

DAFTAR PUSTAKA

- Achari, G. A., & Kowshik, M. (2018). Recent Developments on Nanotechnology in Agriculture: Plant Mineral Nutrition, Health, and Interactions with Soil Microflora. *Journal of Agricultural and Food Chemistry*, 66(33), 8647–8661. <https://doi.org/10.1021/acs.jafc.8b00691>
- Achmad, S. R., & Putra, R. C. (2016). Pengelolaan Lengas Tanah Dan Laju Pertumbuhan Tanaman Karet Belum Menghasilkan Pada Musim Kemarau Dan Penghujan. *Warta Per karetan*, 35(1), 1–10. <https://doi.org/10.22302/wp.v35i1.75>
- Ahanger, M. A., Qi, M., Huang, Z., Xu, X., Begum, N., Qin, C., Zhang, C., Ahmad, N., Mustafa, N. S., Ashraf, M., & Zhang, L. (2021). Improving growth and photosynthetic performance of drought stressed tomato by application of nano-organic fertilizer involves up-regulation of nitrogen, antioxidant and osmolyte metabolism. *Ecotoxicology and Environmental Safety*, 216. <https://doi.org/10.1016/j.ecoenv.2021.112195>
- Ahmad, M. A., Murali, P. V., & Marimuthu, G. (2014). Impact of salicylic acid on growth, photosynthesis and compatible solute accumulation in allium cepa L. Subjected to drought stress. *International Journal of Agricultural and Food Science*, 4(1), 22–30.
- Ahmadian, K., Jalilian, J., & Pirzad, A. (2021). Nano-fertilizers improved drought tolerance in wheat under deficit irrigation. *Agricultural Water Management*, 244, 106544. <https://doi.org/10.1016/J.AGWAT.2020.106544>
- Ahmadikhah, A., & Marufinia, A. (2016). Effect of reduced plant height on drought tolerance in rice. *3 Biotech*, 6(2), 1–9. <https://doi.org/10.1007/s13205-016-0542-3>
- Amin, M. W., Aryan, S., Habibi, N., Kakar, K., & Zahid, T. (2022). Elucidation of photosynthesis and yield performance of rice (*Oryza sativa* L.) under drought stress conditions. *Plant Physiology Reports*, 27(1), 143–151. <https://doi.org/10.1007/s40502-021-00613-0>
- Aqaei, P., Weisany, W., Diyanat, M., Razmi, J., & Struik, P. C. (2020). Response of maize (*Zea mays* L.) to potassium nano-silica application under drought stress. <https://doi.org/10.1080/01904167.2020.1727508>, 43(9), 1205–1216. <https://doi.org/10.1080/01904167.2020.1727508>
- Arnon, D. I. (1949). Plant physiology. *Plant Physiology*, 24(1), 1–15. <https://doi.org/10.2307/4118807>
- Arsyadmunir, A. (2016). *PERIODE KRITIS KEKERINGAN PADA PERTUMBUHAN DAN PRODUKSI KACANG HIJAU (Vigna radiata L.)*. 9(2), 132–140.
- Azizah, F. (2023). *TANGGAPAN PERTUMBUHAN DAN HASIL BAWANG MERAH (Allium cepa L. Aggregatum group) TERHADAP APLIKASI SILIKA NANOABU PADA KONDISI KEKERINGAN*.

- Bacher, H., Sharaby, Y., Walia, H., & Peleg, Z. (2022). Modifying root-to-shoot ratio improves root water influxes in wheat under drought stress. *Journal of Experimental Botany*, 73(5), 1643–1654. <https://doi.org/10.1093/jxb/erab500>
- Balai Penelitian Tanah. (2009). *Analisis Kimia Tanah, Tanaman, Air, dan Pupuk* (B. H. Prasetyo, D. Santoso, & L. Retno W (eds.); Edisi 2). Balai Penelitian Tanah.
- Barciszewski, J., Rattan, S. I. S., Siboska, G., & Clark, B. F. C. (1999). *Kinetin — 45 years on*. 148, 37–45.
- Bashir, S. S., Hussain, A., Hussain, S. J., Wani, O. A., Zahid Nabi, S., Dar, N. A., Baloch, F. S., & Mansoor, S. (2021). Plant drought stress tolerance: understanding its physiological, biochemical and molecular mechanisms. *Biotechnology and Biotechnological Equipment*, 35(1), 1912–1925. <https://doi.org/10.1080/13102818.2021.2020161>
- Bertolino, L. T., Caine, R. S., & Gray, J. E. (2019). Impact of Stomatal Density and Morphology on Water-Use Efficiency in a Changing World. *Frontiers in Plant Science*, 10, 225. <https://doi.org/https://doi.org/10.3389/fpls.2019.00225>
- Bhosale, Y. K., Varghese, S. M., Thivya, P., Hema, V., & Sinija, V. R. (2021). Studies on assessment of safety and nutritional quality of shallot waste fractions. *Journal of Food Processing and Preservation*, 45(2). <https://doi.org/10.1111/jfpp.15147>
- Björklund, S., Antti, H., Uddestrand, I., Moritz, T., & Sundberg, B. (2007). Cross-talk between gibberellin and auxin in development of *Populus* wood: Gibberellin stimulates polar auxin transport and has a common transcriptome with auxin. *Plant Journal*, 52(3), 499–511. <https://doi.org/10.1111/j.1365-313X.2007.03250.x>
- Boora, R., Sheoran, P., Rani, N., Kumari, S., Thakur, R., & Grewal, S. (2023). Biosynthesized Silica Nanoparticles (Si NPs) Helps in Mitigating Drought Stress in Wheat Through Physiological Changes and Upregulation of Stress Genes. *Silicon*. <https://doi.org/10.1007/s12633-023-02439-x>
- BPS. (2022). *Jadi Komoditas Andalan, Konsumsi Bawang Merah Sektor Rumah Tangga Naik 8,33% pada 2021*. <https://databoks.katadata.co.id/datapublish/2022/10/24/jadi-komoditas-andalan-konsumsi-bawang-merah-sektor-rumah-tangga-naik-833-pada-2021#:~:text=Berdasarkan hasil Survei Sosial Ekonomi,%2C33%25 dibandingkan tahun 2020.>
- Brukhin, V., & Morozova, N. (2011). Plant growth and development - Basic knowledge and current views. *Mathematical Modelling of Natural Phenomena*, 6(2), 1–53. <https://doi.org/10.1051/mmnp/20116201>
- Budke, C., thor Straten, S., Mühling, K. H., Broll, G., & Daum, D. (2020). Iodine biofortification of field-grown strawberries – Approaches and their limitations. *Scientia Horticulturae*, 269. <https://doi.org/10.1016/j.scienta.2020.109317>
- Bulgari, R., Cocetta, G., Trivellini, A., Vernieri, P., & Ferrante, A. (2015). Biostimulants and crop responses: A review. In *Biological Agriculture and*

Horticulture (Vol. 31, Issue 1, pp. 1–17). Taylor and Francis Ltd. <https://doi.org/10.1080/01448765.2014.964649>

Caine, R. S., Harrison, E. L., Sloan, J., Flis, P. M., Fischer, S., Khan, M. S., Nguyen, P. T., Nguyen, L. T., Gray, J. E., & Croft, H. (2023). The influences of stomatal size and density on rice abiotic stress resilience. *New Phytologist*, 237(6), 2180–2195. <https://doi.org/https://doi.org/10.1111/nph.18704>

Claussen, W. (2005). *Proline as a measure of stress in tomato plants*. 168, 241–248. <https://doi.org/10.1016/j.plantsci.2004.07.039>

Cuellar-Ortiz, S. M., De La Paz Arrieta-Montiel, M., Acosta-Gallegos, J., & Covarrubias, A. A. (2008). Relationship between carbohydrate partitioning and drought resistance in common bean. *Plant, Cell and Environment*, 31(10), 1399–1409. <https://doi.org/10.1111/J.1365-3040.2008.01853.X>

Deshpande, P., Dapkekar, A., Oak, M. D., Paknikar, K. M., & Rajwade, J. M. (2017). Zinc complexed chitosan/TPP nanoparticles: A promising micronutrient nanocarrier suited for foliar application. *Carbohydrate Polymers*, 165, 394–401. <https://doi.org/10.1016/j.carbpol.2017.02.061>

Efendi, R., M., A. T., & Azrai, M. (2017). Daya Gabung Inbrida Jagung Toleran Cekaman Kekeringan dan Nitrogen Rendah pada Pembentukan Varietas Hibrida. *Jurnal Penelitian Pertanian Tanaman Pangan*, 1(2), 83. <https://doi.org/10.21082/jpptp.v1n2.2017.p83-96>

El Mamoun, I., Bouzroud, S., Zouine, M., & Smouni, A. (2023). The Knockdown of AUXIN RESPONSE FACTOR 2 Confers Enhanced Tolerance to Salt and Drought Stresses in Tomato (*Solanum lycopersicum* L.). *Plants*, 12(15). <https://doi.org/10.3390/plants12152804>

Fadhilah, N., & dan Kristanto, K. B. (2021). Respon pertumbuhan dan produksi padi gogo (*Oryza sativa* L.) terhadap cekaman kekeringan dan pemupukan silika (Growth and production of upland rice response to drought stress and silica fertilization). *J. Agro Complex*, 5(1), 1–13. <http://ejournal2.undip.ac.id/index.php/joac>

Fahad, S., Bajwa, A. A., Nazir, U., Anjum, S. A., Farooq, A., Zohaib, A., Sadia, S., Nasim, W., Adkins, S., Saud, S., Ihsan, M. Z., Alharby, H., Wu, C., Wang, D., & Huang, J. (2017). Crop production under drought and heat stress: Plant responses and management options. In *Frontiers in Plant Science* (Vol. 8). Frontiers Media S.A. <https://doi.org/10.3389/fpls.2017.01147>

Fajriyah, N. (2017). *Kiat Sukses Budidaya Bawang Merah* (A. Mahardika & T. N.F (eds.); 1st ed.). Bio Genesis.

Fang, Y., & Xiong, L. (2015). General mechanisms of drought response and their application in drought resistance improvement in plants. *Cellular and Molecular Life Sciences*, 72, 673–689. <https://doi.org/10.1007/s00018-014-1767-0>

Fariudin, R., Sulistyarningsih, E., & Waluyo, S. (2013). Growth and Yield of Two Cultivars of Lettuce (*Lactuca Sativa*, L.) in Aquaponics in Gourami and Tilapia Fishpond. *Vegetalika*, 2(1), 66–81. <https://jurnal.ugm.ac.id/jbp/index>

- Farooq, M., Wahid, A., Kobayashi, N., Fujita, D., & Basra, S. M. A. (2009). Plant Drought Stress: Effects, Mechanisms and Management. In *Sustainable Agriculture In: Lichtfouse, E., Navarrete, M., Debaeke, P., Véronique, S., Alberola, C. (eds) Sustainable Agriculture* (pp. 153–188). Springer. <https://doi.org/10.4337/9781788974912.S.98>
- Fatirahma, F., Kastono, D., Budidaya Pertanian, D., Pertanian, F., & Gadjah Mada, U. (2020). *Pengaruh Pupuk Organik Cair terhadap Hasil Bawang Merah (Allium cepa L. Aggregatum group) di Lahan Pasir The Effect of Liquid Organic Fertilizer on Yield of Shallots (Allium cepa L. aggregatum group) on Coastal Sandy Land*. 9(1), 305–315. <https://doi.org/10.22146/veg.47792>
- Fen, L. L., Ismail, M. R., Zulkarami, B., Rahman, M. S. A., & Islam, M. R. (2015). Physiological and molecular characterization of drought responses and screening of drought tolerant rice varieties. *Biosci. j.(Online)*, 709–718.
- Fikri, M. S., Indradewa, D., & Putra, E. T. S. (2015). Pengaruh Pemberian Kompos Limbah Media Tanam Jamur Pada Pertumbuhan dan Hasil Kangkung Darat (*Ipomoea reptans* Poir.). *Vegetalika*, 4(2), 79–89.
- Forniawan, A., Sujarwanta, A., & Muhfahroyin, D. (2017). Pengaruh intensitas cahaya dan pupuk cair LCN terhadap produksi bawang merah (Eksperimen untuk Bahan Problem Based Learning). *Jurnal Lentera Pendidikan Pusat Penelitian LPPM UM METRO*, 2(2), 133–141.
- Fukuda, N., Fujita, M., Ohta, Y., Sase, S., Nishimura, S., & Ezura, H. (2008). Directional blue light irradiation triggers epidermal cell elongation of abaxial side resulting in inhibition of leaf epinasty in geranium under red light condition. *Scientia Horticulturae*, 115(2), 176–182. <https://www.sciencedirect.com/science/article/pii/S030442380700297X>
- Gardener, F., Pearce, R., & Mitchell, R. (2017). *Physiology of Crop Plants*. Scientific Publisher.
- Ghorbanpour, M., Mohammadi, H., & Kariman, K. (2020). Nanosilicon-based recovery of barley (: *Hordeum vulgare*) plants subjected to drought stress. *Environmental Science: Nano*, 7(2), 443–461. <https://doi.org/10.1039/c9en00973f>
- Ginting, T. H. U., Ginting, J., & Damanik, R. I. M. (2024). *Morfologi Bawang Merah (Allium ascalonicum L.) Pada Cekaman Kekeringan Terhadap Aplikasi Asam Salisilat Morphology of Shallots (Allium ascalonicum L .) Under Drought Stress Against Salicylic Acid Application*. 20(1), 90–98. <https://doi.org/10.30598/jbdp/2024.20.1.90>
- Gong, H. J., Chen, K. M., Chen, G. C., Wang, S. M., & Zhang, C. L. (2003). Effects of silicon on growth of wheat under drought. *Journal of Plant Nutrition*, 26(5), 1055–1063. <https://doi.org/10.1081/PLN-120020075>
- Gong, H., Zhu, X., Chen, K., Wang, S., & Zhang, C. (2005). Silicon alleviates oxidative damage of wheat plants in pots under drought. *Plant Science*, 169(2), 313–321. <https://doi.org/10.1016/j.plantsci.2005.02.023>
- Guerriero, G., Hausman, J. F., & Legay, S. (2016). Silicon and the plant

extracellular matrix. *Frontiers in Plant Science*, 7(APR2016), 1–8. <https://doi.org/10.3389/fpls.2016.00463>

Hadiawati, L., Suriadi, A., & Irianty, F. (2017). *PENURUNAN HASIL BAWANG MERAH AKIBAT KEKERINGAN PADA BEBERAPA FASE PERTUMBUHAN*.

Haghpanah, M., Hashemipetroudi, S., Arzani, A., & Araniti, F. (2024). Drought Tolerance in Plants: Physiological and Molecular Responses. *Plants*, 13(21), 1–30. <https://doi.org/10.3390/plants13212962>

Haridjaja, O., Putro, D., Baskoro, T., & Setianingsih, M. (2013). *Different Levels of Field Capacity by Alhricks, Free Drainage, and Pressure Plate Methods at Different Soil Texture and Relation for Sunflower Growth (Helianthus annuus L.)*. 15(2), 52–59.

Harita, G., Panggabean, E. L., & Rahman, A. (2022). AGRISAINS: Jurnal Ilmiah Magister Agribisnis Respon Pertumbuhan dan Produksi Tanaman Gambas (*Luffa acutangula* L.) Dengan Pupuk Organik Cair Limbah Industri Tempe dan Kompos Kulit Bawang Merah Response of Gambas (*Luffa acutangula* L.) Growth and Production with Liquid Organic Fertilizer for Tempe Industry Waste and Compost Onion Skin. *Jurnal Ilmiah Magister Agribisnis*, 4(2), 93–107. <https://doi.org/10.31289/agrisains.v4i2.1400>

Hasanuzzaman, M., Parvin, K., Bardhan, K., Nahar, K., Anee, T. I., Masud, A. A. C., & Fotopoulos, V. (2021). Biostimulants for the regulation of reactive oxygen species metabolism in plants under abiotic stress. In *Cells* (Vol. 10, Issue 10). MDPI. <https://doi.org/10.3390/cells10102537>

Hassan, I. F., Ajaj, R., Gaballah, M. S., Ogbaga, C. C., Kalaji, H. M., Hatterman-valenti, H. M., & Alam-eldein, S. M. (2022). Foliar Application of Nano-Silicon Improves the Physiological and Biochemical Characteristics of 'Kalamata' Olive Subjected to Deficit Irrigation in a Semi-Arid Climate. *Plants*, 11(12). <https://doi.org/10.3390/plants11121561>

Hatfield, J. L., & Prueger, J. H. (2015). Temperature extremes: Effect on plant growth and development. *Weather and Climate Extremes*, 10, 4–10. <https://doi.org/10.1016/j.wace.2015.08.001>

Haynes, R. J. (2017). Significance and Role of Si in Crop Production. In *Advances in Agronomy* (Vol. 146, pp. 83–166). Academic Press Inc. <https://doi.org/10.1016/bs.agron.2017.06.001>

Hazarika, A., Yadav, M., Yadav, D. K., & Yadav, H. S. (2022). An overview of the role of nanoparticles in sustainable agriculture. In *Biocatalysis and Agricultural Biotechnology* (Vol. 43). Elsevier Ltd. <https://doi.org/10.1016/j.bcab.2022.102399>

Heriyanto, N., Rogomulyo, R., & Indradewa, D. (2019). Pengaruh Cekaman Kekeringan Terhadap Hasil dan Komponen Hasil Lima Kultivar Kedelai (*Glycine max* L.). *Vegetalika*, 8(4), 227. <https://doi.org/10.22146/veg.42580>

Hirt, H., & Kazuo, S. (2003). Plant responses to abiotic stress. In *Springer Science & Business Media*.

- Hong, J., Wang, C., Wagner, D. C., Gardea-Torresdey, J. L., He, F., & Rico, C. M. (2021). Foliar application of nanoparticles: Mechanisms of absorption, transfer, and multiple impacts. In *Environmental Science: Nano* (Vol. 8, Issue 5, pp. 1196–1210). Royal Society of Chemistry. <https://doi.org/10.1039/d0en01129k>
- Hu, F., Zhang, Y., & Guo, J. (2023). Effects of drought stress on photosynthetic physiological characteristics, leaf microstructure, and related gene expression of yellow horn. *Plant Signaling and Behavior*, 18(1), 1–10. <https://doi.org/10.1080/15592324.2023.2215025>
- Hussain, S., Shuxian, L., Mumtaz, M., Shafiq, I., Iqbal, N., Brestic, M., Shoaib, M., Sisi, Q., Li, W., Mei, X., Bing, C., Zivcak, M., Rastogi, A., Skalicky, M., Hejnak, V., Weiguo, L., & Wenyu, Y. (2021). Foliar application of silicon improves stem strength under low light stress by regulating lignin biosynthesis genes in soybean (*Glycine max* (L.) Merr.). *Journal of Hazardous Materials*, 401. <https://doi.org/10.1016/j.jhazmat.2020.123256>
- Indarwati LD, Sulistyarningsih E, & Kurniasih B. (2021). IOP Conference Series: Earth and Environmental Science Impact of salicylic acid and biosilica application on plant growth of shallot under water deficit. *International Seminar on Agriculture, Biodiversity, Food Security and Health*, 883(1), 012049. <https://doi.org/10.1088/1755-1315/883/1/012049>
- J. Csiszár, E. Lantos, I. Tari, E. Madoşá, B. Wodala, Á. Vashegy, F. Horváth, A. Pécsvárad, M. Szabó, B. Bartha, Á. Gallé, A. Lazăr, G. Coradini, M. Staicu, S. Postelnicu, S. Mihacea, G. Nedelea, & L. Erdei. (2007). Antioxidant enzyme activities in *Allium* species and their cultivars under water stress. *Plant Soil and Environment*, 53(12), 517.
- Kalal, P. R., Singh Tomar, R., & Jajoo, A. (2022). SiO₂ nanopriming protects PS I and PSII complexes in wheat under drought stress. *Plant Nano Biology*, 2, 100019. <https://doi.org/10.1016/j.plana.2022.100019>
- Kar, R. K. (2011). Plant responses to water stress: Role of reactive oxygen species. *Plant Signaling and Behavior*, 6(11), 1741–1745. <https://doi.org/10.4161/psb.6.11.17729>
- Karimi, J., & Mohsenzadeh, S. (2015). Effects of Silicon Oxide Nanoparticles on Growth and Physiology of Wheat Seedlings. *Физиология Растений*, 63(1), 126–130. <https://doi.org/10.7868/s0015330316010103>
- Khaleghi, E., Arzani, K., Moallemi, N., & Barzegar, M. (2012). Evaluation of Chlorophyll Content and Chlorophyll Fluorescence Parameters and Relationships between Chlorophyll a, b and Chlorophyll Content Index under Water Stress in *Olea europaea* cv. Dezful. *International Scholarly and Scientific Research & Innovation*, 6(8), 2108–2111.
- Khan, M. Y., Prakash, V., Yadav, V., Chauhan, D. K., Prasad, S. M., Ramawat, N., Singh, V. P., Tripathi, D. K., & Sharma, S. (2019). Regulation of cadmium toxicity in roots of tomato by indole acetic acid with special emphasis on reactive oxygen species production and their scavenging. *Plant Physiology and Biochemistry*, 142(April), 193–201. <https://doi.org/10.1016/j.plaphy.2019.05.006>

- Khandani, Y., Sarikhani, H., Gholami, M., Rad, A. C., Yousefi, S., Sodini, M., & Sivilotti, P. (2024). Exogenous Auxin Improves the Growth of Grapevine (*Vitis vinifera* L.) under Drought Stress by Mediating Physiological, Biochemical and Hormonal Modifications. *Journal of Soil Science and Plant Nutrition*, 24(2), 3422–3440. <https://doi.org/10.1007/s42729-024-01765-2>
- Kim, Y.-J., Shanmugasundaram, S., Yun, S.-J., Park, H.-K., & Park, M.-S. (2001). A Simple Method of Seedling Screening for Drought Tolerance in Soybean TT -. In *한국작물학회지* (Vol. 46, Issue 4, pp. 284–288). <https://db.koreascholar.com/Article/Detail/13446>
- Kiremit, M. S., & Arslan, H. (2018). Response of Leek (*Allium porrum* L.) to Different Irrigation Water Levels Under Rain Shelter. *Communications in Soil Science and Plant Analysis*, 49(1), 99–108. <https://doi.org/10.1080/00103624.2017.1421652>
- Kumar, M., Barbhai, M. D., Hasan, M., Punia, S., Dhumal, S., Radha, Rais, N., Chandran, D., Pandiselvam, R., Kothakota, A., Tomar, M., Satankar, V., Senapathy, M., Anitha, T., Dey, A., Sayed, A. A. S., Gadallah, F. M., Amarowicz, R., & Mekhemar, M. (2022). Onion (*Allium cepa* L.) peels: A review on bioactive compounds and biomedical activities. In *Biomedicine and Pharmacotherapy* (Vol. 146). Elsevier Masson s.r.l. <https://doi.org/10.1016/j.biopha.2021.112498>
- Leite, V. M., Rosolem, C. A., & Rodrigues, J. D. (2003). *GIBBERELLIN AND CYTOKININ EFFECTS ON SOYBEAN GROWTH*. 2000, 537–541.
- Long, S. P., Humphries, S., & Falkowski, P. G. (1994). Photoinhibition of photosynthesis in nature. *Annual Review of Plant Physiology and Plant Molecular Biology*, 45, 633–662. <https://doi.org/10.1146/annurev.pp.45.060194.003221>
- Lou, H., Zhao, B., Peng, Y., El-Badri, A. M., Batool, M., Wang, C., Wang, Z., Huang, W., Wang, T., Li, Z., Xu, Z., Wang, J., Wang, B., Kuai, J., & Zhou, G. (2023). Auxin plays a key role in nitrogen and plant density-modulated root growth and yield in different plant types of rapeseed. *Field Crops Research*, 302(July), 109066. <https://doi.org/10.1016/j.fcr.2023.109066>
- Lux, A., Luxová, M., Hattori, T., Inanaga, S., & Sugimoto, Y. (2002). Silicification in sorghum (*Sorghum bicolor*) cultivars with different drought tolerance. *Physiologia Plantarum*, 115(1), 87–92. <https://doi.org/10.1034/j.1399-3054.2002.1150110.x>
- Ma, X., Zhou, G., Li, G., & Wang, Q. (2021). Quantitative evaluation of the trade-off growth strategies of maize leaves under different drought severities. *Water (Switzerland)*, 13(13), 1–13. <https://doi.org/10.3390/w13131852>
- Maghsoudi, K., Emam, Y., & Pessarakli, M. (2016). Effect of silicon on photosynthetic gas exchange, photosynthetic pigments, cell membrane stability and relative water content of different wheat cultivars under drought stress conditions. [Http://Dx.Doi.Org.Ezproxy.Ugm.Ac.Id/10.1080/01904167.2015.1109108](http://Dx.Doi.Org.Ezproxy.Ugm.Ac.Id/10.1080/01904167.2015.1109108), 39(7), 1001–1015. <https://doi.org/10.1080/01904167.2015.1109108>

- Majda, M., & Robert, S. (2018). The role of auxin in cell wall expansion. *International Journal of Molecular Sciences*, 19(4). <https://doi.org/10.3390/ijms19040951>
- Malik, M. A., Wani, A. H., Mir, S. H., Rehman, I. U., Tahir, I., Ahmad, P., & Rashid, I. (2021). Elucidating the role of silicon in drought stress tolerance in plants. *Plant Physiology and Biochemistry*, 165(April), 187–195. <https://doi.org/10.1016/j.plaphy.2021.04.021>
- Margiwiyatno, A., & Sumarni, E. (2011). *Modifikasi Iklim Mikro pada Bawang Merah Hidroponik dalam Rangka Memperoleh Bibit Bermutu*. 25(1), 43–47. <https://media.neliti.com/media/publications/21582-ID-modifikasi-iklim-mikro-pada-bawang-merah-hidroponik-dalam-rangka-memperoleh-bibi.pdf>
- Marhama, H., Triharyanto, E., Theresia, M., & Budiastuti, S. (2023). *ANALISIS PERTUMBUHAN DAN HASIL VARIETAS BAWANG MERAH DENGAN PUPUK HAYATI DI LUAR MUSIM TANAM*. 10(May), 320–333.
- Mark, P. (2024). *Kenaikan suhu Bumi tembus ambang batas 1,5 Celsius untuk pertama kalinya*. BBC News. <https://www.bbc.com/indonesia/articles/cedqye0qng1o#:~:text=Pemanasan global periode Februari 2023 hingga Januari 2024,Januari tercatat sebagai bulan terpanas kedelapan secara berturut-turut>.
- Medyouni, I., Zouaoui, R., Rubio, E., Serino, S., Ahmed, H. Ben, & Bertin, N. (2021). Effects of water deficit on leaves and fruit quality during the development period in tomato plant. *Food Science and Nutrition*, 9(4), 1949–1960. <https://doi.org/10.1002/fsn3.2160>
- Meier, S., Moore, F., Morales, A., González, M. E., Seguel, A., Meriño-Gergichevich, C., Rubilar, O., Cumming, J., Aponte, H., Alarcón, D., & Mejías, J. (2020). Synthesis of calcium borate nanoparticles and its use as a potential foliar fertilizer in lettuce (*Lactuca sativa*) and zucchini (*Cucurbita pepo*). *Plant Physiology and Biochemistry*, 151, 673–680. <https://doi.org/10.1016/j.plaphy.2020.04.025>
- Mhamdi, A. (2023). CHAPTER Two - Hydrogen peroxide in plants. *Advances in Botanical Research*, 105, 43–75.
- Mir, R. A., Bhat, B. A., Yousuf, H., Islam, S. T., Raza, A., Rizvi, M. A., Charagh, S., Albaqami, M., Sofi, P. A., & Zargar, S. M. (2022). Multidimensional Role of Silicon to Activate Resilient Plant Growth and to Mitigate Abiotic Stress. *Frontiers in Plant Science*, 13(March). <https://doi.org/10.3389/fpls.2022.819658>
- Morales, M., & Munné-Bosch, S. (2019). Malondialdehyde: Facts and artifacts. *Plant Physiology*, 180(3), 1246–1250. <https://doi.org/10.1104/pp.19.00405>
- Mungara, E., Indradewa, D., & Rogomulyo, R. (2013). Analisis Pertumbuhan dan Hasil Padi Sawah pada Sistem Pertanian Konvensional, Transisi Organik, dan Organik. *Vegetalika*, 2(3), 2–12.
- Naaz, H., Rawat, K., Saffeuallah, P., & Umar, S. (2022). Silica nanoparticles synthesis and applications in agriculture for plant fertilization and protection:

a review. In *Environmental Chemistry Letters*. Springer Science and Business Media Deutschland GmbH. <https://doi.org/10.1007/s10311-022-01515-9>

Nanopartikel. (2024). *Nanopartikel*. Wikipedia. <https://id.wikipedia.org/wiki/Nanopartikel>

Nasrudin, N., & Firmansyah, E. (2020). Respon pertumbuhan vegetatif padi varietas IPB 4S pada kondisi cekaman kekeringan. *Agromix*, 11(2), 218–226. <https://doi.org/10.35891/agx.v11i2.2066>

Natasha, Shahid, M., Farooq, A. B. U., Rabbani, F., Khalid, S., & Dumat, C. (2020). Risk assessment and biophysiochemical responses of spinach to foliar application of lead oxide nanoparticles: A multivariate analysis. *Chemosphere*, 245. <https://doi.org/10.1016/j.chemosphere.2019.125605>

Nazir, F., Fariduddin, Q., & Khan, T. A. (2020). Hydrogen peroxide as a signalling molecule in plants and its crosstalk with other plant growth regulators under heavy metal stress. *Chemosphere*, 252, 126486. <https://doi.org/10.1016/j.chemosphere.2020.126486>

Pamungkas, S. S. T., Suwanto, S., & Noor, F. (2022). Drought Stress: Responses and Mechanism in Plants. In *Reviews in Agricultural Science* (Vol. 10, pp. 168–175).

Panguriseng, D. (2016). Capillary Shock Phenomena of Groundwater in Land of Irrigation Groundwater Users in Takalar. *National Conference FGDTPTM Engineering*, June, 1–10. https://www.researchgate.net/publication/303989142_Capillary_Shock_Phenomena_of_Groundwater_in_Land_of_Irrigation_Groundwater_Users_in_Takalar

Parveen, A., Liu, W., Hussain, S., Asghar, J., Perveen, S., & Xiong, Y. (2019). Silicon Priming Regulates Morpho-Physiological Growth and Oxidative Metabolism in Maize under. *Plants*, 8(10), 431.

Permana, I., Anggoro, O., Carsidi, D., Alam, S., Sihaloho, N. K., M.Killa, Y., Wita, W. A., Putra, R., Mutiara, C., Masnag, A., Zurrahmi, W., & Elizabeth, R. (2023). Kesuburan Tanah dan Pemupukan. In M. . Diana Purnama Sari (Ed.), *Universitas Sumatera Utara Press, Medan* (cetakan ke, Issue September). Get Press Indonesia.

Perrot-Rechenmann, C. (2010). Cellular responses to auxin: division versus expansion. *Cold Spring Harbor Perspectives in Biology*, 2(5), 1–15. <https://doi.org/10.1101/cshperspect.a001446>

Purbajanti, E. D. (2023). *Yield and component yield of onion (Allium cepa L .) effect of salicylic acid under drought stress in Indonesia*. 9411.

Rabinowitch, H. . (1990). *Onion and Allied Crops* (H. D. Rabinowitch & J. L. Brewster (eds.); 1st ed., Vol. 1). CRC Press.

Rahayu, E., & Ali, N. V. B. (2004). *Bawang Merah*.

Rahmawati, N., & Wulandari, N. (2024). Foliar application of SiO₂nanoparticles to increase shallot production under water stress as an effort to mitigate climate

- change. *IOP Conference Series: Earth and Environmental Science*, 1302(1), 8–13. <https://doi.org/10.1088/1755-1315/1302/1/012031>
- Rajanna, G. A., Dass, A., & Paramesha, V. (2018). Excess Water Stress: Effects on Crop and Soil, and Mitigation Strategies. *Popular Kheti*, 6(3), 48–53.
- Raliya, R., Franke, C., Chavalmane, S., Nair, R., Reed, N., & Biswas, P. (2016). Quantitative Understanding of Nanoparticle Uptake in Watermelon Plants. *Frontiers in Plant Science*, 7. <https://doi.org/10.3389/fpls.2016.01288>
- Salazar-Cerezo, S., Martínez-Montiel, N., García-Sánchez, J., Pérez-y-Terrón, R., & Martínez-Contreras, R. D. (2018). Gibberellin biosynthesis and metabolism: A convergent route for plants, fungi and bacteria. *Microbiological Research*, 208(January), 85–98. <https://doi.org/10.1016/j.micres.2018.01.010>
- Salazar-Iribe, A., & De-la-Peña, C. (2020). Auxins, the hidden player in chloroplast development. *Plant Cell Reports*, 39(12), 1595–1608. <https://doi.org/10.1007/s00299-020-02596-y>
- Salehi-Lisar, S. Y., & Bakhshayeshan-Agdam, H. (2016). Drought stress in plants: Causes, consequences, and tolerance. In *Drought Stress Tolerance in Plants, Vol 1: Physiology and Biochemistry* (pp. 1–16). Springer International Publishing. https://doi.org/10.1007/978-3-319-28899-4_1
- Samarah, N. H. (2005). Effects of drought stress on growth and yield of barley. *Agronomy for Sustainable Development*, 25(1), 145–149. <https://doi.org/10.1051/agro>
- Schäfer, M., Brütting, C., Meza-canales, I. D., Großkinsky, D. K., Vankova, R., Baldwin, I. T., & Meldau, S. (2015). The role of *cis*-zeatin-type cytokinins in plant growth regulation and mediating responses to environmental interactions. 66(16), 4873–4884. <https://doi.org/10.1093/jxb/erv214>
- Schaller, G. E., Street, I. H., & Kieber, J. J. (2014). Cytokinin and the cell cycle. *Current Opinion in Plant Biology*, 21, 7–15. <https://doi.org/10.1016/j.pbi.2014.05.015>
- Shi, H., Chen, L., Ye, T., Liu, X., Ding, K., & Chan, Z. (2014). Modulation of auxin content in *Arabidopsis* confers improved drought stress resistance. *Plant Physiology and Biochemistry*, 82, 209–217. <https://doi.org/10.1016/j.plaphy.2014.06.008>
- Singh, R. P., Handa, R., & Manchanda, G. (2021). Nanoparticles in sustainable agriculture: An emerging opportunity. *Journal of Controlled Release*, 329, 1234–1248. <https://doi.org/https://doi.org/10.1016/j.jconrel.2020.10.051>
- Sumarni, N., & Hidayat, A. (2005). Budidaya Bawang Merah. *Panduan Teknis PTT Bawang Merah*, 3.
- Sun, Y., Wang, H., Liu, S., & Peng, X. (2016). Exogenous application of hydrogen peroxide alleviates drought stress in cucumber seedlings. *South African Journal of Botany*, 106, 23–28. <https://doi.org/10.1016/j.sajb.2016.05.008>
- Susanawati, Rozaki, Z., & Mulyono. (2019). Pemanfaatan Limbah Kulit Bawang Merah Menjadi PupukKompos Di Kecamatan Kretek Kabupaten Bantul.

Seminar Nasional ABDIMAS II, 1897–1904.

- Susanti, D., & Safrina, D. (2018a). IDENTIFIKASI LUAS DAUN SPESIFIK DAN INDEKS LUAS DAUN KARANGANYAR, JAWA TENGAH Specific Leaf Area and Leaf Area Index Identification of Centella (Centella asiatica (L .) Urb .) Leaf in Karangpandan, Karanganyar, Central Java. *Jurnal Tumbuhan Obat Indonesia*, 11(1), 11–17. <https://doi.org/10.22435/toi.v11i1.8242>. CITATIONS
- Susanti, D., & Safrina, D. (2018b). IDENTIFIKASI LUAS DAUN SPESIFIK DAN INDEKS LUAS DAUN PEGAGAN (Centella asiatica (L .) Urb .) DI KARANGPANDAN, KARANGANYAR, JAWA TENGAH Specific Leaf Area and Leaf Area Index Identification of Centella (Centella asiatica (L .) Urb .) Leaf in Karang. *Jurnal Tumbuhan Obat Indonesia*, 11(1), 11–17. <https://doi.org/10.22435/toi.v11i1.8242>. CITATIONS
- Susilo, D. E. . (2015). Susilo, D. E. H. (2015). Identifikasi Nilai Konstanta Bentuk Daun untuk Pengukuran Luas Daun Metode Panjang Kali Lebar pada Tanaman Hortikultura di Tanah Gambut: Identification of Constanta Value of Leaf Shape for Leaf Area Measurement Using Length Cross . *Anterior Jurnal*, 14(2), 139–146.
- Susilowati, R. D., Sulistyanyingsih, E., & Murti, R. H. (2023). Increasing the growth and yield of shallot (*Allium cepa* L. Aggregatum group) by using Methyl Jasmonic Acid (MeJA) concentrations under drought condition. *Lmu Pertanian (Agricultural Science)*, 8(1), 55–68. [https://www.researchgate.net/publication/370303311_Increasing_the_growth_and_yield_of_shallot_Allium_cepa_L_Aggregatum_group_by_using_Methyl_Jasmonic_Acid_MeJA_concentrations_under_drought_condition#:~:text=Application of 50 \$\mu\$ M of MeJA could increase the](https://www.researchgate.net/publication/370303311_Increasing_the_growth_and_yield_of_shallot_Allium_cepa_L_Aggregatum_group_by_using_Methyl_Jasmonic_Acid_MeJA_concentrations_under_drought_condition#:~:text=Application%20of%2050%20%25C3%25BCM%20of%20MeJA%20could%20increase%20the)
- Ullah, A., Manghwar, H., Shaban, M., Khan, A. H., Akbar, A., Ali, U., Ali, E., & Fahad, S. (2018). Phytohormones enhanced drought tolerance in plants: a coping strategy. In *Environmental Science and Pollution Research* (Vol. 25, Issue 33, pp. 33103–33118). Springer Verlag. <https://doi.org/10.1007/s11356-018-3364-5>
- Umayatul Aliah, N., Sulistyowati, L., & Muhibbudin, A. (2015). *HUBUNGAN KETEBALAN LAPISAN EPIDERMIS DAUN TERHADAP SERANGAN JAMUR (Mycosphaerella musicola) PENYEBAB PENYAKIT BERCAK DAUN SIGATOKA PADA SEPULUH KULTIVAR PISANG* (Vol. 3).
- Ummul Hasanah, H., Hasanah, R., & Author, C. (2021). THE EFFECT OF FERMENTED SHALLOT SKIN ON THE GROWTH OF MUSCLE PLANTS (*Brassica juncea*). *Jurnal Biologi & Konservasi*, 3(2).
- Utami, K. (2019, June 20). *Kekeringan Picu Gagal Panen Bawang Merah*. <https://www.kompas.id/baca/utama/2019/06/20/kekeringan-picu-lahan-bawang-merah-gagal-panen>
- Vetrivel, M., Amutha, R., Kalarani, M. K., Paramaguru, P., & Rajanbabu, V. (2022). Screening of Aggregatum Onion Varieties for Sodicity Tolerance. *International Journal of Environment and Climate Change*, 12(11), 3254–3263. <https://doi.org/10.9734/ijecc/2022/v12i111373>

- Wang, W. Bin, Kim, Y. H., Lee, H. S., Kim, K. Y., Deng, X. P., & Kwak, S. S. (2009). Analysis of antioxidant enzyme activity during germination of alfalfa under salt and drought stresses. *Plant Physiology and Biochemistry*, 47(7), 570–577. <https://doi.org/10.1016/j.plaphy.2009.02.009>
- Wang, L., Nie, Q., Li, M., Zhang, F., Zhuang, J., Yang, W., Li, T., & Wang, Y. (2005). Biosilicified structures for cooling plant leaves: A mechanism of highly efficient midinfrared thermal emission. *Applied Physics Letters*, 87(19), 1–3. <https://doi.org/10.1063/1.2126115>
- Wang, Z., Yang, Y., Yadav, V., Zhao, W., He, Y., Zhang, X., & Wei, C. (2022). Drought-induced proline is mainly synthesized in leaves and transported to roots in watermelon under water deficit. *Horticultural Plant Journal*, 8(5), 615–626. <https://doi.org/10.1016/j.hpj.2022.06.009>
- Widiastoety, D. (2014). *Pengaruh Auksin dan Sitokinin Terhadap Pertumbuhan Planlet Anggrek Mokara (Effect of Auxin and Cytokinin on the Growth of Mokara Orchid Plantlets)*. 24(3), 230–238.
- Willigis Benito Khatulistiwa, I. P., Mayun Permana, I. D. G., & Puspawati, I. G. A. K. (2020). PENGARUH SUHU PENGERINGAN OVEN TERHADAP AKTIVITAS ANTIOKSIDAN BUBUK DAUN CEMCEM (*Spondias pinnata* (L.f) Kurz). *Jurnal Ilmu Dan Teknologi Pangan (ITEPA)*, 9(3), 350. <https://doi.org/10.24843/itepa.2020.v09.i03.p11>
- Yang, X., Lu, M., Wang, Y., Wang, Y., Liu, Z., & Chen, S. (2021). Response mechanism of plants to drought stress. In *Horticulturae* (Vol. 7, Issue 3). MDPI AG. <https://doi.org/10.3390/horticulturae7030050>
- Yulina, N., Ezward, C., & Haitami, A. (2021). Karakter Tinggi Tanaman, Umur Panen, Jumlah Anakan dan Bobot Panen Pada 14 Genotipe Padi Lokal. *Jurnal Agrosains Dan Teknologi*, 6(1), 15–24.
- Zahedi, S. M., Hosseini, M. S., Fahadi Hoveizeh, N., Kadkhodaei, S., & Vaculik, M. (2023). Comparative morphological, physiological and molecular analyses of drought-stressed strawberry plants affected by SiO₂ and SiO₂-NPs foliar spray. *Scientia Horticulturae*, 309, 111686. <https://doi.org/10.1016/j.scienta.2022.111686>
- Zhang, C., Yang, H., Wu, W., & Li, W. (2017). Effect of drought stress on physiological changes and leaf surface morphology in the blackberry. *Revista Brasileira de Botanica*, 40(3), 625–634. <https://doi.org/10.1007/s40415-017-0377-0>
- Zhang, X. H., & Schmidt, R. (1999). Biostimulating turfgrasses. *Grounds Maintenance*, 15–32.
- Zhang, Y., Li, Y., Hassan, M. J., Li, Z., & Peng, Y. (2020). Indole-3-acetic acid improves drought tolerance of white clover via activating auxin, abscisic acid and jasmonic acid related genes and inhibiting senescence genes. *BMC Plant Biology*, 20(1), 1–12. <https://doi.org/10.1186/s12870-020-02354-y>
- Zhu, Y., & Gong, H. (2014). Beneficial effects of silicon on salt and drought tolerance in plants. In *Agronomy for Sustainable Development* (Vol. 34, Issue

2, pp. 455–472). EDP Sciences. <https://doi.org/10.1007/s13593-013-0194-1>

Achari, G. A., & Kowshik, M. (2018). Recent Developments on Nanotechnology in Agriculture: Plant Mineral Nutrition, Health, and Interactions with Soil Microflora. *Journal of Agricultural and Food Chemistry*, 66(33), 8647–8661. <https://doi.org/10.1021/acs.jafc.8b00691>

Achmad, S. R., & Putra, R. C. (2016). Pengelolaan Lemas Tanah Dan Laju Pertumbuhan Tanaman Karet Belum Menghasilkan Pada Musim Kemarau Dan Penghujan. *Warta Perkaretan*, 35(1), 1–10. <https://doi.org/10.22302/wp.v35i1.75>

Ahanger, M. A., Qi, M., Huang, Z., Xu, X., Begum, N., Qin, C., Zhang, C., Ahmad, N., Mustafa, N. S., Ashraf, M., & Zhang, L. (2021). Improving growth and photosynthetic performance of drought stressed tomato by application of nano-organic fertilizer involves up-regulation of nitrogen, antioxidant and osmolyte metabolism. *Ecotoxicology and Environmental Safety*, 216. <https://doi.org/10.1016/j.ecoenv.2021.112195>

Ahmad, M. A., Murali, P. V., & Marimuthu, G. (2014). Impact of salicylic acid on growth, photosynthesis and compatible solute accumulation in *Allium cepa* L. Subjected to drought stress. *International Journal of Agricultural and Food Science*, 4(1), 22–30.

Ahmadian, K., Jalilian, J., & Pirzad, A. (2021). Nano-fertilizers improved drought tolerance in wheat under deficit irrigation. *Agricultural Water Management*, 244, 106544. <https://doi.org/10.1016/J.AGWAT.2020.106544>

Ahmadikhah, A., & Marufinia, A. (2016). Effect of reduced plant height on drought tolerance in rice. *3 Biotech*, 6(2), 1–9. <https://doi.org/10.1007/s13205-016-0542-3>

Amin, M. W., Aryan, S., Habibi, N., Kakar, K., & Zahid, T. (2022). Elucidation of photosynthesis and yield performance of rice (*Oryza sativa* L.) under drought stress conditions. *Plant Physiology Reports*, 27(1), 143–151. <https://doi.org/10.1007/s40502-021-00613-0>

Aqaei, P., Weisany, W., Diyanat, M., Razmi, J., & Struik, P. C. (2020). Response of maize (*Zea mays* L.) to potassium nano-silica application under drought stress. <https://doi.org/10.1080/01904167.2020.1727508>, 43(9), 1205–1216. <https://doi.org/10.1080/01904167.2020.1727508>

Arnon, D. I. (1949). Plant physiology. *Plant Physiology*, 24(1), 1–15. <https://doi.org/10.2307/4118807>

Arsyadmunir, A. (2016). PERIODE KRITIS KEKERINGAN PADA PERTUMBUHAN DAN PRODUKSI KACANG HIJAU (*Vigna radiata* L.). 9(2), 132–140.

Azizah, F. (2023). TANGGAPAN PERTUMBUHAN DAN HASIL BAWANG MERAH (*Allium cepa* L. *Aggregatum* group) TERHADAP APLIKASI SILIKA NANOABU PADA KONDISI KEKERINGAN.

Bacher, H., Sharaby, Y., Walia, H., & Peleg, Z. (2022). Modifying root-to-shoot ratio improves root water influxes in wheat under drought stress. *Journal of*

- Experimental Botany*, 73(5), 1643–1654. <https://doi.org/10.1093/jxb/erab500>
- Balai Penelitian Tanah. (2009). *Analisis Kimia Tanah, Tanaman, Air, dan Pupuk* (B. H. Prasetyo, D. Santoso, & L. Retno W (eds.); Edisi 2). Balai Penelitian Tanah.
- Barciszewski, J., Rattan, S. I. S., Siboska, G., & Clark, B. F. C. (1999). *Kinetin — 45 years on*. 148, 37–45.
- Bashir, S. S., Hussain, A., Hussain, S. J., Wani, O. A., Zahid Nabi, S., Dar, N. A., Baloch, F. S., & Mansoor, S. (2021). Plant drought stress tolerance: understanding its physiological, biochemical and molecular mechanisms. *Biotechnology and Biotechnological Equipment*, 35(1), 1912–1925. <https://doi.org/10.1080/13102818.2021.2020161>
- Bertolino, L. T., Caine, R. S., & Gray, J. E. (2019). Impact of Stomatal Density and Morphology on Water-Use Efficiency in a Changing World. *Frontiers in Plant Science*, 10, 225. <https://doi.org/https://doi.org/10.3389/fpls.2019.00225>
- Bhosale, Y. K., Varghese, S. M., Thivya, P., Hema, V., & Sinija, V. R. (2021). Studies on assessment of safety and nutritional quality of shallot waste fractions. *Journal of Food Processing and Preservation*, 45(2). <https://doi.org/10.1111/jfpp.15147>
- Björklund, S., Antti, H., Uddestrand, I., Moritz, T., & Sundberg, B. (2007). Cross-talk between gibberellin and auxin in development of *Populus* wood: Gibberellin stimulates polar auxin transport and has a common transcriptome with auxin. *Plant Journal*, 52(3), 499–511. <https://doi.org/10.1111/j.1365-313X.2007.03250.x>
- Boora, R., Sheoran, P., Rani, N., Kumari, S., Thakur, R., & Grewal, S. (2023). Biosynthesized Silica Nanoparticles (Si NPs) Helps in Mitigating Drought Stress in Wheat Through Physiological Changes and Upregulation of Stress Genes. *Silicon*. <https://doi.org/10.1007/s12633-023-02439-x>
- BPS. (2022). *Jadi Komoditas Andalan, Konsumsi Bawang Merah Sektor Rumah Tangga Naik 8,33% pada 2021*. <https://databoks.katadata.co.id/datapublish/2022/10/24/jadi-komoditas-andalan-konsumsi-bawang-merah-sektor-rumah-tangga-naik-833-pada-2021#:~:text=Berdasarkan hasil Survei Sosial Ekonomi,%2C33%25 dibandingkan tahun 2020.>
- Brukhin, V., & Morozova, N. (2011). Plant growth and development - Basic knowledge and current views. *Mathematical Modelling of Natural Phenomena*, 6(2), 1–53. <https://doi.org/10.1051/mmnp/20116201>
- Budke, C., thor Straten, S., Mühling, K. H., Broll, G., & Daum, D. (2020). Iodine biofortification of field-grown strawberries – Approaches and their limitations. *Scientia Horticulturae*, 269. <https://doi.org/10.1016/j.scienta.2020.109317>
- Bulgari, R., Cocetta, G., Trivellini, A., Vernieri, P., & Ferrante, A. (2015). Biostimulants and crop responses: A review. In *Biological Agriculture and Horticulture* (Vol. 31, Issue 1, pp. 1–17). Taylor and Francis Ltd. <https://doi.org/10.1080/01448765.2014.964649>

- Caine, R. S., Harrison, E. L., Sloan, J., Flis, P. M., Fischer, S., Khan, M. S., Nguyen, P. T., Nguyen, L. T., Gray, J. E., & Croft, H. (2023). The influences of stomatal size and density on rice abiotic stress resilience. *New Phytologist*, 237(6), 2180–2195. <https://doi.org/https://doi.org/10.1111/nph.18704>
- Claussen, W. (2005). *Proline as a measure of stress in tomato plants*. 168, 241–248. <https://doi.org/10.1016/j.plantsci.2004.07.039>
- Cuellar-Ortiz, S. M., De La Paz Arrieta-Montiel, M., Acosta-Gallegos, J., & Covarrubias, A. A. (2008). Relationship between carbohydrate partitioning and drought resistance in common bean. *Plant, Cell and Environment*, 31(10), 1399–1409. <https://doi.org/10.1111/J.1365-3040.2008.01853.X>
- Deshpande, P., Dapkekar, A., Oak, M. D., Paknikar, K. M., & Rajwade, J. M. (2017). Zinc complexed chitosan/TPP nanoparticles: A promising micronutrient nanocarrier suited for foliar application. *Carbohydrate Polymers*, 165, 394–401. <https://doi.org/10.1016/j.carbpol.2017.02.061>
- Efendi, R., M., A. T., & Azrai, M. (2017). Daya Gabung Inbrida Jagung Toleran Cekaman Kekeringan dan Nitrogen Rendah pada Pembentukan Varietas Hibrida. *Jurnal Penelitian Pertanian Tanaman Pangan*, 1(2), 83. <https://doi.org/10.21082/jpntp.v1n2.2017.p83-96>
- El Mamoun, I., Bouzroud, S., Zouine, M., & Smouni, A. (2023). The Knockdown of AUXIN RESPONSE FACTOR 2 Confers Enhanced Tolerance to Salt and Drought Stresses in Tomato (*Solanum lycopersicum* L.). *Plants*, 12(15). <https://doi.org/10.3390/plants12152804>
- Fadhilah, N., & dan Kristanto, K. B. (2021). Respon pertumbuhan dan produksi padi gogo (*Oryza sativa* L.) terhadap cekaman kekeringan dan pemupukan silika (Growth and production of upland rice response to drought stress and silica fertilization). *J. Agro Complex*, 5(1), 1–13. <http://ejournal2.undip.ac.id/index.php/joac>
- Fahad, S., Bajwa, A. A., Nazir, U., Anjum, S. A., Farooq, A., Zohaib, A., Sadia, S., Nasim, W., Adkins, S., Saud, S., Ihsan, M. Z., Alharby, H., Wu, C., Wang, D., & Huang, J. (2017). Crop production under drought and heat stress: Plant responses and management options. In *Frontiers in Plant Science* (Vol. 8). Frontiers Media S.A. <https://doi.org/10.3389/fpls.2017.01147>
- Fajriyah, N. (2017). *Kiat Sukses Budidaya Bawang Merah* (A. Mahardika & T. N.F (eds.); 1st ed.). Bio Genesis.
- Fang, Y., & Xiong, L. (2015). General mechanisms of drought response and their application in drought resistance improvement in plants. *Cellular and Molecular Life Sciences*, 72, 673–689. <https://doi.org/10.1007/s00018-014-1767-0>
- Fariudin, R., Sulistyanyingsih, E., & Waluyo, S. (2013). Growth and Yield of Two Cultivars of Lettuce (*Lactuca Sativa*, L.) in Aquaponics in Gourami and Tilapia Fishpond. *Vegetalika*, 2(1), 66–81. <https://jurnal.ugm.ac.id/jbp/index>
- Farooq, M., Wahid, A., Kobayashi, N., Fujita, D., & Basra, S. M. A. (2009). Plant Drought Stress: Effects, Mechanisms and Management. In *Sustainable*

AgricultureIn: Lichtfouse, E., Navarrete, M., Debaeke, P., Véronique, S., Alberola, C. (eds) Sustainable Agriculture (pp. 153–188). Springer. <https://doi.org/10.4337/9781788974912.S.98>

- Fatirahma, F., Kastono, D., Budidaya Pertanian, D., Pertanian, F., & Gadjah Mada, U. (2020). *Pengaruh Pupuk Organik Cair terhadap Hasil Bawang Merah (Allium cepa L. Aggregatum group) di Lahan Pasir The Effect of Liquid Organic Fertilizer on Yield of Shallots (Allium cepa L. aggregatum group) on Coastal Sandy Land*. 9(1), 305–315. <https://doi.org/10.22146/veg.47792>
- Fen, L. L., Ismail, M. R., Zulkarami, B., Rahman, M. S. A., & Islam, M. R. (2015). Physiological and molecular characterization of drought responses and screening of drought tolerant rice varieties. *Biosci. j.(Online)*, 709–718.
- Fikri, M. S., Indradewa, D., & Putra, E. T. S. (2015). Pengaruh Pemberian Kompos Limbah Media Tanam Jamur Pada Pertumbuhan dan Hasil Kangkung Darat (*Ipomoea reptans* Poir.). *Vegetalika*, 4(2), 79–89.
- Forniawan, A., Sujarwanta, A., & Muhfahroyin, D. (2017). Pengaruh intensitas cahaya dan pupuk cair LCN terhadap produksi bawang merah (Eksperimen untuk Bahan Problem Based Learning). *Jurnal Lentera Pendidikan Pusat Penelitian LPPM UM METRO*, 2(2), 133–141.
- Fukuda, N., Fujita, M., Ohta, Y., Sase, S., Nishimura, S., & Ezura, H. (2008). Directional blue light irradiation triggers epidermal cell elongation of abaxial side resulting in inhibition of leaf epinasty in geranium under red light condition. *Scientia Horticulturae*, 115(2), 176–182. <https://www.sciencedirect.com/science/article/pii/S030442380700297X>
- Gardener, F., Pearce, R., & Mitchell, R. (2017). *Physiology of Crop Plants*. Scientific Publisher.
- Ghorbanpour, M., Mohammadi, H., & Kariman, K. (2020). Nanosilicon-based recovery of barley (: *Hordeum vulgare*) plants subjected to drought stress. *Environmental Science: Nano*, 7(2), 443–461. <https://doi.org/10.1039/c9en00973f>
- Ginting, T. H. U., Ginting, J., & Damanik, R. I. M. (2024). *Morfologi Bawang Merah (Allium ascalonicum L.) Pada Cekaman Kekeringan Terhadap Aplikasi Asam Salisilat Morphology of Shallots (Allium ascalonicum L .) Under Drought Stress Against Salicylic Acid Application*. 20(1), 90–98. <https://doi.org/10.30598/jbdp/2024.20.1.90>
- Gong, H. J., Chen, K. M., Chen, G. C., Wang, S. M., & Zhang, C. L. (2003). Effects of silicon on growth of wheat under drought. *Journal of Plant Nutrition*, 26(5), 1055–1063. <https://doi.org/10.1081/PLN-120020075>
- Gong, H., Zhu, X., Chen, K., Wang, S., & Zhang, C. (2005). Silicon alleviates oxidative damage of wheat plants in pots under drought. *Plant Science*, 169(2), 313–321. <https://doi.org/10.1016/j.plantsci.2005.02.023>
- Guerriero, G., Hausman, J. F., & Legay, S. (2016). Silicon and the plant extracellular matrix. *Frontiers in Plant Science*, 7(APR2016), 1–8. <https://doi.org/10.3389/fpls.2016.00463>

- Hadiawati, L., Suriadi, A., & Irianty, F. (2017). *PENURUNAN HASIL BAWANG MERAH AKIBAT KEKERINGAN PADA BEBERAPA FASE PERTUMBUHAN*.
- Haghpahan, M., Hashemipetroudi, S., Arzani, A., & Araniti, F. (2024). Drought Tolerance in Plants: Physiological and Molecular Responses. *Plants*, *13*(21), 1–30. <https://doi.org/10.3390/plants13212962>
- Haridjaja, O., Putro, D., Baskoro, T., & Setianingsih, M. (2013). *Different Levels of Field Capacity by Alhricks, Free Drainage, and Pressure Plate Methods at Different Soil Texture and Relation for Sunflower Growth (Helianthus annuus L.)*. *15*(2), 52–59.
- Harita, G., Panggabean, E. L., & Rahman, A. (2022). AGRISAINS: Jurnal Ilmiah Magister Agribisnis Respon Pertumbuhan dan Produksi Tanaman Gambas (*Luffa acutangula* L.) Dengan Pupuk Organik Cair Limbah Industri Tempe dan Kompos Kulit Bawang Merah Response of Gambas (*Luffa acutangula* L.) Growth and Production with Liquid Organic Fertilizer for Tempe Industry Waste and Compost Onion Skin. *Jurnal Ilmiah Magister Agribisnis*, *4*(2), 93–107. <https://doi.org/10.31289/agrisains.v4i2.1400>
- Hasanuzzaman, M., Parvin, K., Bardhan, K., Nahar, K., Anee, T. I., Masud, A. A. C., & Fotopoulos, V. (2021). Biostimulants for the regulation of reactive oxygen species metabolism in plants under abiotic stress. In *Cells* (Vol. 10, Issue 10). MDPI. <https://doi.org/10.3390/cells10102537>
- Hassan, I. F., Ajaj, R., Gaballah, M. S., Ogbaga, C. C., Kalaji, H. M., Hatterman-valenti, H. M., & Alam-eldein, S. M. (2022). Foliar Application of Nano-Silicon Improves the Physiological and Biochemical Characteristics of ‘Kalamata’ Olive Subjected to Deficit Irrigation in a Semi-Arid Climate. *Plants*, *11*(12). <https://doi.org/10.3390/plants11121561>
- Hatfield, J. L., & Prueger, J. H. (2015). Temperature extremes: Effect on plant growth and development. *Weather and Climate Extremes*, *10*, 4–10. <https://doi.org/10.1016/j.wace.2015.08.001>
- Haynes, R. J. (2017). Significance and Role of Si in Crop Production. In *Advances in Agronomy* (Vol. 146, pp. 83–166). Academic Press Inc. <https://doi.org/10.1016/bs.agron.2017.06.001>
- Hazarika, A., Yadav, M., Yadav, D. K., & Yadav, H. S. (2022). An overview of the role of nanoparticles in sustainable agriculture. In *Biocatalysis and Agricultural Biotechnology* (Vol. 43). Elsevier Ltd. <https://doi.org/10.1016/j.bcab.2022.102399>
- Heriyanto, N., Rogomulyo, R., & Indradewa, D. (2019). Pengaruh Cekaman Kekeringan Terhadap Hasil dan Komponen Hasil Lima Kultivar Kedelai (*Glycine max* L.). *Vegetalika*, *8*(4), 227. <https://doi.org/10.22146/veg.42580>
- Hirt, H., & Kazuo, S. (2003). Plant responses to abiotic stress. In *Springer Science & Business Media*.
- Hong, J., Wang, C., Wagner, D. C., Gardea-Torresdey, J. L., He, F., & Rico, C. M. (2021). Foliar application of nanoparticles: Mechanisms of absorption,

- transfer, and multiple impacts. In *Environmental Science: Nano* (Vol. 8, Issue 5, pp. 1196–1210). Royal Society of Chemistry. <https://doi.org/10.1039/d0en01129k>
- Hu, F., Zhang, Y., & Guo, J. (2023). Effects of drought stress on photosynthetic physiological characteristics, leaf microstructure, and related gene expression of yellow horn. *Plant Signaling and Behavior*, 18(1), 1–10. <https://doi.org/10.1080/15592324.2023.2215025>
- Hussain, S., Shuxian, L., Mumtaz, M., Shafiq, I., Iqbal, N., Brestic, M., Shoaib, M., Sisi, Q., Li, W., Mei, X., Bing, C., Zivcak, M., Rastogi, A., Skalicky, M., Hejnak, V., Weiguo, L., & Wenyu, Y. (2021). Foliar application of silicon improves stem strength under low light stress by regulating lignin biosynthesis genes in soybean (*Glycine max* (L.) Merr.). *Journal of Hazardous Materials*, 401. <https://doi.org/10.1016/j.jhazmat.2020.123256>
- Indarwati LD, Sulistyanyingsih E, & Kurniasih B. (2021). IOP Conference Series: Earth and Environmental Science Impact of salicylic acid and biosilica application on plant growth of shallot under water deficit. *International Seminar on Agriculture, Biodiversity, Food Security and Health*, 883(1), 012049. <https://doi.org/10.1088/1755-1315/883/1/012049>
- J. Csiszár, E. Lantos, I. Tari, E. Madoşă, B. Wodala, Á. Vashegy, F. Horváth, A. Pécsvárad, M. Szabó, B. Bartha, Á. Gallé, A. Lazăr, G. Coradini, M. Staicu, S. Postelnicu, S. Mihacea, G. Nedelea, & L. Erdei. (2007). Antioxidant enzyme activities in *Allium* species and their cultivars under water stress. *Plant Soil and Environment*, 53(12), 517.
- Kalal, P. R., Singh Tomar, R., & Jajoo, A. (2022). SiO₂ nanopriming protects PS I and PSII complexes in wheat under drought stress. *Plant Nano Biology*, 2, 100019. <https://doi.org/10.1016/j.plana.2022.100019>
- Kar, R. K. (2011). Plant responses to water stress: Role of reactive oxygen species. *Plant Signaling and Behavior*, 6(11), 1741–1745. <https://doi.org/10.4161/psb.6.11.17729>
- Karimi, J., & Mohsenzadeh, S. (2015). Effects of Silicon Oxide Nanoparticles on Growth and Physiology of Wheat Seedlings. *Физиология Растений*, 63(1), 126–130. <https://doi.org/10.7868/s0015330316010103>
- Khaleghi, E., Arzani, K., Moallemi, N., & Barzegar, M. (2012). Evaluation of Chlorophyll Content and Chlorophyll Fluorescence Parameters and Relationships between Chlorophyll a, b and Chlorophyll Content Index under Water Stress in *Olea europaea* cv. Dezful. *International Scholarly and Scientific Research & Innovation*, 6(8), 2108–2111.
- Khan, M. Y., Prakash, V., Yadav, V., Chauhan, D. K., Prasad, S. M., Ramawat, N., Singh, V. P., Tripathi, D. K., & Sharma, S. (2019). Regulation of cadmium toxicity in roots of tomato by indole acetic acid with special emphasis on reactive oxygen species production and their scavenging. *Plant Physiology and Biochemistry*, 142(April), 193–201. <https://doi.org/10.1016/j.plaphy.2019.05.006>
- Khandani, Y., Sarikhani, H., Gholami, M., Rad, A. C., Yousefi, S., Sodini, M., &

- Sivilotti, P. (2024). Exogenous Auxin Improves the Growth of Grapevine (*Vitis vinifera* L.) under Drought Stress by Mediating Physiological, Biochemical and Hormonal Modifications. *Journal of Soil Science and Plant Nutrition*, 24(2), 3422–3440. <https://doi.org/10.1007/s42729-024-01765-2>
- Kim, Y.-J., Shanmugasundaram, S., Yun, S.-J., Park, H.-K., & Park, M.-S. (2001). A Simple Method of Seedling Screening for Drought Tolerance in Soybean TT -. In *한국작물학회지* (Vol. 46, Issue 4, pp. 284–288). <https://db.koreascholar.com/Article/Detail/13446>
- Kiremit, M. S., & Arslan, H. (2018). Response of Leek (*Allium porrum* L.) to Different Irrigation Water Levels Under Rain Shelter. *Communications in Soil Science and Plant Analysis*, 49(1), 99–108. <https://doi.org/10.1080/00103624.2017.1421652>
- Kumar, M., Barbhai, M. D., Hasan, M., Punia, S., Dhumal, S., Radha, Rais, N., Chandran, D., Pandiselvam, R., Kothakota, A., Tomar, M., Satankar, V., Senapathy, M., Anitha, T., Dey, A., Sayed, A. A. S., Gadallah, F. M., Amarowicz, R., & Mekhemar, M. (2022). Onion (*Allium cepa* L.) peels: A review on bioactive compounds and biomedical activities. In *Biomedicine and Pharmacotherapy* (Vol. 146). Elsevier Masson s.r.l. <https://doi.org/10.1016/j.biopha.2021.112498>
- Leite, V. M., Rosolem, C. A., & Rodrigues, J. D. (2003). *GIBBERELLIN AND CYTOKININ EFFECTS ON SOYBEAN GROWTH*. 2000, 537–541.
- Long, S. P., Humphries, S., & Falkowski, P. G. (1994). Photoinhibition of photosynthesis in nature. *Annual Review of Plant Physiology and Plant Molecular Biology*, 45, 633–662. <https://doi.org/10.1146/annurev.pp.45.060194.003221>
- Lou, H., Zhao, B., Peng, Y., El-Badri, A. M., Batool, M., Wang, C., Wang, Z., Huang, W., Wang, T., Li, Z., Xu, Z., Wang, J., Wang, B., Kuai, J., & Zhou, G. (2023). Auxin plays a key role in nitrogen and plant density-modulated root growth and yield in different plant types of rapeseed. *Field Crops Research*, 302(July), 109066. <https://doi.org/10.1016/j.fcr.2023.109066>
- Lux, A., Luxová, M., Hattori, T., Inanaga, S., & Sugimoto, Y. (2002). Silicification in sorghum (*Sorghum bicolor*) cultivars with different drought tolerance. *Physiologia Plantarum*, 115(1), 87–92. <https://doi.org/10.1034/j.1399-3054.2002.1150110.x>
- Ma, X., Zhou, G., Li, G., & Wang, Q. (2021). Quantitative evaluation of the trade-off growth strategies of maize leaves under different drought severities. *Water (Switzerland)*, 13(13), 1–13. <https://doi.org/10.3390/w13131852>
- Maghsoudi, K., Emam, Y., & Pessarakli, M. (2016). Effect of silicon on photosynthetic gas exchange, photosynthetic pigments, cell membrane stability and relative water content of different wheat cultivars under drought stress conditions. [Http://Dx.Doi.Org.Ezproxy.Ugm.Ac.Id/10.1080/01904167.2015.1109108](http://Dx.Doi.Org.Ezproxy.Ugm.Ac.Id/10.1080/01904167.2015.1109108), 39(7), 1001–1015. <https://doi.org/10.1080/01904167.2015.1109108>
- Majda, M., & Robert, S. (2018). The role of auxin in cell wall expansion.

International Journal of Molecular Sciences, 19(4).
<https://doi.org/10.3390/ijms19040951>

Malik, M. A., Wani, A. H., Mir, S. H., Rehman, I. U., Tahir, I., Ahmad, P., & Rashid, I. (2021). Elucidating the role of silicon in drought stress tolerance in plants. *Plant Physiology and Biochemistry*, 165(April), 187–195. <https://doi.org/10.1016/j.plaphy.2021.04.021>

Margiwiyatno, A., & Sumarni, E. (2011). *Modifikasi Iklim Mikro pada Bawang Merah Hidroponik dalam Rangka Memperoleh Bibit Bermutu*. 25(1), 43–47. <https://media.neliti.com/media/publications/21582-ID-modifikasi-iklim-mikro-pada-bawang-merah-hidroponik-dalam-rangka-memperoleh-bibi.pdf>

Marhama, H., Triharyanto, E., Theresia, M., & Budiastuti, S. (2023). *ANALISIS PERTUMBUHAN DAN HASIL VARIETAS BAWANG MERAH DENGAN PUPUK HAYATI DI LUAR MUSIM TANAM*. 10(May), 320–333.

Mark, P. (2024). *Kenaikan suhu Bumi tembus ambang batas 1,5 Celsius untuk pertama kalinya*. BBC News. <https://www.bbc.com/indonesia/articles/cedqye0qng1o#:~:text=Pemanasan global periode Februari 2023 hingga Januari 2024,Januari tercatat sebagai bulan terpanas kedelapan secara berturut-turut.>

Medyouni, I., Zouaoui, R., Rubio, E., Serino, S., Ahmed, H. Ben, & Bertin, N. (2021). Effects of water deficit on leaves and fruit quality during the development period in tomato plant. *Food Science and Nutrition*, 9(4), 1949–1960. <https://doi.org/10.1002/fsn3.2160>

Meier, S., Moore, F., Morales, A., González, M. E., Seguel, A., Meriño-Gergichevich, C., Rubilar, O., Cumming, J., Aponte, H., Alarcón, D., & Mejías, J. (2020). Synthesis of calcium borate nanoparticles and its use as a potential foliar fertilizer in lettuce (*Lactuca sativa*) and zucchini (*Cucurbita pepo*). *Plant Physiology and Biochemistry*, 151, 673–680. <https://doi.org/10.1016/j.plaphy.2020.04.025>

Mhamdi, A. (2023). CHAPTER Two - Hydrogen peroxide in plants. *Advances in Botanical Research*, 105, 43–75.

Mir, R. A., Bhat, B. A., Yousuf, H., Islam, S. T., Raza, A., Rizvi, M. A., Charagh, S., Albaqami, M., Sofi, P. A., & Zargar, S. M. (2022). Multidimensional Role of Silicon to Activate Resilient Plant Growth and to Mitigate Abiotic Stress. *Frontiers in Plant Science*, 13(March). <https://doi.org/10.3389/fpls.2022.819658>

Morales, M., & Munné-Bosch, S. (2019). Malondialdehyde: Facts and artifacts. *Plant Physiology*, 180(3), 1246–1250. <https://doi.org/10.1104/pp.19.00405>

Mungara, E., Indradewa, D., & Rogomulyo, R. (2013). Analisis Pertumbuhan dan Hasil Padi Sawah pada Sistem Pertanian Konvensional, Transisi Organik, dan Organik. *Vegetalika*, 2(3), 2–12.

Naaz, H., Rawat, K., Saffeuallah, P., & Umar, S. (2022). Silica nanoparticles synthesis and applications in agriculture for plant fertilization and protection: a review. In *Environmental Chemistry Letters*. Springer Science and Business

Media Deutschland GmbH. <https://doi.org/10.1007/s10311-022-01515-9>

Nanopartikel. (2024). *Nanopartikel*. Wikipedia. <https://id.wikipedia.org/wiki/Nanopartikel>

Nasrudin, N., & Firmansyah, E. (2020). Respon pertumbuhan vegetatif padi varietas IPB 4S pada kondisi cekaman kekeringan. *Agromix*, 11(2), 218–226. <https://doi.org/10.35891/agx.v11i2.2066>

Natasha, Shahid, M., Farooq, A. B. U., Rabbani, F., Khalid, S., & Dumat, C. (2020). Risk assessment and biophysiochemical responses of spinach to foliar application of lead oxide nanoparticles: A multivariate analysis. *Chemosphere*, 245. <https://doi.org/10.1016/j.chemosphere.2019.125605>

Nazir, F., Fariduddin, Q., & Khan, T. A. (2020). Hydrogen peroxide as a signalling molecule in plants and its crosstalk with other plant growth regulators under heavy metal stress. *Chemosphere*, 252, 126486. <https://doi.org/10.1016/j.chemosphere.2020.126486>

Pamungkas, S. S. T., Suwanto, S., & Noor, F. (2022). Drought Stress: Responses and Mechanism in Plants. In *Reviews in Agricultural Science* (Vol. 10, pp. 168–175).

Panguriseng, D. (2016). Capillary Shock Phenomena of Groundwater in Land of Irrigation Groundwater Users in Takalar. *National Conference FGDTPTM Engineering*, June, 1–10. https://www.researchgate.net/publication/303989142_Capillary_Shock_Phenomena_of_Groundwater_in_Land_of_Irrigation_Groundwater_Users_in_Takalar

Parveen, A., Liu, W., Hussain, S., Asghar, J., Perveen, S., & Xiong, Y. (2019). Silicon Priming Regulates Morpho-Physiological Growth and Oxidative Metabolism in Maize under. *Plants*, 8(10), 431.

Permana, I., Anggoro, O., Carsidi, D., Alam, S., Sihaloho, N. K., M.Killa, Y., Wita, W. A., Putra, R., Mutiara, C., Masnag, A., Zurrahmi, W., & Elizabeth, R. (2023). Kesuburan Tanah dan Pemupukan. In M. . Diana Purnama Sari (Ed.), *Universitas Sumatera Utara Press, Medan* (cetakan ke, Issue September). Get Press Indonesia.

Perrot-Rechenmann, C. (2010). Cellular responses to auxin: division versus expansion. *Cold Spring Harbor Perspectives in Biology*, 2(5), 1–15. <https://doi.org/10.1101/cshperspect.a001446>

Purbajanti, E. D. (2023). *Yield and component yield of onion (Allium cepa L .) effect of salicylic acid under drought stress in Indonesia. 9411.*

Rabinowitch, H. . (1990). *Onion and Allied Crops* (H. D. Rabinowitch & J. L. Brewster (eds.); 1st ed., Vol. 1). CRC Press.

Rahayu, E., & Ali, N. V. B. (2004). *Bawang Merah*.

Rahmawati, N., & Wulandari, N. (2024). Foliar application of SiO₂nanoparticles to increase shallot production under water stress as an effort to mitigate climate change. *IOP Conference Series: Earth and Environmental Science*, 1302(1),

8–13. <https://doi.org/10.1088/1755-1315/1302/1/012031>

Rajanna, G. A., Dass, A., & Paramesha, V. (2018). Excess Water Stress: Effects on Crop and Soil, and Mitigation Strategies. *Popular Kheti*, 6(3), 48–53.

Raliya, R., Franke, C., Chavalmane, S., Nair, R., Reed, N., & Biswas, P. (2016). Quantitative Understanding of Nanoparticle Uptake in Watermelon Plants. *Frontiers in Plant Science*, 7. <https://doi.org/10.3389/fpls.2016.01288>

Salazar-Cerezo, S., Martínez-Montiel, N., García-Sánchez, J., Pérez-y-Terrón, R., & Martínez-Contreras, R. D. (2018). Gibberellin biosynthesis and metabolism: A convergent route for plants, fungi and bacteria. *Microbiological Research*, 208(January), 85–98. <https://doi.org/10.1016/j.micres.2018.01.010>

Salazar-Iribe, A., & De-la-Peña, C. (2020). Auxins, the hidden player in chloroplast development. *Plant Cell Reports*, 39(12), 1595–1608. <https://doi.org/10.1007/s00299-020-02596-y>

Salehi-Lisar, S. Y., & Bakhshayeshan-Agdam, H. (2016). Drought stress in plants: Causes, consequences, and tolerance. In *Drought Stress Tolerance in Plants, Vol 1: Physiology and Biochemistry* (pp. 1–16). Springer International Publishing. https://doi.org/10.1007/978-3-319-28899-4_1

Samarah, N. H. (2005). Effects of drought stress on growth and yield of barley. *Agronomy for Sustainable Development*, 25(1), 145–149. <https://doi.org/10.1051/agro>

Schäfer, M., Brütting, C., Meza-canales, I. D., Großkinsky, D. K., Vankova, R., Baldwin, I. T., & Meldau, S. (2015). *The role of cis -zeatin-type cytokinins in plant growth regulation and mediating responses to environmental interactions*. 66(16), 4873–4884. <https://doi.org/10.1093/jxb/erv214>

Schaller, G. E., Street, I. H., & Kieber, J. J. (2014). Cytokinin and the cell cycle. *Current Opinion in Plant Biology*, 21, 7–15. <https://doi.org/10.1016/j.pbi.2014.05.015>

Shi, H., Chen, L., Ye, T., Liu, X., Ding, K., & Chan, Z. (2014). Modulation of auxin content in Arabidopsis confers improved drought stress resistance. *Plant Physiology and Biochemistry*, 82, 209–217. <https://doi.org/10.1016/j.plaphy.2014.06.008>

Singh, R. P., Handa, R., & Manchanda, G. (2021). Nanoparticles in sustainable agriculture: An emerging opportunity. *Journal of Controlled Release*, 329, 1234–1248. <https://doi.org/https://doi.org/10.1016/j.jconrel.2020.10.051>

Sumarni, N., & Hidayat, A. (2005). Budidaya Bawang Merah. *Panduan Teknis PTT Bawang Merah*, 3.

Sun, Y., Wang, H., Liu, S., & Peng, X. (2016). Exogenous application of hydrogen peroxide alleviates drought stress in cucumber seedlings. *South African Journal of Botany*, 106, 23–28. <https://doi.org/10.1016/j.sajb.2016.05.008>

Susanawati, Rozaki, Z., & Mulyono. (2019). Pemanfaatan Limbah Kulit Bawang Merah Menjadi PupukKompos Di Kecamatan Kretek Kabupaten Bantul. *Seminar Nasional ABDIMAS II*, 1897–1904.

- Susanti, D., & Safrina, D. (2018a). IDENTIFIKASI LUAS DAUN SPESIFIK DAN INDEKS LUAS DAUN KARANGANYAR , JAWA TENGAH Specific Leaf Area and Leaf Area Index Identification of Centella (Centella asiatica (L .) Urb .) Leaf in Karangpandan , Karanganyar , Central Java. *Jurnal Tumbuhan Obat Indonesia*, 11(1), 11–17. <https://doi.org/10.22435/toi.v11i1.8242>. CITATIONS
- Susanti, D., & Safrina, D. (2018b). IDENTIFIKASI LUAS DAUN SPESIFIK DAN INDEKS LUAS DAUN PEGAGAN (Centella asiatica (L .) Urb .) DI KARANGPANDAN , KARANGANYAR , JAWA TENGAH Specific Leaf Area and Leaf Area Index Identification of Centella (Centella asiatica (L .) Urb .) Leaf in Karang. *Jurnal Tumbuhan Obat Indonesia*, 11(1), 11–17. <https://doi.org/10.22435/toi.v11i1.8242>. CITATIONS
- Susilo, D. E. . (2015). Susilo, D. E. H. (2015). Identifikasi Nilai Konstanta Bentuk Daun untuk Pengukuran Luas Daun Metode Panjang Kali Lebar pada Tanaman Hortikultura di Tanah Gambut: Identification of Constanta Value of Leaf Shape for Leaf Area Measurement Using Length Cross . *Anterior Jurnal*, 14(2), 139–146.
- Susilowati, R. D., Sulistyanyingsih, E., & Murti, R. H. (2023). Increasing the growth and yield of shallot (*Allium cepa* L. Aggregatum group) by using Methyl Jasmonic Acid (MeJA) concentrations under drought condition. *Lmu Pertanian (Agricultural Science)*, 8(1), 55–68. https://www.researchgate.net/publication/370303311_Increasing_the_growth_and_yield_of_shallot_Allium_cepa_L_Aggregatum_group_by_using_Methyl_Jasmonic_Acid_MeJA_concentrations_under_drought_condition#:~:text=Application of 50 μM of MeJA could increase the
- Ullah, A., Manghwar, H., Shaban, M., Khan, A. H., Akbar, A., Ali, U., Ali, E., & Fahad, S. (2018). Phytohormones enhanced drought tolerance in plants: a coping strategy. In *Environmental Science and Pollution Research* (Vol. 25, Issue 33, pp. 33103–33118). Springer Verlag. <https://doi.org/10.1007/s11356-018-3364-5>
- Umayatul Aliah, N., Sulistyowati, L., & Muhibbudin, A. (2015). *HUBUNGAN KETEBALAN LAPISAN EPIDERMIS DAUN TERHADAP SERANGAN JAMUR (Mycosphaerella musicola) PENYEBAB PENYAKIT BERCAK DAUN SIGATOKA PADA SEPULUH KULTIVAR PISANG* (Vol. 3).
- Ummul Hasanah, H., Hasanah, R., & Author, C. (2021). THE EFFECT OF FERMENTED SHALLOT SKIN ON THE GROWTH OF MUSCLE PLANTS (*Brassica juncea*). *Jurnal Biologi & Konservasi*, 3(2).
- Utami, K. (2019, June 20). *Kekeringan Picu Gagal Panen Bawang Merah*. <https://www.kompas.id/baca/utama/2019/06/20/kekeringan-picu-lahan-bawang-merah-gagal-panen>
- Vetrivel, M., Amutha, R., Kalarani, M. K., Paramaguru, P., & Rajanbabu, V. (2022). Screening of Aggregatum Onion Varieties for Sodcity Tolerance. *International Journal of Environment and Climate Change*, 12(11), 3254–3263. <https://doi.org/10.9734/ijec/2022/v12i111373>
- Wang, W. Bin, Kim, Y. H., Lee, H. S., Kim, K. Y., Deng, X. P., & Kwak, S. S. (2009). Analysis of antioxidant enzyme activity during germination of alfalfa under salt

- and drought stresses. *Plant Physiology and Biochemistry*, 47(7), 570–577. <https://doi.org/10.1016/j.plaphy.2009.02.009>
- Wang, L., Nie, Q., Li, M., Zhang, F., Zhuang, J., Yang, W., Li, T., & Wang, Y. (2005). Biosilicified structures for cooling plant leaves: A mechanism of highly efficient midinfrared thermal emission. *Applied Physics Letters*, 87(19), 1–3. <https://doi.org/10.1063/1.2126115>
- Wang, Z., Yang, Y., Yadav, V., Zhao, W., He, Y., Zhang, X., & Wei, C. (2022). Drought-induced proline is mainly synthesized in leaves and transported to roots in watermelon under water deficit. *Horticultural Plant Journal*, 8(5), 615–626. <https://doi.org/10.1016/j.hpj.2022.06.009>
- Widiastoety, D. (2014). *Pengaruh Auksin dan Sitokinin Terhadap Pertumbuhan Planlet Anggrek Mokara (Effect of Auxin and Cytokinin on the Growth of Mokara Orchid Plantlets)*. 24(3), 230–238.
- Willigis Benito Khatulistiwa, I. P., Mayun Permana, I. D. G., & Puspawati, I. G. A. K. (2020). PENGARUH SUHU PENDINGINAN OVEN TERHADAP AKTIVITAS ANTIOKSIDAN BUBUK DAUN CEMCEM (*Spondias pinnata* (L.f) Kurz). *Jurnal Ilmu Dan Teknologi Pangan (ITEPA)*, 9(3), 350. <https://doi.org/10.24843/itepa.2020.v09.i03.p11>
- Yang, X., Lu, M., Wang, Y., Wang, Y., Liu, Z., & Chen, S. (2021). Response mechanism of plants to drought stress. In *Horticulturae* (Vol. 7, Issue 3). MDPI AG. <https://doi.org/10.3390/horticulturae7030050>
- Yulina, N., Ezward, C., & Haitami, A. (2021). Karakter Tinggi Tanaman, Umur Panen, Jumlah Anakan dan Bobot Panen Pada 14 Genotipe Padi Lokal. *Jurnal Agrosains Dan Teknologi*, 6(1), 15–24.
- Zahedi, S. M., Hosseini, M. S., Fahadi Hoveizeh, N., Kadkhodaei, S., & Vaculík, M. (2023). Comparative morphological, physiological and molecular analyses of drought-stressed strawberry plants affected by SiO₂ and SiO₂-NPs foliar spray. *Scientia Horticulturae*, 309, 111686. <https://doi.org/10.1016/j.scienta.2022.111686>
- Zhang, C., Yang, H., Wu, W., & Li, W. (2017). Effect of drought stress on physiological changes and leaf surface morphology in the blackberry. *Revista Brasileira de Botanica*, 40(3), 625–634. <https://doi.org/10.1007/s40415-017-0377-0>
- Zhang, X. H., & Schmidt, R. (1999). Biostimulating turfgrasses. *Grounds Maintenance*, 15–32.
- Zhang, Y., Li, Y., Hassan, M. J., Li, Z., & Peng, Y. (2020). Indole-3-acetic acid improves drought tolerance of white clover via activating auxin, abscisic acid and jasmonic acid related genes and inhibiting senescence genes. *BMC Plant Biology*, 20(1), 1–12. <https://doi.org/10.1186/s12870-020-02354-y>
- Zhu, Y., & Gong, H. (2014). Beneficial effects of silicon on salt and drought tolerance in plants. In *Agronomy for Sustainable Development* (Vol. 34, Issue 2, pp. 455–472). EDP Sciences. <https://doi.org/10.1007/s13593-013-0194-1>