DAFTAR PUSTAKA

Abdirad, S., Ghaffari, M. R., Majd, A., Irian, S., Soleymaniniya, A., Daryani, P., Koobaz, P., Shobbar, Z.-S., Farsad, L. K., Yazdanpanah, P., Sadri, A., Mirzaei, M., Ghorbanzadeh, Z., Kazemi, M., Hadidi, N., Haynes, P. A., & Salekdeh, G. H. 2022. Genome-wide expression analysis of root tips in contrasting rice genotypes revealed novel candidate genes for water stress adaptation. *Frontiers in Plant Science*, *13*, 792079.

Abhilasha, A., & Roy Choudhury, S. 2021. Molecular and physiological perspectives of abscisic acid mediated drought adjustment strategies. *Plants*, *10*(12), 2769.

Ackah, M., Shi, Y., Wu, M., Wang, L., Guo, P., Guo, L., ... & Zhao, W. (2021). Metabolomics Response to drought stress in Morus alba L. variety Yu-711. *Plants*, *10*(8), 1636.

Afza, H. 2016. Peran konservasi dan karakterisasi plasma nutfahpadi beras merah dalam pemuliaan tanaman. *Jurnal Litbang Pertanian 35*(3), 143-153.

Akin, S., & Kaya, C. (2024). Asparagine and nitric oxide jointly enhance antioxidant capacity and nitrogen metabolism to improve drought resistance in cotton: evidence from long-term field trials. *Food and Energy Security*, *13*(1), e502.

Alasvandyari, F., Mahdavi, B., & Hosseini, S. M. (2017). Glycine betaine affects the antioxidant system and ion accumulation and reduces salinity-induced damage in safflower seedlings. *Archives of Biological Sciences*, *69*(1), 139-147.

Ali, M., Kamran, M., Abbasi, G. H., Saleem, M. H., Ahmad, S., Parveen, A., ... & Fahad, S. (2021). Melatonin-induced salinity tolerance by ameliorating osmotic and oxidative stress in the seedlings of two tomato (Solanum lycopersicum L.) cultivars. *Journal of Plant Growth Regulation*, *40*(5), 2236-2248.

Ali, S., Tahir, S., Hassan, S. S., Lu, M., Wang, X., Quyen, L. T. Q., ... & Chen, S. (2025). The Role of Phytohormones in Mediating Drought Stress Responses in Populus Species. *International Journal of Molecular Sciences*, *26*(8), 3884.

Anderson, A. J., Hortin, J. M., Jacobson, A. R., Britt, D. W., & McLean, J. E. (2023). Changes in metal-chelating metabolites induced by drought and a root microbiome in wheat. *Plants*, *12*(6), 1209.

Anjum, S. A., Xie, X., Wang, L. C., Saleem, M. F., Man, C., & Lei, W. (2011). Morphological, physiological and biochemical Responses of plants to drought stress. *African journal of agricultural research*, *6*(9), 2026-2032.

Asamarai, A. M., Addis, P. B., Epley, R. J., & Krick, T. P.1996. Wild rice hull antioxidants. *Journal of Agricultural and Food Chemistry*, *44*(1), 126-130,

Awais, M. *et al.,* 2017. Isolation, characterization and inter-relationship of phosphate solubilizing bacteria from the rhizosphere of sugarcane and rice. *Biocatalysis and Agricultural Biotechnology*, 11, 312– 321.

BB Biogen, 2015. Status Koleksi SDG Tanaman Pangan pada Bank Gen Balitbangtan di BB Biogen, < http://biogen.litbang.pertanian.go.id/?p=57710 >, (diakses 5 Juli 2024).

Bhandari, U., Gajurel, A., Khadka, B., Thapa, I., Chand, I., Bhatta, D., ... & Shrestha, J. (2023). Morpho-physiological and biochemical Response of rice (Oryza sativa L.) to drought stress: A review. *Heliyon*, *9*(3).

Bhandari, U., Gajurel, A., Khadka, B., Thapa, I., Chand, I., Bhatta, D., ... & Shrestha, J. (2023). Morpho-physiological and biochemical Response of rice (*Oryza sativa* L.) to drought stress: A review. Heliyon, 9(3).

Bimpong, I. K., Serraj, R., Chin, J. H., Ramos, J., Mendoza, E. M., Hernandez, J. E., ... & Brar, D. S. 2011. Identification of QTLs for drought-related traits in alien introgression lines derived from crosses of rice (Oryza sativa cv. IR64)× O. glaberrima under lowland moisture stress. *Journal of Plant biology*, *54*, 237-250,

Blum, A. (2011). Drought resistance - is it really a complex trait? *Functional Plant Biology*, 38(10), 753–757.

Bray, E.A. 2007. Molecular and Physiological Responses to Water-Deficit Stress. *In Advances in Molecular Breeding Toward Drought and Salt Tolerant Crops*, Jenks, M.A., Hasegawa, P.M., & Jain, S.M (Eds.), Springer. New York, pp. 121-140,

Casartelli, A., Melino, V. J., Baumann, U., Riboni, M., Suchecki, R., Jayasinghe, N. S., ... & Heuer, S. (2019). Opposite fates of the purine metabolite allantoin under water

and nitrogen limitations in bread wheat. *Plant molecular biology*, *99*(4), 477-497.

Chaves, M. M., Flexas, J., & Pinheiro, C. (2009). Photosynthesis under drought and salt stress: regulation mechanisms from whole plant to cell. *Annals of botany*, *103*(4), 551-560,

Choudhary, M. K., Basu, D., Datta, A., Chakraborty, N., & Chakraborty, S. (2009). Dehydration-Responsive nuclear proteome of rice (*Oryza sativa* L.) illustrates protein network, novel regulators of cellular adaptation, and evolutionary perspective. *Molecular & Cellular Proteomics*, *8*(7), 1579-1598.

Comas, L. H., Becker, S. R., Cruz, V. M., Byrne, P. F., & Dierig, D. A. (2013). Root traits contributing to plant productivity under drought. Frontiers in Plant Science, 4, 442.

Correa, J., Postma, J. A., Watt, M., & Wojciechowski, T. (2019). Soil compaction and the architectural plasticity of root systems. *Journal of Experimental Botany*, 70(21), 6019-6034.

Csiszár, J. (2005). Effect of osmotic stress on antioxidant enzyme activities in transgenic wheat calli bearing MsALR gene. *Acta Biologica Szegediensis*, *49*(1-2), 49-50.

Davies, Peter J. 2010, *Plant Hormones Biosynthesis, Signal Transduction, Action! Revised 3rd Edition*. Dordrecht: Springer

Dikilitas, M., Simsek, E., & Roychoudhury, A. (2020). Role of proline and glycine betaine in overcoming abiotic stresses. *Protective chemical agents in the amelioration of plant abiotic stress: biochemical and molecular perspectives*, 1-23.

Elferjani, R., Pahari, S., Soolanayakanahally, R., Ballantyne, K., & Nambara, E. (2024). Drought induced metabolic shifts and water loss mechanisms in canola: role of cysteine, phenylalanine and aspartic acid. *Frontiers in Plant Science*, *15*, 1385414.

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(4), 673–689.

Fang, Y., Du, Y., Wang, J., Wu, A., Qiao, S., Xu, B., . . . & Chen, Y. 2017. Moderate drought stress affected root growth and grain yield in old, modern and newly released cultivars of winter wheat. *Frontiers in Plant Science, 8*, 672.

Farooq, M., Hussain, M., Wahid, A., & Siddique, K. H. M. 2012. Drought Stress in Plants: An Overview. In R. Aroca (Ed.), *Plant Responses to Drought Stress: From Morphological to Molecular Features* (pp. 1–33). Heidelberg: Springer Berlin.

Farooq, M., Wahid, A., Kobayashi, N. S. M. A., Fujita, D. B. S. M. A., & Basra, S. M. (2009). Plant drought stress: effects, mechanisms and management. In *Sustainable agriculture* (pp. 153-188). Dordrecht: Springer Netherlands.

Fitter, A. 2002. Characteristics and functions of root systems. In Y. Waisel, A. Eshel, T. Beeckman, & U. Kafkafi, *Plant roots: The hidden half* (3rd ed., pp. 49–78). CRC Press

Gill, S. S., & Tuteja, N. (2010). Reactive oxygen species and antioxidant machinery in abiotic stress tolerance in crop plants. *Plant physiology and biochemistry*, *48*(12), 909-930.

Gu, D., Zhen, F., Hannaway, D. B., Zhu, Y., Liu, L., Cao, W., & Tang, L. (2017). Quantitative classification of rice (Oryza sativa L.) root length and diameter using image analysis. *PloS one*, *12*(1), e0169968.

Gupta, A., Rico-Medina, A., Cano-Delgado, ˜ A.I., 2020, The physiology of plant Responses to drought. *Science 368*, 266–269

Hasegawa, P. M., Bressan, R. A., Zhu, J. K., & Bohnert, H. J. (2000). Plant cellular and molecular Responses to high salinity. *Annual review of plant biology*, *51*(1), 463-499.

Hassan, M. A., Dahu, N., Hongning, T., Qian, Z., Yueming, Y., Yiru, L., & Shimei, W. (2023). Drought stress in rice: morpho-physiological and molecular Responses and marker-assisted breeding. *Frontiers in Plant Science*, *14*, 1215371.

Hazman, M., & Brown, C. S. (2018). Root adaptation to water deficit: mechanisms, anatomical traits, and functional implications for drought resistance. Frontiers in Plant Science, 9, 1233.

He, M., & Ding, N. Z. (2020). Plant unsaturated fatty acids: multiple roles in stress response. *Frontiers in plant science*, *11*, 562785.

Henry, A., Cal, A. J., Batoto, T. C., Torres, R. O., & Serraj, R. (2012). Root attributes affecting water uptake of rice (Oryza sativa) under drought. *Journal of experimental botany*, *63*(13), 4751-4763.

Hossain, M. A., Munemasa, S., Uraji, M., Nakamura, Y., Mori, I. C., & Murata, Y. (2011). Involvement of endogenous abscisic acid in methyl jasmonate-induced stomatal closure in Arabidopsis. *Plant physiology*, *156*(1), 430-438.

Hsiao, T.C. and Xu, L.K. (2000) Sensitivity of Growth of Roots versus Leaves to Water Stress: Biophysical Analysis and Relation to Water Transport. Journal of Experimental Botany, 51, 1595-1616.

Huang, F., Zhang, L., Wang, X., & Liu, Q. (2018). Root and shoot biomass allocation and root architecture in maize and wheat grown under different soil moisture conditions. Frontiers in Plant Science, 9, 764.

Ilyas, M., Nisar, M., Khan, N., Hazrat, A., Khan, A. H., Hayat, K., Fahad, S., Khan, A., & Ullah, A. 2021. Drought Tolerance Strategies in Plants: A Mechanistic Approach. *Journal of Plant Growth Regulation*, *40*, 926–944.

IPCC Climate Change. 2007. *Climate change 2007: the physical science basis, vol 1009*. Cambridge: Cambridge University Press.

Iqbal, S., Wang, X., Mubeen, I., Kamran, M., Kanwal, I., Díaz, G. A., ... & Fahad, S. (2022). Phytohormones trigger drought tolerance in crop plants: outlook and future perspectives. *Frontiers in Plant Science*, *12*, 799318.

Islam, M. M., Kayesh, E., Zaman, E., Urmi, T. A., & Haque, M. M. (2018). Evaluation of rice (Oryza sativa L.) genotypes for drought tolerance at germination and early seedling stage. *The Agriculturists*, *16*(1), 44-54.

Itam, M., Mega, R., Tadano, S., Abdelrahman, M., Matsunaga, S., Yamasaki, Y., ... & Tsujimoto, H. (2020). Metabolic and physiological Responses to progressive drought stress in bread wheat. *Scientific Reports*, *10*(1), 17189.

Jaleel, C. A., Manivannan, P. A. R. A. M. A. S. I. V. A. M., Wahid, A., Farooq, M., Al-Juburi, H. J., Somasundaram, R. A. M. A. M. U. R. T. H. Y., & Panneerselvam, R. (2009). Drought stress in plants: a review on morphological characteristics and pigments composition. *Int. J. Agric. Biol*, *11*(1), 100-105.

Jarin, A. S., Islam, M. M., Rahat, A., Ahmed, S., Ghosh, P., & Murata, Y. (2024). Drought stress tolerance in rice: physiological and biochemical insights. *International Journal of Plant Biology*, *15*(3), 692-718.

Jia, X., Sun, C., Zuo, Y., Li, G., Li, G., Ren, L., & Chen, G. (2016). Integrating transcriptomics and metabolomics to characterise the response of Astragalus membranaceus Bge. var. mongolicus (Bge.) to progressive drought stress. *Bmc Genomics*, *17*(1), 188.

Junaedi, A., Santosa, E., Chozin, M. A., & Tubur, H. W. 2012. Respons Agronomi Varietas Padi terhadap Periode Kekeringan pada Sistem Sawah. *Indonesian Journal of Agronomy*, *40*(3), 7851.

Kalra, A., Goel, S., & Elias, A. A. 2024. Understanding role of roots in plant Response to drought: Way forward to climate-resilient crops. *The Plant Genome*, *17*(1), e20395.

Kano, M., Inukai, Y., Kitano, H. and Yamauchi, A. 2011. Root plasticity as the key root trait for adaptation to various intensities of drought stress water stresses in rice. Plant Soil. 342: 117-128

Kato, Y., Honda, C., & Hayashi, K. (2014). Anatomical changes of root tip tissues in rice under drought stress. Plant Production Science, 17(1), 87-94.

Kaur, R., Chandra, J., Varghese, B., & Keshavkant, S. (2023). Allantoin: a potential compound for the mitigation of adverse effects of abiotic stresses in plants. *Plants*, *12*(17), 3059.

Khan, T. A., Hassan, H., Inzamamulhaq, M., Ashraf, I., Luo, F., Khan, H., & Huang, G. (2024). How does jasmonic acid improve drought tolerance? Mechanisms and future prospects. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, *52*(2), 13604-13604.

Kim, H., Seomun, S., Yoon, Y., & Jang, G. (2021). Jasmonic acid in plant abiotic stress tolerance and interaction with abscisic acid. *Agronomy*, *11*(9), 1886.

Kim, Y., Chung, Y. S., Lee, E., Tripathi, P., Heo, S., & Kim, K. H. 2020, Root Response to drought stress in rice (*Oryza sativa* L.). *International journal of molecular sciences*, *21*(4), 1513.

Kim, Y., Lee, K., Ku, Y.-S., & Kim, K.-H. (2017). Morphological and physiological Responses of rice (*Oryza sativa* L.) roots under drought stress. *Plant Physiology and Biochemistry*, 111, 41–50,

Ko, D., & Helariutta, Y. 2017. Shoot–root communication in flowering plants. *Current Biology*, *27*(17), R973–R978.

Koevoets IT, Venema JH, Elzenga JTM, Testerink C.(2016). Roots withstanding their Environment: Exploiting Root System Architecture Responses to Abiotic Stress to Improve Crop Tolerance. Frontiers in, Plant Science, 7, 13-35.

Kooyers, N. J. 2015. The evolution of drought escape and avoidance in natural herbaceous populations. *Plant Science: An International Journal of Experimental Plant Biology*, *234*, 155–162.

Kou, X., Han, W., & Kang, J. (2022). Responses of root system architecture to water stress at multiple levels: A meta-analysis of trials under controlled conditions. *Frontiers in Plant Science*, 13, 1085409.

Kramp, R. E., Liancourt, P., Herberich, M. M., Saul, L., Weides, S., Tielbörger, K., & Májeková, M. (2022). Functional traits and their plasticity shift from tolerant to avoidant under extreme drought.

Kudapa, H., Ghatak, A., Barmukh, R., Chaturvedi, P., Khan, A., Kale, S., ... & Varshney, R. K. (2024). Integrated multi-omics analysis reveals drought stress Response mechanism in chickpea (Cicer arietinum L.). *The plant genome*, *17*(1), e20337.

Kulkarni, M. B., Nayak, S. K., & Patil, J. V. (2017). Effects of drought stress on anatomical features and growth parameters of rice (*Oryza sativa* L.). Indian Journal of Plant Physiology, 22(4), 428-436.