

DAFTAR PUSTAKA

- Adegoke, G. O. and Ojo, O. A. 2017. Phytochemical, antioxidant and antimicrobial activities in the leaf, stem and fruit fractions of *Basella Alba* and *Basella Rubra*. *Plant*, 5(5): 73–79.
- Adenegan-Alakinde, T. A. and Mabel, A. F. 2015. Some anatomical features of *Basella* Linn: their adaptive significance to water stress. *Research in Plant Biology*, 5(3): 14–22.
- Asrifa, Yusriadi dan Martina, A. 2017. Uji efek ekstrak etanol daun gendola merah (*Basella alba* L.) terhadap gambaran histologis tubulus ginjal tikus putih jantan (*Rattus norvegicus*). *Farmakologika Jurnal Farmasi*, 14(2): 167–175.
- Avif, A. N. dan Antari, E. D. 2022. Analisis kadar fitokimia dan zat warna dalam sari buah angkung hijau dan merah (*Basella alba* dan *Basella rubra*). *Lantanida Journal*, 10(2): 86–94.
- Bhuiyan, M. N. H. and Adachi, T. 2003. Stimulation of betacyanin synthesis through exogenous methyl jasmonate and other elicitors in suspension-cultured cells of *Portulaca*. *Journal of Plant Physiology*, 160(9): 1117–1124.
- Brito, G. S., Souza, C. M., Jesus, A. T., Souza, G. S., and Santos, A. R. 2022. Growth of *Basella alba* under different light environments. *Revista Verde de Agroecologia e Desenvolvimento Sustentável*, 17(3): 201–205.
- Capacio, A. F. and Belonias, B. 2018. Occurrence and variation of calcium oxalate crystals in selected medicinal plant species. *Annals of Tropical Research*, 40 (2): 45–60.
- Carreón-Hidalgo, J. P., Franco-Vásquez, D. C., Gómez-Linton, D. R., and Pérez-Flores, L. J. 2022. Betalain plant sources, biosynthesis, extraction, stability enhancement methods, bioactivity, and applications. *Food Research International*, 151: 1–21.
- Chandran, K. and Indira, G. 2016. Quantitative estimation of total phenolic, flavonoids, tannin and chlorophyll content of leaves of *Strobilanthes Kunthiana* (Neelakurinji). *Journal of Medicinal Plants Studies*, 4(4): 282–286.
- Chaurasiya, A., Pal, R. K., Verma, P. K., Katiyar, A., and Kumar, N. 2021. An updated review on Malabar spinach (*Basella alba* and *Basella rubra*) and their importance. *Journal of Pharmacognosy and Phytochemistry*, 10(2): 1201–1207.
- Chen, J. Sonobe, K., Ogawa, N., Masuda, S., Nagatani, A., Kobayashi, Y., and Ohta, H. 2013. Inhibition of arabidopsis hypocotyl elongation by jasmonates is enhanced under red light in phytochrome B dependent manner. *Journal of Plant Research*, 126(1): 161–168.
- Cyunel, E. 1989. *Basella alba* L.: In vitro culture and the production of betalains. *Biotchnology in Agriculture and Forestry*, 7: 47–68.
- Deshmukh, S. A. and Gaikwad, D. K. 2014. A review of the taxonomy, ethnobotany, phytochemistry and pharmacology of *Basella alba* (Basellaceae). *Journal of Applied Pharmaceutical Science*, 4(1): 153–165.

- Divya, P., Puthusseri, B., Savanur, M. A., Lokesh, V., and Neelwarne, B. 2018. Effects of methyl jasmonate and carotenogenic inhibitors on gene expression and carotenoid accumulation in coriander (*Coriandrum sativum* L.) foliage. *Food Research International*, 111: 11–19.
- Ebrahimi, P., Shokramraji, Z., Tavakkoli, S., Mihaylova, D., and Lante, A. 2023. Chlorophylls as natural bioactive compounds existing in food by-products: a critical review. *Plants*, 12(7): 1–12.
- Fan, X., Mattheis, J. P. and Fellman, J. K. 1998. A role for jasmonates in climacteric fruit ripening. *Planta*, 204(4): 444–449.
- Gandía-Herrero, F. and García-Carmona, F. 2013. Biosynthesis of betalains: Yellow and violet plant pigments. *Trends in Plant Science*, 18(6): 334–343.
- Hendry, G. A. F. and Grime, J. P. 1993. *Methods in Comparative Plant Ecology: A Laboratory Manual*. Springer Dordrecht, United Kingdom.
- Ho, T. T., Murthy, H. N. and Park, S. Y. 2020. Methyl jasmonate induced oxidative stress and accumulation of secondary metabolites in plant cell and organ cultures. *International Journal of Molecular Sciences*, 21(3): 1–18.
- Huang, H., Liu, B., Liu, L., and Song, S. 2017. Jasmonate action in plant growth and development. *Journal of Experimental Botany*, 68(6): 1349–1359.
- Integrated Taxonomic Information System Report. 2023. *Basella alba* L. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=192210#null. Accessed 22th March 2023, at 20.50 WIB.
- Kiokias, S., Proestos, C. and Varzakas, T. 2016. A review of the structure, biosynthesis, absorption of carotenoids-analysis and properties of their common natural extracts. *Current Research in Nutrition and Food Science*, 4(1): 25–37.
- Krokene, P., Kohmann, K., Huynh, N. B., and Mageroy, M. 2023. Methyl jasmonate, salicylic acid, and oxalic acid affects growth, inducible defenses, and pine weevil resistance in norway spruce. *Frontiers in Plant Science*, 14: 1–11.
- Kulkarni, O. S., Mazumder, M., Kini, S., Hill, E. D., Aow, J. S. B., Phua, S. M. L., Elejalde, U., Kjelleberg, S., and Swarup, S. 2024. Volatile methyl jasmonate from roots triggers host-beneficial soil microbiome biofilms. *Nature Chemical Biology*, 20(4): 473–483.
- Kumar, S. S., Manoj, P., Shetty, N. P., Prakash, M., and Giridhar, P. 2015. Characterization of major betalain pigments -gomphrenin, betanin and isobetanin from *Basella rubra* L. fruit and evaluation of efficacy as a natural colourant in product (ice cream) development. *Journal of Food Science and Technology*, 52(8): 4994–5002.
- Kumari, R., Ashraf, S., Bagri, G.K., Khatik, S.K., Bagri, D.K., and Bagdi, D.L. 2018. Extraction and estimation of chlorophyll content of seed treated lentil crop using DMSO and acetone. *Journal of Pharmacognosy and Phytochemistry*, 7(3): 249–250.
- Kurowska, M. M., Daszkowska-Golec, A., Gajecka, M., Kościelniak, P., Bierza, W., and Szarejko, I. 2020. Methyl jasmonate affects photosynthesis efficiency, expression of HvTIP genes and nitrogen homeostasis in barley. *International Journal of Molecular Sciences*, 21(12): 1–23.

- Lakhotia, P., Singh, K. P., Singh, S. K., Singh, M. C., Prasad, K. V., and Swaroop, K. 2014. Influence of biotic and abiotic elicitors on production of betalain pigments in *Bougainvillea* callus culture. *Indian Journal of Horticulture*, 71(3): 373–378.
- Li, C. Wang, P., Menzies, N. W., Lombi, E., and Kopittke, P. M. 2018. Effects of methyl jasmonate on plant growth and leaf properties. *Journal of Plant Nutrition and Soil Science*, 181(3): 409–418.
- Lin, S. M., Lin, B. H., Hsieh, W. M., Ko, H. J., Liu, C. D., Chen, L. G., and Chiou, R. Y. Y. 2010. Structural identification and bioactivities of red-violet pigments present in *Basella alba* fruits. *Journal of Agricultural and Food Chemistry*, 58(19): 10364–10372.
- Luo, H., He, W., Li, D., Bao, Y., Riaz, A., Xiao, Y., Song, J., and Liu, C. 2020. Effect of methyl jasmonate on carotenoids biosynthesis in germinated maize kernels. *Food Chemistry*, 299: 1–30.
- Maoka, T. 2020. Carotenoids as natural functional pigments. *Journal of Natural Medicines*, 74(1): 1–16.
- Milech, C., Auler, P. A., da Amaral, M. N., Lucho, S. R., da Silva dos Santos, J., Furlan, V. J. M., Bianchi, V. J., and Braga, E. J. B. 2023. Biosynthesis of betalains elicited by methyl jasmonate in two species of *Alternanthera* genus: antagonistic regulations result in increase of pigments. *Applied Biochemistry and Biotechnology*, 195(8): 4965–4982.
- Moutusi, S., Prasannakumar, M. K., and Kiranmayee, P. 2019. Morphological and molecular characterization of culturable leaf endophytic fungi from Malabar Spinach: The first report. *Studies in Fungi*, 4(1): 192–204.
- Natesh, N. H., Ijenyo, M. O., Asiedu, S. K., Rupasinghe, H. P.V., and Abbey, L. 2021. Plant growth and nutritional quality attributes of *Basella alba* applied with variable rates of nitrogen fertilizer at different planting dates under canadian maritime climatic conditions. *International Journal of Agronomy*, 2021(1): 1–11.
- Oyugi, J., Maina, F. N. W. and Rop, N. K. 2022. Morphological characterization of vine spinach (*Basella alba* L. and *Basella rubra* L.) in western kenya. *AfriTVETJournal*, 7(1): 169–176.
- Puspita, D. 2021. Aktifitas antioksidan pigmen bayam malabar (*Basella rubra*) yang dimikroenkapsulasi dengan maltodesktrin. *Jurnal Dunia Gizi*, 4(1): 15–20.
- Reyes-Díaz, M., Lobos, T., Cardemil, L., Nunes-Nesi, A., Retamales, J., Jaakola, L., Alberdi, M. and Ribera-Fonseca, A. 2016. Methyl jasmonate: An alternative for improving the quality and health properties of fresh fruits. *Molecules*, 21(6): 1–18.
- Ruan, J., Zhou, Y., Zhou, M., Yan, J., Khurshid, M., Weng, W., Cheng, J., and Zhang, K. (2019). Jasmonic acid signaling pathway in plants. *International journal of molecular sciences*, 20(10): 1–15.
- Sagar, V., Pragma, Bhirdwaj, R., Devi, J., Singh, S.K., and Singh, P.M. 2022. The inheritance of betalain pigmentation in *Basella alba* L. *South African Journal of Botany*, 145: 360–369.

- Salas, D. S., Sinamban, E. B. and Buenavista, D. P. 2018. Comparative morpho-anatomical studies of *Hoya incrassate* and *Hoya soligamiana* (Apocynaceae) from Mount Hamiguitan, Philippines. *Ruhuna Journal of Science*, 9(1): 1-12.
- See, K. S., Bhatt, A. and Keng, C. L. 2011. Effect of sucrose and methyl jasmonate on biomass and anthocyanin production in cell suspension culture of *Melastoma malabathricum* (Melastomaceae). *Revista de Biologia Tropical*, 59(2): 597–606.
- Shantha, T. R., Patchaimal, P., Reddy, M. P., Kumar, R. K., Tewari, D., Bharti, V., and Venkateshwarlu, G. 2016. Pharmacognostical standardization of upodika - *Basella alba* L: an important ayurvedic antidiabetic plant. *Ancient Science of Life*, 36: 35–41.
- Sirhindi, G., Mushtaq, R., Gill, S. S., Sharma, P., AbdAllah, E. F., and Ahmad, P. 2020. Jasmonic acid and methyl jasmonate modulate growth, photosynthetic activity and expression of photosystem II subunit genes in *Brassica oleracea* L. *Scientific Reports*, 10(1): 1–14.
- Susiana, E. and Maideliza, T., 2013. Analisis morfologi granula pati dan kristal pada beberapa jenis talas. *Jurnal Biologi UNAND*, 2(4): 249-255.
- Sutor-Świeży, K., Antonik, M., Dziedzic, E., Bieniasz, M., Mielczarek, P., Popenda, Ł., Pasternak, K., Tyszcza-Czochara, M., and Wybraniec, S. 2022. Structural studies on diverse betacyanin classes in matured pigment-rich fruits of *Basella alba* L. and *Basella alba* L. var. “*Rubra*” (malabar spinach). *International Journal of Molecular Sciences*, 23(19): 1-21
- Sutor-Świeży, K., Gorska, R., Kumorkiewicz-Jamro, A., Dziedzic, E., Bieniasz, M., Mielczarek, P., Popenda, L., Pasternak, K., Tyszcza-Czochara, M., Baj-Krzyworzeka, M., Stefańska, M., and Błyszczuk, P. 2024. *Basella alba* L. (malabar spinach) as an abundant source of betacyanins: identification, stability, and bioactivity studies on natural and processed fruit pigments. *Journal of Agricultural and Food Chemistry*, 72: 2943–2962.
- Timoneda, A., Feng, T., Sheehan, H., Walker-Hale, N., Pucker, B., Lopez-Nieves, S., Guo, R., and Brockington, S. 2019. The evolution of betalain biosynthesis in caryophyllales. *New Phytologist*, 224(1): 71–85.
- Wang, J., Song, L., Gong, X., Xu, J., and Li, M. 2020. Functions of jasmonic acid in plant regulation and response to abiotic stress. *International Journal of Molecular Sciences*, 21: 1–17.
- Wasternack, C. and Song, S. 2017. Jasmonates: Biosynthesis, metabolism, and signaling by proteins activating and repressing transcription. *Journal of Experimental Botany*, 68(6): 1303–1321.
- Wong, Y. M. and Siow, L. F. 2015. Effects of heat, pH, antioxidant, agitation and light on betacyanin stability using red-fleshed dragon fruit (*Hylocereus polyrhizus*) juice and concentrate as models. *Journal of Food Science and Technology*, 52(5): 3086–3092.
- Zhang, J., Lu, H., and Huang, L. 2014. Calciphytoliths (calcium oxalate crystals) analysis for the identification of decayed tea plants (*Camellia sinensis* L.). *Scientific Reports*, 4(1): 1-9.
- Zhang, T., Qiu, J., Chen, G., Xu, J., Zhu, F., and Ouyang, G. 2019. Uptake of pharmaceuticals acts as an abiotic stress and triggers variation of jasmonates in malabar spinach (*Basella alba* L.). *Chemosphere*, 236: 1–7.