



Centurion
UNIVERSITY

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

SDG 15 | **Research on Life on Land**

SDG 15

REPORT 2021



THE CONTEXT

Centurion University conducts research in the area of “Life on Land” 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 90 research papers published in journals of national and international repute. The year 2021, witnessed 53 publications. A total 7 papers were published in the year 2022 which excludes the papers under review and in-process.

Jaggannath Padhi

Director,
Centurion University



Research Articles

1. Spatio-Temporal Limnological Analyses Resulting to Sustainable Development
2. "Effect on Production of Seed through Induced Breeding by using *Labeo rohita* and *Cyprinus carpio* in Fish Hatchery"
3. Enhancement and Segmentation of Brain Tumor from MR Image Using Modified Water Cycle Algorithm and Relevance Vector Machine Algorithm
4. Breast Cancer Detection and Classification Using a novel Fast and Robust FCM Segmentation and MWCA based LLRBFNN Machine Learning Model
5. Non-Stationary signal Frequency Identification using Frequency improved Fast S-Transform
6. Feathers of *Bulbulcus ibis* (L.) as a non-destructive biomonitoring tool for assessment of lead pollution: A case study from various severely contaminated wetland habitats
7. Molecular insights on cytochrome c and nucleotide regulation of apoptosome function and its implication in cancer
8. Economically Important Macrophytes of Chilika lagoon, Odisha, India
9. Plants used in the preparation of traditional rice-beer "Handia" by tribes of Mayurbhanj district, Odisha
10. Fruit Spoilage Fungi Associated with Orange and Wood Apple from Different Market Places of Bhubaneswar
11. Innovative Farming of Edible Micro Greens at Home and their Nutritional Composition
12. Foliar feeding of fertilizers for enhancing seed yield of *Vigna mungo* L.: A step towards sustainable agriculture
13. Phytoremediation Potential of Aquatic Macrophyte *Azolla Pinnata* R.Br. and *Salvinia Molesta* Mitchell to Remove Chromium from Waste Water
14. Potential Medicinal Plants Used Against Diabetes Mellitus: A Review.
15. Exploration, Distribution and Identification of Mushroom Species in Khurda District of Odisha, India
16. Studies on the medico-botany plants used in Hawan in Jajpur district of Odisha
17. Sacrificed Surveillance Process favours Plant defense: A Review
18. *Arabidopsis* DCP5, a decapping complex protein interacts with Ubiquitin-5 in the processing bodies
19. Agrivoltaic system: Experimental analysis for enhancing land productivity and revenue of farmers
20. Static and dynamic environmental-economic dispatch using tournament selection-based ant lion optimisation algorithm
21. Secure Data Deduplication System with Cyber Security Multikey Management in Cloud Storage
22. phytochemical constituent and its pharmacological application of various types of chemical compounds present in *Cocculus Hirsutus* (L.) Diels
23. Unexpected sudden rise of human monkeypox cases in multiple non-endemic countries amid COVID-19 pandemic and salient counteracting strategies: Another potential global threat?
24. Systematic Review on Phytochemistry and Pharmacology Studies of *Alangium salvifolium*
25. Haemo Conditions Associated with Blood Group Transfusion
26. Oscillatory Behavior of certain First and Second Order Difference Equations
27. Attributes of maize and their correlation behavior with yield

28. Optimization of aerial node mediated emergence and field performance in lower altitude of a higher altitude specific endangered medicinal plant, *Valeriana jatamansi* Jones
29. Linkage disequilibrium mapping: a journey from traditional breeding to molecular breeding in crop plants
30. DNA barcoding of insects from India: Current status and future perspectives
31. GC-MS analysis of methanolic extract of *Urochloa distachya* (L.) T. Q. Nguyen, leave
32. Experimentally investigating the influence of static mixers on the performance of a solar water heater
33. Effect of grade and heating rate on the thermal degradation behaviour, kinetics and thermodynamics of pyrolysis of low rank coal
34. Synthesis of Mesoporous Silica and Graphene-Based FeO and ZnO Nanocomposites for Nutritional Biofortification and Sustained the Productivity of Rice (*Oryza sativa* L.)
35. Modeling and forecasting of sugarcane production in south Asian countries
36. Fly Ash Amendment for Sustainable Agriculture through Vermicomposting
37. Cross-genera amplification of *Cajanus* spp. specific SSR markers in *Clitoria ternatea* (L.) and their application in genetic diversity studies
38. Impact of mining activities on odonates diversity in adjacent villages of Balaram open cast project, Talcher, Angul, Odisha, India
39. Bioconversion of lignocellulosic organic wastes into nutrient rich vermicompost by *Eudrilus eugeniae*
40. Habitat Use of Urban and Periurban Birds in a densely populated City of Eastern India
41. Relationship among physico-chemical parameters of soil and water in different wetland ecosystem
42. Acute Toxicity Assessment and Behavioral Responses Induced by *Kandhamal haladi* in Adult Zebrafish (*Danio rerio*)
43. Vitamin-C Treated Haematology Assessment of Swiss Albino Mice (*Mus musculus*)
44. Quantitation of Total Protein Content in Some Common Edible Food Sources by Lowry Protein Assay
45. Formation of *Arabidopsis* Poly(A)-Specific Ribonuclease Associated Processing Bodies in Response to Pathogenic Infection
46. Insights to Plant Immunity: Defense Signaling and Epigenomics
47. Expression of plant alpha-amylase inhibitor gene(s) revealing bruchid resistance in legume crops
48. Functional Role of miRNAs: Key Players in Soybean Improvement
49. Study on the Effects of *Kandhamal Haladi* in Benzo [a]Pyrene-Induced Behavioral Changes in Adult Zebrafish (*Danio rerio*)
50. Habitat heterogeneity influences avian feeding guild composition in urban landscapes: evidence from Bhubaneswar, India
51. Salicylic acid modulates ACS, NHX1, *sos1* and HKT1;2 expression to regulate ethylene overproduction and Na⁺ ions toxicity that leads to improved physiological status and enhanced salinity stress tolerance in tomato plants cv. Pusa Ruby,
52. Seroprevalence and associated Risk Factors of Bovine Brucellosis in Chhattisgarh Plains, India
53. Influence of Phytobiotic Essential Oils on Growth Performance and Hematological Parameters of Broiler Chickens

54. *Pseudomonas syringae* pv. *syringae* Infection Orchestrates the Fate of the Arabidopsis J Domain Containing Cochaperone and Decapping Protein Factor 5
55. Enteric dissolution enhancement of engineered gastro resistant omeprazole tablets using hydroxypropyl methylcellulose acetate succinate
56. Effect of pH and temperature on swelling behaviour of tamarind gum
57. An Overview on Ethnopharmacology Of different medicinal plants of Odisha in the management of Diabetes Mellitus
58. Epileptic Seizure Detection using Deep Ensemble Network with Empirical Wavelet Transform
59. Development of biodegradable polymer based nanoparticles of doxorubicin; an in vitro evaluation
60. Immunoinformatic Study of Recombinant LigA/BCon1-5 Antigen and Evaluation of Its Diagnostic Potential in Primary and Secondary Binding Tests for Serodiagnosis of Porcine Leptospirosis
61. Heterosis and Combining Ability Analysis for yield and its Components in Bread Wheat (*Triticum aestivum* L.)
62. Impact and Contribution of Forest in Mitigating Global Climate Change
63. An Overview of Ethnopharmacology, phytochemical and Pharmacology of *Eleusine indica*
64. The promising role of oleanolic acid in the management of diabetes mellitus: A review
65. Development of a Three-Source Remote Sensing Model for Estimation of Urban Evapotranspiration
66. Assessing the impact of urbanization on urban evapotranspiration and its components using a novel four-source energy balance model
67. A Hybrid Deep Learning Framework with Physical Process Description for Simulation of Evapotranspiration
68. Integrated Nutrient Management Improves the Growth and Yield of Rice and Greengram in a Rice—Greengram Cropping System under the Coastal Plain Agro-Climatic Condition
69. Weed Management and Crop Establishment Methods in Rice (*Oryza sativa* L.) Influence the Soil Microbial and Enzymatic Activity in Sub-Tropical Environment
70. Identification of bioactive molecules from Triphala (Ayurvedic herbal formulation) as potential inhibitors of SARS-CoV-2 main protease (Mpro) through computational investigations
71. Cerebroprotective effect of Aloe Emodin: In silico and in vivo studies
72. Molecular mechanisms, genetic mapping, and genome editing for insect pest resistance in field crops
73. Pesticide Residues in Vegetables: A Vicious Trend to Break
74. Is the Sea off Odisha, North Western Bay of Bengal, a favourable feeding ground of Bryde's Whale [*Balaenoptera edeni* Anderson, 1878]?
75. Breeding More Crops in Less Time: A Perspective on Speed Breeding
76. Trends and Variability of Rainfall in Tripura State of India in 1986–2019 and Key Drivers
77. Modeling and forecasting metrological factors using BATS and TBATS models for the Keonjhar district of Orissa
78. Diversity of flowering crops (Bee flora) in MS Swaminathan School of Agriculture Paralakhemundi, Odisha
79. Breeding for pest resistance in vegetable crops: A Review
80. Fuelwood species diversity and consumption pattern in the homegardens from foothills of Indian Eastern Himalayas

81. Phytic acid: Blessing in disguise, a prime compound required for both plant and human nutrition
82. A Comprehensive Review on Promising Phytopharmacological Applications of Chamomile Flower
83. Green synthesized ZnO nanoparticles for sustainable production and nutritional biofortification of greengram
84. Role of biotechnology in vegetable breeding
85. Impact of Rural Activities on Biodiversity and Ecosystem Services
86. Diversity, Distribution and Abundance of Lichen in Similipal Biosphere Reserve, Odisha
87. Yield and quality response of turmeric (*Curcuma longa*) under drip irrigation and plastic mulch
88. Assessing Capability of Chemical Ameliorants to Reduce the Bioavailability of Heavy Metals in Bulk Fly Ash Contaminated Soil
89. Lomustine Incorporated Lipid Nanostructures Demonstrated Preferential Anticancer Properties in C6 Glioma Cell Lines with Enhanced Pharmacokinetic Profile in Mice
90. Adapted Facial Recognition And Spoofing Detection For Management Decision Making System: A Visually Impaired People Perspective
91. Influence of Demographic Factors on the Mobile Banking Technology Adoption by Customers: A Case of Few Nationalized Banks of Odisha
92. Biological synthesis of GO-MgO nanomaterial using *Azadirachta indica* leaf extract: A potential bio-adsorbent for removing Cr (VI) ions from aqueous media
93. Impact of phosphorus and sulphur on the growth and productivity of green gram (*Vigna radiata*)
94. Assessing the effects of end-members determination on regional latent heat flux simulation in trapezoidal framework-based model
95. Global-scale application of the RUSLE model: A Comprehensive Review
96. Advances and trends on the utilization of multi-parent advanced generation intercross (MAGIC) for crop improvement
97. Genome-Wide Identification of The Gata Transcription Factor Family in *Dichanthelium Oligosanthes*
98. Oral RNAi toxicity assay suggests clathrin heavy chain as a promising molecular target for controlling the 28-spotted potato ladybird, *Henosepilachna vigintioctopunctata*
99. Microbe-Assisted Alleviation of Heavy Metal Toxicity in Plants: A Review
100. Morphological and biochemical responses of *Macrotyloma uniflorum* (Lam.) Verdc. to allelopathic effects of *Mikania micrantha* Kunth extracts
101. *Spathodea campanulata* P. Beauv. —A review of its ethnomedicinal, phytochemical, and pharmacological profile
102. 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
103. Progressive Genomic Approaches to Explore Drought- and Salt-Induced Oxidative Stress Responses in Plants under Changing Climate.
104. 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.

105. 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
106. Herbicide in Weed Management of Wheat (*Triticum aestivum* L.) and Rainy Season Rice (*Oryza sativa* L.) under Conservation Agricultural System
107. *Azotobacter vinelandii* helps to combat chromium stress in rice by maintaining antioxidant machinery
108. English Express: A Boot Camp Model
109. Congestion and Performance Evaluation of Roundabouts; Case Study at Bhubaneswar City; India
110. Salt and Drought Stress Responses in Cultivated Beets (*Beta vulgaris* L.) and Wild Beet (*Beta maritima* L.).
111. A single transcript CRISPR/Cas9 mediated mutagenesis of CaERF28 confers anthracnose resistance in chilli pepper (*Capsicum annuum* L.)
112. Transition Metal Catalyzed Hydroalkoxylation of Alkynes: An Overview
113. Novel ZnO blended SnO₂ nanocatalysts exhibiting superior degradation of hazardous pollutants and enhanced visible photoemission properties
114. Studying the effects of Cu doping on structure and photoluminescence properties of SnO₂ nanoparticles with its effectiveness towards the mineralization of toxic industrial dye
115. Bio-hydrothermal synthesis of ZnO–ZnFe₂O₄ nanoparticles using *Psidium guajava* leaf extract: Role in waste water remediation and plant immunity
116. Formulation development and characterization of lamotrigine-salicylic acid crystalline product: A strategy to improve oral release of drug for better management of epilepsy
117. Enhancement of Surface quality of DMLS Aluminium alloy using RSM Optimization and ANN Modelling
118. Evaluation of Cell Parameter Variation on Energy Absorption Characteristic of Thermoplastic Honeycomb Sandwich Structure
119. Flow and Heat Transfer Analysis of H₂O–Al₂O₃ Nanofluid Over a Stretching Surface With Electrified Nanoparticles and Viscous Dissipation
120. Electrochemical Mass Transfer in Bubble Columns with Conical Entry in the Presence of Displaced Devices
121. Eddy Viscosity Turbulent Flow Simulation over a Simplified Ahmed Body Model
122. Utilization of seaweed-based biostimulants in improving plant and soil health: Current updates and future prospective
123. Application of Interval Type-2 Fuzzy PID Controller for Frequency Regulation of AC Islanded Microgrid Using Modified Equilibrium Optimization Algorithm
124. Modulation of catalytic and biomolecular binding properties of ruthenium(II)-arene complexes with the variation of coligands for selective toxicity against cancerous cells
125. Production of hydrocarbon rich fuel from abandoned beehive by pyrolysis
126. Teacher Competence and 21st Century Challenges: A Critical Analysis of Existing Teacher Competency Frameworks
127. AHP (Analytical Hierarchical Process): A Novel Approach of Decision Making in Aerospace Industry Supply Chain Optimization
128. Prioritising the factors influencing Productivity in an Aerospace Manufacturing Sector: An Application of Analytical Hierarchical Process

129. Assessment and Prioritization of Supply Chain Risk: Development of AHP Model in Aerospace Industry
130. Prediction by SoFt Computing, Planning, and Strategy Building of Aquatic Catch: Chilika Lagoon, Odisha, India,
131. Effect of incorporation of magnetization in antiferromagnetic Cr₂O₃ by mechanically alloying with α -Fe nanoparticles
132. Crucial cell signaling compounds cross-talk and integrative multi-omics techniques for salinity stress tolerance in plants
133. Highly selective and sensitive optical discrimination of Pyrophosphate ion by a Zn(II)-terpyridine complex in aqueous medium at physiological pH
134. Optimum parameters for production of ethanol from synthetic molasses by *Saccharomyces cerevisiae*
135. Dynamic task scheduling using nature inspired algorithm
136. Electrical conduction mechanism in nanocrystalline ZnO induced by donor/acceptor doping
137. Enhancement investigations on Dielectric and Electrical properties of Niobium pentoxide (Nb₂O₅) reinforced Poly (vinylidene fluoride) (PVDF)- Graphene Oxide (GO) Nanocomposite Films
138. Productivity and Profitability of Kharif Rice are Influenced by Crop Establishment Methods and Nitrogen Management in the Lateritic Belt of the Subtropical Region
139. Vermi-biofiltration for removal of chemical and biological pollutants from municipal wastewater for agriculture - a review
140. Growth and yield of basmati rice under different crop establishment methods and sowing environment
141. Selection of Low Temperature Thermal Power Cycles
142. Performance analysis of a waste heat recovery solar chimney for nocturnal use
143. Carbon Storage of Single Tree and Mixed Tree Dominant Species Stands in a Reserve Forest—Case Study of the Eastern Sub-Himalayan Region of India
144. Fabrication and Characterization of Physical and Mechanical Properties of Carbon Nanotubes—Graphene-Based Sandwich Composite Pressure Sensor
145. Torpor in insects
146. Plastic waste as threat to environmental sustainability in smart cities: A systematic review of extant literature
147. Does Bonus Announcement Effect on Stock Prices: Evidence from Listed Companies in India
148. Unravelling tidal effect on zooplankton community structure in a tropical estuary
149. Evaluation of hydro-biological parameters in response to semi-diurnal tides in a tropical estuary
150. Zinc Biofortification in Food Crops Could Alleviate the Zinc Malnutrition in Human Health

