically, noted down all the details of feasible routes and then planned precisely using as per available data and experience. Any single standards cannot be applied as each country has its own unique soil strata. The design of GPON includes the steps involved in the Route survey stage , preparing a Single Line diagram and drawing a port diagram, splitter allocation design to each route, link loss calculation, Optical Time Domain Reflectometer (OTDR) testing and power meter tes ting. The flow chart showing the each stage of designing an OFC Link for access network based on GPON is shown in Fig.2. The shortest route and optical power budget are the main two factors taken in consideration while designing.

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Automatic Voltage Regulation Using PLC's in Smart GSS

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Abstract

With the increasing electricity demand and thereby meeting the continuous supply demand of consumers, mainly industrial which has now became a challenge to electrical engineers. So for proper consumption of power, substation monitoring is very important for the purpose of controlling the hardware & software. In order to reach strong conclusion about their actual impact on power grid monitoring and control without manpower the software like PLC can be helpful for optimization. Since, as power grid has to maintain a continuous 24hrs supply to industries. Normally industrial loads are connected with two lines, one will be in on mode and the other will be in off mode as a backup, which will be in operation when a fault occurs in the existing line. Mostly this operation of switching from one faulty line to a healthy line or coupling it with another line is done manually. In this paper, a PLC is used to reduce human interventions and thereby making high power quality is required. Last but not least, the concern on climate change has caused a pressing demand for shifting from fossil fuels to renewable energy sources. The traditional solutions of upgrading electric transmission system infrastructure in the form of new power plants, new transmission lines, substations and associated equipment cannot fully address these big challenges. It is very important more than ever to rethink the features, components and organization of the whole grid system. The shift in the development of transmission grids to be more intelligent has been summarized as "smart grid," as well as several other terminologies such as Intelligent Grid, Grid Wise, Future Grid, etc. The Smart Grids program, formed by the European Technology Platform (ETP) in 2005, created a joint vision for the European networks of 2020 and beyond. Its objective features were identified for Europe's electricity networks as flexible to customers' requests, accessible to network users and renewable power

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Wave Energy: New Technology in the Field of Renewable Energy Sources in India

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ABSTRACT

Electricity is the most important energy source all over the world. Electricity has always been an important part of homes & industries. Now a day, without electricity cannot complete our day to day worked. Lots of industries are running by electricity only. People are busy on making electrical vehicles. As per requirement, electricity is generating through renewable and non-renewable sources. Thermal power plant is the non renewable source for generated electricity. But Non renewable sources are going to extinct. So we moved to renewable sources. We know that renewable sources for generating electricity are hydro (from river sources), wind, Solar (sun light), Geothermal, and Wave Energy (Ocean Energy). Accept wave energy, other sources are not available every time for generating electricity. We required lots of unit of electrical power for our day to day life. Wave energy gets 24 hour also Oceans cover 70 percent of the earth's surface. It is suitable source for generating electricity for India. India has a long coastline from Gujarat to west Bengal. The best method is available to convert wave energy to electrical energy. In this paper, discuss about some wave energy conversion mechanisms and wave energy impotents and benefits for developing country like India where lots of sea sources are available.

KEYWORDS: *Wave energy, Energy conversion, Wave energy Benefit, India electricity demands, Wave energy importance in India*

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I. INTRODUCTION

Renewable energy technologies present alternatives

II. WAVE ENERGY

Ocean waves are produced by fast moving air in

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THE ROLE OF THE UN CONVENTIONS AND POLICE AS THE INSTRUMENT OF THE CRIMINAL JUSTICE ADMINISTRATION IN THE PROTECTION OF HUMAN RIGHTS

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ABSTRACT

The aim of this paper is to review the prevalence of human rights issues in general and how the UN convention and criminal justice administration (police) play their role in the protection of human rights. Therefore the paper refers to various secondary sources which include online books and articles, websites, reports and magazines to give evidence to the statement above. The findings show that there is an efficient role being played by both the UN conventions and the criminal justice in managing the human rights, however, there is a space to fill the gap in human rights law. This paper would give a base idea to future researchers who are willing to examine the role of police and UN conventions in the aspect of human rights protection.

KEYWORDS: UN Convention, Criminal Justice Administration, Police, Human Rights, International Peace & Security

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Original Article

INTRODUCTION

"Injustice anywhere is a threat to justice everywhere" – Martin Luther King

The United Nations (UN) has made enormous positive contributions in maintaining international peace and security, promoting cooperation among states and international development(United Nations, 2016). The UN came into being in 1945, following the devastation of the Second World War, with one central mission: the maintenance of international peace and security (United Nations, 2018). The role and function of UN assembly is to discuss, debate, and make recommendations on subjects pertaining to international peace and security, including development, disarmament, human rights, international law, and the peaceful arbitration of disputes between nations (CFR, 2017). So, the convention has been introduced that is a formal agreement between states.

> Front Med Technol. 2022 Mar 28;4:845322. doi: 10.3389/fmedt.2022.845322. eCollection 2022.

Identification of 1, 2, 4-Triazine and Its Derivatives Against Lanosterol 14-Demethylase (CYP51) Property of *Candida albicans:* Influence on the Development of New Antifungal Therapeutic Strategies

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Affiliations + expand

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Free PMC article

Abstract

This research aims to find out whether the 1, 2, 4-triazine and its derivatives have antifungal effects and can protect humans from infection with *Candida albicans*. Molecular docking and molecular dynamic simulation are widely used in modern drug design to target a particular protein with a ligand. We are interested in using molecular docking and molecular dynamics modeling to investigate the interaction between the derivatives of 1, 2, 4-triazine with enzyme Lanosterol 14-demethylase (CYP51)

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Modeling of Peristaltic Blood Flow through Artery with Magnetic effect

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***Abstract*— In this study, we have examined the blood flow through arteries when a progressive wave of area narrowing and expansion goes along the arterial wall influenced by magnetic effect. The flow functioning in a wavelength is the main study point in this paper. In our study, a channel of finite length with a flexible wall is considered. Pressures are set at inlet, outlet boundaries respectively. The influence of some parameters like wave and amplitude division and on the blood pumping routine is examined. Some facts concerned to peristaltic blood flow system are found.**

***Keywords*— Peristaltic flow, Reynolds number, Magnetic effect, Amplitude ratio.**

I. INTRODUCTION

Over last few decades, peristalsis has fascinated much attention of lot researchers due to its significant engineering and biomedical submissions. Peristalsis is a procedure that engages fluid flow in a tubular duct by the waves produce touches with the wall. Over last few decades, peristalsis has fascinated much attention of lot researchers due to its significant engineering and biomedical submissions. Peristalsis is a procedure that engages fluid flow in a tubular duct by the waves produce touches with the wall. Peristaltic movement is a major mechanism for conveying blood, where the cross-section of

Embedded with a Non-Darcy Porous standard. Vajravelu, Sreenadh and Babu [5] made a mathematical model concerned to Peristaltic convey of a Herschel – Bulkley liquid in the tending tube. A detailed study has done by Rath [6] on Peristaltic Non-Newtonian fluid flow having rigid spherical particles. A numerical study has done on Peristaltic blood flow under consequence of a magnetic field in non-uniform system by Mekneimer [7]. Shehawey and Mekneimer [8] have done a combined work on Couple-stresses in Peristaltic blood transport of fluid. Eytan, Jaffa and Elad [9] have done a computational study on peristaltic blood flow in tapered system. Srinivasacharya, Mishra and Rao [10] have done a combined work on Peristaltic pumping of micropolar fluid flow in a tube. A simulated study on peristaltic Blood flow through Artery by a Wave of little Amplitude travelling along its Wall has done by Singh and Singh [11]. The work concerned to peristaltic fluid flow of a 2-order in tubes has done by Schwarz and Siddiqui [12]. Mishra and Rao [13] has done a numerical study on Peristaltic convey of Newtonian fluid flow in an asymmetric system. Wagner and Slattery [14] worked on Slow Non-Newtonian fluid flow by a droplet. A study on Peristaltic fluid flow of viscoelastic liquids has done by Bohme and Friedrich [15]. The combined study have done by Hayat, Ahmad, Abbasi and Alsaedi [16] on Peristaltic move of Carreau-Yasuda Fluids in a Curved system with Slip Effect.

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Pulsatile Flow of Blood through Multiple Stenosed Artery in the Presence of Magnetic Field

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***Abstract*— In the operating of intestines and in biological mechanisms like heart-lung machine, fluid is travelled by a single procedure, arteries of contractions of the wall circulates along the size of concerned tube resulting fluid to be carried towards the wave. It's known peristaltic pumping. Peristaltic motion is required system for fluid carrying in mostly biological systems. Blood has taken as a Newtonian fluid as well as Non-Newtonian. Here, we are applying blood as a both nature fluid in the arteries. It's proved in the previous studies that the surface-active mediator modify profiles considerably. Classification between this analysis and accessible experimental data in the paper show logical agreement for the flow constraints. In the present investigation, we worked out on the blood flow through artery when a progressive area of wave contraction and expansion actions along the stenosed arterial wall.**

***Keywords*— Peristaltic flow, Stenosis, Magnetic effect, non-Newtonian blood.**

I. Introduction

In present times, Peristalsis has fascinated much attention due to its significant in technology and remedial application such as chime progress in the intestine, progress of ovum through fallopian pipe, blood flow from human being kidney to bladders, small capillaries, arterioles and roller pumps. In analysis of such physiological applications, the peristalsis system has been read and observed by science and medical researchers for many type of fluids under different situations.

It is usually recognized that the rheological actions of blood is supposed as Newtonian for values of shear rate higher than 100 per second and such condition generally functioning in bigger arteries. Although in small arteries the blood does not follow the Newtonian postulate and therefore cannot be formed as Newtonian fluid. Arterial blood flows in the active body is a combination of firm corpuscles (R.B.C., W.B.C. and Platelets) stopped in plasma and its functioning is normally a multiphase non-Newtonian pulsatile blood flow in the flexible duct. It is studied that flow of blood thrown by the constriction of the artery which becomes a reason for anomalies in the blood transmission. The exceed gathering of cholesterols, fats and soft muscle cells in blood arteries that's why partial occlusion known as stenosis. It makes the walls thick and hard which may reduce the quantity of the blood that movements through the blood arteries. On the base of Mouyeri and Zendehboodi [1] study the formation and blood flow is considerably deformed and fluid dynamical reasons participate central role as the stenosis maintained to enlarge playing to the growth of major ailments, for example stroke and heart attack. It was Young [2] who made the first move to understand theoretical analysis on blood flow in the course of stenotic arteries. He utilized the concept of mild stenosis in the investigation. Cavalcanti [3] exercised on a thin-rigid wall system and used the letting of mild stenosis with 2% area decrease. Steady blood flow of Newtonian liquid through a nearby tapered artery at small Reynolds number was explored by Lee and Fung [4]. A fundamental method was applied by Morgan and Young [5] for the numerical computation of blood flow in stenotic arteries.

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Modeling of Blood Flow Through Artery With Magnetic Effects

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Abstract— The most important aspiration of present study is to make a mathematical and simulation modeling for magnetic effect of blood within undersized artery. Power law fluid characterizes the non-Newtonian quality of blood. The dynamical functioning of the blood flow is affected by the occurrence of the magnetic effects. The problem is worked out with analytical procedures with facilitate of boundary conditions and consequences are put on show graphically for different flow uniqueness like pressure drop, blood velocity, shear stress, etc. For the justification of mathematical model, the computation outcomes are compared with consequences from published text. In this article blood flow uniqueness are calculated for a precise set of values of the diverse factors concerned in the model examination and presented graphically. Few obtained outcome indicate that the flow characteristics in converging region, diverging region, and nontapered region are efficiently influenced by the occurrence of magnetic electrically field and justify inclination of artery and magnetic area respectively.

Keywords— Non-Newtonian flow, Artery, Magnetic field, Shear stress, Velocity.

I. INTRODUCTION

Under usual circumstances, blood flow in the man circulatory system relies upon the pumping act of the heart and this produce a pressure gradient over all the artery and vein network system. Pressure gradient is having two mechanisms, first of which is regular said to be non-fluctuating and the other is fluctuating known as pulsatile. The main purpose to get knowledge of blood flow by arteries is understanding significance in a lot of heart diseases mainly in atherosclerosis. The regular thing of blood flow is uneasy due to a few odd developments like stenosis in the lumen of the human being's artery in pulse rate etc.

In present time, the outcome of magnetic area on the flow of viscous liquid in the course of a regular porous liquid has been the subject of frequent submissions. RBC is a main biomagnetic matter, and the blood flow may be subjective by the magnetic field. In broad manner, biological systems are concerned by a submission of exterior magnetic field on blood flow, through human being arterial structure. The occurrences of the stationary magnetic field serve to rise in the resistance of flowing blood. A Study on Shape optimization in stable blood flow with numerical investigation of non-Newtonian Blood has done by

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Hemodynamics Effects on Blood Movement through an Artery

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***Abstract*—** Mathematical simulation of blood movement in the arterial system certainly provides the nature and physiology of the creature body. Hemodynamic play the main role to build arterial single or multiple stenoses in the body, which indicate to the abnormalities of the cardio system. Blood functioning, especially in the diseased arteries can be identified by mathematical simulation. Applications of mathematical simulation can be used in surgical planning and configuration of medical devices. The arteries are such organs which can accept the change in varying hemodynamic conditions. In some cases, unusual hemodynamic impacts make an abnormal clinically response. The stenosis becomes the reason for turbulence and flows choking. In the arrival time, the investigation of arterial blood movement will give the prediction of hemodynamic movements in any patient. The advancement of clinical tools to identify the disease and modeling of devices will give better results.

***Keywords*—** Hemodynamic, Stenosis, Artery, Blood Flow.

I. INTRODUCTION

Supply and circulation of essential nutrients also known as a cardio process throughout the body is the most crucial process for all living animals. Recent years have witnessed several deaths due to an abnormality of this process [1]. The fatalities due to cardiac disease may be seen in all the age groups. The reasons may be attributed to changed lifestyle, sedentary or typical office work, lack of proper exercise, adequate sleep as well as eating habits etc. to name a few. Stenosis is one of such complications that deposits of fatty materials, cholesterol, cellular ravage products, calcium as well as other materials build up in the inside part of an artery [2]. This swelling is called plaque. The build-up of heavy tissues as well as calcium in blood vessel walls may become rupture. There are many risk factors to generate stenosis such as the use of tobacco, exceed blood pressure and fat etc. Blood movement and its friction with the blood pipes are studies under the hemorheology, an area of science. The creature blood circulatory system is used to bring nutrients and oxygen to the body cells and it leads waste substances away from the same cells. Creature blood is a suspension of cellular components like RBC, WBC, and platelets in electrolyte liquid called plasma [4]. Plasma is having 90 percent of water and only seven percent of major proteins like albumin, lipoprotein, globulin, and fibrinogen. Approximately forty-five percent of volumes are having formed components and rest fifty-five percent of plasma. The ratio between RBC and full volume of blood is called hematocrit. In big and medium tubes, blood is normally

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Article Detail

Assessment & comparison of hepatoprotective potential of indigenous therapeutic flora by using tetrachloromethane encouraged liver toxicity in Albino (Wister strain) rodent model

Author: GAURAV KUMAR SHARMA, MEENAKSHI DHANAWAT, RAHUL LODHA, KAMAL KUMAR GOYAL, JAI KUMAR PARETA

Abstract: Introduction: Indigenous herbs such as Momordica charantia L., Nardostachys jatamansi (D.Don) DC., Justicia adhatoda L. and Tephrosia purpurea (L.) Pers. are known to improve several disease characteristics including hepatoprotective activities. Objective: We aimed to demenstrate the hepatoprotective potential of indigenous herbs Momordica charantia L., Tephrosia purpurea(L.) Pers., Justicia adhatoda L. & Nardostachys jatamansi (D.Don) DC. in tetrachloromethane (CCl4) encouraged liver toxicity in Albino (Wister strain) rodent model. Methods: In Albino rats (Wister strain, n=114), hepatotoxicity was induced using CCl4 & the liver enzyme & histopathological profiles with an extent of the regenerative changes were evaluated. A total of 19 groups of rats were created containing six rats in each group & received the following - group 1: control group, group 2: CCl40.7 ml/kg, group 3: Liv-52 1 ml/kg. Light petroleum, trichloromethane, alcohol & watery extricates of Justicia adhatoda L.(200mg/kg), Tephrosia purpurea (L.) Pers. (200mg/kg), Momordica charantia L.(200mg/kg), & Nardostachys jatamansi (D.Don) DC.(500mg/kg)were administered in one group each (total 16 groups). Results-The trichloromethane extricate of Justicia adhatoda L. Light petroleum

Review > Front Microbiol. 2022 Jul 14;13:916488. doi: 10.3389/fmicb.2022.916488. eCollection 2022.

Root Exudates: Mechanistic Insight of Plant Growth Promoting Rhizobacteria for Sustainable Crop Production

Sudhir K Upadhyay [1], Abhishek K Srivastava [2], Vishnu D Rajput [3], Prabhat K Chauhan [1], Ali Asger Bhojiya [4], Devendra Jain [5], Gyaneshwer Chaubey [6], Padmanabh Dwivedi [7], Bechan Sharma [8], Tatiana Minkina [3]

Affiliations + expand

PMID: 35910633 PMCID: PMC9329127 DOI: 10.3389/fmicb.2022.916488

Free PMC article

Abstract

The breaking silence between the plant roots and microorganisms in the rhizosphere affects plant growth and physiology by impacting biochemical, molecular, nutritional, and edaphic factors. The components of the root exudates are associated with the microbial population, notably, plant growth-promoting rhizobacteria (PGPR). The information accessible to date demonstrates that PGPR is specific to the plant's roots. However, inadequate information is accessible for developing bio-inoculation/bio-fertilizers for the crop in concern, with satisfactory results at the field level. There is a need to explore the perfect candidate PGPR to meet the need for plant growth and yield. The functions of PGPR and their chemotaxis mobility toward the plant root are triggered by the cluster of genes induced by the components of root exudates. Some reports have indicated the benefit of root

> Front Chem. 2020 Sep 30;8:778. doi: 10.3389/fchem.2020.00778. eCollection 2020.

Microbial Fabrication of Zinc Oxide Nanoparticles and Evaluation of Their Antimicrobial and Photocatalytic Properties

Devendra Jain [1], Shivani [1], Ali Asger Bhojiya [1 2], Himmat Singh [3], Hemant Kumar Daima [4], Mandeep Singh [5], Santosh Ranjan Mohanty [6], Bjorn John Stephen [7], Abhijeet Singh [6]

Affiliations + expand

PMID: 33195020 PMCID: PMC7554571 DOI: 10.3389/fchem.2020.00778

Free PMC article

Abstract

Zinc oxide (ZnO) nanoparticles have attracted significant interest in a number of applications ranging from electronics to biomedical sciences due to their large exaction binding energy (60 meV) and wide bandgap of 3.37 eV. In the present study, we report the low-cost bacterium based "eco-friendly" efficient synthesis of ZnO nanoparticles by using the zinc-tolerant bacteria *Serratia nematodiphila*. The physicochemical characterization of ZnO nanoparticles was performed by employing UV-vis spectroscopy, XRD, TEM, DLS, Zeta potential, and Raman spectroscopy. The antimicrobial and antifungal studies were investigated at different concentrations using the agar well-diffusion method, whereby the microbial growth rate decreases with the increase in nanoparticle concentration. Further, photocatalytic performance studies were conducted by taking methyl orange (MO) as a reference dye.

Keywords: antimicrobial; photocatalytic dye degradation; physiochemical; zinc oxide nanoparticles; zinc tolerant bacteria

J Biomol Struct Dyn. 2022 May 9;1-15. doi: 10.1080/07391102.2022.2071338. Online ahead of print.

" *In silico* identification of ethoxy phthalimide pyrazole derivatives as IL-17A and IL-18 targeted gouty arthritis agents"

Abhishek Kumar Verma [1], Md Shahadat Hossain [2], Sk Faisal Ahmed [2], Nasir Hussain [3], Mohammad Ashid [3], Sudhir K Upadhyay [4], Naveen Kumar Vishvakarma [5], Ali Asger Bhojiya [6], Sandeep Kumar Srivastava [1]

Affiliations + expand

PMID: 35532103 DOI: 10.1080/07391102.2022.2071338

Abstract

Two proinflammatory cytokines, IL17A and IL18, are observed to be elevated in the serum of gout patients and they play a crucial role in the development and worsening of inflammation, which has severe effects. In present study, we have combined molecular docking, molecular dynamics studies and MM-PBSA analysis to study the effectiveness of ethoxy phthalimide pyrazole derivatives (series 3a to 3e) as potential inhibitors against cytokines IL17A and IL18 as a druggable targets. The binding energy of the docked series ranges from -13.5 to -10.0 kcal/mol and extensively interacts with the

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Effect of Organic Manures on Growth and Yield of Linseed (Linum usitatissimum L.)

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Abstract

A field experiment entitles "Effect of Organic Manures on Growth and Yield of Linseed (Linum usitatissimum L.) was carried out during rabi season of 2021-22 at the Agronomy Farm Mewar University, Gangrar, to find out the best treatment for the growth and yield of linseed. The experiment was laid out in Randomized Block Design, comprising nine treatments with three replications. The result showed significant superiority in giving the maximum plant height (84.65 cm at 90 days), plant diameter (5.40 cm^2 at 90 days), Secondary branches (24.92), Number of leaves (387.08), capsule/plant (58.50 at harvesting), and seed yield q/ha (20.12). The results showed that T_5 (50% Vermicompost + 50 % Neem Cake) was the best in terms of linseed growth and yield.

Keywords: *Growth, Linseed, Organic Manures, and Yield parameters.*

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Response of Organic Manures, Inorganic Fertilizers and Bio-fertilizers on Growth and Yield of Field Pea (Pisum sativum L.)

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ABSTRACT

A field experiment was carried out in Agriculture farm, Department of Agronomy, Mewar University, Chittorgarh, Rajasthan, during the Rabi season of 2021-2022 to find out the "Effect of Organic Manures, Inorganic Fertilizers and Bio-Fertilizers on Growth and Yield of Field Pea (Pisum sativum L.)". The experiment was laid out in Randomized Block Design (RBD) comprising of 9 treatments with three replications. The results revealed that the treatment T_9 ((55:90:40) NPK + Rhizobium + PSB) was found to be the most suitable for various parameters; days to germination (9.05), number of days till the first bloom appears (44.42), days to pod set (63.67), number of pods/plant (24.75), Seed index (15.03) and Yield (66.26 q/ha).

Keywords: *Bio-Fertilizer, Field Pea, Inorganic Fertilizers, Organic Manures and Yield.*

INTRODUCTION

Field Pea (*Pisum sativum L.*) being an important pulse crops of India also ranks fifth among the vegetables grown in India. Some of the districts in Rajasthan where pea is being grown are Jaipur, Baran, Bundi, Kota and Bharatpur (Bunker *et al.*, 2018). It is an extremely nutritive Rabi season legume carries excessive percentage of digest able protein, along with carbohydrates, Vitamin A, C, calcium and phosphorus (Jitendar 2011). Field pea or dry pea is stored further for human consumption or livestock food. It is cultivated mainly in Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Punjab, Haryana, Rajasthan, Maharashtra, Bihar and

Research Article

Influence of Nutrient Sources on Chlorophyll Content and other Leaf Parameters of Banana *Musa* (AAB) Nendran

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ABSTRACT

Background: Chlorophyll is a green molecule found in plant cells that aids photosynthesis. It absorbs sunlight and

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Author Information

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Effects of organic manures and inorganic fertilizers on growth and yield of wheat (*Triticum aestivum* L.)

AUTHOR(S)

Mohd Ali and Dr. Gautam Singh Dhaked

ABSTRACT

The present study was conducted on loam soil at Agronomy Farm, Mewar University, Gangrar, during the rabi season of 2021-22. Ten treatments consisting of Control, 100% recommended dose of nitrogen (RDN) + 25% N through FYM, 100% T_3-100% RDN + 25% N through vermicompost, 75% RDN + 25% N through FYM, 75% RDN + 25% N through vermicompost, 50% RDN + 50% N through FYM, 50% RDN + 50% N through vermicompost 50% RDN + 50% N through vermicompost, 25% RDN + 75% N through FYM, 25% RDN + 75% N through vermicompost and 100% RDN through chemical fertilizer in Randomize Block Design with three replications. The wheat cultivar of Raj-3077 was grown in the experiment.

The highest yield attribute and yield were recorded with 100% RDN + 25% N through vermicompost through compost which was statistically similar to the treatment of 100% recommended dose of nitrogen (RDN) + 25% N through FYM and significantly higher than

Impacts of NPK consortia biofertilizer and mineral fertilizer on growth and yield of two maize (Zea mays L.) hybrids in Rajasthan-India

pdf

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Keywords: Maize-Hybrids, Chemical fertilizers, Consortia biofertilizer, Growth-parameters, Yield-parameters.

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Abstract

Inoculation of important microbial strains in a modern intensive crop production is a critical step for the improvement of hybrid crop production. This study evaluated the impact of NPK consortia biofertilizer (NPK CB) and mineral fertilizer on growth and yield of two maize (*Zea mays* L.) hybrids at Mewar University research farm, India. The research was conducted during 2020/2021 Kharif cultivation season. The split-plot design was adopted in three replications, each consisting of six treatments combinations; (T1 = control, T2 = 50% Recommended Dose of Fertilizers (RDF), T3 = 100% RDF, T4 = NPK CB, T5 = 50% RDF + NPK CB and T6 = 100% RDF + NPK CB) and two maize hybrids (i.e., N.K-30 and N.K-30 plus). The result obtained revealed that the growth attributes, and yield attributes increased due to the combined application of NPK CB and mineral fertilizers. But there is no significant difference ($p>0.05$) observed between the studied hybrids, except for the 1000 kernels weight. Although the highest grain yield (1987.39 kg ha^{-1}) obtained from the application of T6 [100%RDF + NPK (CB)] was

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Study about Berberry (*Berberis vulgaris)*, their development, collection, Hepatic treatment, and therapeutic Studies.

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Faculty of Agriculture, Mewar University, Chittaurgarh (RJ.)- 312901

Abstract

The Berberry or ***Berberis vulgaris*** has a spot with the Berberidaceae family which is red concealed natural items created in Europe and Asia. These sorts of normal items should contain trimmings, for instance, berberine, berbamine, palmatine, oxycanthine, malic destructive berberubin. The principal worsens that should be found including the plant of Berberry are berberine and berbamine. Building up to the

Cuscuta reflexa: A critical review on the medicinal plant used in homeopathy

Waseem A K R A M Khan

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About the Journal

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2022, Vol. 5, Issue 2, Part A

Remedial merit of rhododendron (*Rhododendron arboretum*)

AUTHOR(S)

Waseem Akram Khan and Anzar Ahmed Khoker

ABSTRACT

Rhododendron arboretum is a woody plant with a gaudy showcase of dazzling red blossoms has a place with Ericaceae typically develops on North Temperate Zone particularly in the sodden corrosive soil of the Himalayas, South East Asia. The plant is tracked down in the Himalayas from Jammu & Kashmir eastwards to Nagaland and generally fills in Bhutan, China, Myanmar, Nepal, Sri Lanka, Pakistan and Thailand. Usually it is utilized in gardens, estates because of its tasteful worth of alluring bloom tree plant. It assumes a significant part in Traditional solutions for various sicknesses because of its phytochemical potential. This audit center around therapeutic properties of various pieces of *Rhododendron arboretum*.

PAGES : 25-28 | 885 VIEWS | 548 DOWNLOADS

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Issue Bar

2023, Vol. 3, Issue 1, Part A

Parthenium hysterophorus (congress grass) a unwanted plant & its uses

Author(s): Waseem Akram Khan and OP Gurjar

Abstract: In right now we are confronting the pervasion of Parthenium hysterophorus all over the place. It is accessible in stocks around the rail route tracks, in exposed lands, in farming fields, in plantations and in backwoods, it attacks significant part of Indian mainland. We are knowing all about Parthenium hysterophorus poisonous properties and need to control its invasion. Nonetheless, just controlling its isn't an answer eliminate it however it very well may be overseen by means of its use for various purposes. As of late a ton of exploration has been proceeding to investigate the use properties of Parthenium. This survey article presents a few properties and utility capability of Parthenium finished up by different scientists.

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A REVIEW

Recent varieties released in fruit crops

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Department of Fruit Science, College of Agriculture, Kerala Agricultural University,
Thrissur (Kerala) India

Abstract : India produces 13% of the world's total fruit production, which makes it the second-largest fruit producer after China.Fruits provide food and nutritional security, making them a vital part of the human diet. Food security is a complex idea and for it, crop diversity is essential for production as well as for steady supply of raw materials required for future breeding programme. Crop diversity enables farmers and breeders to create high-yielding varieties with higher-quality traits in response to customer demands.Several improved fruit varieties have been created as a result of technological advancements in varietal improvement made by several ICAR institutes and state agricultural universities. However, the demand for fruit production will increase in the future due to rising population, depleting resources, altering dietary habits, declining productivity, and unfavourable climatic factors. Therefore, it is essential to produce varieties that can solve the aforementioned issues as well as satisfy the rising demand for consumption, processing, and export.

Key Words : Fruit crops, Varieties, Hybrids, Characteristics

View Point Article : Jayachandran, Anju and Meghwal, Manohar Lal (2022). Recent varieties released in fruit crops. *Internat. J. agric. Sci.*, **18** (OCAEBGD) : 158-167, **DOI:10.15740/HAS/IJAS/18-OCAEBGD/158-167.**

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Effect of Organic Manures on Growth and Yield of Linseed (Linum usitatissimum L.)

Rensang K[1*], Dr. Gautam Singh Dhaked[2], Dr. Manohar Lal Meghwal[2], Benile Kent

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Abstract

A field experiment entitles "Effect of Organic Manures on Growth and Yield of Linseed (Linum usitatissimum L.) was carried out during rabi season of 2021-22 at the Agronomy Farm Mewar University, Gangrar, to find out the best treatment for the growth and yield of linseed. The experiment was laid out in Randomized Block Design, comprising nine treatments with three replications. The result showed significant superiority in giving the maximum plant height (84.65 cm at 90 days), plant diameter (5.40 cm^2 at 90 days), Secondary branches (24.92), Number of leaves (387.08), capsule/plant (58.50 at harvesting), and seed yield q/ha (20.12). The results showed that T$_8$ (50% Vermicompost + 50 % Neem Cake) was the best in terms of

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Screening and Optimization of Zinc Removal Potential in *Pseudomonas aeruginosa*-HMR1 and its Plant Growth-Promoting Attributes

Ali Asger Bhojiya ✉, Harshada Joshi, Sudhir K. Upadhyay, Abhishek K. Srivastava, Vinayak Vandan Pathak, Vimal Chandra Pandey & Devendra Jain

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Abstract

The soil samples of old Zawar mine sites were sandy texture, basic, electric conductivity range from 16 to 59 dSm^{-1} with a high content of heavy metals of Zn, Pb, Cd, and Fe, indicating poor soil-health. Two bacterial isolates *Pseudomonas aeruginosa* HMR1 and *P. aeruginosa* HMR16 (GenBank-accession-number KJ191700 and KU174205, respectively), differed in the Phylogenetic tree based on 16S-rDNA sequences. HMR1 isolate showed the high potential of Plant growth-promoting attributes like IAA, Phosphate-solubilization, Exopolysaccharide production, and Proline activities at high concentration of Zn augmented nutrient media after 24 h, followed by HMR1 + HMR16 and HMR16. Both isolates were survived at 100 ppm Zn

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Zinc biosorption, biochemical and molecular characterization of plant growth-promoting zinc-tolerant bacteria

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Abstract

Zinc plays a key role in plant nutrition at low levels; however, at higher concentrations Zn ions can be highly phytotoxic and plant growth-promoting rhizobacteria can be used to reduce such metal toxicity. In the present investigation we had reported the zinc biosorption and molecular characterization of plant growth-promoting zinc-tolerant bacteria. Initially, thirty bacteria having zinc solubilizing ability were screened for MIC against zinc ion and displayed high value of MIC ranging from 2.5 to 62.5 mM. Biochemically, all the 30 isolates showed significant difference in the 6 biochemical tests performed. The molecular diversity studies based on the repetitive DNA PCR viz, REP, ERIC and BOX elements showed significant genetic diversity among these 30 zinc-tolerant bacteria. These ZTB strains also showed multiple PGP activities and all ZTB strains were found positive for production of IAA, GA_3 and ammonia, whereas 24 were found positive for ACC deaminase activity, 8 showed siderophore production and 9 ZTB isolates were positive for HCN production. Out of 30 isolates, 24 showed phosphorus solubilization activity, 20 showed potash solubilization, 15 showed silica

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Effect of microbial consortia on growth and yield of wheat under *typic haplustepts*

Devendra Jain ✉, Ram Hari Meena, Jagdish Choudhary, Shanti Kumar Sharma, Surya Chauhan, Ali Asger Bhojiya, Sunil Kumar Khandelwal & Santosh Ranjan Mohanty

Plant Physiology Reports **26**, 570–580 (2021) | Cite this article

Abstract

The uses of environment friendly biological fertilizers to improve plant growth and crop productivity are of great importance for soil health and sustainable agriculture. Hence, an experiment was conducted in two successive *rabi* seasons of 2017–18 and 2018–19 to analyze the impact of microbial consortium (combination of local strains of *Azotobacter*, phosphorus solubilizing bacteria, potassium mobilizing bacteria and zinc solubilizing bacteria) and inorganic fertilizers on growth, yield and economics of wheat. The experiment consisting twelve treatment combinations and different levels of inorganic fertilizers along with biofertilizer consortia replicated three times in randomized block design. The results emanated from present investigation revealed that plant height, plant biomass, root length, chlorophyll content in leaves at different growth stages of wheat crop was influenced by

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Polyphasic Characterization of Plant Growth Promoting Cellulose Degrading Bacteria Isolated from Organic Manures

Devendra Jain ✉, Ravina, Ali Asger Bhojiya, Surya Chauhan, Deepak Rajpurohit & Santosh R. Mohanty

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Abstract

In the present study, twenty seven cellulose-degrading bacteria (CDB) were isolated from various organic manures and their cellulolytic activities were determined. The bacterial isolate CDB-26 showed the highest cellulolytic index, released 0.507 ± 0.025 mg/ml glucose and produced 0.196 ± 0.014 IU/ml cellulase enzyme under in vitro conditions. Biochemically, all the 27 isolates showed difference in the 6 biochemical tests performed. Further, all the 27 CDB isolates were subjected to various plant growth-promoting activities, and all CDB strains were positive for IAA production, GA_3 production and siderophore production, whereas 19 strains were positive for ACC deaminase activity, 21 strains showed NH_3 production and 19 strains were positive for HCN production. Out of 27 CDB isolates, 18 isolates were able to solubilize

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The Role of Nanofertilizers in Smart Agriculture: An Effective Approach to Increase Nutrient Use Efficiency

Devendra Jain, Suman Sanadhya, Heena Saheewala, Arunabh Joshi, Ali Asger Bhojiya & Santosh Ranjan Mohanty

Chapter | First Online: 08 January 2022

Abstract

Outburst of world population in the recent times has forced the agricultural sector to increase crop productivity to satisfy the huger of billions of people especially in under-developed and developing countries. The use of large quantities of chemical fertilizers increased crop production, but on the other hand disturbed the soil mineral balance and decreased soil fertility. In recent years, nanotechnology has extended its relevance in all the sectors including

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Zinc tolerant plant growth promoting bacteria alleviates phytotoxic effects of zinc on maize through zinc immobilization

Devendra Jain, Ramandeep Kour, Ali Asger Bhojiya, Ram Hari Meena, Abhijeet Singh, Santosh Ranjan Mohanty, Deepak Rajpurohit & Kapil Dev Ameta

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Abstract

The increasing heavy metal contamination in agricultural soils has become a serious concern across the globe. The present study envisages developing microbial inoculant approach for agriculture in Zn contaminated soils. Potential zinc tolerant bacteria (ZTB) were isolated from zinc (Zn) contaminated soils of southern Rajasthan, India. Isolates were further screened