DAFTAR PUSTAKA

Acquaah, G. 2009. Principles of plant genetics and breeding. John Wiley & Sons

Adiwimarta, K. 2021 Nutrisi Ruminanasia: Kepentingan Energi dan Protein. Gadjah Mada University Press. Yogyakarta.

Aili, E. N., & A. N. Sugiharto. 2016. Pengaruh pemberian *colchicine* terhadap penampilan fenotip galur inbrida jagung pakan (*Zea mays* L.) pada fase pertumbuhan vegetatif . Jurnal Produksi Tanaman. 4(5) : 370-377

Álvarez-Holguín, A., Morales-Nieto, C. R., Corrales-Lerma, R., Avendaño-Arrazate, C. H., Rubio-Arias, H. O., & Villarreal-Guerrero, F. 2018. Stomatal characterization, chlorophyll concentration and their relation with biomass production of Bouteloua curtipendula. *Agronomía Mesoamericana*, *29*(2) : 251-261. http://dx.doi.org/10.15517/ma.v29i2.29900

Antony, E., Sridhar, K., & Kumar, V. 2017. Effect of chemical sprays and management practices on *Brachiaria ruziziensis* seed production. *Field Crops Research*, *211*:19-26.

Avivi, S., Suliswanto, E. N., Restanto, D. P., Miswar, M., Syamsunihar, A., Soeparjono, S., & Hartatik, S. 2019. Morphological Diversity and Molecular RAPD Markers of Sugarcane Mutane (*Saccharum officinarum* L.) in Inundation Tolerance. AGRIVITA, Journal of Agricultural Science, 41(2):221-229. http://doi.org/10.17503/agrivita.v41i2.1304

Bailey-Serres, J., J. E. Parker, E. A. Ainsworth, G. E. D. Oldroyd, & J. I. Schroeder. 2019. Genetic strategies for improving crop yields. Nature. 575:109–118. https://doi.org/10.1038/s41586-019-1679-0.

Bharath, P., Gahir, S., & Raghavendra, A. S. 2021. Abscisic Acid-Induced Stomatal Closure: An Important Component of Plant Defense Against Abiotic and Biotic Stress. Frontiers in plant science, *12*, 615114. https://doi.org/10.3389/fpls.2021.615114.

Bharati, R., Gupta, A., Novy, P., Severová, L., Šrédl, K., Žiarovská, J., & Fernández-Cusimamani, E. 2023. Synthetic polyploid induction influences morphological, physiological, and photosynthetic characteristics in *Melissa officinalis* L. Frontiers in plant science. 14, 1332428. https://doi.org/10.3389/fpls.2023.1332428

Cao, Q., Zhang, X., Gao, X., Wang, L., & Jia, G. 2018. Effects of ploidy level on the cellular, photochemical and photosynthetic characteristics in *Lilium* FO hybrids. Plant Physiology and Biochemistry. 133:50–56. https://doi.org/10.1016/j.plaphy.2018.10.027

Croft, H., Chen, J. M., Luo, X., Bartlett, P., Chen, B., & Staebler, R. M. 2017. Leaf chlorophyll content as a proxy for leaf photosynthetic capacity. Global change biology. *23*(9): 3513-3524. https://doi.org/10.1002/2015JG002980

Crowder, L. V. 2021. Genetika Tumbuhan: Cetakan ke-8. Gadjah Mada University Press. Yogyakarta.

Dewanata, P. A., & Mushlih, M. 2021. Differences in DNA purity test using UV-Vis spectrophotometer and nanodrop spectrophotometer in type 2 diabetes mellitus patients. Indonesian Journal of Innovation Studies, *15* : 10-21070.

Fathurrahman, F., Ulpah, S, Sodiq, N. A. M, & Mahadi, I. 2024. The effect of *colchicine* treatment on phenotype and genotype characteristics of Detam-2 variety of soybean *Glycine max*. Biodiversitas Journal of Biological Diversity, 25:206-214. https://doi.org/10.13057/biodiv/d250339.

Fathurrahman, F., Mardaleni., Krisianto, A. 2023. Effect of colchicine mutagen on phenotype and genotype of *Vigna unguiculata* var. sesquipedalis the 7th generation. Biodiversitas, 24(3):1408-1415. https://doi.org/10.13057/biodiv/d240310.

Ferreira, R. C. U., A. Costa, L. Chiari, R. M. Simeão, B. B. Z. Vigna, & A. P. de Souza. 2021. An overview of the genetics and genomics of the urochloa species most commonly used in pastures. Frontiers in plant science. 12:770461. https://doi.org/10.3389/fpls.2021.770461.

Fitriyanti, R. I., Yuniastuti, E., & Nandariyah, N. 2023. Hubungan Kekerabatan Genetik Rambutan (*Nephelium lappaceum* L.) Berdasarkan Lima Marka RAPD (Random Amplified Polimorphic DNA). Agrikultura, 34(2) : 264-273.

Florina, D. G., Irina, M., & Catalina. 2022. Seed germination capacity for Poaceae species suitable for landscape design and the effect of saline stress on grasses. Journal of Horticulture Forestry and Biology, 26(4) : 72-80.

Frei, M. 2013 Lignin: characterization of a multifaceted crop component. Scientific World Journal. https://doi.org/10.1155/2013/436517

Gatti, M. L., Ayala, T. A. T., Cipriotti, P. A., & Golluscio, R. A. 2017. Effects of defoliation frequency and nitrogen fertilization on the production and potential for persistence of Dactylis glomerata sown in multispecies swards. Grass and Forage Science, 72(3):489-501. http://dx.doi.org/10.1111/gfs.12245

Gusmiaty, M Restu, dan SH Larekeng. 2016. Polimorfisme Penanda RAPD untuk Analisis Keragaman Genetik Pinus merkusii di Hutan. Jurnal Natur Indonesia. 16(2): 47–53.

Haider, M. W., Nafees, M., Iqbal, R., Asad, H. U., Azeem, F., Raza, M. S., Gaafar, A. Z., Elshikh, M. S., Arslan, M., Rahman, M. H. U., & Elshamly, A. M. S. 2024. Exploring the mechanism of transformation in Acacia nilotica (Linn.) triggered by *colchicine* seed treatment. *BMC Plant Biology*, *24*(1), 428. https://doi.org/10.1186/s12870-024-05139-9

Hartl, D & Jones, E. 2005. Genetics: Analysis of Genes and Genomes, Sixth Edition. Jones and Bartlett Publishers.

Humami, D. W., Sujono, P. A. W., & Desmawati, I. 2020. Densitas dan Morfologi Stomata Daun Pterocarpus indicus di Jalan Arif Rahman Hakim dan Kampus ITS, Surabaya. *Rekayasa*, *13*(3):240-245.

Jankowicz-Cieslak, J., Tai, T. H., Kumlehn, J., & Till, B. J. 2017. Biotechnologies for plant mutation breeding: protocols. Springer Nature. https://doi.org/10.1007/978-3-319-45021-6

Jena, R.C., & P. K. Chand. 2022. DNA marker-based auditing of genetic diversity and population structuring of Indian mango (*Mangifera indica* L.) elites. Genet Resour Crop Evol. 69:1595–1626. https://doi.org/10.1007/s10722-021-01322-1

Jiang, J., N. Yang, L. Li, G. Qin, K. Ren, H. Wang, J. Deng, & D, Ding. 2022. Tetraploidy in Citrus wilsonii Enhances Drought Tolerance via Synergistic Regulation of Photosynthesis, Phosphorylation, and Hormonal Changes. Frontiers in plant science, 13:875011. https://doi.org/10.3389/fpls.2022.875011

Karti, P. D. M. H., L. Abdullah., A. T. Permana., I. Prihantoro., N. R. Kumalasari., M. A. Setiana., D. Apriandi. 2021. Pengantar Ilmu Pastura. PT Penerbit IPB Press.

Laila F., A. Z. Abidin, Alaydrus, I. U. A. Jalil, A. Hakim, I. Sriwahyuni, R. Ismayati, D. Hervani, & Eliyani. 2023. Dasar – Dasar Pemuliaan Tanaman. G Press.

Li, S., Lin, Y., Pei, H., Zhang, J., Zhang, J., & Luo, J. 2020. Variasi tanaman autotetraploid yang diinduksi *colchicine* dari *Lilium davidii* var. satu warna. Kultur Sel Jaringan dan Organ Tumbuhan (PCTOC*)*. 141: 479 - 488. https://doi.org/10.1007/s11240-020-01805-6

Listiani, L., Dhanti, K. R., Kurniawan, K., & Widodo, O. S. Y. 2023. Optimasi Suhu Annealing Gen Blaz Dari Bakteri Methicillin-Resistant Staphylococcus Aureus (MRSA) Pada Peralatan Medis: Optimization Annealing Temperature Gene blaZ of Bacterial Methicillin-resistant Staphylococcus aureus (MRSA) in Medical Equipment. *Borneo Journal of Medical Laboratory Technology*. *6*(1).

Liu, C., Liu, Y., Lu, Y., Liao, Y., Nie, J., Yuan, X., & Chen, F. 2019. Use of a leaf chlorophyll content indeks to improve the prediction of above-ground biomass and productivity. PeerJ, .6240: 420-425. https://doi.org/10.7717/peerj .

Maftukhah, M., Sholikhah, N. I., & Fawaida, U. U. 2023. Pengaruh Cahaya Terhadap Proses Fotosintesis pada Tanaman Naungan Dan Tanaman Terpapar Cahaya Langsung. Jurnal Pengabdian Masyarakat MIPA dan Pendidikan MIPA, *7*(1):51-55.

Manzoor, A., Ahmad, T., Bashir, M.A., Hafiz, I.A., Silvestri, C. 2019. Studies on *Colchicine* Induced Chromosome Doubling for Enhancement of Quality Traits in Ornamental Plants. *Plants*. 8(7):194. https://doi.org/10.3390/plants8070194

Mawardi, A., & Simonapendi, M. L. 2016. Uji efektivitas metode isolasi DNA genom kopi arabika (*Coffea arabica* L.) asal kabupaten Jayawijaya. Jurnal Biologi Papua, 8(1) : 7-12.

Moghbel, N., K. M. Borujeni, & F. Bernard. 2015. *Colchicine* effect on the DNA content and stomata size of *Glycyrrhiza glabra* var.glandulifera and *Carthamus tinctorius* L. cultured in vitro. Journal, genetic engineering & biotechnology, 13: 1–6. https://doi.org/10.1016/j.jgeb.2015.02.002.

Mollah, A., Ashan, M. A., & Khatimah, A. H. 2022. Uji Kualitas dan Kuantitas DNA Porang (*Amorphophallus Muelleri Blume*) pada Beberapa Kawasan di Sulawesi Selatan. Jurnal Agritechno, 15(1) : 1-7.

Muhajirin, M., Despal, D., & Khalil, K. 2017. Pemenuhan kebutuhan nutrien sapi potong bibit yang digembalakan di padang mengatas. Buletin Ilmu Makanan Ternak, 104(1):9-20.

Murtiyaningsih, H. 2017. Isolasi DNA Genom dan Identifikasi Kekerabatan Genetik Nanas Menggunakan RAPD (*Random Amplified Polimorfic DNA*). Agritop. 15(1) : 1-15.

Mutimura, M., Ebong, C., Rao, I. M., & Nsahlai, I. V. 2017. Effect of cutting time on agronomic and nutritional characteristics of nine commercial cultivars of *Brachiaria* grass compared with Napier grass during establishment under semi-arid conditions in Rwanda. African journal of agricultural research, 12(35): 2692-2703. http://dx.doi.org/10.5897/AJAR2017.12474

Nikmah, A., Ridhana, F., Rahmawati, R., & Perdana, A. 2021. Pemberian Pupuk Guano Dengan Dosis Berbeda Terhadap Produksi Rumput Ruzi (Bachiaria Ruziziensis). JIPVET: Jurnal Ilmu Peternakan dan Veteriner, *3*(2) : 1-8.

Ningsih, M., Susilo, E., Rahmadina., Qolby, F., Tanjung, D., Anis, U., Eka, N., Panggabean, N., Priyadi, S., Nasution, J., Sari, N., Baharuddin, R., Wisnubroto, M. 2024. Dasar-Dasar Fisiologi Tummbuhan. CV Hei Publishing Indonesia. Padang, Sumatra Barat. Indonesia.

Okukenu, O. A., Eesuola, A. A., Dele, P. A., Akinyemi, B. T., Amisu, A. A., Onifade, O. S., Adegboyega, S. S. 2021. Chemical composition of *Brachiaria ruziziensis* and Chloris gayana as affected by age at Harvest. Nigerian Journal of Animal Production. 48(6):312-320. http://dx.doi.org/10.51791/njap.v48i6.3319

Oladosu, Y., M. Y. Rafii., N. Abdullah., G. Hussin., A. Ramli., H. A. Rahim., M. Usman. 2016. Principle and application of plant mutagenesis in crop improvement: a review. Biotechnology & Biotechnological Equipment, 30(1) : 1-16. https://doi.org/10.1080/13102818.2015.1087333

Pessarakli, M. 2019. Handbook of plant and crop stress. Boca Raton USA. CRc press.

Pradana, D. A., & Hartatik, S. 2019. Pengaruh *colchicine* terhadap karakter morfologi tanaman terung (*Solanum melongena* L.). Berkala ilmiah pertanian, 2(4) : 155-158.

Pratomo, Y. W., Zahida, F., & Yuda, P. 2021. Perbandingan Metode Isolasi DNA sebagai Templat PCR untuk Identifikasi Jenis Kelamin Cerek Jawa (*Charadriius javanicus*) secara Molekuler Menggunakan Primer 2550F/2718R. Biota: Jurnal Ilmiah Ilmu-Ilmu Hayati.6(2) : 78–86.

Prasath, D., Nair, R. R., & Babu, P. A. 2022. Effect of *colchicine*-induced tetraploids of ginger (*Zingiber officinale Roscoe)* on cytology, rhizome morphology, and essential oil content. Journal of Applied Research on Medicinal and Aromatic Plants. *31*, 100422. https://doi.org/10.1016/j.jarmap.2022.100422

Rahmawati, R. 2019 Pengaruh Naungan terhadap Kandungan Bahan Kering, Protein Kasar, Serat Kasar, Lemak Kasar Rumput Ruzi (*Brachiaria* Ruziziensis). Journal of Livestock and Animal Health, *2*(1) : 20-24.

Ratag, S. P., & Pangemanan, E. F. 2023. The Chlorophyll Content Of Dalugha (*Cyrtosperma merkusii* (Hassk.) Schott) In Open & Shaded Light Conditions In The Swamp Edge Of Lake Kapeta, Siau Island, Sitaro Regency. Jurnal Agroekoteknologi Terapan, *4*(1): 166-172.

Respati, A. N., N. Umami, C. Hanim. 2018. Growth and Production of *Brachiaria* brizantha cultivar MG5 in Three Difference Regrowth Phase Treated by Gamma Radiation Dose. Tropical Animal Science Journal. 41:179-184. https://doi.org/10.5398/tasj.2018.41.3.179.

Samadi N, Naghavi MR, Moratalla-López N, Alonso GL, Shokrpour M. 2022. Morphological, molecular, and phytochemical variations induced by *colchicine* and EMS chemical mutagens in Crocus sativus L. Food Chem 4: 100086. https://doi.org/10.1016/j.fochms.2022.100086

Santana, J. C. S., Ítavo, L. C. V., Ítavo, C. C. B. F., Dias, A. M., Niwa, M. V. G., de Moraes, G. J., dos Santos Difante, G. 2022. Productive characteristics, chemical composition, in vitro digestibility, and degradation kinetics of two *Brachiaria* grasses at different *regrowth* ages. Tropical Animal Health and Production, 54(6) : 342. https://doi.org/10.1007/s11250-022-03341-1.

Sari, N. M. P., Sutapa, G. N., & Gunawan, A. N. 2020. Pemanfaatan radiasi gamma co-60 untuk pemuliaan tanaman cabai (Capsicum annuum L.) dengan metode mutagen fisik. Buletin Fisika, 21(2) : 47-52.

Sauer PM, Muller, Kang J. 1998. Quantitation DNA. Qiagen News 2:23-26

Savitri, M. V., Sudarwati, H., & Hermanto, H. 2013. Pengaruh umur pemotongan terhadap produktivitas gamal (*Gliricidia sepium*). Jurnal Ilmu-Ilmu Peternakan (Indonesian Journal of Animal Science*)*, *23*(2) : 25-35.

Singh, K., OP, Awasthi., A, Singh., VK, Sharma., AK, Dubey., LS, Sisodia. 2020. Effect of *colchicine* on plant growth and leaf nutrien acquisition of sweet orange (*Citrus sinenensis* (L.) Osbeck) cv. Mosambi. International Journal of Chemical Studies, 8(3): 211-215. https://doi.org/10.22271/chemi.2020.v8.i3c.9225

Sharma, R., S. Sharma, & S. Kumar. 2018. Pair-wise combinations of RAPD primers for diversity analysis with reference to protein and single primer RAPD in soybean. Annals of Agrarian Science, 16:243-249. https://doi.org/10.1016/j.aasci.2018.03.002.

Shuaibu, A. Y., Fasae, O. A., Adeleye, O. O., Wheto, M., & Oluwatosin, B. O. 2018. Biomass yield and hay quality of irrigated *Brachiaria ruziziensis* fertilized with goat manure as dry season forage. 51(3) : 146-155

Stoskopf, N. C., Tomes, D. T., Christie, B. R., & Christie, B. R. 2019. Plant breeding: theory and practice. CRC Press.

Tan, FQ., Tu, H., Wang, R., Wu, X., Xie, K., Chen, J.. Zhang, H., Xu, J., Guo, W. 2017 Metabolic adaptation following genome doubling in citrus doubled diploids revealed by non-targeted metabolomics. Metabolomics 13:143 https://doi.org/10.1007/s11306-017-1276-x.

Timbó, A., Souza, P., Pereira, R., Nunes, J., Pinto, J., Souza, S., Davide, L. C. 2014. Obtaining tetraploid plants of ruzigrass (*Brachiaria* ruziziensis). Revista Brasileira de Zootecnia, *43*:127-131. https://doi.org/10.1590/S1516-35982014000300004.

Ulum F. B., Hadacek F., Hörandl E. 2021. Polyploidy Improves Photosynthesis Regulation within the Ranunculus auricomus Complex (*Ranunculaceae*). Biology. 10(8) : 811. https://doi.org/10.3390/biology10080811

Umami, N., Suhartanto, B., Suwignyo, B., Suseno, N., & Herminasari, F. 2018. Research Article Effects of Season, Species and Botanical Fraction on Oxalate Acid in *Brachiaria* Spp. Grasses in Yogyakarta, Indonesia, Pakistan Journal of Nutrition, 17(6) : 300 -305. http://dx.doi.org/10.3923/pjn.2018.300.305

Umami, N., Widodo, S., Suhartanto, B., Suwignyo, B., Suseno, N., & Noviandi, C. T. 2018. The effect of planting material on nutrient quality and production of *Brachiaria* spp. Yogyakarta, Indonesia. Pakistan Journal of Nutrition, 17(12):671-6. http://dx.doi.org/10.3923/pjn.2018.671.676

Wahyudi, D., L. Hapsari, & S. Sundari. 2020. RAPD analysis for genetic variability detection of mutan soybean (*Glycine max* (L.) Merr). Journal of Tropical Biodiversity and Biotechnology. 5:68-77. https://doi.org/10.22146/jtbb.53653

Wang, W., Tu, Q., Chen, R., Lv, P., Xu, Y., Xie, Q., Zhang, X. 2022. Polyploidization increases the lipid content and improves the nutritional quality of rice. Plants, 11(1) : 132. https://doi.org/10.3390/plants11010132

Wibisono, K., Aisyah, S., Nurcholis, W., & Suhesti, S. 2022. Sensitivity in Callus Tissue of Plectranthus amboinicus (L.) through Mutation Induction with *Colchicine* . *AGRIVITA Journal of Agricultural Science*. https://doi.org/10.17503/agrivita.v44i1.3058.

Worthington, M., Perez, J. G., Mussurova, S., Silva-Cordoba, A., Castiblanco, V., Cardoso Arango, J. A., Jones, C., Fernandez-Fuentes, N., Skot, L., Dyer, S., Tohme, J., Di Palma, F., Arango, J., Armstead, I., & De Vega, J. J. 2021. A new genome allows the identification of genes associated with natural variation in aluminium tolerance in *Brachiaria* grasses. *Journal of experimental botany*, *72*(2), 302–319. https://doi.org/10.1093/jxb/eraa469

Wu, F., Yu, X., Zhuang, N., Liu, G., Liu, J. 2015. Induction and identification of *Stylosanthes guianensis* tetraploids. Genetic Molecular Research. 14(4):12692-12698. https://doi.org/10.4238/2015.october.19.13

Wu, J., Q. Zhou, Y. Sang, Y. Zhao, B. Kong, L. Li, J. Du, L. Ma, M. Lu, & P. Zhang. 2023. In vitro induction of tetraploidy and its effects on phenotypic variations in Populus hopeiensis. BMC plant biology. 23:557. https://doi.org/10.1186/s12870-023-04578-0.

Yao, P. Q., J. H. Chen, P. F. Ma, L. H. Xie, & S. P. Cheng. 2023. Stomata variation in the process of polyploidization in Chinese chive (*Allium tuberosum*). BMC plant biology. 23:595. https://doi.org/10.1186/s12870-023-04615-y.

Yulia, N., I. Prihantoro, I., P. D. M. H. Karti. 2022. Optimasi penggunaan mutagen *Colchicine* untuk peningkatan produktivitas Tanaman Stylo (*Stylosanthes guianensis* (Aubl.) Sw.). Jurnal Ilmu Nutrisi dan Teknologi Pakan. 20(1) : 19-24.

Yulita, K., Martanti, D., Poerba, Y., Herlina, H. 2014. Deteksi Mutan Kentang Hitam Hasil Radiasi Sinar Γ Menggunakan Marka ISSR Dan RAPD. *Jurnal Hortikultura*, vol. 24, no. 1, Mar. 2014, pp. 1-9, doi:10.21082/jhort.v24n1.2014.p1-9.

Yuwono, T. 2009. Biologi Molekular. Erlangga, Jakarta