



Centurion
UNIVERSITY

*Shaping Lives...
Empowering Communities...*

SDG 3

**Research on Good
Health and Well-being**

SDG 3

REPORT 2021



THE CONTEXT

Centurion University conducts research in the area of “Good Health and Well-Being” through its various schools and research centres. Faculty and students are engaged in and publish many research articles striving towards the standalone topic and others which are cross disciplinary. the University's production units, industry sponsored action learning laboratories and community engagement provide an excellent basis for research in this area.

In the year 2020, there were 17 research papers published in journals of national and international repute which increased to 72 in the year 2021. There were 22 published papers in the year 2022 excluding the papers under review and in-process. The following section serves as a link to last three-year research endeavour in SDG 3.

Jaggannath Padhi

Director,
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Research Articles

1. Attributes of maize and their correlation behaviour with yield
2. DNA barcoding of insects from India: Current status and future perspectives
3. Influence of Phytobiotic Essential Oils on Growth Performance and Hematological Parameters of Broiler Chickens
4. Role of molecular markers in improving abiotic stress tolerance in agricultural crops
5. Influence of weather factors on severity of yellow leaf disease of sugarcane
6. Aspirin hydrogel ocular film for topical delivery and ophthalmic anti-inflammation
7. Effect of amlodipine in proliferative retinopathy: Biochemical estimation and zebrafish (*Danio rerio*) Modeling
8. A New HPLC Stability Indicating Method and Validation for Simultaneous Quantitation of Bilastine and Montelukast Sodium in API and Marketed Formulation by QbD Approach
9. Role of molecular markers in improving abiotic stress tolerance in agricultural crops
10. Genome-wide identification and expression analysis of the RcYABBYs reveals their potential functions in rose (*Rosa chinensis* Jacq.)
11. RNAi suppression of the nuclear receptor FTZ-F1 impaired ecdysis, pupation, and reproduction in the 28-spotted potato ladybeetle, *Henosepilachna vigintioctopunctata*
12. Marker-Free Rice (*Oryza sativa* L. cv. IR 64) Overexpressing PDH45 Gene Confers Salinity Tolerance by Maintaining Photosynthesis and Antioxidant Machinery.
13. Effect of eutectic formulation on photodegradation kinetics of ornidazole in aqueous state: predicted interaction and molecular binding in docking studies
14. Advancement and Applications of Platelet inspired Nanoparticles: a Paradigm for Cancer Targetting
15. Tyrosine hydroxylase involves in cuticle tanning and reproduction in the 28-spotted potato ladybeetle, *Henosepilachna vigintioctopunctata*
16. Adsorptive Sequestration of Toxic Congo Red Dye from Aqueous Solution Using Fe O /Sugarcane Bagasse Biochar Nanocomposite
17. Influence of weather factors on severity of yellow leaf disease of sugarcane
18. Impact of Indazole scaffold as Antibacterial and Antifungal agent
19. Aspirin hydrogel ocular film for topical delivery and ophthalmic anti-inflammation
20. Effect of amlodipine in proliferative retinopathy: Biochemical estimation and zebrafish (*Danio rerio*) Modeling
21. A New HPLC Stability Indicating Method and Validation for Simultaneous Quantitation of Bilastine and Montelukast Sodium in API and Marketed Formulation by QbD Approach
22. Heterosis and Combining Ability Analysis for yield and its Components in Bread Wheat (*Triticum aestivum* L.)
23. Frequency control in hybrid distributed power systems via type-2 fuzzy PID controller
24. A Novel Sine Augmented Scaled Sine Cosine Algorithm for Frequency Control Issues of a Hybrid Distributed Two-Area Power System
25. *Pseudomonas syringae* pv. *syringae* Infection Orchestrates the Fate of the Arabidopsis J Domain Containing Cochaperone and Decapping Protein Factor 5
26. Unveiling the Urease Like Intrinsic Catalytic Activities of Two Dinuclear Nickel Complexes towards in-situ Syntheses of Aminocyanopyridines



27. Functional Role of miRNAs: Key Players in Soybean Improvement
28. The Productivity and Nutrient Use Efficiency of Rice–Rice–Black Gram Cropping Sequence Are Influenced by Location Specific Nutrient Management
29. Enhanced dielectric & electrical properties and percolation behavior of PVDF-BiFeO₃-Carbon Black (CB) Tri-Phase Composite film
30. Preparation and properties of Benzoxazine (BA) based BiFeO₃-Poly (vinylidene fluoride) (PVDF) Composites: Enhanced Dielectric Constant and Suppressed Loss
31. Intercropping–A Low Input Agricultural Strategy for Food and Environmental Security
32. Identifying Most Promising Agronomic Adaptation Strategies to Close Rainfed Rice Yield Gap in Future - A Model-based Assessment
33. Impact and Contribution of Forest in Mitigating Global Climate Change
34. An Overview of Ethnopharmacology, phytochemical and Pharmacology of *Eleusine indica*
35. The promising role of oleanolic acid in the management of diabetes mellitus: A review
36. Review article on the plant *Avena sativa* Linn.
37. Preparation and in-vitro, in-vivo characterisation of Pioglitazone loaded Chitosan/PEG blended PLGA biocompatible nanoparticles
38. An updated review on morpholine derivatives with their pharmacological actions
39. Formulation and evaluation of sustained release tablets of propranolol hydrochloride
40. Study on the electronic band structure of ZnO–SnO₂ heterostructured nanocomposites with mechanistic investigation on the enhanced photoluminescence and photocatalytic properties
41. Genome Wide Analysis of the Potato Soft Rot Pathogen *Pectobacterium carotovorum* Strain ICMP 5702 to Predict Novel Insights into Its Genetic Features
42. Molecular characterization of Zn(II)2Cys6 cluster gene family and their association with pathogenicity of the onion basal rot pathogen, *Fusarium oxysporum* f. sp. *cepae*
43. Bentonite clay incorporated topical film formulation for delivery of trimetazidine: Control of ocular pressure and in vitro-in vivo correlation
44. Targeting Microbial Bio-film: an Update on MDR Gram-Negative Bio-film Producers Causing Catheter-Associated Urinary Tract Infections
45. Evaluation of Anti-Ulcer and Anti-Diarrhoeal Activities of the Ayurvedic Formulation Udumbara Ghanasatwa
46. Global-scale application of the RUSLE model: A Comprehensive Review
47. phytochemical constituent and its pharmacological application of various types of chemical compounds present in *Cocculus Hirsutus* (L.) Diels
48. Computational studies on potential new anti-Covid-19 agents with amulti-target mode of action
49. Unexpected sudden rise of human monkeypox cases in multiple non-endemic countries amid COVID-19 pandemic and salient counteracting strategies: Another potential global threat?
50. Systematic Review on Phytochemistry and Pharmacology Studies of *Alangium salvifolium*
51. Prediction of Life Insurance Premium during Pre-and Post-Covid-19: A Higher-Order Neural Network Approach
52. Folklore use of Wild fruits by the Oraon tribe of Sarguja district of Chhattisgarh, India
53. Exploration of Efficacy and Safety of Anticancer Applications of New Fluoroquinolones Derivatives
54. Effect of Organic Manure on Growth and Development of Amur Carp
55. Characterization of Hydration Behaviour and Modeling of Film Formulation



56. Celecoxib Crystallized from Hydrophilic polymeric solution showed modified crystalline behaviour with an improved dissolution profile
57. Characterization and Molecular Docking of Kaolin-based Cellulosic Film for Extending Ophthalmic Drug Delivery
58. An Overview on Ethnopharmacology Of different medicinal plants of Odisha in the management of Diabetes Mellitus
59. Development of biodegradable polymer based nanoparticles of doxorubicin; an in vitro evaluation
60. Phytic acid: Blessing in disguise, a prime compound required for both plant and human nutrition
61. A Comprehensive Review on Promising Phytopharmacological Applications of Chamomile Flower
62. Molecular basis of insect resistance in plants: current updates and future prospects
63. Auxin and Cytokinin Interplay during Leaf Morphogenesis and Phyllotaxy
64. Modeling of an Electric Vehicle's Powertrain with a 1KW BLDC Motor and STM Controller
65. Natural Preservative Efficacy of Cured Betel Leaf Essential Oil in Sapota Juice: Effect on Physicochemical, Microbial and Sensory Properties
66. Diversity, Distribution and Abundance of Lichen in Similipal Biosphere Reserve, Odisha
67. Yield and quality response of turmeric (*Curcuma longa*) under drip irrigation and plastic mulch
68. Assessing Capability of Chemical Ameliorants to Reduce the Bioavailability of Heavy Metals in Bulk Fly Ash Contaminated Soil
69. Lomustine Incorporated Lipid Nanostructures Demonstrated Preferential Anticancer Properties in C6 Glioma Cell Lines with Enhanced Pharmacokinetic Profile in Mice
70. Biological synthesis of GO-MgO nanomaterial using *Azadirachta indica* leaf extract: A potential bio-adsorbent for removing Cr (VI) ions from aqueous media
71. Impact of phosphorus and sulphur on the growth and productivity of green gram (*Vigna radiata*)
72. Assessing the effects of end-members determination on regional latent heat flux simulation in trapezoidal framework based model
73. Advances and trends on the utilization of multi-parent advanced generation intercross (MAGIC) for crop improvement
74. Genome-Wide Identification of the Gata Transcription Factor Family in *Dichantheium Oligosanthes*
75. Oral RNAi toxicity assay suggests clathrin heavy chain as a promising molecular target for controlling the 28-spotted potato ladybird, *Henosepilachna vigintioctopunctata*
76. Microbe-Assisted Alleviation of Heavy Metal Toxicity in Plants: A Review
77. Morphological and biochemical responses of *Macrotyloma uniflorum* (Lam.) Verdc. to allelopathic effects of *Mikania micrantha* Kunth extracts
78. *Spathodea campanulata* P. Beauv. —A review of its ethnomedicinal, phytochemical, and pharmacological profile
79. Productivity and Nutrient Balance of an Intensive Rice-Rice Cropping System Are Influenced by Different Nutrient Management in the Red and Lateritic Belt of West Bengal, India
80. Progressive Genomic Approaches to Explore Drought- and Salt-Induced Oxidative Stress Responses in Plants under Changing Climate.



81. Crop Establishment Methods and Integrated Nutrient Management Improve: Part I. Crop Performance, Water Productivity and Profitability of Rice (*Oryza sativa* L.) in the Lower Indo-Gangetic Plain, India.
82. Crop Establishment Methods and Integrated Nutrient Management Improve: Part II. Nutrient Uptake and Use Efficiency and Soil Health in Rice (*Oryza sativa* L.) Field in the Lower Indo-Gangetic Plain, India
83. Herbicide in Weed Management of Wheat (*Triticum aestivum* L.) and Rainy Season Rice (*Oryza sativa* L.) under Conservation Agricultural System
84. *Azotobacter vinelandii* helps to combat chromium stress in rice by maintaining antioxidant machinery
85. English Express: A Boot Camp Model
86. Congestion and Performance Evaluation of Roundabouts; Case Study at Bhubaneswar City; India
87. Salt and Drought Stress Responses in Cultivated Beets (*Beta vulgaris* L.) and Wild Beet (*Beta maritima* L.).
88. A single transcript CRISPR/Cas9 mediated mutagenesis of CaERF28 confers anthracnose resistance in chilli pepper (*Capsicum annum* L.)
89. Enhancement of Surface quality of DMLS Aluminium alloy using RSM Optimization and ANN Modelling
90. Eddy Viscosity Turbulent Flow Simulation over a Simplified Ahmed Body Model
91. Utilization of seaweed-based biostimulants in improving plant and soil health: Current updates and future prospective
92. Application of Interval Type-2 Fuzzy PID Controller for Frequency Regulation of AC Islanded Microgrid Using Modified Equilibrium Optimization Algorithm
93. Modulation of catalytic and biomolecular binding properties of ruthenium(II)-arene complexes with the variation of coligands for selective toxicity against cancerous cells
94. Cellular and Molecular Mechanism of Liver Fibrosis: A Critical Insight
95. Enhancement and Segmentation of Brain Tumor from MR Image Using Modified Water Cycle Algorithm and Relevance Vector Machine Algorithm
96. Molecular insights on cytochrome c and nucleotide regulation of apoptosome function and its implication in cancer
97. Sacrificed Surveillance Process favours Plant defense: A Review
98. Potential Medicinal Plants Used Against Diabetes Mellitus: A Review
99. Plants used in the preparation of traditional rice-beer “Handia” by tribes of Mayurbhanj district, Odisha
100. A Model for Disease Control and Combat Mapping using Geospatial Technology –A Case Study for Selected Tribal Blocks of Gajapati District, Odisha
101. Analysis of Infectious Hepatitis Disease with High Accuracy Using Machine Learning Techniques
102. RBC Classification in Blood Smear Image using Neural Network
103. Annonaine an Alkaloid from the Leaves of Custard Apple (*Annona squamosa*): A Comprehensive Review on its Phytochemicals and Pharmacological Activities
104. Pharmacological interaction between antidiabetic drugs and herbs: An overview of mechanism of action and clinical implication
105. Preventive Role of Naringin in Diabetes mellitus and its mechanism of action : A Review



106. Computationally Efficient Feature Extraction and Machine Learning for Drug Toxicity Prediction
107. Starch gelatinization and drying of paddy using microwave rotary drum dryer: Optimization, kinetics, and cooking studies
108. Assessment of Rice Yield Gap under a Changing Climate in India
109. Time Series Modeling and Forecasting on Pulses Production Behavior of India.
110. Effect of Slotted Wing Tip on Aerodynamic Efficiency
111. Production of hydrocarbon rich fuel from abandoned beehive by pyrolysis



