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DAFTAR PUSTAKA

Adhikari, B., Adhikari, M., Ghimire, B., Adhikari, B. C., Park, G., & Choi, E. H. (2020). Cold plasma seed priming modulates growth, redox homeostasis and stress response by inducing reactive species in tomato (Solanum lycopersicum). *Free Radical Biology and Medicine*, *156*, 57-69.

Ai, N. S. (2011). Biomassa dan kandungan klorofil total daun jahe (Zingiber officinale L.) yang mengalami cekaman kekeringan. *Jurnal Ilmiah Sains, 4 (1), 1*, *5*.

Arrofi, M. A., Budiman, C., & Diaguna, R. (2023). Pengembangan Uji Vigor dengan Pemunculan Radikula pada Benih Terung (Solamun melongena L.) Menggunakan Pengolahan Citra Digital. *Buletin Agrohorti*, 11(3), 435-443.

Attri, P., Ishikawa, K., Okumura, T., Koga, K., & Shiratani, M. (2020). Plasma agriculture from laboratory to farm: A review. *Processes*, *8*(8), 1002.

Benabderrahim, M. A., Bettaieb, I., Hannachi, H., Rejili, M., & Dufour, T. (2024). Cold plasma treatment boosts barley germination and seedling vigor: Insights into soluble sugar, starch, and protein modifications. *Journal of Cereal Science*, *116*, 103852.

Choudhary, A., Nepovimova, E., Rajput, V. D., Malik, T., Choudhary, M., Bhardwaj, N., ... & Kimta, N. (2025). Mechanistic understanding of GABA and trehalose in modulating plant response to drought stress. *Plant Stress*, *16*, 100838.

Cui, D., Yin, Y., Sun, H., Wang, X., Zhuang, J., Wang, L., & Jiao, Z. (2022). Regulation of cellular redox homeostasis in Arabidopsis thaliana seedling by atmospheric pressure cold plasma-generated reactive oxygen/nitrogen species. *Ecotoxicology and Environmental Safety*, *240*, 113703.

Cui, D., Yin, Y., Wang, J., Wang, Z., Ding, H., Ma, R., & Jiao, Z. (2019). Research on the physio-biochemical mechanism of non-thermal plasma-regulated seed germination and early seedling development in Arabidopsis. *Frontiers in plant science*, *10*, 1322.

Dobrin, D., Magureanu, M., Mandache, N. B., & Ionita, M. D. (2015). The effect of non-thermal plasma treatment on wheat germination and early growth. *Innovative Food Science & Emerging Technologies*, *29*, 255-260.

Dobrynin, D., Fridman, G., Friedman, G. & Fridman. (2009). A. Physical and biological mechanisms of direct plasma interaction with living tissue. *New J. Phys*. 11, 2–26.

Eziz, A., Yan, Z., Tian, D., Han, W., Tang, Z., & Fang, J. (2017). *Drought effect on plant biomass allocation: a meta-analysis. Ecol Evol 7: 11002–11010*.

Faradila, N., Fevria, R., Vauzia, V., & Putri, I. L. E. (2023). The Growth of the Red Lactus (Lactuca sativa L. var. Crispa) After Using Nano Technology Liquid Organic Fertilizer Hydroponically Cultivated. *Jurnal Biologi Tropis*, *23*(2), 68-74.

Geng, A., Lian, W., Wang, Y., Liu, M., Zhang, Y., Wang, X., & Chen, G. (2024). Molecular mechanisms and regulatory pathways underlying drought stress response in rice. *International Journal of Molecular Sciences*, *25*(2), 1185.

Gnanasri, M., Vinothini, N., Gurunathan, S., Rajanikanth, B. S., Bibisha, V. M., & Jegadeeswaran, M. (2026). Impact of Surface Discharge Cold Plasma on

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Seed Germination and Seedling Vigour in Rice (Oryza sativa L.) Genotypes. *Indian Journal of Agricultural Research*, *60*(5), 661-668.

Guo, Q., Wang, Y., Zhang, H., Qu, G., Wang, T., Sun, Q., & Liang, D. (2017). Alleviation of adverse effects of drought stress on wheat seed germination using atmospheric dielectric barrier discharge plasma treatment. *Scientific reports*, *7*(1), 16680.

Hadiyanti, N., Muharram, M., & Probojati, R. T. (2023). Pengaruh Stres Kekeringan terhadap Pertumbuhan dan Kandungan Sinensetin Tanaman Kumis Kucing (Orthosiphon aristatus (Blume) Miq.). *Jurnal Agroekoteknologi*, *15*(2), 81-97.

Hanum, L., Windusari, Y., Setiawan, A., HIDAYAT, M. R., ADRIANSYAH, F., Mubarok, A. A., & Pratama, R. (2018). Morfologi Dan Molekuler Padi Lokal Sumatera Selatan. *Perpustakaan Nasional Katalog Dalam Terbitan (KDT). Palembang*.

Hasanah, N., Bayu, E. S., & Kardhinata, E. H. (2020). Pengaruh cekaman kekeringan terhadap morfologi akar beberapa genotipe padi beras merah (Oryza Sativa L.) pada fase vegetatif. *Jurnal Online Agroekoteknologi*, *8*(2), 74-79.

Hendrati, R. L., Rachmawati, D., & Pamuji, A. C. (2016). Drought responses on growth, proline content and root anatomy of Acacia auriculiformis cunn., Tectona grandis l., Alstonia spectabilis br., and Cedrela odorata l. *Jurnal Penelitian Kehutanan Wallacea*, *5*(2), 123-133.

Hosseinifard, M., Stefaniak, S., Ghorbani Javid, M., Soltani, E., Wojtyla, Ł., & Garnczarska, M. (2022). Contribution of exogenous proline to abiotic stresses tolerance in plants: a review. *International Journal of Molecular Sciences*, *23*(9), 5186.

Indraswati, D. S., Zulkifli, Z., & Handayani, T. T. (2015). Uji ketahanan pada kecambah padi gogo (Oryza sativa L.) terhadap cekaman kekeringan yang diinduksi oleh polietilen glikol 6000. In *Prosiding Seminar Nasional Pengembangan Teknologi Pertanian*.

Kasmiyati, S. (2018). Respon Enzim Antioksidatif Sonchus oleraceus terhadap Cekaman Krom pada Media Tanam Berbeda (Response of Antioxidative Enzymes of Sonchus oleraceus toward Chromium Stress on Different Planting Media). *Biologi Indonesia*, *14*(1), 51-59.

Kocira, S., Pérez-Pizá, M. C., Bohata, A., Bartos, P., & Szparaga, A. (2022). Cold plasma as a potential activator of plant biostimulants. *Sustainability*, *14*(1), 495.

Konchekov, E. M., Gusein-Zade, N., Burmistrov, D. E., Kolik, L. V., Dorokhov, A. S., Izmailov, A. Y., & Gudkov, S. V. (2023). Advancements in plasma agriculture: a review of recent studies. *International journal of molecular sciences*, *24*(20), 15093.

Li, K., Zhong, C., Shi, Q., Bi, H., & Gong, B. (2021). Cold plasma seed treatment improves chilling resistance of tomato plants through hydrogen peroxide and abscisic acid signaling pathway. *Free Radical Biology and Medicine*, *172*, 286-297.

Ling, L., Jiafeng, J., Jiangang, L., Minchong, S., Xin, H., Hanliang, S., & Yuanhua, D. (2014). atrattr germination and seedling growth of soybean. *Scientific reports*, *4*(1), 5859.

UNIVERSITAS
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Ling, L., Jiangang, L., Minchong, S., Chunlei, Z., & Yuanhua, D. (2015). Cold plasma treatment enhances oilseed rape seed germination under drought stress. *Scientific reports*, *5*(1), 1-10.

Mackill, D. J., & Khush, G. S. (2018). IR64: a high-quality and high-yielding mega variety. *Rice*, *11*, 1-11.

Michel, B. E., & Kaufmann, M. R. (1973). The osmotic potential of polyethylene glycol 6000. *Plant physiology*, *51*(5), 914-916.

Mishra, N., Jiang, C., Chen, L., Paul, A., Chatterjee, A., & Shen, G. (2023). Achieving abiotic stress tolerance in plants through antioxidative defense mechanisms. *Frontiers in plant science*, *14*, 1110622.

Monareh, J., & Ogie, T. B. (2020). Disease control using biopesticide on rice plants (Oryza sativa L.). *Jurnal Agroekoteknologi Terapan*, *1*(1), 11-13.

Mudhor, M. A., Dewanti, P., Handoyo, T., & Ratnasari, T. (2022). Pengaruh cekaman kekeringan terhadap pertumbuhan dan produksi tanaman padi hitam varietas jeliteng. *Agrikultura*, *33*(3), 247-256.

Pandey, S., Fartyal, D., Agarwal, A., Shukla, T., James, D., Kaul, T., & Reddy, M. K. (2017). Abiotic stress tolerance in plants: myriad roles of ascorbate peroxidase. *Frontiers in plant science*, *8*, 581.

Priatama, R. A., Pervitasari, A. N., Park, S., Park, S. J., & Lee, Y. K. (2022). Current advancements in the molecular mechanism of plasma treatment for seed germination and plant growth. *International Journal of Molecular Sciences*, *23*(9), 4609.

Purnama, G. W., Permana, A. A. J., Ananda, I. K. N., Purnami, N. L. I., Nugraha, G. N. A., & Yogi, I. B. S. M. (2024). Implementasi Sistem Pakar untuk Klasifikasi Tanaman Padi (Oryza sativa L.) Berdasarkan Ciri-Ciri Morfologi. *Jurnal Pendidikan Teknik Elektro Undiksha*, *13*(2), 171-185.

Quek, W.P., Yu, W., Tao, K., Fox, G.P., Gilbert, R.G. (2019). Starch structure property relations as a function of barley germination times. Int. *J. Biol. Macromol*. 136, 1125–1132

Rajput, V. D., Harish, Singh, R. K., Verma, K. K., Sharma, L., Quiroz-Figueroa, F. R., & Mandzhieva, S. (2021). Recent developments in enzymatic antioxidant defence mechanism in plants with special reference to abiotic stress. *Biology*, *10*(4), 267.

Rembang, J. H., Rauf, A. W., & Sondakh, J. O. (2018). Morphological character of local irrigated rice on farmer field in North Sulawesi. *Buletin Plasma Nutfah*, *24*(1), 1-8.

Rosa, M., Prado, C., Podazza, G., Interdonato, R., González, J. A., Hilal, M., & Prado, F. E. (2009). Soluble sugars: Metabolism, sensing and abiotic stress: A complex network in the life of plants. *Plant signaling & behavior*, *4*(5), 388-393.

Saha, S., Begum, H. H., & Nasrin, S. (2019). Effects of drought stress on growth and accumulation of proline in five rice varieties (Oryza Sativa L.). *Journal of the Asiatic Society of Bangladesh, Science*, *45*(2), 241-247.

Sayahi, K., Sari, A. H., Hamidi, A., Nowruzi, B., & Hassani, F. (2024). Evaluating the impact of Cold plasma on Seedling Growth properties, seed germination, and soybean antioxidant enzyme activity. *BMC biotechnology*, *24*(1), 93.

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Sayahi, K., Sari, A. H., Hamidi, A., Nowruzi, B., & Hassani, F. (2024). Evaluating the impact of Cold plasma on Seedling Growth properties, seed germination, and soybean antioxidant enzyme activity. *BMC biotechnology*, *24*(1), 93.

Siddiqui, H., Sami, F., & Hayat, S. (2020). Glucose: Sweet or bitter effects in plants-a review on current and future perspective. *Carbohydrate research*, *487*, 107884.

Sofo, A., Scopa, A., Nuzzaci, M., & Vitti, A. (2015). Ascorbate peroxidase and catalase activities and their genetic regulation in plants subjected to drought and salinity stresses. *International journal of molecular sciences*, *16*(6), 13561-13578.

Sujinah, S., & Jamil, A. (2016). Mekanisme respon tanaman padi terhadap cekaman kekeringan dan varietas toleran. *Iptek tanaman pangan*, *11*(1).

Sumariana, S., & Juswardi, J. (2022, November). Kadar Prolin dan Indeks Toleransi Pinak Tanaman Tebu (Saccharum officinarum L.) Hasil Kultur Jaringan di PTPN VII Cinta Manis pada Cekaman Kekeringan. In *Prosiding SNPBS (Seminar Nasional Pendidikan Biologi dan Saintek)* (pp. 26-32).

Supriyanto, B. (2013). Pengaruh cekaman kekeringan terhadap pertumbuhan dan hasil padi gogo lokal, kultivar jambu. *Agrifor*, *12*(1), 77-82.

Tardieu, F., Granier, C., & Muller, B. (2011). Water deficit and growth. Co-ordinating processes without an orchestrator?. *Current opinion in plant biology*, *14*(3), 283-289.

Thomas, A., Beena, R., Laksmi, G., Soni, K. B., Alex, S., & Viji, M. M. (2022). Changes in sucrose metabolic enzymes to water stress in contrasting rice genotypes. *Plant Stress*, *5*, 100088.

Ubaidillah, M. (2021). Pengaruh Cekaman Kekeringan Terhadap Ekspresi Gen Ketahanan OSCATA Dan OSAPX1 Pada Padi Toleran Kekeringan. *Jurnal Bioteknologi dan Biosains Indonesia*, *8*(2), 276-285.

Verslues, P. E., Agarwal, M., Katiyar-Agarwal, S., Zhu, J., & Zhu, J. K. (2006). Methods and concepts in quantifying resistance to drought, salt and freezing, abiotic stresses that affect plant water status. *The Plant Journal*, *45*(4), 523-539.

Wachid, A., & Mintono, M. (2017). Rice Productivity Variety Ir-64 Using System Of Rice Intensification (Sri) Method With Several Models (Tegel And Legowo). *Nabatia*, *5*(2), 91-99.

Wahab, A., Abdi, G., Saleem, M. H., Ali, B., Ullah, S., Shah, W., ... & Marc, R. A. (2022). Plants' physio-biochemical and phyto-hormonal responses to alleviate the adverse effects of drought stress: A comprehensive review. *Plants*, *11*(13), 1620.

Wang, F., Niu, H., Xin, D., Long, Y., Wang, G., Liu, Z., ... & Chen, X. (2021). OsIAA18, an Aux/IAA transcription factor gene, is involved in salt and drought tolerance in rice. *Frontiers in Plant Science*, *12*, 738660.

Wang, X., Liu, H., Yu, F., Hu, B., Jia, Y., Sha, H., & Zhao, H. (2019). Differential activity of the antioxidant defence system and alterations in the accumulation of osmolyte and reactive oxygen species under drought stress and recovery in rice (Oryza sativa L.) tillering. *Scientific reports*, *9*(1), 8543.

Wijayanto, F. V., Wibowo, Y. W., & Sulistyowati, I. (2021). APLIKASI SISTEM PAKAR UNTUK PERLINDUNGAN TANAMAN PADI IR 64 DARI

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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

HAMA DAN PENYAKIT. *Journal of Computer Science and Technology (JCS-TECH)*, *1*(1), 1-6.

Wu, Z. H., Chi, L. H., Bian, S. F. & Xu, K. Z. (2007). Effects of plasma treatment on maize seeding resistance. *J Maize Sci*. 15, 111–113.

Yadav, C., Bahuguna, R. N., Dhankher, O. P., Singla-Pareek, S. L., & Pareek, A. (2022). Physiological and molecular signatures reveal differential response of rice genotypes to drought and drought combination with heat and salinity stress. *Physiology and Molecular Biology of Plants*, *28*(4), 899-910.

Yin, M. Q., Huang, M. J., Ma, B. Z. & Ma, T. C. (2005). Stimulating effects of seed treatment bymagnetized plasma on tomato growth and yield. *PlasmaSci.Techno*. 7, 3143–3147.

Zhang, J., Zhang, S., Cheng, M., Jiang, H., Zhang, X., Peng, C., & Jin, J. (2018). Effect of drought on agronomic traits of rice and wheat: A meta-analysis. *International journal of environmental research and public health*, *15*(5), 839.

Zhang, Q., Ya, J., Khan, A., Duan, S., Huang, W., Deng, R., & Bano, M. (2026). Differential regulation of rice seedling morphogenesis, carbon metabolism, and energy charge by Pro-Ca and GA_3 under salt stress. *BMC Plant Biology*, *26*(1), 322.