





One year update on the COVID-19 pandemic: Where are we now?

[Sanjay Kumar Mishra](#)^a, [Timir Tripathi](#)^b  

[Show more](#) 

 [Outline](#) |  [Share](#)  [Cite](#)

<https://doi.org/10.1016/j.actatropica.2020.105778> 

[Get rights and content](#) 

Highlights

- COVID-19 pandemic has sparked a research revolution to understand the disease and find a cure.
- The past year has seen rapid advances in understanding the biology of SARS-CoV-2 and developing therapeutics.
- Four vaccines have recently cleared phase III trials (BNT162b2, AZD1222, Sputnik V, and mRNA-1273 vaccine).
- At the pandemic's 1-year mark, we summarize information on SARS-CoV-2 gathered in the past year.

Abstract

We are living through an unprecedented crisis with the rapid spread of the new coronavirus disease (COVID-19) worldwide within a short time. The timely availability of thousands of SARS-CoV-2 genomes has enabled the scientific community to study the origin, structures, and pathogenesis of the virus. The pandemic has spurred research publication and resulted in an unprecedented number of therapeutic proposals. Because the development of new drugs is time consuming, several strategies, including drug repurposing and repositioning, are being tested to treat patients with COVID-19. Researchers have developed several potential vaccine candidates that have shown promise in phase II and III trials. As of 12 November 2020, 164 candidate vaccines are in preclinical evaluation, and 48 vaccines are in clinical evaluation, of which four have cleared phase III trials (Pfizer/BioNTech's BNT162b2, Moderna's mRNA-1273, University of Oxford & AstraZeneca's AZD1222, and Gamaleya's Sputnik V vaccine). Despite the acquisition

of a vast body of scientific information, treatment depends only on the clinical management of the disease through supportive care. At the pandemic's 1-year mark, we summarize current information on SARS-CoV-2 origin and biology, and advances in the development of therapeutics. The updated information presented here provides a comprehensive report on the scientific progress made in the past year in understanding of SARS-CoV-2 biology and therapeutics.



Keywords

SARS-CoV-2; Coronavirus; COVID-19; Drug repurposing; Vaccines; Therapeutics; Pandemic; Pathogenesis; Outbreak

1. Introduction

We have now been living with CoronaVirus Disease (COVID-19) for the past year. COVID-19 emerged in December 2019, and in March of 2020 was declared a pandemic by the World Health Organization. The devastating effect of the causative SARS-CoV-2 virus has infected millions of humans across 218 countries and territories and led to more than 1.4 million deaths globally as of 24 November 2020. The pandemic has significantly affected biomedical researchers, by first halting research and then resulting in the concentration of scientific resources toward better understanding the SARS-CoV-2 virus and developing vaccines and therapeutics ([Palayewetal., 2020](#); [Zamora-Ledezmaetal., 2020](#)). The advent of genomics technologies and computational approaches has accelerated scientific breakthroughs in the past year. There has been exponential growth in the number of scientific publications related to COVID-19. The genome sequence of the virus appeared online on January 10, and within weeks, the structures of several viral proteins were determined. Within months, clinical trials of vaccines and therapeutics began, and positive reports on vaccines are currently appearing. Moreover, an array of drugs approved for other viral infections are being studied for COVID-19 treatment in hundreds of clinical trials worldwide. Here, we review current knowledge related to SARS-CoV-2 gained in the past year, including its progression, pathology, prevention, and therapeutics. We discuss what is currently known about the virus and how far medicine has progressed in the fight against COVID-19.

2. Origin and diversification of human CoVs

Coronaviruses (CoVs) are a large group of viruses that infect the upper respiratory tract in humans and cause common cold and flu-like infections. Their name originates from the presence of club-shaped glycoprotein projections (called spikes) that arise from the surface of the viral envelope and impart a crown-like appearance to the viral particles, similarly to the Sun's corona ([Fig. 1A](#)). The CoVs belong to the order Nidovirales of the subfamily *Orthocoronaviridae* in the family *Coronaviridae*. All CoVs have zoonotic origin, and cause respiratory and intestinal infections in several animals, including humans. On the basis of genomic organization and phylogenetic relationships, CoVs are classified into four genera: α -CoV, β -CoV, γ -CoV, and δ -CoV. The α -CoVs and β -CoVs infect various mammals (such as bats, cattle, domestic animals, livestock, and humans), whereas the γ -CoVs and δ -CoVs infect avians and sometimes mammals ([Wooetal., 2012](#)).

[Download PDF](#)Search [Get published](#)[Explore Journals](#)[Books](#)[About](#)[Login](#)Menu 

Future Journal of Pharmaceutical Sciences

[About](#) [Articles](#) [Submission Guidelines](#)[Submit manuscript](#)[Download PDF](#)Review | [Open access](#) | [Published: 12 March 2021](#)

A review on the phytochemical and pharmacological properties of *Hyptis suaveolens* (L.) Poit

[Pratibha Mishra](#), [Saima Sohrab](#) & [Sanjay Kumar Mishra](#) [Future Journal of Pharmaceutical Sciences](#) **7**,

Article number: 65 (2021)

8646 Accesses | **14** Citations | **1** Altmetric | [Metrics](#)

Abstract

Background

Plants are the repository of variable number of valuable secondary metabolites that bears pharmacognostic and pharmacological implications having potentiality to emerge as super drugs in future. In-vivo production of these metabolites is

[View PDF](#)**EN** abiotic stresses
accumulation of diverse

the existence of medicinally important secondary metabolites and possible pharmacological and pharmacognostic importance of under-explored weed plant species *Hyptis suaveolens* (L.) Poit., to explore the potentiality of the plant for developing and designing the drugs for future.

Main body of the abstract

Hyptis suaveolens belonging to family Lamiaceae is the rich source of medicinally important phytochemicals like essential oils, tannins, saponins, phenols, flavonoids, terpenoids, alkaloids, and sterols. One or many of these compounds have antioxidative, anti-inflammatory, antispasmodic, anti-septic, anti-cancer, anti-ulcer, antimicrobial, antibacterial, antiviral, antifungal, anti-diabetic, anti-fertility, diaphoretics, anticutaneous, anticatarrhal, antirheumatic, anti-ulcer, gastroprotective, immunomodulatory, analgesic, and antiviral activity.

Short conclusion

Hyptis suaveolens contains unique terpenoid metabolites like suaveolic acid, suaveolol, methyl suaveolate, beta-sitosterol, ursolic acid, and phenolic compound like rosamarinic acid, methyl rosamarinate that have potentiality to substitute the traditional drugs as therapeutic agent against the resistant and newly emerged bacterial and viral pathogens. Pentacyclic triterpenoid, ursolic acid have been reported to have effective antiviral response against the SARS-CoV2 responsible for the present COVID-19 pandemic and HIV virus for



Effect of different types of abiotic stress on the growth and productivity of linseed (*Linum usitatissimum* L.)

Prerana Upadhyay, Sanjay Kumar Mishra

Department of Botany, Ewing Christian College (University of Allahabad) Prayagraj, Uttar Pradesh, India

Abstract

The objective of this study is to evaluate the effect of UV radiation, different concentrations of Copper salts and auxin on the growth and productivity of linseed (*Linum usitatissimum* L.) using some morphological and phytochemical markers. Different treatment affects the growth and productivity of linseed differently in concentration dependent manner. UV radiation treatment affects the growth and productivity of the plant adversely by inhibiting the seed viability and plant productivity. The copper salt affects the growth and productivity of linseeds in concentration dependent manner. The low and medium concentrations of copper ions enhances the seed viability and conversion of seed to seedling without any promising effect on the growth and productivity of the plant but the higher copper concentrations adversely affect the seed germination plant growth and productivity. The auxin treatment show promising effect on the growth and productivity of the plant resulting in about 15 to 20% increment in productivity. The UV-B is adversely affecting the growth and productivity of plant by destabilizing DNA. The plant needs elements like copper for its growth and development as it is integral cofactor of large number of enzyme and coenzymes, electron carrier protein involved in essential metabolic activities of photosynthesis, respiration, DNA synthesis, gene regulation etc. But the presence of this essential element in high concentration may impose inhibitory influence on plant growth and productivity. Similarly the lower concentration of phytohormone auxin stimulate plant growth development and productivity but the concentration above optimal level impose adverse effect on linseed. Thus the knowledge of optimal dose of exogenously supplied micronutrient and growth regulator is essential to favorably induce the plant growth and yield

Keywords: linum, anthrone, metallozyme, morphological, CTAB

Introduction

In present scenario healthy food and good health is a topic of concern due to drastic change in life style. Now-a day's people show high interest in food source which are rich in good quality of fat, proteins, dietary fibers, vitamins and minerals. Linseed is among one of the important traditional plant with immense nutraceutical and medicinal value due to its diverse pharmacological effects (Umer *et al*, 2017). Linseed is gaining popularity as functional nutraceutical due presence of abundance of high quality of fatty acids, alpha linolenic acid an important omega fatty acid along with dietary fibres, proteins, lignans, phytoestrogens, vitamins and minerals having promising effect on cancer, cardiovascular diseases, obesity and other human ailments (Katare *et al*, 201). 'Linseed' (*Linum usitatissimum* L.) belongs to dicotyledonous family Linaceae. The genus *Linum* includes approximately 250 species (Fatma *et al*, 2016). It is an annual herbaceous plant growing up to the height of 15-30 inches, morphologically characterized by an erect stem bearing many lateral branches arising from the base of the stem. *L. usitatissimum* completes its life cycle in about 100 days. Depending upon the variety of the plant flowers may be white, blue, pink or violet and bear diploid chromosome number of $2n = 30$ (Nag *et al*, 2015) [20]. The mature fruits of linseed are ball like capsule with segments. Seeds are reddish to deep brown in color. The colour of seed is determined by amount of tannin present in pigmented cells of seed coat (Katare *et al*. 2012) [13].

The medicinal importance of plant is due to presence of many pharmacologically active phytochemical substances

like alkaloids, glycosides, Resins, flavanoids, volatile oil, gum, Tannin, fatty acids, lignans etc. (Bekal *et al*, 2015) [4]. Linseed contains nearly 38-40% fat, 23-25% protein, 15-20% carbohydrate of which one third parts consisted of mucilage and 20-80 % fiber. Omega-3 fatty acid is the chief constituent of the fat content of the seed. Oil contains minerals, amino acid and vitamins like A, B, D and E (Hanna *et al.*, 2017). Several research studies carried out to evaluate the effects of ultraviolet-B radiation on field grown linseed crop exhibited that ultraviolet-B radiation mainly affects the growth, productivity and chlorophyll content of the linseed crop plant (Goyal *et al*, 1991) [9]. The exposure of plant to UV radiation may results in chlorosis and necrosis of leaves by inhibiting the synthesis of chlorophyll content (Zhao *et al*, 2003) [36]. The metallic elements like copper, zinc, manganese are essentially required in photosynthetic organism in trace amount but their higher concentrations may induce metal toxicity (Fernandes & Henriguez, 1991; Baron *et al*, 1995) [3]. Copper, an essential trace element is required for the proper activities of large number of proteins, enzymes and metallozymes (Burkhead *et al*, 2009) [5] in plants but its high concentration may adversely affect cellular biomolecules like chlorophyll by replacing the magnesium ion from it (Kupper *et al*, 2002) [15] or by replacing metallic cofactor like zinc from essential enzymes (Valasta *et al*, 2018; Laporta *et al*, 2020) [17]. Excess of copper may adversely affect photosynthesis by substituting Mg^{++} under low radiance with dark phase by phenomenon called shade reaction (Kupper *et al*, 2002, 2003) [15]. Experimental studies using copper on linseed

Bulletin of the National Research Centre

[About](#) [Articles](#) [Submission Guidelines](#)[Submit manuscript](#)[Download PDF](#)[Review](#) | [Open access](#) | [Published: 04 December 2021](#)

Phytochemical competence and pharmacological perspectives of an endangered boon—*Costus speciosus* (Koen.) Sm.: a comprehensive review

[Saima Sohrab](#), [Pratibha Mishra](#) & [Sanjay Kumar Mishra](#) [Bulletin of the National Research Centre](#) **45**,

Article number: 209 (2021)

6384 Accesses | **5** Citations | [Metrics](#)

Abstract

Background

Costus speciosus (Koen) Sm. popularly known as crepe ginger or spiral ginger and insulin plant is a perennial rhizomatous herb contain variable number of medicinally important bioactive

[View PDF](#)**EN** nsive pharmacological antimicrobial,

insecticidal, anticancerous, and antidiabetic properties. This plant is widely distributed throughout India and has tremendous ethnobotanical uses. This review article is the coalescence of the distribution, morphology, phytochemistry, pharmacology, effect, and mode of action of pharmacologically active principles of *Costus speciosus*.

Main body

The therapeutic potential possessed by the plant is mainly the attribution of the bioactive compounds such as phenolics, steroids, alkaloids, flavonoids, saponins, terpenoids, and tannins, which are found to be present in different parts of the plant. Bioactive constituents like diosgenin, gracillin, dioscin, prosapogenins A and B of dioscin, eremanthin, costunolide, β -sitosterol, β -D-glucoside, β -carotene, α -tocopherol quinone, dihydrophytylplastoquinone, 5α -stigmast-9(11)en 3β -ol, tetracosanyl octadecanoate, methyl hexadecanoate, methyl octadecanoate, cycloartenol, cycloartanol, and cycloalaudenol are specifically found in *C. speciosus*. This review also focuses on the possible mechanisms followed by these bioactive compounds while exhibiting various pharmacological properties. Because of the presence of diosgenin, this plant is given the name “insulin plant.” Diosgenin along with an important sesquiterpene, costunolide, performs significantly high antioxidant, anticancer, and antidiabetic activities. Besides these properties, insecticidal, antifungal, antibacterial, and anthelmintic properties have also been discussed. This plant needs to be given more emphasis as it is exploited at the commercial level by the pharmaceutical

Acta Chim Slov. 2021 Jun;68(2):341-354.

Application of Chemically Modified Industrial Slag to As(III) Adsorption from Wastewater: Kinetics and Mass Transfer Analysis

Arijit Dutta Gupta, Vivek Jaiswal, Vivek Bhadauria, Harinder Singh

PMID: 34738121

Abstract

In the present study, brick kiln slag (BKS) has been utilized for low concentration As(III) adsorption in batch mode. BKS was modified with H₂SO₄ (SA) and NaOH (SB) for enhancing As(III) uptake capacity. Maximum adsorption capacity (13.7 mg/g) was observed for SA at 298 K, pH = 7.0, adsorbent dose = 0.3 g and time = 70 min which was 1.4 times higher than that of SB. Adsorption data modelled into Freundlich isotherm and pseudo-second-order kinetics. Mass transfer coefficients decreased with increase in As(III) concentration. Film diffusion significantly dominated the adsorption of As(III) ions irrespective of the initial concentration. Dimensionless Sherwood number (Sh) interrelated As(III) concentration (C₀) as: $Sh = 2.97(C_0)^{-0.376}$, $Sh = 4.12(C_0)^{-0.215}$, $Sh = 4.83(C_0)^{-0.588}$ for H₂SO₄ modified, NaOH modified and native slag respectively. Low temperature (298 K) favoured As(III) adsorption (based on ΔG° value). Therefore, the modified slag can be used as an effective adsorbent for As(III) remediation from groundwater.

[PubMed Disclaimer](#)

LinkOut – more resources

Research Materials

[NCI CPTC Antibody Characterization Program](#)



Carbohydrate Polymers

Volume 269, 1 October 2021, 117763

Recent trends in the application of modified starch in the adsorption of heavy metals from water: A review

Arijit Dutta Gupta^a, K.P. Rawat^b, Vivek Bhadauria^c, Harinder Singh^a  [Show more](#)  Share  Cite<https://doi.org/10.1016/j.carbpol.2021.117763> [Get rights and content](#) 

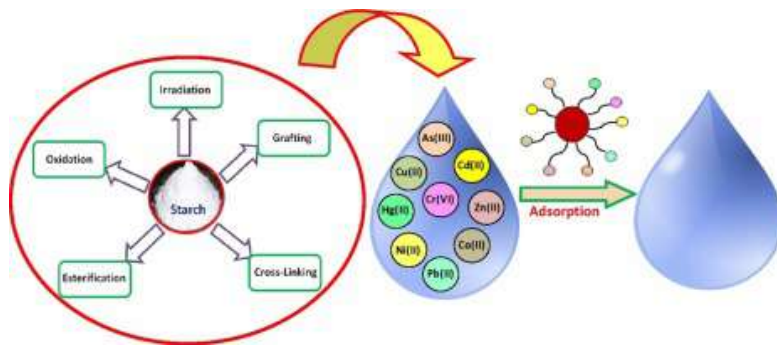
Highlights

- Physical and chemical modifications of starch can enhance its adsorption capacity.
- Addition of functional groups aids heavy metals scavenging from water.
- Adsorption may occur via electrostatic interaction, ion exchange or complexation.
- Modified starches have the potential to replace conventional adsorbents.

Abstract

The presence of polyfunctional ligands on the bio-macromolecules acts as an efficient adsorbent for heavy metal ions. Starch is one of the most abundant, easily available and cheap biopolymer of plant origin. However, native starch exhibits significantly low adsorption capacity due to the absence of some essential functional groups like carboxyl, amino or ester groups and is thus modified using various reaction routes like grafting, cross-linking, esterification, oxidation and irradiation for addition of functional groups to increase its adsorption capacity. The present review provides a comprehensive discussion on the above mentioned modification schemes of starch over the last 10–15 years highlighting their preparation methods, physico-chemical characteristics along with their adsorption capacities and mechanisms of heavy metal ions from water.

Graphical abstract



Download : [Download high-res image \(185KB\)](#)

Download : [Download full-size image](#)

Introduction

Starch is one of the most abundant, economically viable, renewable and biodegradable naturally occurring polysaccharide (Blennow, 2018). Native starch occurs naturally in semi-crystalline granular form and comprises of amylose and amylopectin. Different types of starch crystal polymorphs (A-, B- and C-types) are a result of the alternating crystalline and amorphous layers within the interior of the starch granules (Haq et al., 2019; Vanier, El Halal, Dias, & da Rosa Zavareze, 2017). The 'A' type (cereal) starch crystal polymorph consist of close packing of amylopectin double helices whereas 'B' type (tuber) starches have loose packing of double helices. The content of water present between the helices also differs in these starches. Legume starches show 'C' type polymorph which is said to be mixture of 'A' and 'B' patterns (Hoover, Hughes, Chung, & Liu, 2010; Tester, Karkalas, & Qi, 2004). The degree of polymerization of amylose molecules ranges from 840 to 22000 glucose units while the average degree of polymerization of amylopectin molecule is around 2 million making it the largest naturally occurring molecule. The molecular weight of amylopectin is around 1000 times that of amylose (Singh et al., 2017). Native starches are modified to alter their response to changes in pH and temperature which are important process parameters in adsorption. The addition of specific functional groups (amino, carbonyl, carboxyl, ester etc.) improves the adsorption affinities of starches towards heavy metal ions or dyes. These modifications have also been observed to widen their applications in food, textile and petrochemical industries (Fan & Picchioni, 2020; Zhu, 2017; Zia-ud-Din, Xiong, & Fei, 2017).

Literature survey reveals that modified starches could exhibit high adsorption capacities towards dyes and heavy metals due to replacement of hydroxyl groups with chemically active groups (Haq et al., 2019). Besides this these starches are biodegradable to great extent. Various modified starches like starch phosphate, starch xanthate, starch sulphate, starch carbamate, carboxyl methyl starch etc. have been used as an efficient adsorbents for heavy metals remediation over the past 10–15 years (Kärkkäinen et al., 2016; Menzel et al., 2017; Santosh Kumar & Naga Satya Yagnesh, 2018; Xiao et al., 2020; Zhang et al., 2016). Besides such modifications, there is an increasing research interest towards starch irradiation over the past 5–7 years due to its rapid and eco-friendly technique. Irradiation based modification technique has also been referred as a “green tool” for the processing of many biopolymers (Braşoveanu & Nemţanu, 2018). The increased attractiveness towards such modification of starch is due to the absence of any chemicals or modifying agents and ease in preparation (Gupta et al., 2020). Disruption of the hydrogen bonds during modification aids in the addition of the preferential functional groups (Kshirsagar & Singhal, 2007). Table 1 summarizes of the properties and applications of various modified starches.

Pollution and contamination of heavy metals in water is one of the most alarming global issues faced by the mankind today. The major contributing sources for heavy metal pollution in water are electrochemical and

[< Back](#)

Advertise

Starch - Stärke / Volume 73, Issue 3-4 / 2000143

Research Article

Comparison of Starch Characteristics from Pigmented and Non-Pigmented Sorghum Cultivars before and after Electron Beam Irradiation

Vivek Jaiswal, Kauslesh Pan Singh Rawat, Arijit Dutta Gupta, Vivek Bhadauria, Uttam Chavan, Dipankar Kalita, Harinder Singh ✉

First published: 07 December 2020

<https://doi.org/10.1002/star.202000143>

Citations: 4

Abstract

Starch is extracted from the seeds of a pigmented (Phule Rohini) and a non-pigmented (Phule Maldandi) Indian sorghum cultivar using same wet milling method for both cultivars. This study is focused on investigation of the effect of the pigment on starch characteristics. Isolated starches differing in color are irradiated with an electron beam dose of 5 kGy and compared by measuring physicochemical, structural, pasting, and digestibility properties. Amylose content increases after irradiation and the increase is greater in the case of Phule Maldandi starch. The pigmented starch shows higher carboxyl content after irradiation which may be due to higher amylopectin content. Granular morphology remains constant after irradiation. Irradiation causes a decrease in swelling power and an increase in pasting viscosity of both starches. Color content of red sorghum starch is not changed significantly after irradiation. **The increase in pasting viscosity and solubility of non-pigmented starch is more drastic in nonpigmented starch than in pigmented starch after irradiation.** Resistant starch decreases after irradiation which indicates opening up of granular structure or hydrolytic action of irradiation. Pigmented starch can have potential applications in custard powder and bakery products.

Conflict of Interest

The authors declare no conflict of interest.



Log in

| Register



Cart

Home ▶ All Journals ▶ International Journal of Environmental Analytical Chemistry ▶ List of Issues
▶ Volume 103, Issue 17 ▶ Silica derived from rice husk ash and lo ...

International Journal of Environmental Analytical Chemistry >

Volume 103, 2023 - Issue 17

183 | 4

Views | CrossRef citations to date | 0 | Altmetric

Research Article

Silica derived from rice husk ash and loaded with iron oxide for As(III) adsorption from water: experimental and modelling studies

Arijit Dutta Gupta, Vivek Bhadauria & Harinder Singh  

Pages 5771-5794 | Received 26 Apr 2021, Accepted 09 Jun 2021, Published online: 24 Jun 2021

 Cite this article  <https://doi.org/10.1080/03067319.2021.1943373>



 Sample our Earth Sciences journals, sign in here to start your access, latest two full volumes FREE to you for 14 days

 Full Article

 Figures & data

 References

 Citations

 Metrics

 Reprints & Permissions

Read this article

ABSTRACT

Arsenic in water at low concentration (1–5 mg/L) presents difficulty in its removal by adsorption due to low concentration gradient. In the present study, silica was extracted from rice husk ash via sol–gel method and loaded with iron oxide using co-precipitation method. The maximum removal As(III) percentage (97.5%) was achieved using 0.1 g/L of adsorbent with a contact time of 90 min at pH = 7.0. Modelling experimental data with Freundlich isotherm and pseudo-second-order kinetics showed the highest regression coefficient ($R^2 > 0.95$). Adsorption was spontaneous at all temperatures (ΔG° value). Film and intraparticle diffusivities followed power-law model with initial concentration. FTIR spectra (at 825 cm^{-1}) indicated the presence of

PDF

Help

monodentate arsenic complexes. The presence of PO_4^{3-} ions affected the As(III) removal from water. The synthesised adsorbent exhibited excellent reusability up to three adsorption-desorption cycles.

Q KEYWORDS: Arsenic adsorption silica iron oxide modelling monodentate complexes

Acknowledgments

HS and ADG are thankful to Technical Education Quality Improvement Programme (TEQIP-III) for providing the required funding to carry out the experiments and MRC department, IIT Kanpur for SEM analysis.

Disclosure statement

The authors declare that they have no conflict of interest regarding the publication of this paper.

Related research

People also read



Recommended articles

Cited by

4

PDF

Help

Individual Differences in Classroom : Importance and Utilization

Savita¹ & Vidyapati²

1. M. Phil Scholar, School of Education, Central University of Haryana, Mahendergarh, Haryana E-mail: Rathisavita0@gmail.com
2. Head, Department of Education, Ewing Christian College, Prayagraj, Uttar Pradesh E-mail: drvidyapati09@gmail.com

Received : 19/08/2021

1st BPR : 26/08/2021

2nd BPR : 02/09/2021

Accepted : 11/09/2021

ABSTRACT

Psychology has effected revolutionary changes in the field of education. As far as individual differences are concerned, this function has been performed right from the ancient times and individuals are classified on the basis of their physical structure, as obese, tall and short and on the basis of their mental ability, as intelligent and dull. However, the scientific study in this field was started in the 19th century by Sir Francis Galton. After him, Pearson, Terman, Tayler and Skinner, in the 20th century, constructed measurement techniques for the measurement of factors of individual differences (Intelligence, Ability, Interest and attitude, etc.), which are called tests today. At present, all those elements of an individual are included in individual differences which can be measured scientifically in education. This study highlights the factors, different dimensions, causes, importance and utility of individual differences in education. At one time education was teacher-centered, it has now become child-centered due to the importance of individual differences in each classroom. Not only this, the study of individual differences has started the efforts to make it child-centered completely by concluding that individual differences are very important and useful in the field of education. The prime focus of this paper is to shed light on the role of individual differences catering by teachers in classroom. Teacher should respect the individual differences and should behaviour with all students with love, sympathy and co-operation.

Keywords: Individual differences, Dimension, Utility, Accommodation, Education.

Introduction

"Give me a child; I can make him whatever I want him to make-
a doctor, an advocate, a thief, or anything else."

- Watson

This world is a strange museum in itself. It has numerous types of organism and all of them are different from one another, even the organisms of the some species differ from one another in one way or the other. However, when we consider this difference in psychology then our scope is limited to the differences among persons. Inside psychological terminology, no two individuals are even equal or similar. Just think, there are almost 700 crore people in the world today. Still we can identify a person related to us in this mess up population despite the fact that all of them possess the same body organs from head to toe. The fact remains that the similar or equal body parts are different from one another in one way or the other, on the basis of which a person identify a person related to him easily. Psychologists have also studied differences in mental faculties of individuals along with their differences in physical body parts and have developed methods of their measurement. In the words of Skinner, "Today we think of individual differences as including any measurable aspect of the total personality."

This definition seems to be complete in it because any measurable treat or symptom

An Analytical Study of Education as a Human Capital and Investment for Economic Development of a Nation

Savita¹ & Vidyapati²

1. M. Phil Scholar, School of Education, Central University of Haryana, Mahendergarh, Haryana
2. Head, Department of Education, Ewing Christian College, Prayagraj, Uttar Pradesh

Received : 09/08/2021 1st BPR : 19/08/2021 2nd BPR : 01/09/2021 Accepted : 16/09/2021

Abstract

Economic development of a country is generally meant is progressive increase in its income and it is measured by Gross National Product (GNP) depreciation in machine machinery is deducted from Gross National Product to find Net National Product (NNP). Generally people take net national product as the national income. But economic development is not done for economic development only. It should raise the standard of life of people and raising the standard of life does not mean only the fulfillment of food, clothes and shelter needs or by making available other resources, such as high quality food, clothing, shelter, television, refrigerator and so on; rather it is meant by making available proper education, proper health services, suitable security services and suitable means of transport etc. It includes all that is useful and beneficial for human life. According to investigator it is possible that the standard of life of the citizens may not raise despite increase in national income rather it may see a downfall. It occurs when the rate of population growth is more than the rate of growth in income therefore economic development of a nation is measured by per capita income in play with national income. This review paper is trying to shed light on the role of different types of education in economic development of a nation and investigate the role of education as an Investment and Human capital.

Keywords: *Economic development, Education, Investment, Human Capital, Nation.*

Introduction

"By economic development of a nation means continuous increase in its per capita income and rising of the standard of life of its citizens as its outcome."

- (Bhatnagar S., Maisnam P.)

India is a land of education, it most effective instrument to mould the responses of the agents of production to a common goal. It can generate potent forces helpful in the transformation of a traditional society (Thipperudrappa.E & Dhananjaya. K.B., 2017). Dividing the national income by the total population we get per capita income but it is also possible that increase in per capita income may not rise by the standard of life of the citizens it occurs when the currency is depreciated and fairness increases therefore it is also necessary that the contemporary value of currency is also kept in view beside per capita income does if the per capita income of a nation increases even after the depreciation of its currency and the standard of life of the citizens rise and they start to live a better life then we call it in economic development of the nation.

Basically the economic development of a nation depends on its production and distribution of them production depends on natural resources and human resources and distribution depends on human resources by natural resources is meant the natural material available in a country such as land, forest, climate and minerals etc. Food materials cannot be produced in the absence of fertile land and proper climate, raw material, wood and Herbs etc, cannot be procured in the absence of forest and does finished goods cannot be produced and in the absence of minerals like oil, coal, metals etc. These articles produced from them cannot be obtained. The more and a higher quality of natural resources

Observation and an Effective Strategy for Preschoolers' Online Teaching and Learning

Abrasi¹ & Vidyapati²

1. Head of Early Childhood Education Programme, Veritas University College, Malaysia
2. Head, Department of Education, Ewing Christian College, University of Allahabad, Prayagraj, India

Received : 16/10/2021

1st BPR : 28/10/2021

2nd BPR : 06/11/2021

Accepted : 24/11/2021

Abstract

Observations on Malaysian's preschool online teaching and learning has brought six crucial aspects in ensuring the effectiveness of preschoolers' online learning. Though preschools' teachers may have the creativity in promoting fun and developmentally appropriate online lesson, they should be able to design and choose the best technology tools to enhance children's engagement. The key principle to determine effective preschoolers' online lesson is by scrutinizing preschoolers' holistic development. Thus, the rudiments of evaluating preschoolers online are important to diagnose the level of child's development rather than their achievement.

Keywords: Online Teaching Learning, Pre-Schoolers, Observation and Effective Strategy.

Introduction

As school closed due to the Covid-19 pandemic, preschool educations moved quickly to offer remote learning to continue children's education through multi-modality technology including online platforms. This paper provides insightful observation on preschoolers' online teaching and learning in Malaysia during the '2020 Education Crisis' (UNESCO, 2021) and the strategy to improve the outcomes of preschoolers' online teaching and learning.

Observation on Preschoolers' Online Teaching and Learning in Malaysia

Author's observation found that success and effectiveness of preschoolers' online learning correlates highly with these six crucial aspects.

1. Education Technology

Education technology is not a new concept. Young children had access to educational technologies and devices like electronic toys, games, radio and televisions since late 1990's. Children engagement in education technology has increased dramatically in the last few years. Often preschool included devices and technology in the classroom like iPad, computer and interactive whiteboards. Naturally, children have had no huge issues shifting to an online learning during the pandemic, however the amount of time children can be occupied with the devices for an online learning varies from child to child.

2. Preschoolers' Online Learning

Online learning is a form of distance education process that take place through the internet. Online learning for preschoolers during the pandemic has highlighted major concerns on children interactions, lack of participations and social isolations. Some children have shown delayed, as well as providing insubstantial amount of feedback. Preschoolers' digital learning are also been debated and criticized by parents and stakeholders. The increased concerns are towards online risks and dangers, digital addictions, and physical health issues. Although more online and



Awareness About Measures for Environmental Conservation among Student Teachers

Aswathy M. Prince and Shivam Tripathi*

Department of Education, E.C.C. University of Allahabad, Prayagraj, Uttar Pradesh, India

*Corresponding author: stcuteshivam@gmail.com

Received: 20 Feb., 2021

Revised: 17 May, 2021

Accepted: 12 June, 2021

ABSTRACT

Environmental education includes interrelated concepts of awareness, real life situation, conservation and sustainable development. The study aims to check the awareness about the different measures to be taken for the conservation of environment among student teachers. It also tries to note the daily life application of the acquired awareness. The study helps to understand, how much the present generation is equipped with the awareness about the measures for environment conservation to transfer it to the next generation. It also tries to relate the intellectual and practical aspects of different domains. It will also include all the educational perspective regarding awareness about environment education. It will also talk about the major and minor difference between the environment awareness and environment Education.

Keywords: Environment, awareness , student teachers, conservation

Environment refers the sum total of conditions which surround man at a given point of time and space. It is an inseparable whole and is constituted by the interacting systems of physical, biological and cultural elements which are interrelated individually as well as collectively. Man has to improve the quality of his environment, because there is pollution or crisis. Having concern for the environment and its preservation is every individual's responsibility. So, we have to take care of our environment if we aspire for sustainable development. Environment is the surrounding we live in. Unplanned human activities cause environmental degradation.

How to cite this article: Prince, M.P. and Tripathi, S. (2021). Awareness About Measures for Environmental Conservation among Student Teachers. *TechnoLearn: An International Journal of Educational Technology*, 11(1): 09-12.

Source of Support: None; **Conflict of Interest:** None



Liberating Actors, Spaces and Spectators: Budhan Theatre as an Expression of Historical Stigmatisation

Dr. Jyoti Tabita Hermit
Assistant Professor
Department of English
Ewing Christian College
Prayagraj.

Article History: Submitted-28/03/2021, Revised-24/04/2021, Accepted-27/04/2021, Published-05/05/2021.

Abstract:

Over the decades, community theatre has been endeavouring to fight oppression and resistance creatively in India, catering to under-developed communities by providing them information and entertainment. It has been considered a social instrument that provides an outlet for expression and offers a commentary on society, culture, politics and other aspects of contemporary life. With an attempt to dismantle the hegemonic powers in India, the socially and economically weak communities produced plays in their own language and style. The marginalized Denotified Tribes have been displaying an amazing tolerance for the hegemonic conditions used their art and theatrical performances to reveal the hierarchy in the social system. Budhan Theatre, a community theatre led by the subaltern youth of the Chhara community used art as a medium to erase the historical stigma of their ancestors and question their identity as ‘second class citizens’ in India. Budhan Theatre has been influenced by Jerzy Grotowski’s concept of “poor theatre” and has been following its dynamics by moving away from the conventions of synthetic theatre and adopting a minimalistic style for their theatrical performances.

Keywords: hegemonic, Denotified tribes, Budhan theatre, stigma.

Over the decades, community theatre has been endeavouring to fight oppression and resistance creatively in India, catering to under-developed communities by providing them information and entertainment. It has been considered a social instrument that provides an outlet for expression and offers a commentary on society, culture, politics and other aspects of contemporary life. It shatters the boundaries of traditional theatre by moving away from the rigidities of institutionalised conventions. Imbued with the power to lift the veil of

ADVERTISEMENT


RETURN TO ISSUE< PREV **C: PHYSICAL PROPERTI...** NEXT >[Get e-Alerts](#)

Effect of Fe Doping on the Surface Morphology and Supercapacitor Properties of Sr(OH)₂ Thin Films: A Fractal Approach

Madhavi Yadav, Ram P. Yadav*, Pradip K. Priya*, Hari P. Bhasker, Ștefan Țălu, Ashok K. Mittal, and Robert Saraiva Matos

✓ **Cite this:** *J. Phys. Chem. C* 2021, 125, 41, 22827–22836

Publication Date: October 12, 2021

<https://doi.org/10.1021/acs.jpcc.1c06668>

Copyright © 2021 American Chemical Society

[Request reuse permissions](#)

Article Views

409

Altmetric

1

Citations

6

[LEARN ABOUT THESE METRICS](#)

Share Add to Export

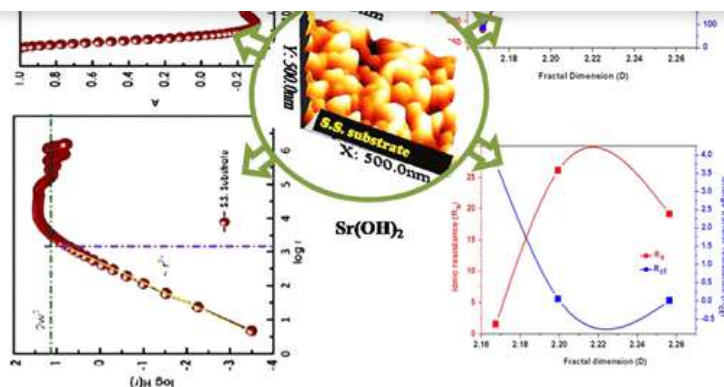


Access Through Your Institution

Other access options

SUBJECTS: [Doping](#), [Electrodes](#), [Surface morphology](#), [Surface roughness](#), [Thin films](#)

Abstract



Fractal concepts have been employed to explore the morphological evolution of Sr(OH)₂ thin films prepared by the successive ionic layer adsorption and reaction (SILAR) method on stainless steel (SS) substrate. The surface morphology of each sample was captured using atomic force microscopy (AFM). Interface width, lateral correlation length, and roughness exponent were computed. Our study reveals that as doping is increased, the roughness exponent decreases and the fractal dimension increases. In all cases, the value of the roughness exponent was found to be greater than 0.5, indicating that the height fluctuations at neighboring pixels are correlated positively and exhibit persistent behavior and memory effect. Advanced fractal parameters such as lacunarity coefficient (σ), Hurst coefficient (HC), fractal succolarity (FS), and surface entropy (SE) are also calculated. Our study reveals that the surface entropy does not show any significant change, indicating a globally uniform surface. Furthermore, the local surface slope is found to play a crucial role in the performance of supercapacitive electrodes. Fractal analysis indicates that electrodes with larger fractal dimension are better for supercapacitor applications. These observations are corroborated with the 0.5 atom % Fe/Sr(OH)₂ doped sample. This sample exhibits both the highest fractal dimension and a specific capacity of 776 C g⁻¹ at a scan rate of 5 mV s⁻¹. The materials with higher fractal dimension could thus be a strong candidate for the fabrication of highly efficient supercapacitors.

Read this Article

To access this article, please review the available access options below.

This website uses cookies to improve your user experience. By continuing to use the site, you are accepting our use of cookies. [Read the ACS privacy policy.](#)

CONTINUE

[< back](#)

Theoretical analysis of p_T spectra of light-flavor hadrons in $p + p$ collisions at $\sqrt{s} = 7$ TeV under differential and single freeze-out scenarios

No Access

Pramod Kumar, P. K. Khandai, Kapil Saraswat, and V. Singh

<https://doi.org/10.1142/S0217751X21501608> | Cited by: 0 (Source: Crossref)[< Previous](#)[Next >](#)

Abstract

We present the published data of ALICE at mid-rapidity region ($|y| < 0.5$) to study the p_T spectra of light-flavor hadrons in different charged-particle multiplicities ($\frac{dN_{ch}}{d\eta}$) for $p + p$ collisions at $\sqrt{s} = 7$ TeV. We parametrize the p_T spectra of different hadrons such as pion ($\pi^+ + \pi^-$), kaon ($K^+ + K^-$), K_S^0 , K^{*0} ($K^{*0} + \bar{K}^{*0}$), ϕ , proton ($p + \bar{p}$), lambda ($\Lambda + \bar{\Lambda}$), cascade ($\Xi^- + \bar{\Xi}^+$) and omega ($\Omega^- + \bar{\Omega}^+$) using Tsallis distribution. We perform this analysis by considering both differential and single freeze-out scenarios. In the differential freeze-out scenario, both the Tsallis parameters n and T increase with charged multiplicities for most of the particles. This implies that the multipartonic interactions increase the multiplicities in $p + p$ collisions and it brings the system towards thermal equilibrium. Here we observe that both n and T have different trends with different masses of particles. The parameters n and T are higher for massive particles (except for multistrange baryons) in comparison to lighter ones, which supports the differential freeze-out scenario and suggests that massive particles freeze-out earlier from the system. In the case of single freeze-out scenario, the value of parameter n has a little variation with multiplicity and the parameter T increases with multiplicity. This implies that the degree of thermalization remains similar for the events of different multiplicity classes.

Keywords: Hadron spectra • Tsallis distribution • differential and single freeze-out**PACS:** 13.15.+g, 25.70.Bc, 12.15.-y, 23.40.Bw, 25.60.Dz**We recommend**

[< back](#)

Medium effects of charged particles in Xe+Xe collisions at $\sqrt{s_{NN}} = 5.44$ TeV using modified Tsallis distribution

Pramod Kumar, P. K. Khandai, Kapil Saraswat, and V. Singh

Doi: <https://doi.org/10.1142/S0217751X21500597>[< Previous](#)

Abstract

We present a systematic study of transverse momentum (p_T) spectra of charged particles in $p + p$ and Xe+Xe collisions at $\sqrt{s_{NN}} = 5.44$ TeV. The published data of invariant yields of charged particles as a function of p_T is taken from ALICE at LHC in the mid-pseudorapidity region $|\eta| < 0.8$. The modified form of Tsallis distribution is used here to analyze the p_T spectra of charged particles. The power law of Tsallis/Hagedorn form gives very good description of the charged particle spectra in $p + p$ collisions within a p_T range of 0.15 GeV/ c to 50 GeV/ c . When we go from $p + p$ collisions to heavy-ion (Xe+Xe) collisions, the original form of Tsallis/Hagedorn distribution is not able to describe the p_T spectra of charged particles properly. This may be occurred due to the medium effects or the final state effects. Here we discuss two types of medium effects of charged particles in Xe+Xe collisions, one is the transverse flow in the low to intermediate p_T region ($p_T \leq 7$ GeV/ c) and the other is the energy loss in the high p_T region ($p_T > 7$ GeV/ c), using the modified Tsallis distribution.

Keywords: Charged particle spectra ▪ Tsallis distribution ▪ energy loss ▪ collective flow

PACS: 13.15.+g, 25.70.Bc, 12.15.-y, 23.40.Bw, 25.60.Dz

Access content

To read the fulltext, please use one of the options below to sign in or purchase access.



IJSSIR, Vol.10, No.2, FEB

A STUDY ON CHALLENGES BEFORE UNITED NATIONS

Dr. Ashima Ghosh

Associate Professor

Department of Political Science

Ewing Christian College, Prayagraj

Abstract

While declaring the objectives in the Charter of the United Nations, it has very beginning that the first goal is to liberate mankind from the horrors of war. An important effort is to make impossible the conditions that give rise to war. At the time of establishment, the memories of the Second World War were fresh. At that time colonialism was widespread throughout the world. In these circumstances peace in danger were clearly identifiable.

But within a few days that situation started changing and the challenge to the minds of the people in favor of their ideology became strong during the war. It was understood that if economic growth slowed, social discontent and resentment would grow, and violent anarchy and political upheaval would put peace at risk.

The challenges faced by the United Nations Organization in the latter half of the 20th century related to some critical issues. The Security Council was busy keeping the world safe and secure, while the specialist departments were busy in influencing the process of development in a customized manner. The study is predicated on functional work to examine the United Nations and the contemporary challenges of the world, etc. in the world.

Keywords: United Nations, World War, Security Council, Economic growth

Introduction

The United Nations was established in an environment created by global challenges. In the tenure of seven decades, it tried to solve global challenges through collective action. To a certain extent succeeded in them. The United Nations is a permanent system.

A STUDY ON CHALLENGES BEFORE UNITED NATIONS

Dr. Ashima Ghosh
Associate Professor
Department of Political Science
Ewing Christian College, Prayagraj

Abstract

While declaring the objectives in the Charter of the United Nations, it has been made clear from the very beginning that the first goal is to liberate mankind from the horrors of war. Obviously, its most important effort is to make impossible the conditions that give rise to war and destroy peace. At the time of establishment, the memories of the Second World War were fresh and the struggle against colonialism was widespread throughout the world. In these circumstances, the reasons that made peace in danger were clearly identifiable.

But within a few days that situation started changing and the challenge of winning the hearts and minds of the people in favor of their ideology became strong during the Cold War era. It was understood that if economic growth slowed, social discontent and resentment would continue to grow, and violent anarchy and political upheaval would put peace at risk.

The challenges faced by the United Nations Organization in the latter half of the 20th century were related to some critical issues. The Security Council was busy keeping untouchables collective security and peace, while the specialist departments were busy in influencing the direction and pace of development in a customized manner. The study is predicated on functionalist theoretical framework to examine the United Nations and the contemporary challenges of war, conflicts, genocide etc. in the world.

Keywords: United Nations, World War, Security Council, Economic growth, Cold War

Introduction

The United Nations was established in an environment created by global circumstances. During the tenure of seven decades, it tried to solve global challenges through collective effort and to some extent succeeded in them. The United Nations is a permanent system at the global level, which performs its functions through its various organs. In the year 2015, it identified the challenges of the present world in 17 points through the Sustainable Development Goals. These include poverty, hunger, education, health, energy, economic growth and better employment, fundamental problems, industry and innovation, gender equality, water and sanitation, inequality reduction, sustainable cities, climate action, ecological systems, peace and justice and participation. Huh. But the above goals represent challenges designed keeping human development in mind. While the obvious points of global challenges differ from these as well. Such as: challenges arising from climate change, declining biodiversity, increasing poverty and inequality, spreading hatred, geo-political tensions,

Dr. Ashima Ghosh

Associate Professor, Department of Political Science, Ewing Christian College, Prayagraj.

Abstract

The promotion of global cooperation in the economic and social spheres is significantly aided by the UN and its related organizations. The United Nations believed that global economic and social progress was necessary for achieving lasting peace. As a result, a large portion of the UN's funding goes toward social and economic initiatives. The United Nations' primary focus since 1960 has been on the economic and social development of newly independent, developing nations. Numerous initiatives are being taken in these domains to address issues including food insecurity, housing instability, and sickness, all of which have both economic and social implications.

The United Nations Economic and Social Council is a grouping of some of the member states of the United Nations, which assists the General Assembly in international economic and social cooperation and development programs. This council strives to make international peace effective through social problems. According to this the only solution to make peace in the world is not political. It was established in 1945. Initially, this council had only 18 members. In 1965, the number of its members was increased to 27 by modifying the UN Charter and in 1971 the number of members increased to 54. The term of each member is three years. One-third of the members are relieved every year, that is, 18 members are changed every year. A relieved member can also be re-elected. The United Nations considered that stable peace cannot be achieved without economic and social development of all nations.

Keywords: United Nations, General Assembly, Cooperation, Development, Piece.

Introduction

The creation of the United Nations Economic and Social Council (ECOSOC) underscores the fact that lasting peace and security in all parts of the world cannot only be ensured by political and military stability, but it also requires a high standard of living. The conditions for level, full employment and economic and social progress and development are also essential.

ECOSOC has the responsibility to create conditions of stability and well-being which are essential for peaceful and friendly relations between nations. It seeks to promote universal respect for and respect human rights and fundamental freedoms, as well as seek solutions to international economic, social, health and other humanitarian problems. The primary duty of those working under the authority of the General Assembly is to coordinate the activities of specialized agencies operating in a myriad of fields for the improvement of the socio-economic conditions of the people of all parts of the world. Mertus, J. A., & Mertus, J. (2010).

To study and report on international economic, social, cultural, educational, health and related matters and to submit suggestions in this regard to the General Assembly is part of the functioning of ECOSOC. For its local and territorial expansion, many regional and executive commissions have been constituted under the authority of which the most important are - Economic, Employment and Development Commission, Population Commission, Human Rights Commission, Commission on the Status of Women, Asia and Far East. Economic Commission for, as well as Economic Commission for Latin America. FAO, F. (2018).

Functions and Powers of the United Nations Economic and Social Council

The functions and powers of the ECOSOC, the functions and powers of the United Nations Economic and Social Council are as follows:

- To act as a central forum for discussion on international economic and social matters of global and interdisciplinary nature and to propose policy suggestions on such matters to Member States and the United Nations system as a whole.
- To study, report and suggest on international economic, social, cultural, educational and related matters.

HUMAN RIGHTS AND JUDICIAL ACTIVISM: ANALYSIS OF WRITS IN INDIA

Dr. Ashima Ghosh

Associate Professor, Department of Political Science, Ewing Christian College, Prayagraj.

Abstract

Human Rights can be defined as those rights which are inherent in our nature and without which we cannot live as human beings. This paper is an attempt to analyse the role of Writs and Judicial Activism for the protection of Human Rights in India and analysis important Landmark Judgements given by the Apex court. Supreme Court of India played a crucial role in Protecting Human Rights and Granting Remedies through Writs. In the existing state system very often rights of individual and the state - to be safeguarded for establishment of Rule of Law. In a situation where human rights are violated, it is but judiciary which plays positive role in interpreting the rights and hence guide or check the state accordingly. The concept of judicial activism is dynamic, by which an Egalitarian society can be a reality. Judicial Activism in a sense, has be forced upon the Judiciary by an insensitive and irresponsible Administration that disregards the interest of the people. Judiciary should, therefore employ self-restrain and should evolve a code of ethics for judges while indulging in Judicial Activism and should use it only a last Resort.

Keywords: Human Rights, Writs, Supreme Court, Egalitarian Society, Judicial Activism, Faster Remedy.

Introduction

Human rights are rights inherent to all human beings, regardless of gender, nationality, place of Birth, sex, ethnicity, religion, color or and other categorization. Thus, human rights are non-discriminatory, and Universal that all human beings are entitled to every Individuals. Many governments and individuals ignore human rights and grossly exploit other human beings. A strong, independent and impartial judiciary is a sine qua non of any system of government, excluding dictatorship. In each country the judiciary plays the key role of interpreting and applying the law and deciding the disputes between one citizen and the other and between a citizen and state. Where there is a written constitution the courts perform the function of safeguarding the supremacy of the constitution by interpreting and applying its provisions and keeping all authorities within the limits of the constitution. Judiciary is a great institution and is a fundamental arch of the system of checks and balance without which no democracy can function. The judiciary plays a very important role as a protector of the constitutional values that the founding fathers have given us. In India, the constitution has empowered the writ jurisdiction under Article 32 to the Supreme Court of India and under Article 226 to the High Courts. During the Constituent Assembly debates in December 1948, a discussion on this fundamental right (in the draft, it is referred to as Article 25), Dr. B R Ambedkar had said, "If I was asked to name any particular Article in this Constitution as the most important- an Article without which this Constitution would be a nullity-I could not refer to any other Article except this one. It is the very soul of the Constitution and the very heart of it..." He said the rights invested with the Supreme Court through this Article could not be taken away unless the Constitution itself is amended and hence it was "one of the greatest safeguards that can be provided for the safety and security of the individual". Indian Judicial activism of recent times has added to the writ nomenclature like never before, with

On Bayesian Estimation of Fuction of Unknown Parameter of Modified Power Series Distribution

Randhir Singh

Department of Statistics, Ewing Christian College, Prayagraj, India.

Abstract:- This paper deals with the Bayesian estimation of a function of the unknown parameter θ of Modified Power Series distribution. These estimates have similar forms as the classical MVUE given by Gupta (1977), but are better than MVUV in the sense ,that they increase the range of estimation. The prior distribution for the unknown parameter θ varies from distribution to distribution, depending upon the range of θ . On the part of loss functions, the Squared Error Loss Function (SELF) and two different forms of Weighted Squared Error Loss Function (WSELF) has been considered.

Keywords:- Modified Power Series Distribution, Bayes Estimator, Squared Error Loss Function, Weighted Squared Error Loss Function.

I. INTRODUCTION

A discrete random variable X is said to have Modified Power Series distribution, if its probability mass function (p. m. f.) $p_\theta(x) = P(X = x)$ is given by,

$$p_\theta(x) = \begin{cases} \frac{a(x)g(\theta)^x}{f(\theta)}, & \text{if } x \in S, \theta \in A \\ 0, & \text{Otherwise.} \end{cases} \quad (1)$$

Where, θ is unknown parameter of the distribution, $A \subseteq \mathcal{R}$ (the set of real numbers), $a(x) > 0$, S is a subset of the set of non-negative integers, $g(\theta) > 0$ and $f(\theta)$ is a function of θ such that $\sum_{x \in S} p_\theta(x) = f(\theta)$

As mentioned by Gupta (1974) the p. m. f. given by (1) covers a wide range of discrete distributions. When $g(\theta) = \theta$, (1) coincides with the class of discrete distributions as given by Roy and Mitra (1957).

Gupta (1977), has obtained MVUE of $\phi(\theta) = \theta^r, r \geq 1$. For values of $r < 1$, no unbiased estimator of $\phi(\theta)$ exists and hence no MVUE of $\phi(\theta)$ exists. This is a serious limitation of this Classical estimator. In this paper, Bayes Estimator of $\phi(\theta) = \theta^r, r \in (-\infty, \infty)$. Here the range of estimation is increased as we have taken $r \in (-\infty, \infty)$.

On the part of loss functions, the usual Squared Error Loss Function (SELF) and two different forms of the Weighted Squared Error Loss Function (WSELF) have been taken.

II. NOTATIONS AND RESULTS USED:

Let $X_1, X_2, X_3, \dots, X_N$ be a random sample of size N from the p. m. f given by (1).

Then,

$$T_N = \sum_{i=1}^N X_i \quad (2)$$

We shall use the following result as given by Abramowitz and Stegun (1964):

$$\Gamma(x) = \int_0^\infty u^{x-1} e^{-u} du \quad (3)$$

$$\Gamma(x)b^{-x} = \int_0^\infty u^{x-1} e^{-bu} du \quad (4)$$

$$\frac{\Gamma(b-a)\Gamma(a)M(a,b,z)}{\Gamma(b)} = \int_0^1 u^{a-1}(1-u)^{b-a-1} e^{-zu} du \quad (5)$$

Where, $M(a, b, z)$ is the Confluent Hypergeometric Function and has a series representation given by,

$$M(a, b, z) = \sum_{n=0}^\infty \frac{(a)_n z^n}{(b)_n n!} \quad (6)$$

Where, $(a)_0 = 1$ and

$$(a)_n = \prod_{i=1}^n (a + i - 1) \quad (7)$$

For observed value $t_N = \sum_{i=1}^N x_i$ of the statistic $T_N = \sum_{i=1}^N X_i$, the likelihood function, denoted by $L(\theta)$, is given by,

$$L(\theta) = k\{g(\theta)\}^{t_N} \{f(\theta)\}^{-N} \quad (8)$$

Where, k is function of $x_1, x_2, x_3, \dots, x_N$ and does not contain θ .

Let $\pi(\theta)$ be the prior probability density function of θ , then the posterior posterior probability density function of θ , denoted by $\pi(\theta/t_N)$, is given by,

$$\pi(\theta/t_N) = \frac{L(\theta)\pi(\theta)}{\int_A L(\theta)\pi(\theta)d\theta} \quad (9)$$

Under the Squared Error Loss Function (SELF), $L(\phi(\theta), d) = (\phi(\theta) - d)^2$, the Bayes Estimate of $\phi(\theta)$, denoted by $\hat{\phi}_B$ is given by,

$$\hat{\phi}_B = \int_A \phi(\theta)\pi(\theta/t_N)d\theta \quad (10)$$

Similarly, under the Weighted Squared Error Loss Function (WSELF), $L(\phi(\theta), d) = W(\theta)(\phi(\theta) - d)^2$, where, $W(\theta)$ is a function of θ , the Bayes Estimate of $\phi(\theta)$, denoted by $\hat{\phi}_W$ is given by,

$$\hat{\phi}_W = \frac{\int_A W(\theta)\phi(\theta)\pi(\theta/t_N)d\theta}{\int_A W(\theta)\pi(\theta/t_N)d\theta} \quad (11)$$



On Bayesian Estimation of Loss and Risk Functions

Randhir Singh

Department of Statistics, Ewing Christian College, Prayagraj, India

Email address:

dr.singh.ecc@gmail.com

To cite this article:

Randhir Singh, On Bayesian Estimation of Loss and Risk Functions. *Science Journal of Applied Mathematics and Statistics*. Vol. 9, No. 3, 2021, pp. 73-77. doi: 10.11648/j.sjams.20210903.11

Received: June 7, 2021; Accepted: June 21, 2021; Published: June 26, 2021

Abstract: Loss functions and Risk functions play very important role in Bayesian estimation. This paper aims at the Bayesian estimation for the loss and risk functions of the unknown parameter of the $H(r, \theta)$, (θ being the unknown parameter) distribution. The estimation has been performed under Rukhin's loss function. The importance of this distribution is that it contains some important distributions such as the Half Normal distribution, Rayleigh distribution and Maxwell's distribution as particular cases. The inverse Gamma distribution has assumed as the prior distribution for the unknown parameter θ . This prior distribution is a Natural Conjugate prior distribution for the unknown parameter because the posterior probability density function of the unknown parameter is also inverse gamma distribution. The Rukhin's loss function involves another loss function denoted by $w(\theta, \delta)$ the form of $w(\theta, \delta)$ is important as it changes the estimate. In this paper, three forms of $w(\theta, \delta)$ have been taken and corresponding estimates have been derived. The three forms are, the Squared Error Loss Function (SELF) and two different forms of Weighted Squared Error Loss Function (WSELF) namely, the Minimum Expected Loss (MELO) Function and the Exponentially Weighted Minimum Expected Loss (EWMELo) Function have been considered. A criterion of performance of various form of $w(\theta, \delta)$ has been defined. It has been proved that among three forms of $w(\theta, \delta)$, considered here, the form corresponding to EWMELo is most dominant.

Keywords: Bayes Estimator, Loss Function, Risk Function, $H(r, \theta)$ Distribution

1. Introduction

A continuous random variable X is said to have $H(r, \theta)$ distribution, if its probability density function is given by,

$$f(x, \theta) = \begin{cases} \frac{2\theta^{-\frac{r}{2}} x^{r-1} e^{-\frac{x^2}{\theta}}}{\Gamma(\frac{r}{2})}, & \text{if } x > 0, \theta > 0, r > 0 \\ 0, & \text{Otherwise.} \end{cases} \quad (1)$$

This distribution covers some important distribution for various values of r . For example, $r=1, 2$ and 3 respectively, the probability density function in (1) coincides with that of the probability density functions of Half Normal distribution, Rayleigh distribution and Maxwell's distribution respectively. This distribution used by Singh [1], the author for Bayesian estimation of Shannon's entropy and distribution function. It is to be noted that the random variable $Y = X^2$ follows gamma distribution with its probability density function is given by,

$$g(y, \theta) = \begin{cases} \frac{\theta^{-\frac{r}{2}} x^{r-1} e^{-\frac{x}{\theta}}}{\Gamma(\frac{r}{2})}, & \text{if } y > 0, \theta > 0, r > 0 \\ 0, & \text{Otherwise.} \end{cases} \quad (2)$$

Rayleigh Distribution and Maxwell's distribution (which correspond to $r=1$ and $r=2$, respectively), were studied by many authors. Bhattacharya [2] introduced Bayesian approach in estimation of life testing using SELF. Tyagi and Bhattacharya [3-5] studied the classical and Bayesian estimation of Rayleigh and Maxwell's distribution. They also used only SELF for Bayesian estimation. Chaturvedi and Rani [6] studied the reliability of the generalized Maxwell's distribution in the Bayesian framework. SELF and two forms of WSELF was used by Singh [7-8] in the study of reliability of a multicomponent system and Bayesian Estimation of the mean and distribution function of Maxwell's distribution under the assumption of conjugate prior distribution. Poddar and Roy [11] also studied Maxwell's distribution using modified linear exponential loss (MLINEX) function. Bekker

On Bayesian Estimation of Fuction of Unknown Parameter of Modified Power Series Distribution

Randhir Singh

Department of Statistics, Ewing Christian College, Prayagraj, India.

Abstract:- This paper deals with the Bayesian estimation of a function of the unknown parameter θ of Modified Power Series distribution. These estimates have similar forms as the classical MVUE given by Gupta (1977), but are better than MVUV in the sense ,that they increase the range of estimation.The prior distribution for the unknown parameter θ varies from distribution to distribution, depending upon the range of θ .On the part of loss functions, the Squared Error Loss Function (SELF) and two different forms of Weighted Squared Error Loss Function (WSELF) has been considered.

Keywords:- Modified Power Series Distribution, Bayes Estimator, Squared Error Loss Function, Weighted Squared Error Loss Function.

I. INTRODUCTION

A discrete random variable X is said to have Modified Power Series distribution, if its probability mass function (p. m .f.) $p_\theta(x) = P(X = x)$ is given by,

$$p_\theta(x) = \begin{cases} \frac{a(x)\{g(\theta)\}^x}{f(\theta)}, & \text{if } x \in S, \theta \in A \\ 0, & \text{Otherwise.} \end{cases} \quad (1)$$

Where, θ is unknown parameter of the distribution, $A \subseteq \mathcal{R}$ (the set of real numbers), $a(x) > 0$, S is a subset of the set of non-negative integers, $g(\theta) > 0$ and $f(\theta)$ is a function of θ such that $\sum_{x \in S} p_\theta(x) = f(\theta)$

As mentioned by Gupta (1974) the p. m .f. given by (1) covers a wide range of discrete distributions. When $g(\theta) = \theta$, (1) coincides with the class of discrete distributions as given by Roy and Mitra (1957).

Gupta (1977), has obtained MVUE of $\phi(\theta) = \theta^r, r \geq 1$.For values of $r < 1$,no unbiased estimator of $\phi(\theta)$ exists and hence no MVUE of $\phi(\theta)$ exists. This is a serious limitation of this Classical estimator. In this paper, Bayes Estimator of $\phi(\theta) = \theta^r, r \in (-\infty, \infty)$.Here the range of estimation is increased as we have taken $r \in (-\infty, \infty)$.

On the part of loss functions, the usual Squared Error Loss Function (SELF)and two different forms of the Weighted Squared Error Loss Function (WSELF) have been taken.

II. NOTATIONS AND RESULTS USED:

Let $X_1, X_2, X_3, \dots, X_N$ be a random sample of size N from the p .m. f given by (1).

Then,

$$T_N = \sum_{i=1}^N X_i \quad (2)$$

We shall use the following result as given by Abramowitz and Stegun (1964):

$$\Gamma(x) = \int_0^\infty u^{x-1} e^{-u} du \quad (3)$$

$$\Gamma(x)b^{-x} = \int_0^\infty u^{x-1} e^{-bu} du \quad (4)$$

$$\frac{\Gamma(b-a)\Gamma(a)M(a,b,z)}{\Gamma(b)} = \int_0^1 u^{a-1} (1-u)^{b-a-1} e^{-zu} du \quad (5)$$

Where, $M(a, b, z)$ is the Confluent Hypergeometric Function and has a series representation given by,

$$M(a, b, z) = \sum_{n=0}^\infty \frac{(a)_n z^n}{(b)_n n!} \quad (6)$$

Where, $(a)_0 = 1$ amd

$$(a)_n = \prod_{i=1}^n (a + i - 1) \quad (7)$$

For observed value $t_N = \sum_{i=1}^N x_i$ of the statistic $T_N = \sum_{i=1}^N X_i$, the likelihood function, denoted by $L(\theta)$, is given by,

$$L(\theta) = k\{g(\theta)\}^{t_N} \{f(\theta)\}^{-N} \quad (8)$$

Where, k is function of $x_1, x_2, x_3, \dots, x_N$ and does not contain θ .

Let $\pi(\theta)$ be the prior probability density function of θ ,then the posterior probability density function of θ ,denoted by $\pi(\theta / t_N)$, is given by,

$$\pi(\theta / t_N) = \frac{L(\theta)\pi(\theta)}{\int_A L(\theta)\pi(\theta)d\theta} \quad (9)$$

Under the Squared Error Loss Function (SELF), $L(\phi(\theta), d) = (\phi(\theta) - d)^2$,the Bayes Estimate of $\phi(\theta)$,denoted by $\hat{\phi}_B$ is given by,

$$\hat{\phi}_B = \int_A \phi(\theta)\pi(\theta / t_N) d\theta \quad (10)$$

Similarly, under the Weighted Squared Error Loss Function (WSELF), $L(\phi(\theta), d) = W(\theta)(\phi(\theta) - d)^2$, where, $W(\theta)$ is a function of θ , the Bayes Estimate of $\phi(\theta)$,denoted by $\hat{\phi}_W$ is given by,

$$\hat{\phi}_W = \frac{\int_A W(\theta)\phi(\theta)\pi(\theta / t_N) d\theta}{\int_A W(\theta)\pi(\theta / t_N) d\theta} \quad (11)$$

ANNALS OF PLANT PROTECTION SCIENCES

(<http://https://www.indianjournals.com/ijor.aspx?target=ijor:apps&type=home>)

Journal Home (?target=ijor:apps&type=home)

Current Issue (?target=ijor:apps&type=current_issue)

Archive / Issues (?target=ijor:apps&type=archive)

Registration (?target=register)

Subscribe (?target=ijor:apps&type=subscribe)

Editorial Board (?target=ijor:apps&volume=29&issue=1&type=eboard)

Aims & Scope (?target=ijor:apps&type=aimscope)

Author

Guidelines (?target=ijor:apps&valume=29&issue=1&type=for_authors)

Ethics & Malpractice (?target=ijor:apps&type=pubethics)

Subscribe TOC

Alerts (?target=ijor:apps&type=toc_alerts)

Article Submission

([target=ijor:apps&type=onlinesubmission](http://https://www.indianjournals.com/ijor.aspx?target=ijor:apps&type=onlinesubmission))

FREE

Sample Issue (?target=ijor:apps&type=sample_issue)

Trial Access (?target=ijor:apps&type=trialaccess_issue)

Annals of Plant Protection Sciences

Year : 2021, Volume : 29, Issue : 1

First page : (32) Last page : (38)

Print ISSN : 0971-3573. Online ISSN : 0974-0163.

Article DOI : [10.5958/0974-0163.2021.00006.9](https://doi.org/10.5958/0974-0163.2021.00006.9) (<http://dx.doi.org/10.5958/0974-0163.2021.00006.9>)

Effect of insecticides and botanicals against *Chrysanthemum api* (*Macrosiphoniella sanbornii*, Gillette)

Sewak Nishi*, Sharma Sujata

Department of Zoology, Ewing Christian College, Prayagraj - 211 003, (U.P.), India

*nishisewak@gmail.com (<mailto:nishisewak@gmail.com?cc=gbehal@indianjournals.com>)

Online published on 4 May, 2021.

Abstract

Results showed that all the treatments were significantly different in causing pest mortality over control. Thiomethaxam 0.003% Neem Seed Kernel Extract 5% (NSKE) were found to be most effective and significantly different from other treatments in causing mortality at 1, 3 and 5 DAS. Acetamiprid 1.5% and DDVP 0.05% were the next most effective insecticides and were statistically causing pest mortality. NSKE 5% was at par with Profenophos 0.05%. Neem oil 1.5%, Chilli + garlic extract 5% and Neem leaf 5% showed more than 50% pest mortality, respectively.

Keywords

Chrysanthemum, Chemical treatment, NSKE, NLE, *Macrosiphoniella sanbornii*.

[Buy Now](#) (2)

[target=ijor:apps&volume=29&issue=1&article=006&type=subscribearticle](http://https://www.indianjournals.com/ijor.aspx?target=ijor:apps&volume=29&issue=1&article=006&type=subscribearticle)

[PDF](#) (2)

[target=ijor:apps&volume=29&issue=1&article=006](http://https://www.indianjournals.com/ijor.aspx?target=ijor:apps&volume=29&issue=1&article=006)

We recommend

Management of citrus black fly (*Aleurocanthus woglumi*

Ashby) with different insecticides in sweet orange

Patil S. K. et al., BIOINFOLET, 2016

Acaricidal efficacy of certain neem based pesticides against

the red spider mite (*Tetranychus urticae* Koch) infesting okra

Rabindra Prasad et al., Journal of Eco-friendly Agriculture,

2017

Performance of neem seed kernel extract with reduced

insecticidal dosage on the infestation of okra fruit borer,

Earias vittella Fab.

S.V. Sarode et al., Journal of Entomological Research, 1994

Age Related Response of *Pieris brassicae* (Linn.) to

Biorational Insecticides

Nishi S. et al., Annals of Plant Protection Sciences, 2009

Bio-efficacy of Different Insecticides against Spotted Pod

Borer, *Maruca testulalis* (Geyer) Infesting Cowpea

R.D. Kanhere et al., Legume Research, 2012

QUANTITATIVE STUDY ON ANTI-PEST ACTIVITY OF

NATURAL PRODUCTS BASED ON VISUALIZATION

FRAMEWORK OF KNOWLEDGE GRAPH

Xing LI et al., Frontiers of Agricultural Science and

Engineering, 2023

BIOINSECTICIDES AS FUTURE MAINSTREAM PEST

CONTROL AGENTS: OPPORTUNITIES AND

CHALLENGES

Mingbo QU et al., Frontiers of Agricultural Science and

Engineering, 2022

Effect of insecticides on biological attributes of the egg

parasitoid *Telenomus remus* (Hymenoptera:

Platygastridae)

Mikael B. Araújo et al., Journal of Transport Economics and

Policy (JTEP), 2022

Efficacy of alginate-based formulation of *Steinernema*

carpocapsae IRMoghan1 against *Mythimna loreyi*

(Lepidoptera: Noctuidae)

Laleh Ebrahimi, Journal of Transport Economics and Policy

(JTEP), 2023

Spatial distribution of insecticide resistant populations of

Aedes aegypti and *Ae. albopictus* and first detection of

V410L mutation in *Ae. aegypti* from Cameroon

Matthew Montgomery et al., Infectious Diseases of Poverty,

2022

Powered by [TREND MD](#)

|| [Site map \(ijor.aspx?target=site_map\)](#) || [Privacy Policy \(ijor.aspx?target=privacy_policy\)](#) || [Copyright \(ijor.aspx?target=copyright_disclaimer\)](#) || [Terms & Conditions](#) || (ijor.aspx?target=

Page Rank 5 (<http://www.prchecker.info/>) ||

723,148,109 visitor(s) since 30th May, 2005.

All rights reserved. Site designed and maintained by DIVA ENTERPRISES PVT. LTD. (<http://www.divan.in>)

Note: Please use Internet Explorer (6.0 or above). Some functionalities may not work in other browsers.

Effect of Insect growth regulators on mortality deformity and longevity of the Lepidopterous pests

Sanjay Cyril Masih^{1*}, Ravindra Kumar Pathak¹ and Bhat Rayees Ahmad²

¹Department of Zoology, Ewing Christian Post Graduate College, Allahabad

²Department of Zoology, Kurukshetra University, Kurukshetra.

Abstract

The administration of penfluron and diaino-furyl-s-triazine was done by feeding and residual technique to *Euproctis icilia* and *Euproctis fraterna* larvae, to see its interaction on the experimental insects. The effect of the chemical at lethal and sublethal levels was recorded. The parameter of study was mortality, deformity, development, food consumption, growth and weight loss during exposure period. The results obtained in different experiments on these parameters were processed and are presented in tabular form. In the present study the insect growth regulators, penfluron and diamino-furyl-s-triazine, suppressed the food intake and larval growth of the treated insects, both in feeding as well as residual treatment. Results obtained showed that diamino-furyl-s-triazine reduced the food intake capacity more than penfluron, in third instar larvae. Reduction in food consumption was greater in *Euproctis icilia* than in *E. fraterna* in feeding treatment and was almost the same in residual treatment with penfluron. Similar results were also seen by diamino-furyl-s-triazine.

Key Words: penfluron, *Euproctis icilia*, *Euproctis fraterna*, mortality, deformity and development.

Introduction:

Despite a host of weapons and vast annual expenditure, little progress was made in the age-old battle against the insect. Fecundity of these creatures is frightening. Many species lay hundreds or thousands of eggs after mating. Some pass through their entire life cycle, from egg to adult in a matter of days or week, producing dozens of generations a season, thus giving them enormous evolutionary advantages, as scientist have learnt to their dismay. With the discovery of synthesis insecticides in 1940, which was referred as first generation pesticide, it was believed that the pest population will easily be eliminated but the control of some of the pest even below economic injury level, could not achieves. Besides, they also created many side problems such as development of resistance, secondary pest outbreak, resurgence and pollution to ecosystem. The fecundity of the surviving adults avoiding sublethal dosage is also increased. (Knustson 1951 and Afifi and Knutson 1965). Such problems forced the economic entomologists to proceed further in search of safer methods of pest management and second and third generation of pesticides came into existence by using the chemoterilant, pheromones and juvenile hormones, etc., but the desired success could not be achieved by any of them. The insect growth regulator, a fourth generation pesticide, accidentally came into existence in the Laboratory of Philips Duphar. The Netherlands, while preparing the herbicides. First insect growth regulator synthesized, was diflubenzuron, which was from Benzoyal phenyl urea group. Later, different groups of insect growth regulators, having chitin biosynthesis inhibiting property, were identified. The different groups of insects growth regulators, though differ in their chemical structure and mode of action, but have a common characteristic, i.e. they exhibit lethal action in juvenile stages and sterility in sexually mature adults, thus the pest population declines very rapidly. Besides, they also inhibit the food consumption and growth of individuals, which survive sub lethal treatments. This becomes an additional benefit in the field of pest management as surviving pest will consume less population by the use of insect growth regulators has already been achieved by many workers. (Flint et al., 1978; Zepp et al., 1979; Hopkins et al., 1982; Velcheva 1983; Lecheva 1985; etc.). The bioefficacy of insect growth regulators is



STATUS OF EXOTIC FISHES FROM THE YAMUNA RIVER (GANGA BASIN), UTTAR PRADESH, INDIA: A REVIEW

ATUL TRIVEDI ^{a*}, R. K. PATHAK ^b AND SHWETA AGNIWANSHI ^c

^aDepartment of Zoology, Kalinga University, Naya, Raipur, India.

^bDepartment of Zoology, Ewing Christian Post Graduate College, Prayagraj, India.

^cDepartment of Zoology, Dr. Radhabai Govt. Navin Girls College, Raipur, India.

AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

Editor(s):

(1) Dr. Telat Yanik, Professor, Ataturk University, Turkey.

Reviewers:

(1) Agung Setia Abadi, Indonesia.

(2) Dagneu Mequanent, Bahir Dar University, Ethiopia.

Received: 20 October 2021

Accepted: 27 December 2021

Published: 30 December 2021

Review Article

ABSTRACT

The Yamuna River is a major river of India that originates from the Himalayan mountain system. It originates from Yamunotri in Uttarkashi district of Uttarakhand. Nile tilapia, *Oreochromis niloticus*, is an African freshwater cichlid and a very important food fish in the world. Nile tilapia competes with the native species in areas where it has been introduced. The Nile tilapia was intentionally introduced around the world as an aquaculture edible fish. It is a very hardy fish that can tolerate a wide range of environmental factors, making it well suited to aquaculture. It is the third most imported food fish worldwide. The non-native fish species play an important role in the landing and trade from the Yamuna River. The stock of these fish well established from the Yamuna River.

Keywords: *Oreochromis niloticus*; Exotic Fish; Yamuna River.

1. INTRODUCTION

The Yamuna River is the largest right- hand tributary of the Ganges River. It is the second most important river system in the Ganges Basin. Its drainage system spans two geographic regions namely hilly (Vindhyan area) and plain. Each of the geographic regions of the Yamuna River possesses a distinct fish fauna [1], which as noted includes two established exotic fish species, both of which have established local, self

replicating populations in the Ganga Basin. It has a huge stock of exotic fish species notably *C. carpio* and *O. niloticus* and many commercially important native fish from the lower part of Prayagraj, Uttar Pradesh. It is (e.g. the Yamuna River) main source of exotic species for the Ganga River [2] and its tributaries.

Fish is an important part of the human diet in case of malnutrition [3-5]. In particular, river fin fish (small

*Corresponding author: Email: a.t.over123@gmail.com;

Biodiversity of Khanwari pond of Kaushambi district of U.P. with special reference to aquatic insects

Prakash Shri¹, Sanjay C Masih^{2*}

¹ Department of Zoology, K. A. P.G. College, Prayagraj, Uttar Pradesh, India

² Department of Zoology, Ewing Christian College, Prayagraj, Uttar Pradesh, India

Abstract

Diversity of aquatic insect fauna of Khanwari pond has been studied during July, 2019 to June, 2020. The study revealed that the pond was rich in terms of diversity of aquatic insects, which was represented by 20 species belonging to 6 orders and 20 families from three sampling sites of the Khanwari pond. The results of the present study reveals great diversity of aquatic insects in freshwater body and suggest the possibility of using insects effectively for biomonitoring programmes.

Keywords: biodiversity, insect fauna, wetland, conservation, Khanwari pond.

Introduction

Biodiversity is the 'foundation of human life' on earth because each organism plays an important role and helps in producing more productive and stable ecosystem (Verma and Prakash, 2020) [15]. Environmental changes have had enormous impacts on biodiversity patterns in the past and will remain one of the major drivers of biodiversity patterns in the future (Prakash and Srivastava, 2019) [16]. It plays an important role in the function of an ecosystem by providing many services like nutrients and water cycling, soil formation and retention, resistance against invasive species, pollination of plants, regulation of climate, as well as pest and pollution (Prakash, 2017) [27]. The biodiversity helps to maintain the ecological balance (Ashok, 2017) [1]. There is a necessity of ecological balance for widespread biodiversity and sustainable development (Ashok, 2018, 2019) [2, 3]. The climate change has a huge impact on biodiversity and farmers' practices (Mandal and Singh, 2020) [7].

Aquatic insects are those which live a part of their life cycle in water. They play important role in ecosystem functioning by virtue of their abundance, taxonomic diversity and form an important link in many food chains (Prakash and Verma, 2019) [16]. Aquatic insects make up 3-5% of all insect species, they are taxonomically diverse and play a critical role in stability and maintenance of ecosystem, especially in nutrient dynamics (Prakash and Yadav, 2016) [17]. They also present striking features in periodicity of occurrence, life cycle and great adaptability to the environmentally stress condition. The presence or absence of aquatic insects can indicate whether a particular ecosystem is healthy or polluted.

Aquatic insects are good indicators of human impact on the freshwater ecosystem. They are suited for use in environmental impact assessment (EIA) and act as reliable indicators of water quality of the water body. The insect order Ephemeroptera, Plecoptera and Trichoptera are the pollution sensitive groups and are used extensively for aquatic insect biomonitoring programmes (Prakash and Verma, 2018) [12].

The aquatic insects form an important component of the food chain and energy flow pathways and comprise of a high proportion of biomass in fresh water ecosystems. At the larval stage, they constitute the principal nutritive fauna

of fish and are known to play a significant role in the processing and cycling of nutrients as they belong to several feeding groups such as filter feeders, deposit collectors and predators (Prakash and Verma, 2020) [15].

Wetlands support vast biodiversity of flora and fauna, provide food and shelter to organisms that thrive in. They occur where the water table is at or near the surface of the land, or where the land is covered by water. Wetlands are among the world's most productive environments (Verma and Prakash, 2018a) [28]. Wetlands are extremely suitable ecosystems to assess the effect of climate change on the density of aquatic insects. Inland wetlands of India serve as the habitat for more than 500 species of aquatic insects which are mainly from Ephemeroptera (mayflies), Odonata (dragonflies) and Trichoptera (caddis flies) (Subramanian and Sivaramakrishnan, 2007) [18].

Several works on aquatic fauna have been published in India of them some works are those by Subramanian and Sivaramakrishnan (2007) [18], Kumar (2014) [6], Choudhary and Janakahi (2015) [4], Prakash and Yadav (2016) [17], Prakash and Verma (2018, 2019 and 2020) [12, 16, 15]. The Khanwari pond and village is studied by Verma and Prakash (2017) [27], Prakash and Verma (2019a) [13], Verma (2019) [16] for biodiversity point of view while Verma (2018a, 2018b and 2020) [28, 29, 30] studied the chordate biodiversity of other places. But nothing has been known about the aquatic insect diversity of Kaushambi district of U.P. Thus the present study was aimed to study the faunal diversity of aquatic insects of Khanwari pond a wetland of Kaushambi district of U.P.

Material and methods

The pond (photograph) under exploration is situated in Khanwari village, which is located in block and tahsil of Sirathu of Kaushambi district of Uttar Pradesh (image). The pond is more than 75 km away from Allahabad, 10 km from Manjhanpur (headquarter of district Kaushambi) and 270 km from Lucknow by road. Its nearest railway station is Sirathu at a distance of 15 km and nearest airport Bamrauli (Allahabad) is at a distance of 60 km. It is situated between the latitude 25°32'32.58"N- 81°18'09.66"E and 25°32'31.01"N- 81°18'18.19"E.

Impact Of Monocrotophos Pesticide On Serum Biochemical Profile In Freshwater Fish, *Cirrhinus Mrigala* (Hamilton, 1822).

Article PDF :

View Full Text PDF (<https://ipindexing.com/journal-article-file/31098/impact-of-monocrotophos-pesticide-on-serum-biochemical-profile-in-freshwater-fish-cirrhinus-mrigala-hamilton-1822->)

Article Type :

Original article (<https://ipindexing.com/article-type/original-article>)

Author :

Sanjay C. Masih

Volume :

3

Issue :

2

Abstract :

The present exploration was designed to study the effect of sublethal concentrations of monocrotophos on the serum biochemical parameters of *Cirrhinus mrigala* after exposure to 96 hours. The result of study shows that serum biomolecules such as glucose, protein, triglyceride, cholesterol, urea, bilirubin, SGOT and SGPT were significantly altered in monocrotophos exposed fish. The response of the fish towards toxicity of monocrotophos was grossly dependent on the duration of exposure. Thus, this paper gives an overview of the manipulation of fish, *Cirrhinus mrigala* as a biomarker of pesticides through alternation in behavior and biochemical parameters.

Keyword :

Cirrhinus mrigala, Monocrotophos, Serum biomolecules, Pesticides.

Doi :

<https://doi.org/10.46505/IJBI.2021.3222> (<https://doi.org/https://doi.org/10.46505/IJBI.2021.3222>)

Company

Home (<https://ipindexing.com/>)

About Us (<https://ipindexing.com/about-us>)



(<http://https://www.indianjournals.com/ijor.aspx?target=ijor:jer&type=home>)

[Journal Home \(?target=ijor:jer&type=home\)](#)

[Current Issue \(?target=ijor:jer&type=current_issue\)](#)

[Archive / Issues \(?target=ijor:jer&type=archive\)](#)

[Registration \(?target=register\)](#)

[Subscribe \(?target=ijor:jer&type=subscribe\)](#)

[Editorial Board \(?target=ijor:jer&valume=45&issue=2&type=eboard\)](#)

[Aims & Scope \(?target=ijor:jer&type=aimsnscope\)](#)

[Author](#)

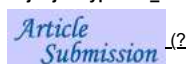
[Guidelines \(?target=ijor:jer&valume=45&issue=2&type=for_authors\)](#)

[Ethics &](#)

[Malpractice \(?target=ijor:jer&type=pubethics\)](#)

[Subscribe TOC](#)

[Alerts \(?target=ijor:jer&type=toc_alerts\)](#)



([target=ijor:jer&type=onlinesubmission](http://https://www.indianjournals.com/ijor.aspx?target=ijor:jer&type=onlinesubmission))

FREE

[Sample Issue \(?target=ijor:jer&type=sample_issue\)](#)

[Trial Access \(?target=ijor:jer&type=trialaccess_issue\)](#)

Journal of Entomological Research
 Year : 2021, Volume : 45, Issue : 2
 First page : (214) Last page : (223)
 Print ISSN : 0378-9519. Online ISSN : 0974-4576.
 Article DOI : [10.5958/0974-4576.2021.00035.9](https://doi.org/10.5958/0974-4576.2021.00035.9) (<http://dx.doi.org/10.5958/0974-4576.2021.00035.9>)

Efficacy of native isolates of entomopathogenic bacterium against cabbage butterfly (*Pieris brassicae* linn.)

Sewak Nishi*, Singh Saurabh N.¹

Department of Zoology, Ewing Christian College, Prayagraj - 211 003, Uttar Pradesh, India

¹Centre for Microbiology Ewing Christian College, Prayagraj - 211 003, Uttar Pradesh, India; E-mail: saurabhnavsingh@gmail.com (<mailto:saurabhnavsingh@gmail.com?cc=gbehal@indianjournals.com>)

*Corresponding author's E-mail: nishisewak@gmail.com (<mailto:nishisewak@gmail.com?cc=gbehal@indianjournals.com>)

Online published on 19 July, 2021.

Abstract

Three isolates of *Bacillus licheniformis* were identified from local soil samples of Prayagraj agro-climatic regions, and bioassay studies were performed to corroborate the insecticidal activity of the isolates against the larval instars. Soil samples were also examined for their pedological characteristics. It was found that all the concentrations were significantly different from control in causing mortality on both 1st and 3rd instar larvae. While BI(cht) was found to be the most effective isolate in causing larval mortality. Studies on relative toxicity of isolates showed that BI(cht) was found to be most toxic, causing 50% mortality of 1st instar larvae at a concentration of 2 x 10⁴ cfu/ml. In the case of 3rd instar larvae, BI (am) and BI (cht) both were found to be toxic at 2 x cfu/ml concentration. Thus, *Bacillus licheniformis* can be looked upon as a successful candidate as a biopesticide, an alternative synthetic pesticides with reduced chances of resistance and multiple beneficial impacts to crops in the field of agriculture as well.

Keywords

Bacillus licheniformis, Cole crops, Isolation, *Pieris brassicae*, Toxicity.

[Buy Now](#) (?)

[PDF](#) (?)

[target=ijor:jer&volume=45&issue=2&article=007&type=subscribearticle](http://https://www.indianjournals.com/ijor.aspx?target=ijor:jer&volume=45&issue=2&article=007&type=subscribearticle) [target=ijor:jer&volume=45&issue=2&article=007&type=r](http://https://www.indianjournals.com/ijor.aspx?target=ijor:jer&volume=45&issue=2&article=007&type=r)

We recommend

Toxicity and Growth Inhibitory Effect of *Bacillus thuringiensis* subspecies *tolworthi* against Lepidopterous Insect Pests of Kumaon Hills

M Mohan et al., Pesticide Research Journal, 2005

Insect Growth Inhibition and Antifeedant Activity of Culture Filtrate Extracts of *Bacillus licheniformis*

PK Sharma et al., Pesticide Research Journal, 2009

Isolation and evaluation of *Heterorhabditis bacteriophora* strain-s26 as biocontrol agents against *Pieris brassicae* L. under laboratory conditions

Tomar Preety et al., Indian Journal of Nematology, 2022

Efficacy of entomopathogenic nematodes and *Bacillus thuringiensis* against diamondback moth *Plutella xylostella* (L.)

Aggarwal Naveen et al., Agricultural Research Journal, 2014

Laboratory evaluation of toxicity of *Bacillus thuringiensis* subsp. *kurstaki* to larvae of mulberry silkworm, *Bombyx mori* L.

P.D. Kamala Jayanthi et al., Journal of Entomological Research, 1997

Armigeres subalbatus is a potential vector for Zika virus but not dengue virus

Wenqiang Yang et al., Infectious Diseases of Poverty, 2022

Toxicological and melanin synthesis effects of *Polygonum multiflorum* root extracts on zebrafish embryos and human melanocytes

Dang Thi Hoai Thanh et al., Biomedical Research and Therapy, 2016

A novel lytic phage potentially effective for phage therapy against *Burkholderia pseudomallei* in the tropics

Yanshuang Wang et al., Infectious Diseases of Poverty, 2022

Biotechnological and food synthetic biology potential of platform strain: *Bacillus licheniformis*

Hehe He et al., Synthetic and Systems Biotechnology, 2023

Distribution and Bioavailability of Metals in Gasoline Contaminated Sites in Lagos, Nigeria

Authors: Oketola et al., The Journal of Solid Waste Technology and Management, 2013

Powered by [TREND MD](#)

|| [Site map \(ijor.aspx?target=site_map\)](#) || [Privacy Policy \(ijor.aspx?target=privacy_policy\)](#) || [Copyright \(ijor.aspx?target=copyright_disclaimer\)](#) || [Terms & Conditions](#) || (ijor.aspx?target=ter

Page Rank 5 (<http://www.prchecker.info/>)

723,158,464 visitor(s) since 30th May, 2005.

All rights reserved. Site designed and maintained by DIVA ENTERPRISES PVT. LTD. (<http://www.divan.in>).

Note: Please use Internet Explorer (6.0 or above). Some functionalities may not work in other browsers.



(ijor.aspx)

🔍 [ij] [ij]

(ijor.as

- Home (ijor.aspx) About us (ijor.aspx?target=about_us) My Profile (ijor.aspx?target=users_zone) Registration (ijor.aspx?target=register) Products
- Article Submission (ijor.aspx?target=manuscript_submission) Usage Statistics (https://c5live.mpsinsight.com/ijc/login) Price List 2024 (./JournalsPriceList.aspx)
- Contact Us (ijor.aspx?target=contact_us) Tutorial Login/Register (Ijor_homemenucontrol/#) Email id



(http://https://www.indianjournals.com/ijor.aspx?target=ijor:tle&type=home)

- Journal Home (?target=ijor:tle&type=home)
- Current Issue (?target=ijor:tle&type=current_issue)
- Archive / Issues (?target=ijor:tle&type=archive)
- Next Article (?target=ijor:tle&volume=11&issue=1&article=010)
- TOC (?target=ijor:tle&volume=11&issue=1&type=toc)
- Prev Article (?target=ijor:tle&volume=11&issue=1&article=008)
- Registration (?target=register)
- Subscribe (?target=ijor:tle&type=subscribe)
- Editorial Board (?target=ijor:tle&valume=11&issue=1&type=eboard)
- Aims & Scope (?target=ijor:tle&type=aimsnscope)

- Author Guidelines (?target=ijor:tle&valume=11&issue=1&type=for_authors)
- Ethics & Malpractice (?target=ijor:tle&type=pubethics)
- Subscribe TOC Alerts (?target=ijor:tle&type=toc_alerts)



target=ijor:tle&type=onlinesubmission)

FREE

Sample Issue (?target=ijor:tle&type=sample_issue)

Trial Access (?target=ijor:tle&type=trialaccess_issue)

Year : 2021, Volume : 11, Issue : 1
 First page : (45) Last page : (52)
 Print ISSN : 2231-4105. Online ISSN : 2249-5223. Published online : 2021 June 14.
 Article DOI : 10.30954/2231-4105.01.2021.9 (http://dx.doi.org/10.30954/2231-4105.01.2021.9)

Perspective of Students and Teachers of Higher Education Level About Online Teaching During Pandemic Period

Sahae Justin P.¹, Aswathy Mary Prince^{2,*}

¹Assistant Professor, Department of Education, Ewing Christian College, Prayagraj, Uttar Pradesh, India

²Assistant Professor, Department of Education, Ewing Christian College, Prayagraj, Uttar Pradesh, India

*Corresponding author: achumary29@gmail.com (mailto:achumary29@gmail.com?cc=gbehal@indianjournals.com)

Online Published on 14 September, 2022.

Received: 23 , 2021; : 30 , 2021; Accepted: 17 , 2021.

Abstract

Change is the law of nature. In the rapidly changing world, the pandemic brought everything to halt. But in every negative situation there is always something new to learn. Online teaching was the safest mode to continue the teaching- learning process at all levels. The paper is an attempt to explore the extent to which online teaching is able to fulfill its purpose in the Covid scenario. The major objective is to find out merits and demerits of this teaching from both students' and teachers' perspective. The paper will also try to explore the major barriers in such teaching and how these can be overcome. The data is collected through an online questionnaire having yes/no questions as well as some open ended questions for students and teachers separately. It was found that majority of the sample found that internet related issues are a major drawback of such teaching Apart from that, both the groups expressed mixed opinions about its pros and cons. The paper certainly would be throwing some light about the general success or failure of this mode.

Keywords

Online teaching, Higher education, Student, Teacher perspective.

[Buy Now](#)

target=ijor:tle&volume=11&issue=1&article=009&type=subscribearticle)

[Full Text](#)

target=ijor:tle&volume=11&issue=1&article=009&type=fulltext)

[PDF](#)

target=ijor:tle&volume=11&issue=1&article=009&type=p

We recommend

Barriers to Online Learning during COVID-19
 Pandemic:Students' Perspective
 Shakir Mohd et al., Educational Quest, 2021

Parental and teachers' anxiety regarding actual learning
 through online teaching-learning among school children
 during COVID-19 pandemic lockdown
 Preeti Chandel et al., Learning Community, 2020

Online Teaching During COVID-19: An Opinion Analysis of
 Student-Teachers
 Alli SK Samsul et al., Educational Quest, 2021

A study to assess the perspective of E-learning among
 nursing students in selected nursing college Thrissur
 Sr. Vincent Reena et al., International Journal of Nursing
 Education and Research, 2022

Opportunities and Challenges of Using ICT in Teaching and
 Learning-Teachers' Perception
 Melbha D. Ashlin et al., Library Herald, 2023

Online medical school—a win for accessibility?
 Patrick Doherty et al., The BMJ, 2022

College-level Personal Health Courses: A Perspective for
 Improving Their Relevance and Reducing Health
 Disparities in the US
 Kristen M. Brewer et al., Health Behavior and Policy
 Review

A digital game about water use as a teaching-learning
 tool in elementary school
 Julien César Mélega et al., Rev. Ambient. Água., 2020

Leadership Behavior in Dance Application of the
 Leadership Scale for Sports to Dance Technique
 Teaching
 Rafferty, Sonia et al., Journal of Dance Medicine &
 Science, 2006

Abortion teaching must empower medical students and
 doctors to advocate for reproductive justice
 Joy Hodgkinson et al., The BMJ, 2022

Powered by TREND MD

Site map (ijor.aspx?target=site_map) Privacy Policy (ijor.aspx?target=privacy_policy) Copyright (ijor.aspx?target=copyright_disclaimer) Terms & Conditions (ijor.aspx?target=terr

Page Rank 5 (http://www.prchecker.info/)

719,909,205 visitor(s) since 30th May, 2005.

All rights reserved. Site designed and maintained by DIVA ENTERPRISES PVT. LTD. (http://www.divan.in).

Note: Please use Internet Explorer (6.0 or above). Some functionalities may not work in other browsers.

