

DAFTAR PUSTAKA

- Abushal, L. (2021). *Optimization of In-Vitro Tissue Culture and Transformation System for Sweet Sorghum Cultivars Using Immature Inflorescence* [The American University in Cairo]. <https://fount.aucegypt.edu/etds/1829/>
- Ahmed, R. I., Ding, A., Xie, M., & Kong, Y. (2018). Progress in optimization of *Agrobacterium*-mediated transformation in sorghum (*Sorghum bicolor*). *International Journal of Molecular Sciences*, 19(10), 2983. <https://doi.org/10.3390/ijms19102983>
- Andayani, R. D., Rahmatika, W., & Fitriyah, N. (2023). Transfomasi Genetik : Peluang dan Tantangan. =*Jurnal Ilmiah Agrineca*, 23(1), 80–91. <https://doi.org/10.36728/afp.v23i1.2350>
- Anjala, K., & Augustine, R. (2023). Designing of guide RNA constructs for CRISPR/Cas9-mediated editing of rice transcription factor OsMADS26 for enhancing drought tolerance. *Journal of Applied Biology & Biotechnology*, 11(1), 176–182. <https://doi.org/10.7324/JABB.2023.110124>
- Aregawi, K., Shen, J., Pierroz, G., Sharma, M. K., Dahlberg, J., Owiti, J., & Lemaux, P. G. (2022). Morphogene-assisted transformation of *Sorghum bicolor* allows more efficient genome editing. *Plant Biotechnology Journal*, 20(4), 748–760. <https://doi.org/10.1111/pbi.13754>
- Arum, L. S., Safitri, L. W., Murtiyaningsih, H., & Hazmi, M. (2022). Efektifitas Madu Sebagai Substituen Media Induksi Kalus Sorgum (*Sorghum bicolor*) Secara *In Vitro*. *Paspalum: Jurnal Ilmiah Pertanian*, 10(1), 39-45. <https://doi.org/10.35138/paspalum.v10i1.377>
- Assem, S. K., Zamzam, M. M., Hussein, B. A., & Hussein, E. H. A. (2014). Evaluation of Somatic Embryogenesis and Plant Regeneration in Tissue Culture of Ten Sorghum (*Sorghum bicolor* L.) Genotypes. *African Journal of Biotechnology*, 13(36), 3673–3681. <https://doi.org/10.5897/AJB2014.13924>
- Australian Government Department of Health, O. of the G. T. R. (2017). *The Biology of Sorghum bicolor (L .) Moench subsp . bicolor (Sorghum)*. <https://www.ogtr.gov.au/resources/publications/biology-sorghum-bicolor-l-moench-subsp-bicolor-sorghum>
- Australian Government Department of Health, O. of the G. T. R. (2024). *The Biology of Sorghum bicolor (L .) Moench subsp . bicolor (Sorghum)*. <https://www.ogtr.gov.au/resources/publications/biology-sorghum-bicolor-l->

moench-subsp-bicolor-sorghum

- Aysar, M., & Salim, A. M. (2020). Callus Induction and Differentiation. *Future J. Agric*, 3, 5–9. <https://doi.org/10.37229/fsa.fja.2020.07.02>
- Budaya, M. S., Mursyanti, E., & Yuda, P. (2022). Transformasi Genetik pada Kalus Embriogenik Tanaman Suku Rubiaceae. *Biota: Jurnal Ilmiah Ilmu-Ilmu Hayati*, 7(2), 94–107. <https://doi.org/10.24002/biota.v7i2.5550>
- Che, P., Anand, A., Wu, E., Sander, J. D., Simon, M. K., Zhu, W., Sigmund, A. L., Zastrow-Hayes, G., Miller, M., Liu, D., Lawit, S. J., Zhao, Z. Y., Albertsen, M. C., & Jones, T. J. (2018). Developing a flexible, high-efficiency *Agrobacterium*-mediated sorghum transformation system with broad application. *Plant Biotechnology Journal*, 16(7), 1388–1395. <https://doi.org/10.1111/pbi.12879>
- Che, P., Wu, E., Simon, M. K., Anand, A., Lowe, K., Gao, H., Sigmund, A. L., Yang, M., Albertsen, M. C., Gordon-Kamm, W., & Jones, T. J. (2022). Wuschel2 enables highly efficient CRISPR/Cas-targeted genome editing during rapid de novo shoot regeneration in sorghum. *Communications Biology*, 5, 344. <https://doi.org/10.1038/s42003-022-03308-w>
- Chen, J., Zhang, L., Zhu, M., Han, L., Lv, Y., Liu, Y., Li, P., Jing, H., & Cai, H. (2018). Non-dormant Axillary Bud 1 Regulates Axillary Bud Outgrowth in Sorghum. *JIPB: Journal of Integrative Plant Biology*, 60(10), 938–955. <https://doi.org/10.1111/jipb.12665>
- Cui, Z., Wei, W., Han, X., Wang, Y., Jia, J., Wang, H., Liu, L., Wang, L., Tassawark, A., Li, J., Li, D., Wu, Y., & Zhang, L. (2025). An Optimized Protocol for *In vitro* Regeneration and Genetic Transformation of Broomcorn Millet. *BMC Genomics*, 26(725), 2–11. <https://doi.org/10.1186/s12864-025-11899-x>
- Do, V. G., Kim, S., Win, N. M., Kwon, S.-I., Kweon, H., Yang, S., Juhyeon, T., Do, G., & Lee, Y. (2024). Efficient regeneration of transgenic rice from embryogenic calli through *Agrobacterium*-mediated transformation: A case study using GFP and apple MdFT1 genes. *Plants*, 13(19), 2803. <https://doi.org/10.3390/plants13192803>
- Dreger, M., Mól, R., Deja, A., Raj, E., & Wielgus, K. (2019). Improved Plant Regeneration in Callus Cultures of *Sorghum bicolor* (L.) Moench. *In vitro Cellular & Developmental Biology - Plant*, 55, 190–198. <https://doi.org/10.1007/s11627-019-09963-9>

- Elkonin, L., Italyanskaya, J., & Panin, V. (2018). Genetic Modification of Sorghum for Improved Nutritional Value: State of The Problem and Current Approaches. *J Investing Genomics*, 5(1), 39–48. <https://doi.org/10.15406/jig.2018.05.00076>
- Fajriah, U., Suryati, E., Parenrengi, A., Suharsono, & Widyastuti, U. (2014). Introduksi Gen Metallothionein Tipe II ke dalam Rumput Laut *Kappaphycus alvarezii* Menggunakan *Agrobacterium tumefaciens*. *J. Ris. Akuakultur*, 9(3), 377–385. <https://dx.doi.org/10.15578/jra.9.3.2014.377-385>
- Flinn, B. S., Dale, S., Disharoon, A., & Kresovich, S. (2020). Comparative analysis of *in vitro* responses and regeneration between diverse bioenergy sorghum genotypes. *Plants*, 9(2), 248. <https://doi.org/10.3390/plants9020248>
- Haque, M. I., Singh, P. K., Ghuge, S., Kumar, A., Rai, A. C., Kumar, A., & Modi, A. (2022). *A general Introduction To and Background of Plant Tissue Culture : Past , Current , and Future Aspects* (A. C. Rai, A. Kumar, A. Modi, & M. Singh (eds.)). Academic Press (Elsevier). <https://doi.org/10.1016/B978-0-323-90795-8.00019-9>
- Huang, X., Su, F., Huang, S., Mei, F., Niu, X., Ma, C., Zhang, H., Zhu, X., Zhu, J.-K., & Zhang, J. (2021). Novel Wx Alleles Generated by Base Editing for Improvement of Rice Grain Quality. *Journal of Integrative Plant Biology*, 63(9), 1632–1638. <https://doi.org/10.1111/jipb.13098>
- Jeong, J., Hoon, S., & Kim, J. (2025). Empowering *Agrobacterium* : Ternary Vector Systems as A New Arsenal for Plant Transformation and Genome Editing. *Biotechnology Advances*, 83, 108631. <https://doi.org/10.1016/j.biotechadv.2025.108631>
- Khatimah, K., Muthmainnah, T. A., & Hala, Y. (2025). *Agrobacterium tumefaciens* sebagai Agen Rekayasa Genetika: Mekanisme, Keunggulan, dan Tantangan dalam Transformasi Genetik Tanaman. *Indigenous Biologi: Jurnal Pendidikan Dan Sains Biologi*, 8(1), 19–29. <https://doi.org/10.33323/indigenous.v8i1.710>
- Kuriyama, T., Shimada, S., & Matsui, M. (2019). Improvement of *Agrobacterium*-mediated transformation for tannin-producing sorghum. *Plant Biotechnology*, 36(1), 43–48. <https://doi.org/10.5511/plantbiotechnology.19.0131a>
- Li, K., Wang, Y., & Fang, C. (2021). A novel method to construct binary CRISPR vectors for plant transformation by single round of PCR amplification. *Bio-protocol*, 11(7), e3971. <https://doi.org/10.21769/BioProtoc.3971>

- Mohemed, N., Charnikhova, T., Fradin, E. F., Rienstra, J., Babiker, A. G. T., & Bouwmeester, H. J. (2018). Genetic Variation in *Sorghum bicolor* Strigolactones and Their Role in Resistance Against Striga hermonthica. *Journal of Experimental Botany*, 69(9), 2415–2430. <https://doi.org/10.1093/jxb/ery041>
- Moin, M., Tyagi, W., & Sreevarshitha, G. (2025). A simple seed-piercing transformation protocol for pearl millet and finger millet. *AoB PLANTS*, 17(5), plaf050. <https://doi.org/10.1093/aobpla/plaf050>
- Mridula, M. R., Nair, A. S., & Kumar, K. S. (2018). Genetic programming based models in plant tissue culture: An addendum to traditional statistical approach. *PLOS Computational Biology*, 14(2), e1005976. <https://doi.org/10.1371/journal.pcbi.1005976>
- Murtiyaningsih, H., Fananta, W. I. D., Addy, H. S., Sudiarti, D., & Siswoyo, T. A. (2026). Strigolactone and abscisic acid positively regulate morphophysiological traits and gene expression in locally grown *Sorghum bicolor* L. under drought conditions. *International Journal of Agriculture and Biosciences*, 15(4), 1572–1581. <https://doi.org/10.47278/journal.ijab/2026.070>
- Namata, M. J., Xu, J., Habyarimana, E., Palakolanu, S. R., Wang, L., & Li, J. (2025). Genome editing in maize and sorghum: A comprehensive review of CRISPR/Cas9 and emerging technologies. *The Plant Genome*, 18(2), e70038. <https://doi.org/10.1002/tpg2.70038>
- Pontieri, P., Pepe, G., Campiglia, P., Merciai, F., Basilicata, M. G., Smolensky, D., Calcagnile, M., Troisi, J., Romano, R., Giudice, F. Del, Aletta, M., Guida, M., Alifano, P., & Giudice, L. Del. (2021). Comparison of Content in Phenolic Compounds and Antioxidant Capacity in Grains of White , Red , and Black Sorghum Varieties Grown in the Mediterranean Area. *ACS Food Sci. Technol*, 1(6), 1109–1119. <https://doi.org/10.1021/acsfoodscitech.1c00115>
- Pontieri, P., Troisi, J., Calcagnile, M., Bean, S. R., Tilley, M., Aramouni, F., Boffa, A., Pepe, G., Campiglia, P., Giudice, F. Del, Chessa, A. L., Smolensky, D., Aletta, M., Alifano, P., & Giudice, L. Del. (2022). Chemical Composition, Fatty Acid and Mineral Content of Food-Grade White, Red and Black Sorghum Varieties Grown in the Mediterranean Environment. *Foods*, 11(3), 436. <https://doi.org/10.3390/foods11030436>
- Pramanik, D., Wang, K., & Lee, K. (2025). CRISPR/Cas9-mediated gene knockout in cereal crops. *Current Protocols*, 5(9), e70210.

<https://doi.org/10.1002/cpz1.70210>

- Pushpa, K., Madhu, P., Venkatesh Bhat, B. and Balakrishna, D. (2017) Effect of *Hygromycin* on explant selection in genetic transformation experiments of sorghum (*Sorghum bicolor* (L.) Moench), *International Journal of Current Research*, 9(12), pp. 62294–62296.
- Rahmadhanisa, N. A. (2025). *Transformasi genetik pada berbagai umur kalus sorgum hitam (Sorghum bicolor L.) menggunakan Agrobacterium tumefaciens* [Skripsi, Universitas Muhammadiyah Jember]. Fakultas Pertanian, Universitas Muhammadiyah Jember.
- Roche, M. C., Liu, W., & Hernández, R. (2025). An improved method for *Agrobacterium*-mediated genetic transformation of three types of lettuce. *Plants*, 14(4), 620. <https://doi.org/10.3390/plants14040620>
- Sari, N., R, E. S., & Sumadi. (2014). Optimasi Jenis dan Konsentrasi ZPT dalam Induksi Kalus Embriogenik dan Regenerasi menjadi Planlet pada *Carica pubescens* (Lenne & K.Koch). *Biosantika*, 6(1), 52–59
- Siantar, P. L., Pramono, E., Hadi, M. S., & Agustiansyah. (2019). Budidaya, Produksi, dan Vigor Benih pada Budidaya Tumpangsari Sorgum-Kedelai. *Galung Tropika*, 8(2), 91–102. <https://doi.org/10.31850/jgt.v8i2.429>
- Sisharmini, A., Apriana, A., Enggarini, W., & Trijatmiko, K. R. (2009). Pengembangan Populasi Mutan Penanda Aktivasi : I . Transformasi Padi Japonica Tropis Lokal Sulawesi cv . Asemendi dengan bantuan *Agrobacterium tumefaciens*. *AgroBiogen*, 5(2), 49–56
- Sisharmini, A., Purwoko, B. S., Khumaida, N., & Trijatmiko, K. R. (2018). Optimasi Konsentrasi Asetosiringon dan *Hygromycin* dalam Transformasi Genetik Padi Fatmawati dengan Perantara *Agrobacterium tumefaciens*. *J. Agron. Indonesia*, 46(3), 223–230. <https://dx.doi.org/10.24831/jai.v46i3.19445>
- Srivastava, A. K., Riaz, A., Jiang, J., Li, X., Uzair, M., & Mishra, P. (2025). Advancing Climate - Resilient Sorghum : the Synergistic Role of Plant Biotechnology and Microbial Interactions. *Rice*, 18(41), 2–21. <https://doi.org/10.1186/s12284-025-00796-2>
- Suarni. (2016). Peranan Sifat Fisikokimia Sorgum dalam Diversifikasi Pangan dan Industri serta Prospek Pengembangannya. *Litbang Pertanian*, 35(3), 99–110. <https://doi.org/10.21082/jp3.v35n3.2016.p99-110>

- Sumarno, Damardjati, D. S., Syam, M., & Hermanto. (2013). *Sorgum: Inovasi Teknologi dan Pengembangan*. Badan Penelitian dan Pengembangan Pertanian, Kementerian Pertanian (IAARD Press)
- Steel, R. G. D., & Torrie, J. H. (1993). *Prinsip dan Prosedur Statistika: Suatu Pendekatan Biometrik* (B. Sumantri, Terj.). PT Gramedia Pustaka Utama
- Sunday, G., Nwaneri, G., Ugwu, C. M., Onyekachi, O. I., Ruth, C. C., Ebenebe, I. N., Nedum, C. H., & Oli, A. N. (2024). *Agrobacterium tumefaciens* : Biology and Application in Genetic Engineering. *GCS Advanced Research and Reviews*, 20(01), 389–398. <https://doi.org/10.30574/gscarr.2024.20.1.0272>
- Ubudiyah, I. W. A., & Nurhidayati, T. (2013). Respon Kalus Beberapa Varietas Padi (*Oryza sativa* L .) pada Kondisi Cekaman Salinitas (NaCl) secara *In vitro*. *Sains Dan Seni Pomits*, 2(2), E138–E143
- Yu J, Liu W, Liu J, Qin P and Xu L (2017) Auxin Control of Root Organogenesis from Callus in Tissue Culture. *Front. Plant Sci.* 8:1385. <https://doi.org/10.3389/fpls.2017.01385>

