



DAFTAR PUSTAKA

- Aji, G. M., Pratiwi, A. F., & Utami, S. W. (2022). Rancang bangun sistem plant factory untuk produksi tanaman pakcoy (*Brassica rapa* L.). *Agroteknika*, 5(2), 130–142. <https://doi.org/10.55043/agroteknika.v5i2.149>
- Akhter, R., & Sofi, S. A. (2022). Precision agriculture using IoT data analytics and machine learning. In *Journal of King Saud University - Computer and Information Sciences* (Vol. 34, Issue 8, pp. 5602–5618). King Saud bin Abdulaziz University. <https://doi.org/10.1016/j.jksuci.2021.05.013>
- Antwi-Agyei, P., Dougill, A. J., Stringer, L. C., & Codjoe, S. N. A. (2018). Adaptation opportunities and maladaptive outcomes in climate vulnerability hotspots of northern Ghana. *Climate Risk Management*, 19(September 2017), 83–93. <https://doi.org/10.1016/j.crm.2017.11.003>
- Ares, G., Ha, B., & Jaeger, S. R. (2021). Consumer attitudes to vertical farming (indoor plant factory with artificial lighting) in China, Singapore, UK, and USA: A multi-method study. *Food Research International*, 150(November). <https://doi.org/10.1016/j.foodres.2021.110811>
- Arinal, V., & Azhari, M. (2023). Penerapan regresi linear untuk prediksi harga beras di Indonesia. *Jurnal Sains Dan Teknologi*, 5(1), 341–346.
- Aritonang, A. B. (2021). Produksi dan karakterisasi biocharampas tebu (*Saccharum officinarum* Linn) production and charaterization of bagasse biochar (*Saccharum officinarum* Linn). In */ Indo. J. Pure App. Chem* (Vol. 4, Issue 2). <http://jurnal.untan.ac.id/index.php/IJoPAC>
- Badan Pusat Statistik. (2022). *Analisis PDB Sektor Pertanian Tahun 2022* (M. Mas'ud & S. Wahyuningsih, Eds.). Pusat Data dan Sistem Informasi Pertanian.
- Baldocchi, D., & Ma, S. (2013). How will land use affect air temperature in the surface boundary layer? Lessons learned from a comparative study on the energy balance of an oak savanna and annual grassland in California, USA. *Tellus, Series B: Chemical and Physical Meteorology*, 65(1). <https://doi.org/10.3402/tellusb.v65i0.19994>
- Cabillo, C. M. (2019). Biomass production of lettuce (*Lactuca sativa* L.) under water stress. *International Journal of Scientific & Engineering Research*, 10. <http://www.ijser.org>
- Chamara, N., Islam, M. D., Bai, G. (Frank), Shi, Y., & Ge, Y. (2022). Ag-IoT for crop and environment monitoring: Past, present, and future. In *Agricultural Systems* (Vol. 203). Elsevier Ltd. <https://doi.org/10.1016/j.agsy.2022.103497>
- Chicco, D., Warrens, M. J., & Jurman, G. (2021). The coefficient of determination R-squared is more informative than SMAPE, MAE, MAPE, MSE and RMSE in regression analysis evaluation. *PeerJ Computer Science*, 7, 1–24. <https://doi.org/10.7717/PEERJ-CS.623>
- Concepcion, R., Lauguico, S., Almero, V. J., Dadios, E., Bandala, A., & Sybingco, E. (2020). Lettuce Leaf Water Stress Estimation Based on Thermo-Visible Signatures Using Recurrent Neural Network Optimized by Evolutionary Strategy. *IEEE Region 10 Humanitarian Technology Conference, R10-HTC, 2020-Decem*, 1–6. <https://doi.org/10.1109/R10-HTC49770.2020.9356963>



- Dalengkade, M. N. (2020). Profil 24 jam kuat penerangan, suhu udara, kelembaban udara di luar dan di dalam hutan mangrove. *BAREKENG: Jurnal Ilmu Matematika Dan Terapan*, 14(1), 047058. <https://doi.org/10.30598/barekengvol14iss1pp047058>
- Dickinson, M. B., & Johnson, E. A. (2004). Temperature-dependent rate models of vascular cambium cell mortality. *Canadian Journal of Forest Research*, 34(3), 546–559. <https://doi.org/10.1139/x03-223>
- Filgueiras, R., Mantovani, E. C., Althoff, D., Fernandes Filho, E. I., & da Cunha, F. F. (2019). Crop NDVI monitoring based on sentinel 1. *Remote Sensing*, 11(12). <https://doi.org/10.3390/rs11121441>
- Gamma Aditya Rahardi, Hasanur Mohammad Firdausi, Satryo Budi Utomo, Ali Rizal Chadir, & Dodi Setiabudi. (2023). Penerapan jaringan syaraf tiruan backpropagation untuk smart control early warning system (EWS). *Cyclotron*, 6(01), 44–49.
- Giménez-Gallego, J., González-Teruel, J. D., Soto-Valles, F., Jiménez-Buendía, M., Navarro-Hellín, H., & Torres-Sánchez, R. (2021). Intelligent thermal image-based sensor for affordable measurement of crop canopy temperature. *Computers and Electronics in Agriculture*, 188. <https://doi.org/10.1016/j.compag.2021.106319>
- Haryadi, R., Saputra, D., Wijayanti, F., Yusofa, D. A., Ferlis, N. N., Alizkan, U., & Priane, W. T. (2017). Pengaruh cahaya lampu 15 watt terhadap pertumbuhan tanaman pandan (*Pandanus Amaryllifolius*). *Gravity: Jurnal Ilmiah Penelitian Dan Pembelajaran Fisika*, 3(2), 100–109. <https://doi.org/10.30870/gravity.v3i2.2594>
- He, J. C., Xie, H. T., Li, S. Q., & Wei, X. (2018). Estimation of crop water stress of lettuce using infrared thermography. *International Agricultural Engineering Journal*, 8, 371–378.
- He, T. T., Huang, Y., Gao, H. R., Zhangzhong, L. L., Guo, R., & Yang, Y. R. (2023). Study on water stress index model of lettuce based on fusion of thermal infrared and visible light images. *Water Saving Irrigation*, 3, 116–122. <https://doi.org/10.12396/jsgg.2022169>
- Idso, S. B. (1982). Non-water-stressed baselines: A key to measuring and interpreting plant water stress. *Agricultural Meteorology*, 27(1–2), 59–70. [https://doi.org/10.1016/0002-1571\(82\)90020-6](https://doi.org/10.1016/0002-1571(82)90020-6)
- Izzuddin, A. (2016). Wirausaha santri berbasis budidaya tanaman hidroponik. *Dimas: Jurnal Pemikiran Agama Untuk Pemberdayaan*, 16(2), 351. <https://doi.org/10.21580/dms.2016.162.1097>
- Jin, X. B., Yu, X. H., Wang, X. Y., Bai, Y. T., Su, T. L., & Kong, J. L. (2020). Deep learning predictor for sustainable precision agriculture based on internet of things system. *Sustainability (Switzerland)*, 12(4). <https://doi.org/10.3390/su12041433>
- Johansson, B., American Statistical Association, Association for Computing Machinery Special Interest Group on Simulation, IEEE Systems, M., Winter Simulation Conference (WSC) 2010.12.05-08 Baltimore, Md., & Modeling and Analysis for Semiconductor Manufacturing Conference (MASM) 2010.12.05-08 Baltimore, Md. (2010). *Proceedings of the 2010 Winter*



Simulation Conference (WSC) 5-8 Dec. 2010, Baltimore, MD, USA ; [incorporating the] MASM (Modeling and Analysis for Semiconductor Manufacturing) Conference. IEEE.

- Jullyantari, N. L. P., Wijaya, I. M. A. S., & Budisanjaya, I. P. G. (2021). Pendugaan intensitas serangan penyakit BLB (Bacterial Leaf Blight) pada tanaman padi menggunakan pendekatan citra termal. *Jurnal BETA (Biosistem Dan Teknik Pertanian)*, 9(1), 86. <https://doi.org/10.24843/jbeta.2021.v09.i01.p09>
- Katimbo, A., Rudnick, D. R., DeJonge, K. C., Lo, T. H., Qiao, X., Franz, T. E., Nakabuye, H. N., & Duan, J. (2022). Crop water stress index computation approaches and their sensitivity to soil water dynamics. *Agricultural Water Management*, 266(February), 107575. <https://doi.org/10.1016/j.agwat.2022.107575>
- Khomarudin, M. R., & Sofan, P. (2010). Crop water stress index (Cwsi) estimation using modis data. *International Journal of Remote Sensing and Earth Sciences (IJReSES)*, 3, 80–84. <https://doi.org/10.30536/j.ijreses.2006.v3.a1208>
- Kume, A. (2017). Importance of the green color, absorption gradient, and spectral absorption of chloroplasts for the radiative energy balance of leaves. *Journal of Plant Research*, 130(3), 501–514. <https://doi.org/10.1007/s10265-017-0910-z>
- Luan, Y., Xu, J., Lv, Y., Liu, X., Wang, H., & Liu, S. (2021). Improving the performance in crop water deficit diagnosis with canopy temperature spatial distribution information measured by thermal imaging. *Agricultural Water Management*, 246(August 2019), 106699. <https://doi.org/10.1016/j.agwat.2020.106699>
- Luh Putu Mahyuni, & Luh Putu Yulika Rara Gayatri. (2021). Pengenalan sistem pertanian hidroponik rumah tangga di Desa Dalung. *Dinamisia : Jurnal Pengabdian Kepada Masyarakat*, 5(6), 1403–1412. <https://doi.org/10.31849/dinamisia.v5i6.6303>
- Ma, S., Liu, S., Gao, Z., Wang, X., Ma, S., & Wang, S. (2024). Water deficit diagnosis of winter wheat based on thermal infrared imaging. *Plants*, 13(3), 1–11. <https://doi.org/10.3390/plants13030361>
- Mahmuddin Yuliarmann. (2018). Pengaruh pengalaman, komitmen, motivasi kerja terhadap kinerja pegawai pada Dinas Pendidikan Kota Padang. *Jurnal Ekobistek Fakultas Ekonomi*, Vol. 7,(No. 2), 82–92. https://core.ac.uk/display/229586288?utm_source=pdf&utm_medium=banner&utm_campaign=pdf-decoration-v1
- Nabillah, I., & Ranggadara, I. (2020). Mean absolute percentage error untuk evaluasi hasil prediksi komoditas laut. *JOINS (Journal of Information System)*, 5(2), 250–255. <https://doi.org/10.33633/joins.v5i2.3900>
- Nugroho, A. P., Okayasu, T., Hoshi, T., Inoue, E., Hirai, Y., Mitsuoka, M., & Sutiarno, L. (2016). Development of a remote environmental monitoring and control framework for tropical horticulture and verification of its validity under unstable network connection in rural area. *Computers and Electronics in Agriculture*, 124, 325–339. <https://doi.org/10.1016/j.compag.2016.04.025>
- Pennisi, G., Pistillo, A., Orsini, F., Cellini, A., Spinelli, F., Nicola, S., Fernandez, J. A., Crepaldi, A., Gianquinto, G., & Marcelis, L. F. M. (2020). Optimal light



- intensity for sustainable water and energy use in indoor cultivation of lettuce and basil under red and blue LEDs. *Scientia Horticulturae*, 272(April), 109508. <https://doi.org/10.1016/j.scienta.2020.109508>
- Pineda, M., Barón, M., & Pérez-Bueno, M. L. (2021). Thermal imaging for plant stress detection and phenotyping. In *Remote Sensing* (Vol. 13, Issue 1, pp. 1–21). MDPI AG. <https://doi.org/10.3390/rs13010068>
- Pipatsitee, P., Eiumnoph, A., Praseartkul, P., Taota, K., Kongpugdee, S., Sakulleerungroj, K., & Cha-um, S. (2018). Application of infrared thermography to assess cassava physiology under water deficit condition. *Plant Production Science*, 21(4), 398–406. <https://doi.org/10.1080/1343943X.2018.1530943>
- Radinka, S., Zuhair, N., Nauli, G., Aulia, N., Mundi, C., & Yeninta, D. (2023). Peran mahasiswa dalam menjaga dan membudidayakan tanaman Hidroponik di jurusan PKK. *Indonesian Journal of Conservation*, 12(1), 24–32. <https://doi.org/10.15294/jsi.v12i1.40810>
- Ristian, U., Ruslianto, I., & Sari, K. (2022). Sistem monitoring smart greenhouse pada lahan terbatas berbasis internet of things (IoT). *Jurnal Edukasi Dan Penelitian Informatika (JEPIN)*, 8(1), 87. <https://doi.org/10.26418/jp.v8i1.52770>
- Romalasari, A., & Sobari, E. (2019). Produksi selada (*Lactuca sativa L.*) menggunakan sistem hidroponik dengan perbedaan sumber nutrisi. *Agrip prima : Journal of Applied Agricultural Sciences*, 3(1), 36–41. <https://doi.org/10.25047/agrip prima.v3i1.158>
- Ryu, K. H., Kim, G. Y., & Chae, H. Y. (2000). Monitoring greenhouse plants using thermal imaging. *IFAC Proceedings Volumes*, 33(29), 181–186. [https://doi.org/10.1016/s1474-6670\(17\)36773-3](https://doi.org/10.1016/s1474-6670(17)36773-3)
- Salma, N. (2023). *Analisis Kinerja Kamera Termal Flir Pada Sistem Pengamatan Temperatur Kanopi Dan Sensitivitasnya Terhadap Kondisi Lingkungan Di Greenhouse*. Universitas Gadjah Mada.
- Sanjeevi, P., Prasanna, S., Siva Kumar, B., Gunasekaran, G., Alagiri, I., & Vijay Anand, R. (2020). Precision agriculture and farming using Internet of Things based on wireless sensor network. *Transactions on Emerging Telecommunications Technologies*, 31(12), 1–14. <https://doi.org/10.1002/ett.3978>
- Siebert, S., Ewert, F., Eyshi Rezaei, E., Kage, H., & Graß, R. (2014). Impact of heat stress on crop yield - On the importance of considering canopy temperature. *Environmental Research Letters*, 9(4). <https://doi.org/10.1088/1748-9326/9/4/044012>
- Singh, R. K., Berkvens, R., & Weyn, M. (2021). AgriFusion: An Architecture for IoT and Emerging Technologies Based on a Precision Agriculture Survey. In *IEEE Access* (Vol. 9, pp. 136253–136283). Institute of Electrical and Electronics Engineers Inc. <https://doi.org/10.1109/ACCESS.2021.3116814>
- Singh, V., Sharma, N., & Singh, S. (2020). A review of imaging techniques for plant disease detection. *Artificial Intelligence in Agriculture*, 4, 229–242. <https://doi.org/10.1016/j.aiia.2020.10.002>



- Sondakh, J., Rembang, J. H. W., & Syahyuti, N. (2021). Karakteristik, potensi generasi milenial dan perspektif pengembangan pertanian presisi di indonesia. *Forum Penelitian Agro Ekonomi*, 38(2), 155. <https://doi.org/10.21082/fae.v38n2.2020.155-166>
- Still, C., Powell, R., Aubrecht, D., Kim, Y., Helliker, B., Roberts, D., Richardson, A. D., & Goulden, M. (2019). Thermal imaging in plant and ecosystem ecology: applications and challenges. *Ecosphere*, 10(6). <https://doi.org/10.1002/ecs2.2768>
- Sulaiman, A. S. S., Ahmad, M. A., Hassim, S. A., & Azman, M. S. A. (2021). Evaluation of fertilizer electrical conductivity (Ec) and temperature distribution via vertical farming system under plant factory. *Basrah Journal of Agricultural Sciences*, 34(special issue 1), 63–72. <https://doi.org/10.37077/25200860.2021.34.SP1.7>
- Syakti, F., & Agustina, M. (2023). *Estimasi Ketinggian Planetary Boundary Layer Berdasarkan Data Radiosonde Menggunakan Metode Gradien Vertikal Suhu Udara*. 4(2), 718–729. <https://doi.org/10.30865/klik.v4i2.1211>
- Thut, H. F. (1938). Relative humidity variations affecting transpiration. In *Source: American Journal of Botany* (Vol. 25, Issue 8).
- Vadivambal, R., & Jayas, D. S. (2011). Applications of thermal imaging in agriculture and food industry-a review. *Food and Bioprocess Technology*, 4(2), 186–199. <https://doi.org/10.1007/s11947-010-0333-5>
- Virnodkar, S. S., Pachghare, V. K., Patil, V. C., & Jha, S. K. (2020). Remote sensing and machine learning for crop water stress determination in various crops: a critical review. In *Precision Agriculture* (Vol. 21, Issue 5). Springer US. <https://doi.org/10.1007/s11119-020-09711-9>
- Wardani, S. (2023). *Aplikasi Thermal Imaging Untuk Estimasi Crop Water Stress Index Pada Tanaman Dalam Greenhouse*. Universitas Gadjah Mada.
- Wijanarko, A., Nugroho, A. P., Kusumastuti, A. I., Dzaky, M. A. F., Masithoh, R. E., Sutiarto, L., & Okayasu, T. (2021). Mobile mecvision: Automatic plant monitoring system as a precision agriculture solution in plant factories. *IOP Conference Series: Earth and Environmental Science*, 733(1). <https://doi.org/10.1088/1755-1315/733/1/012026>
- Wiratmoko, A. (2021). *Perancangan Sistem Monitoring Termografi Berbasis Thermal Imaging Camera Pada Growth Chamber*. Universitas Gadjah Mada.
- Wulandari, W., & Rifaldi, T. (2021). Sistem penyemaian otomatis menggunakan teknik computer numerical control pada budidaya tanaman selada. *Jurnal Keteknikan Pertanian Tropis Dan Biosistem*, 9(2), 112–121. <https://doi.org/10.21776/ub.jkptb.2021.009.02.02>
- Zhang, X., Cai, J., Wollenweber, B., Liu, F., Dai, T., Cao, W., & Jiang, D. (2013). Multiple heat and drought events affect grain yield and accumulations of high molecular weight glutenin subunits and glutenin macropolymers in wheat. *Journal of Cereal Science*, 57(1), 134–140. <https://doi.org/10.1016/j.jcs.2012.10.010>