

Jurnal Teknik Pertanian (J-TPEP) is a scientific journal devoted to publish results of research, development, studies or ideas in the field of agricultural sciences, engineering, and technology in a broad sense. The scope of J-TPEP includes (but is not limited to) the fields of: water-plant-land resource engineering, agricultural environment, bioprocess engineering, post-harvest and agro-industrial technology, farm power and equipment, renewable energy, agro-industrial wastes, control systems and artificial intelligence, robotics, and IoT applications in agriculture. Since 2016, J-TPEP has been accredited to the SINTA-3 journal based on the Decree of the Director General of Higher Education No.21/E/KPT/2018, and since Vol. 11, No. 3 (September 2021) J-TPEP has been accredited as a SINTA-2 journal based on the Decree of the Director General of Higher Education, Research and Technology No. 164/E/KPT/2021. Starting from Vol. 11, No.1 (March 2022) J-TPEP is published in English. Starting in 2025, J-TPEP is published 6 (six) times a year: February, April, June, August, October, and December. J-TPEP is open to the public and invites researchers, students, practitioners, and observers in the world of agricultural engineering and agricultural technology to submit their scientific papers.

Chief Editor

Prof. Dr. Ir. Agus Haryanto, M.P. (Universitas Lampung)

Section Editors

Dr. Ir. Sugeng Triyono, M.Sc (Universitas Lampung)
Prof. Dr. Ir. R.A. Bustomi Rosadi, M.S. (Universitas Muhammadiyah Kotabumi)
Dr. Warji, S.T.P., M.Si (Universitas Lampung)
Prof. Dr. Dra. Maria Erna Kustyawati, M.Sc. (Universitas Lampung)
Prof. Dr. Ir. Santosa, M.P. (Universitas Andalas)
Ahmad Tusi, S.T.P., M.Si., Ph.D. (Universitas Lampung)
Dr. Ansar, S.T.P., M.Si. (Universitas Mataram)
Prof. Dr. Diding Suhandy, S.T.P., M.Agr. (Universitas Lampung)
Dr. Siti Suharyatun, S.T.P., M.Si. (Universitas Lampung)
Dr. Cicih Sugianti, S.T.P., M.Si. (Universitas Lampung)
Dr. Ir. Gatot Pramuhadi, M.Si. (IPB University).
Bayu Dwi Apri Nugroho, S.T.P., M.Agr., Ph.D. (Universitas Gadjah Mada)
Dr. Arif Dwi Santoso, S.Pi, M.Eng (Badan Riset dan Inovasi Nasional)
Dr. Mareli Telaumbanua, S.T.P., M.Sc. (Universitas Lampung)
Sri Waluyo, S.T.P., M.Si. Ph.D. (Universitas Lampung)
Dr. Ir. Mahmud Achmad, M.P. (Universitas Hasanudin)
Dr. Siswoyo Soekarno, S.T.P., M.Eng. IPM (Universitas Jember)

Editorial Boards

Febryan Kusuma Wisnu, S.T.P., M.Sc. (Universitas Lampung)
Witaningsih, S.T., M.T. (Universitas Lampung)
Merry Meyliana Leowan, S.T. (Universitas Lampung)

Jurnal Teknik Pertanian Lampung is published by Agricultural Engineering Department, University of Lampung in collaboration with PERTETA.

Mail address:

Jurusan Teknik Pertanian, Fakultas Pertanian Universitas Lampung
Jl. Soemantri Brodjonegoro No.1, Telp. 0721-701609 ext. 846
Website :<http://jurnal.fp.unila.ac.id/index.php/JTP>
Email :jurnal_tep@fp.unila.ac.id

PREFACE

With gratitude to Allah the Almighty, Jurnal Teknik Pertanian Lampung (J-TEP) Volume 14, No. 5, October 2025 can finally be published. This edition contains 42 (forty-two) papers from various fields of study in the world of Agricultural Engineering and Agricultural Technology including cultivation engineering, bioprocess technology, wood engineering, design, modeling, renewable energy, and others.

On this occasion, we would like to express our deepest gratitude to the authors for their contribution to J-TEP and to the reviewers of this journal for their participation and contribution in improving the quality of scientific papers published in this edition. Finally, I hope that J-TEP can be useful for the community and make a meaningful contribution to the development of science and technology, especially in the field of agricultural engineering and technology.

Editors

Content	Page
<i>Preface</i>	
Effect of Salinity Stress on Plant Growth and Yield of Two Varieties of Soybean (<i>Glycine max</i> L.) in Saline Soil <i>Jeremia Setyo Laksono, Ida Retno Moeljani, Djarwatiningsih Djarwatiningsih</i>	1534–1541
Characterization of Coating Flour Based on Local Timor Corn Flour Modified with the Addition of Rice Flour, Tapioca Flour, and Glutinous Rice Flour <i>Maria Susana Medho, Aydamel Asisaul Gelora Mentur Takalapeta, Endeyani Vivitrida Muhamad, Yosefina Lewar</i>	1542–1552
Optimization of Microwave Treatment to Improve Adsorption Properties of Porous Rice Starch <i>Elok Pawening Maharani, Priyanto Triwitono, Yudi Pranoto, Djagal Wiseso Marseno</i>	1553–1562
Antioxidant Extraction from Pedada (<i>Sonneratia caseolaris</i>) with Pulsed Electric Field Pretreatment <i>Ayu Kartika, Jariyah Jariyah, Anugerah Dany Priyanto</i>	1563–1572
Oil Extraction and Quality Stability of Crude Palm Oil Derived from Variations in Palm Fruit Ripeness <i>Ika Ucha Pradifta Rangkuti, Muhammad Syukri, Jenny Elisabeth, Dwita Sari</i>	1573–1581
The Performance of Water Irrigation Control using Fuzzy-GA Approach <i>Muhamad Febrian Soambaton, Anan Nugroho</i>	1582–1592
Evaluation of Land Suitability for Sugar Cane Cultivation <i>Thariq Naufal Haq, Bakti Wisnu Widjajani, Siswanto Siswanto</i>	1593–1603
Growth and Yield of Sweet Corn Hybrids Organically Grown During the Dry Season in the Midland with Monsoon Rainfall Pattern <i>Rike Faradilla, Mohammad Chozin, Sigit Sudjatkiko, Fahrurrozi Fahrurrozi</i>	1604–1610
Optimization of Spent Coffee Ground Extraction for Kombucha Production: Effect of Temperature on Fermentation Dynamics and Antioxidant Activity <i>Sri Hartini, Margareta Novian Cahyanti, Alifia Dewi Safira</i>	1611–1618
Application of POC Addition to Nutrients and its Effect on Planting Direction in Lettuce Plants in Vertical Hexagonal Aeroponics <i>Muhammad Thoriqul Akbar, Hadi Suhardjono, Sutini Sutini</i>	1619–1626
Traction Performance Analysis of Three Models of Traction Device for Muddy Soil <i>Frandy Mey Syaputra, Wawan Hermawan, Radite Praeko Agus Setiawan</i>	1627–1637
Application of Extreme Learning Machine (ELM) for Water Level Prediction in Krueng Peusangan River Basin (2014–2023) <i>Meri Aznita, Siti Rusdiana, Ichwana Ramli, Atika Izzaty, T Ferijal</i>	1638–1649
Identification of Critical Land based on Land Damage Standard Criteria in Manten Sub Watershed, Malang City <i>Anisah Aprilia Garciah, Maroeto Maroeto, Purnomo Edi Sasongko</i>	1650–1660

Morphophysiological Response of Edamame Soybean to Arbuscular Mycorrhizal Fungi (AMF) and Bioactive Compost Charcoal in Tidal Swamp Land	1661–1670
<i>Shinta Rosalina, Iwan Sasli, Tatang Abdurrahman</i>	
Evaluating <i>Lumbricus rubellus</i> Performance and Vermicompost Quality in Cow Manure–Mealworm Waste Mixtures	1671–1682
<i>Tamara Putri Utami, Salundik Salundik, Asnath Maria Fuah, Verika Armansyah Mendrofa</i>	
Application of Biopesticide with Active Ingredients Containing <i>Trichoderma</i> sp., <i>Streptomyces</i> sp., and Chitosan for Groundnut Aphid (<i>Aphis craccivora</i> Koch.)	1683–1690
<i>Mochamad Bima Erdiansyah, Penta Suryaminarsih, Dita Megasari</i>	
Estimation of Surface Water Potential in Manokwari Regency Using Remote Sensing Data	1691–1700
<i>Arif Faisol, Bertha Ollin Paga, Mashudi Mashudi, Budiyono Budiyono</i>	
Assessing the Water Quality Status Using the Pollution Index Approach – Case Study for Tiku Subwatershed, North Musi Rawas Regency	1701–1713
<i>Alfirmansyah Alfirmansyah, Yuwana Yuwana, Budi Kurniawan, Nur Sulisty Budi Ambarini</i>	
Screening and Potential Testing of <i>Metarhizium</i> sp. Isolates for Controlling <i>Lepidiotia stigma</i> (Fabricius) Larvae in Sugarcane (<i>Saccharum officinarum</i> L.)	1714–1725
<i>Hanik Sulistyawati, Wiwin Windriyanti, Yenny Wuryandari</i>	
Effect of Storage Duration and Seed Type on the Viability and Growth of <i>Agave</i> (<i>Agave sisalana</i> L. Perrine) from In Vitro Culture	1726–1737
<i>Mala Murianingrum, Parnidi Parnidi, Moch. Machfud, Fatkhur Rochman, Marjani Marjani, Bambang Heliyanto, Rully Dyah Purwati</i>	
Land Suitability Analysis for Peanut (<i>Arachis hypogea</i>) Farming in World Heritage Conservation Area Sangiran	1738–1747
<i>Agung Rimayanto Gintu, Bistok H Simanjuntak, Suprihati Suprihati</i>	
Humic Silica for Optimising Soil Phosphorus Availability and Phosphorus Uptake by Maize Plants on Industrial Contaminated Lands	1748–1757
<i>Diqy Ridwan Aditama, Wanti Mindari, Maroeto Maroeto, M Ghufon Chakim</i>	
Evaluation of the Suitability of Irrigated Paddy Fields (<i>Oryza sativa</i> L.) in the Kelingi Irrigation Area, Tugumulyo District, Musi Rawas Regency	1758–1766
<i>Oktaviano Oktaviano, Yuwana Yuwana, Faiz Barchia, Reflis Reflis</i>	
Application of Solar Energy for Coconut Grating Machine in Rural Areas	1767–1777
<i>Husen Asbanu, Yendi Esye, Yefri Chan, Danny Faturachman</i>	
Analysis of Soil Erodibility Value Using the Wischmeier-Smith Method	1778–1784
<i>Marchelino Rendi Pradana, Purnomo Edi Sasongko, Maroeto Maroeto</i>	
Assessment of Soil and Water Conservation Potential Using Vetiver Crops (<i>Chrysopogon zizanioides</i>) as a Nature-Based Solution for Watershed Restoration	1785–1797
<i>Chandra Setyawan, Yekti Nugraheni, Ngadisih Ngadisih, Rizki Maftukhah, Devi Safrina</i>	
The Effect of Drying and Roasting Times on Sensory and Physicochemical Characteristics of Ground Roasted Coconut	1798–1806
<i>Sri Hartuti, Juanda Juanda, Mustaqimah Mustaqimah</i>	

Chili Ripeness Level Detection with YOLOv8 and Fuzzy Logic for Harvest Decision Making <i>Ninda Yulia Dwi Rahmawati, Febry Putra Rochim</i>	1807–1818
Growth and Yield Response of Sunflower (<i>Helianthus annuus</i> L.) Plants to Paclobutrazol Dosage and Application Time <i>Fitriyah Fitriyah, Ramdan Hidayat, Widiwurjani Widiwurjani</i>	1819–1828
Environmental Factors and Mulching Effects on Soil Nitrogen in Organic Curly Chili (<i>Capsicum annuum</i> L.) Cultivation for Sustainable Agriculture <i>Indah Retno Wulan, Bayu Dwi Apri Nugroho, Chandra Setyawan, Jeane Claudea Tanjung, Aristya Ardhitama</i>	1829–1842
The Effectiveness of Hydrocooling in Maintaining Broccoli Quality During Storage <i>Rizky Wulansetiasari, Usman Ahmad, Emmy Darmawati</i>	1843–1856
Evaluation of Fertilizer Management Approaches in Maintaining Soil Fertility and Plant Nutrient Content in Coffee-Based Agroforestry Systems <i>Syahrul Kurniawan, Silvia Febiona, R Muhammad Yusuf Adi Pujo Nugroho, Sri Rahayu Utami</i>	1857–1868
Physical and Physiological Quality of Rice Seeds of Inpari 32 Variety Under Different Harvest Ages, Packaging Types, and Storage Durations <i>Arif Fathoni, Ramdan Hidayat, Juli Santoso</i>	1869–1881
Chemical and Organoleptic Characteristics of Pempek Using Different Ratios of Lampam Fish Surimi and Tapioca Flour <i>Dasir Dasir, Suyatno Suyatno, Putri Anisa Amnes</i>	1882–1892
Product Development of High Carotenoids Chocolate Confectionery Based on Red Palm Olein Oleogel <i>Tria Amanda, Nur Wulandari, Dase Hunaefi</i>	1893–1904
Comparison of Machine Learning Models for Classifying Consumer Sentiment of Coffee Shops on Social Media X <i>Agung Putra Pamungkas, Adam Mahendra, Ibnu Wahid Fakhruddin Aziz</i>	1905–1912
Effectiveness of Silica Humate in Improving Soil Quality in Paddy Field Contaminated by Industrial Waste <i>Nanda Ajeng Kartika, Wanti Mindari, Siswanto Siswanto, M. Ghufroon Chakim</i>	1913–1924
Analysis of Potassium (K) Uptake and Plant Growth of Lettuce (<i>Lactuca sativa</i> L.): Effect of AB Mix Concentrations and NPK Fertilizer Doses <i>Ramlan Ramlan, Siti Hijrah, Adnan Khaliq</i>	1925–1934
Analysis of Procurement and Supply Chain Control of Sugarcane in a Sugar Mill <i>Erika Aprilia Renata, Teguh Soedarto, Sri Widayanti</i>	1935–1947
Rice Farming Applicator Robot Control System Based on Radio Wave Communication Using Flysky Fs-iA6 Type Remote Control and Arduino Mega <i>Ridwan Siskandar, Tineke Mandang, Wawan Hermawan, Irzaman Irzaman</i>	1948–1961
Study on Soil Macrofauna Diversity and Its Role in Litter Decomposition in Coffee-Based Agroforestry <i>Melda Lely Marthalina, Maroeto Maroeto, Rossyda Priyadarshini</i>	1962–1975

REVIEW

Biogas Production from Palm Oil Mill Effluent and the Prospect of Co-digestion with Empty Fruit Bunches – A Comprehensive Review

1976–2005

Afid Fito Setiawan, Agus Haryanto, Udin Hasanudin, Sugeng Triyono, Dewi Agustina Iryani

ARTICLE WRITING GUIDELINES FOR AUTHORS

1) Manuscript: The Editorial Board accepts scientific papers in either Indonesian or English, with the following requirements:

- a. Manuscripts must be typed on A4-sized paper (210 mm × 297 mm), double-spaced, using Times New Roman font, 12 pt. Margins should be 3 cm on the left, right, top, and bottom. The length of the manuscript should not exceed 20 pages, including abstract, references, tables, and figures. All tables and figures must be embedded in the manuscript and numbered consecutively as they appear. The manuscript should be structured as follows: Title; Author(s) with footnotes indicating institutional affiliation(s); Introduction; Materials and Methods; Results and Discussion; Conclusion and Recommendations; References; and Appendices (if necessary). A writing template can be downloaded at <http://jurnal.fp.unila.ac.id/index.php/IJP>.
- b. **Abstracts** must be written in both Indonesian and English, with no more than 200 words. They should provide clear and concise information that is easy to understand, briefly covering the background, objectives, methods, main findings, and conclusions of the study.
- c. **Introduction:** Should present the background of the problem, relevant previous findings, and the objectives of the study or engineering work.
- d. **Materials and Methods:** Should clearly describe the materials and methodologies used, including the location and time of the study, as well as the statistical analyses applied. References should be provided for specific methods.
- e. **Results and Discussion:** Should present the research or engineering results, their relevance to problem-solving, implications, similarities and differences with previous studies, and potential for further development. Results may be presented in the form of figures, graphs, or tables.
- f. **Conclusion and Recommendations:** Should summarize the key findings, their contribution to addressing the problem, and provide recommendations for future research or engineering work.
- g. **References:** Must be arranged alphabetically. The format is as follows: Author's family name/surname followed by the initials of the first name. For the second and subsequent authors, write in normal order.
 - *Journal* article:
Tusi, A., & Rosadi, R.A.B. (2009). Aplikasi irigasi defisit pada tanaman jagung. *Jurnal Irigasi*, 4(2), 120–130.
 - *Book:*
Keller, J., & Bleisner, R.D. (1990). *Sprinkle and Trickle Irrigation*. AVI Publishing Company Inc., New York, USA.
- h. **Units:** All measurements must follow the International System of Units (SI), e.g., m (meter), N (newton), °C (temperature), kW and W (power), etc.

2) Manuscript Submission: Manuscripts should be submitted in soft copy to the following address:

Editorial Office, J-Tep (Journal of Agricultural Engineering, University of Lampung)

Department of Agricultural Engineering, Faculty of Agriculture

University of Lampung

Jl. Sumantri Brodjonegoro No. 1

Telp. +62-721-701609 ext. 846

Website: <http://jurnal.fp.unila.ac.id/index.php/IJP>

Email: jurnal_tep@fp.unila.ac.id

3) Review Process

During the submission, peer review, and acceptance stages, all correspondence with the author(s) will be conducted via email.

4) Editorial and Reviewer Rights

Reviewers have the right to evaluate, correct, add, or remove content from the manuscript if deemed necessary, without altering the overall purpose and objectives of the study.