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Biodiesel Industrial Waste based on *Jatropha curcas* as a Fungicide to Control *Fusarium oxysporum* and *Alternaria solani*

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Fusarium oxysporum (Schlecht. emend. Snyder & Hansen.) is the most devastating pathogens causing wilt disease on the tomatoes (*Solanum lycopersicum* L.) plant, whereas *Alternaria solani* (Sorauer), is a pathogen that caused early blight on potatoes (*Solanum tuberosum* L.) *Jatropha curcas* L. is a biodiesel material known as a potential fungicide. The industrial biodiesel waste based on *J. curcas* was not yet observed, particularly on the utilization of waste mainly for green manure and biogas. This research aimed to evaluate the extract of industrial biodiesel waste based on *J. curcas* against *F. oxysporum* and *A. solani*. There were 2×10^3 mg L⁻¹, 4×10^3 mg L⁻¹, 6×10^3 mg L⁻¹, 8×10^3 mg L⁻¹, and 10×10^3 mg L⁻¹ of crude extract that were tested on both pathogens in vitro and in vivo. The concentration of the extract was in an effective range of 10×10^3 mg L⁻¹ and was able to inhibit the growth of all isolates of *F. oxysporum* from both locations by more than 80 %, but the inhibition of the pathogen *A. solani* was less than 76 %. © The Authors, published by EDP Sciences, 2023.

Author keywords

Environmentally friendly; Pathogen control; Waste to fungicide; Waste utilization

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- 1 Primadari, S.R.P., Islam, A.K.M.A., Yaakob, Z., Chakrabarty, S. *Jatropha curcas* L. biomass waste and its utilization, in: *Advances in biofuels and bioenergy*. Cited 3 times. M. Nageswara-Rao, and J. Soneji [eds.], (IntechOpen, London, 2018) <http://dx.doi.org/10.5772/intechopen.72803>
- 2 Adinurani, P.G., Setyobudi, R.H., Wahono, S.K., Mel, M., Nindita, A., Purbajanti, E., Harsono, S.S., (...), Sasmito, A. Ballast weight review of capsule husk *Jatropha curcas* Linn. on acid fermentation first stage in two phase anaerobic digestion (2017) *Proceedings of the Pakistan Academy of Sciences: Part B*, 54 (1B), pp. 47-57. Cited 18 times. <http://www.paspk.org/wp-content/uploads/2017/03/Ballast-Weight-Review-of-Capsule-Husk-Jatropha-curcas-Linn.pdf>
- 3 Isaac, M.R., Leyva-Mir, S.G., Sahagún-Castellanos, J., Câmara-Correia, K., Tovar-Pedraza, J.M., Rodríguez-Pérez, J.E. Occurrence, identification, and pathogenicity of *Fusarium* spp. associated with tomato wilt in Mexico (2018) *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 46 (2), pp. 484-493. Cited 10 times. <http://www.notulaeobotanicae.ro/index.php/nbha/issue/archive> doi: 10.15835/nbha46211095

[View at Publisher](#)

- 4 Chaerani, C., Kardin, M.K., Suhardi, S., Sofiani, E., Glinkel, R.V., Groenwolt, R.
(2018) *Indones. J. Agric. Sci*, 18, pp. 51-62. Cited 3 times.
<https://doi.org/10.21082/ijas.v18n2.2017.p51-62>
-

- 5 Adinurani, P.G., Setyobudi, R.H., Wahono, S.K., Sasmito, A., Nelwan, L.O., Nindita, A., Liwang, T.
Optimization of concentration and EM4 augmentation for improving bio-gas productivity from jatropha curcas linn capsule husk
(2014) *International Journal of Renewable Energy Development*, 3 (1), pp. 73-78. Cited 17 times.
ejournal.undip.ac.id/index.php/ijred/index
doi: 10.14710/ijred.3.1.73-78
[View at Publisher](#)
-

- 6 Hendroko, R., Liwang, T., Salafudin, Adinurani, P.G., Nelwan, L.O., Sakri, Y., Wahono, S.K.
The modification for increasing productivity at hydrolysis reactor with Jatropha Curcas linn capsule husk as biomethane feedstocks at two stage digestion
(2013) *Energy Procedia*, 32, pp. 47-54. Cited 16 times.
<http://www.sciencedirect.com/science/journal/18766102>
doi: 10.1016/j.egypro.2013.05.007
[View at Publisher](#)
-

- 7 Hendroko, R., Wahyudi, A., Wahono, S.K., Praptiningsih, G.A., Salafudin, Salundik, Liwang, T.
Bio-refinery study in the crude jatropha oil process: Co-digestion sludge of crude jatropha oil and capsule husk Jatropha curcas Linn as biogas feedstocks
(2013) *International Journal of Technology*, 4 (3), pp. 202-208. Cited 16 times.
http://www.ijtech.eng.ui.ac.id/File/2.%20Bio-refinery%20study%20in%20the%20crude%20_Roy%20Hendroko%20et%20al.%20202-208.pdf
doi: 10.14716/ijtech.v4i3.115
[View at Publisher](#)
-

- 8 Roy, H.S., Satriyo, K.W., Praptiningsih, G.A., Salafudin, Agus, S.Y., Imam, W., Salundik, D.
The study of optimization hydrolysis substrate retention time and augmentation as an effort to increasing biogas productivity from jatropha curcas linn. Capsule husk at two stage digestion
(2014) *Energy Procedia*, 47, pp. 255-262. Cited 14 times.
<http://www.sciencedirect.com/science/journal/18766102>
doi: 10.1016/j.egypro.2014.01.222
[View at Publisher](#)
-

- 9 Rathore, D., Nizami, A.-S., Singh, A., Pant, D.
Key issues in estimating energy and greenhouse gas savings of biofuels: Challenges and perspectives
(2016) *Biofuel Research Journal*, 3 (2), pp. 380-393. Cited 110 times.
https://www.biofueljournal.com/article_15102_a46d968aa47a767c971b1ec496affcc.pdf
doi: 10.18331/BRJ2016.3.2.3
View at Publisher
-
- 10 Cabrera, O.G., Molano, E.P.L., José, J., Álvarez, J.C., Pereira, G.A.G.
Ceratocystis wilt pathogens: History and biology-highlighting *C. Cacaofunesta*, the causal agent of wilt disease of cacao (Open Access)
(2016) *Cacao Diseases: A History of Old Enemies and New Encounters*, pp. 383-428. Cited 7 times.
<http://dx.doi.org/10.1007/978-3-319-24789-2>
ISBN: 978-331924789-2; 978-331924787-8
doi: 10.1007/978-3-319-24789-2_12
View at Publisher
-
- 11 Rahman, M., Ahmad, S.H., Mohamed, M.T.M., Zaki, M., Rahman, A.
Extraction of *Jatropha curcas* fruits for antifungal activity against anthracnose (*Colletotrichum gloeosporioides*) of papaya (Open Access)
(2011) *African Journal of Biotechnology*, 10 (48), pp. 9796-9799. Cited 18 times.
<http://www.academicjournals.org/AJB/PDF/pdf2011/29Aug/Rahman%20et%20al.pdf>
doi: 10.5897/ajb11.930
View at Publisher
-
- 12 Rampadarath, S., Puchooa, D., Jeewon, R.
Jatropha curcas L: Phytochemical, antimicrobial and larvicidal properties (Open Access)
(2016) *Asian Pacific Journal of Tropical Biomedicine*, 6 (10), pp. 858-865. Cited 22 times.
<http://www.journals.elsevier.com/asian-pacific-journal-of-tropical-biomedicine/>
doi: 10.1016/j.apjtb.2016.01.019
View at Publisher
-
- 13 Akogwu, R.D., Aguorum, C.U., Ikpa, F., Ogbonma, I., Olasan, J.O.
(2018) *Int. J. Environ. Agric. Biotech*, 3 (4), pp. 1547-1551. Cited 2 times.
<http://dx.doi.org/10.22161/ijeab/3.4.52>
-
- 14 Widiyastuti, T., Sutardi, T.R., Setyobudi, R.H.
Evaluation of Protein Concentrate from *Jatropha* Seed Cake as a Soybean Meal Substitution in the Rabbit Feed (Open Access)
(2015) *Energy Procedia*, 65, pp. 362-367. Cited 3 times.
<http://www.sciencedirect.com/science/journal/18766102>
doi: 10.1016/j.egypro.2015.01.069
View at Publisher

- 15 Handajani, H., Hakim, R.R., Sutaro, G.A., Mavuso, B.R., Chang, Z.-W., Andriawan, S.
Degradation of phorbol esters on the *jatropha curcas* Linn. seed by biological detoxification ([Open Access](#))

(2021) *E3S Web of Conferences*, 226, art. no. 00020.
www.e3s-conferences.org/
doi: 10.1051/e3sconf/202122600020

[View at Publisher](#)

- 16 Alamgir, A.N.M.
Methods of qualitative and quantitative analysis of plant constituents

(2018) *Progress in Drug Research*, 74, pp. 721-804. Cited 2 times.
<http://www.springer.com/series/4857>
doi: 10.1007/978-3-319-92387-1_9

[View at Publisher](#)

- 17 Adinurani, P.G.
Perancangan dan Analisis Data Percobaan Agro: Manual and SPSS [Design and Analysis of Agrotrial Data: Manual and SPSS]. Cited 4 times.
(Plantaxia, Yogyakarta, 2016) [in Bahasa Indonesia]
<https://opac.perpusnas.go.id/DetailOpac.aspxid=1159798#>

- 18 Adinurani, P.G.
Statistik Terapan Agroteknologi (disusun sesuai rencana pembelajaran semester). Cited 4 times.
[Agrotechnology Applied Statistics (compiled according to the semester learning plan)] (Deepublish, Yogyakarta, 2022) [in Bahasa Indonesia]
<https://deepublishstore.com/shop/buku-statistika-terapan-3/>

- 19 Kone, N.A.N., Ndongo, B., Mountapmbeme, M.M., Manga, E.F.R., Heu, A., Mvondo, N.D.
(2018) *Int. J. Sci. Res. Methodol*, 9 (1), pp. 95-109.
<https://www.researchgate.net/profile/Francois-Manga/publication/324597606-Anti-Fungal-Activities-of-Jatropha-curcas-Seeds-Extracts-against-Cercospora-malayensis-Causative-Agent-of-Sigatoka-of-Okra-Leaves/links/5b11260a4585150a0a5ebdf9/Anti-Fungal-Activities-of-Jatropha-curcas-Seeds-Extracts-against-Cercospora-malayensis-Causative-Agent-of-Sigatoka-of-Okra-Leaves.pdf>

- 20 Francis, M., Chaca, M., Ndakidemi, P.A., Mbega, E.
(2021) *J. Anim. Plant Sci*, 47 (1), pp. 8358-8371. Cited 4 times.
<https://dspace.nm-aist.ac.tz/handle/20.500.12479/1159>

- 21 Cushnie, T.P.T., Lamb, A.J.
Antimicrobial activity of flavonoids ([Open Access](#))
(2005) *International Journal of Antimicrobial Agents*, 26 (5), pp. 343-356. Cited 2912 times.
www.elsevier.com/locate/ijantimicag
doi: 10.1016/j.ijantimicag.2005.09.002

[View at Publisher](#)

- 22 Rachana, S., Tarun, A., Rinki, R., Neha, A., Meghna, R. (2012) *J. Pharm. Biomed. Sci*, 15 (15), pp. 1-4. Cited 7 times. <https://www.researchgate.net/profile/Rachana-Singh-4/publication/259195469-Comparative-Analysis-of-Antibacterial-Activity-of-Jatropha-curcas-Fruit-Parts/links/0c960535ddd3c0e65a000000/Comparative-Analysis-of-Antibacterial-Activity-of-Jatropha-curcas-Fruit-Parts.pdf>
-
- 23 Gopalakrishnan, S., Kannan, I.G.K., Alekhya, G., Humayun, P., Meesala, S.V., Kanala, D.
Efficacy of jatropha, annona and parthenium biowash on sclerotium rolfsii, fusarium oxysporum f. sp. ciceri and macrophomina phaseolina, pathogens of chickpea and sorghum
(2010) *African Journal of Biotechnology*, 9 (47), pp. 8048-8057. Cited 14 times. <http://www.academicjournals.org/AJB/PDF/pdf2010/22Nov/Gopalakrishnan%20et%20al.pdf>
doi: 10.5897/ajb10.1276
View at Publisher
-
- 24 Francis, M., Chacha, M., Ndakidemi, P.A., Mbega, E.R.
Antifungal Effects against *Phaeoisariopsis personata* under Greenhouse Conditions and Phytochemical Analysis of *Jatropha curcas* Leaf Extracts (Open Access)
(2021) *International Journal of Agriculture and Biology*, 26 (2), pp. 231-240. <http://www.fsublishers.org/>
doi: 10.17957/IJAB/15.1829
View at Publisher
-
- 25 Bajpai, V.K., Baek, K.-H., Kim, E.S., Han, J.E., Kwak, M., Oh, K., Kim, J.-C., (...), Choi, G.J.
In vivo antifungal activities of the methanol extracts of invasive plant species against plant pathogenic fungi (Open Access)
(2012) *Plant Pathology Journal*, 28 (3), pp. 317-321. Cited 6 times. <http://fppi.riceblast.snu.ac.kr/folder.php?a=down&id=94563>
doi: 10.5423/PPJ.NT.04.2012.0056
View at Publisher
-
- 26 Goel, A., Sharma, K. (2013) *Int. J. Agric. Biol. Eng*, 7 (9), pp. 859-862. Cited 2 times. <https://citeseerx.ist.psu.edu/viewdoc/downloaddoi=10.1.1.962.1803rep=rep1typ=pdf>

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