

## DAFTAR PUSTAKA

- Agrios, G. N. (2005). *Plant Pathology* (5<sup>th</sup> ed.). Department of Plant Pathology, Elsevier Academic Press, Burlington, MA, pp. 922.
- Alfizar, Marlina dan N. Hasanah. 2011. Upaya Pengendalian Penyakit Layu *Fusarium oxysporum* dengan Pemanfaatan Agen Hayati Cendawan Fma dan *Trichoderma Harzianum*. *J. Floratek*, 6: 8 – 17.
- Arif W. & Endang. 2022. Biostimulation of tomato growth and biocontrol of *Fusarium* wilt disease using certain endophytic fungi. *Botanical Studies*, 63(2).
- Badan Pusat Statistik (BPS). 2022. *Statistik Hortikultura Indonesia*. BPS Indonesia, Jakarta.
- Balai Penelitian Tanaman Sayuran (BALITSA). 2015. *Aplikasi Pendukung PHT*. Bandung: Balai Penelitian Tanaman Sayuran.
- Basuki, R. S., Khaririyatun, N., Luthfy. 2014. Evaluasi dan Preferensi Petani Brebes terhadap Atribut Kualitas Varietas Unggul Bawang Merah. *Jurnal Hortikultura* 24(3): 276-282.
- Bell, C. and A. Kyriakides. 2002. *Salmonella: A Practical Approach to The Organism and Its Control In Foods*. Blackwell Science, Ltd., Oxford.
- Berg, M. D. and C. J. Brandi. 2021. Transfer RNAs: diversity in forms and function. *RNA Biology* 18(3) 316-339.
- Black, H. S., 2011. UV-B radiation induces protective 15-LOX-2 expression in plant leaves. *Photochemistry and Photobiology*, 87(4), 797-803.
- Bolsover, S. R. 2014. *Cell Biology: A Short Course*. USA: Cram 101.
- Burchard, P., Bilger, W. and Weissenbock, G., 2000. Contribution of hydroxycinnamates and flavonoids to epidermal shielding of UV-A and UV-B radiation in developing rye primary leaves as assessed by ultraviolet-induced chlorophyll fluorescence measurements. *Plant, Cell & Environment*, 23(12), pp.1373-1380.
- Chandrasekaran M, Belachew ST, Yoon E, Chun SC.2017. Eksresi dari Gen  $\beta$ -1,3- glukanasase (GLU) dan Fenilalanin Amonia-lyase (PAL) dan Enzimnya pada Tanaman Tomat Diinduksi Setelah Pengobatan dengan *Bacillus subtilis* CBR05 Melawan *Xanthomonas campestris*.

- Cole, David L., Savannah J. Kobza, Savannah R. Fahning, Samuel H. Stapley, Dicken K. A. Bonsrah, Rachel L. Buck, and Bryan G. Hopkins. 2021. "Soybean Nutrition in a Novel Single-Nutrient Source Hydroponic Solution" *Agronomy* 11, no. 3: 523.
- Deden dan Umiyati, U. 2017. Pengaruh inokulasi *Trichoderma* sp. dan varietas bawang merah terhadap penyakit moler dan hasil tanaman bawang merah (*Allium ascalonicum* L). *Jurnal Kultivasi*. 16(2): 340-348.
- Fardhani, D. M., A. D. Kharisma., T. Kobayashi., N. A. Arofattullah., M. Yamada, S.Tanabata., Y. Yokoda., A. Widiastuti., and T. Sato. 2022. Ultraviolet-B Irradiation Induces Resistance Against Powdery Mildew in Cucumber (*Cucumis sativus* L.) Through A Different Mechanism than That of Heat Shock-Induced Resistance. *Agronomy* 12: 1-13.
- Farmer, E. E., Alméras, E., & Krishnamurthy, V. 1998. Oxylinin Pathways in Arabidopsis. *The Plant Cell*, 10(10), 1945-1960.
- Fitriana, N. dan R. Susandarini. 2019. Morphology and Taxonomic Relationships of Shallot (*Allium cepa* L. group aggregatum) Cultivars From Indonesia. *Biodiversitas Journal of Biological Diversity*, 20(10): 2809-2814
- Fraga, D., Meulia, T., Fenster, S. 2008. Real Time PCR In: Gallagher SR, Wiley EA (eds.) *Current Protocols Essential Laboratory Techniques*. Wiley. p1-32.
- Freeman, S., Zveibel, A., Vintal, H., & Maymon, M. 2002. Isolation of Nonpathogenic Mutants of *Fusarium Oxysporum* F.Sp. *Melonis* for Biological Control Of *Fusarium Wilts* In Cucurbits. *Phytopathology*. 92:164-168.
- Ghufron, M., Soetiarso, T. A., & Subandiyah, S. 2017. Pengaruh Waktu dan Metode Inokulasi *Fusarium acutatum* terhadap Keparahan Penyakit Moler pada Bawang Merah. *Jurnal Perlindungan Tanaman Indonesia*, 21(2), 78-84.
- Hadiwiyono, Sudadi, C.S., dan Sofani. 2014. Jamur Pelarut Fosfat Untuk Menekan Penyakit Moler (*Fusarium oxysporum* f. sp. *cepae*) dan Meningkatkan Pertumbuhan Bawang Merah. *Jurnal Ilmu Tanah dan Agroklimatologi*. 11(2): 130-138.

Hadhiwiyono, S., & Wiyono, S. 2020. Fusarium disease management in shallots.

Asian Journal of Agriculture, 3(2), 33-40.

Haliman, R., 2011. Aktivitas enzim peroksidase dan polifenol oksidase pada tanaman yang terpapar UV-B. *Journal of Plant Biochemistry*, 12(3), 45-56.

Hamdi, S. 2019. Analysis of ultraviolet index, ultraviolet B isolation, and sunshine duration at Bandung in year 2017. IOP Conf. Series: Earth and Environmental Science 303: 1-7.

Hariastuti, M. 2011. Pengujian ketahanan beberapa kultivar padi beras merah dan hitam terhadap wereng batang coklat *Nilaparvata lugens* Stal (Homoptera: Delphacidae). Fakultas Pertanian Universitas Andalas. Padang. Hal: 2-111.

Hazra, F., Istiqomah, F. N., & Adriani, L. (2021). Aplikasi pupuk hayati mikoriza terhadap tanaman bawang merah (*Allium cepa* var. *aggregatum*) pada Latosol Dramaga. *Journal of Soil Science and Environment*, 23(2), 59-65.

He, Y.M., Zhan, F.D., Zu, Y.Q., Liu, C., Li, Y. 2014. Pengaruh Peningkatan UV-B Radiasi pada Sistem Antioksidan Dua Ras padi di Sawah di Teras Yuanyang. *Internasional Jurnal Pertanian Biol.* 16:585–590.

He, Y.M., Xiang, Li., Fangdong, Zhan., Chunmei, Xie., Yanqun, Zu., Yuan, Li & M in Yue. 2018. Resistance-related Physiological Response of Rice Leaves to The Compound Stress of Enhanced UV-B Radiation and *Magnaporthe oryzae*, *Journal of Plant Interactions*, 13:1, 321-328.

Hikmawati, M. R., Auliah, Ramlah, Fitrianti. 2020. Identifikasi Cendawan Penyebab Penyakit Moler pada Tanaman Bawang Merah (*Allium ascolonicum* L.) di Kabupaten Enrekang. *Agrovital : Jurnal Ilmu Pertanian* 5(2): 83-86.

Hori, Y., C. Engel, and T. Kobayashi. 2023. Regulation of ribosomal RNA gene copy number, transcriptional and nucleolus organization in eukaryotes. *Nature Review Molecular Cell Biology*. 1: 1-16.

Huang, X., Li, Y., Chen, J., & Yang, Y. 2020. Plant responses to UV-B radiation: signaling, acclimation and stress tolerance. *Stress Biology*, 1(2).

Ibrahim, A. M. dan A. Rahman. 2021. Identifikasi Penyakit Tanaman Bawang

Merah Varietas Bima Menggunakan Metode Forward Chaining dan Certainty Factor. Intech, 1(1): 7-12.

- Jaenudin, A., Iman, W., Anang, R., & Maryuliyanna. 2022. Pengaruh kombinasi perlakuan teknik budidaya dengan metode benih dari tiga varietas dan pupuk organik terhadap pertumbuhan dan hasil bawang merah di daerah Pantura. *Jurnal Agroekoteknologi* 15(2):68-74.
- Jansen, M. A. K. 2002. Ultraviolet-B radiation effects on plants: induction of morphogenic responses. *Physiol. Plant.* 116, 423–429.
- Juwanda, M., Khusnul, K. dan Mohamad, A. 2016. Peningkatan Ketahanan Bawang Merah terhadap Penyakit Layu Fusarium melalui Induksi Ketahanan dengan Asam Salisilat secara InVitro. *Agrin* 20(1):1410-0029.
- Kalman, B., Abraham, D., Graph, S., Perl- Treves, R., Meller Harel, Y., & Degani, O. 2020. Isolation and Identification of *Fusarium spp.*, the Causal Agents of Onion (*Allium cepa*) Basal Rot in Northeastern Israel. *Biology*, 9(4).
- Karthishwaran, K., Kurup, S.S., Sakkir S., Cheruth, A.J.2018. Radikal Bebas Kapasitas Pemulungan dan Antioksidan dengan Penekanan Khusus pada Aktivitas Enzim dan Studi In Vitro di Flava CarallumaNE Br. *Bioteknologi Biotec Persamaan*.32(1):156–162.
- Kuang, J., X. Yan, A. J. Gendra, C. Granata, and D. J. Bishop. 2018. An Overview of Technical Considerations When Using Quantitative Real-time PCR Analysis of Gene Expression in Human Exersice Research. *Plos One* 13(5): 1-27.
- Kubista M, Andrade JM, Bengtsson M, Forootan A, Jonak J, Lind K. 2006. The Real-time Polymerase Chain Reaction. *Molecular Aspects of Medicine.*; 27:95-125.
- Lee, J. H. 2016. UV-B signal transduction pathway in Arabidopsis. *Journal Plant Biol.* 59, 223–230.
- Lestiyani, A. 2014. Patogenesitas, Deteksi Hormon GA3 dan IAA, Variabilitas *Fusarium Spp.* pada Tanaman Bawang Merah Bergejala Moler. Tesis. Program Studi Fitopatologi. Program Pascasarjana Universitas Gadjah Mada. Yogyakarta.

- Lestiyani, A., A. Wibowo, and S. Subandiyah. 2021. Pathogenicity and detection of Phytohormone (Gibberellic Acid and Indole Acetic Acid) Produced by *Fusarium* spp. That Causes Twisted Disease in Shallot. JPT: Jurnal Proteksi Tanaman (Journal of Plant Protection) 5(1): 24-33.
- Li, X., Moellering, E.R., Liu, B., Johnny, C., Fedewa, M., Sears, B.B., Kuo, M.H., Benning, C. 2012. A galactoglycerolipid lipase is required for triacylglycerol accumulation and survival following nitrogen deprivation in *Chlamydomonas reinhardtii*. *Plant Cell* 24: 4670–4686.
- Li, X., Y. He, C. Xie, Y. Zu, F. Zhan, X. Mei, Y. Xia, and Y. Li. 2018. Effects of UV-B Radiation on The Infectivity of *Magnaporthe oryzae* and Rice Disease-resistant Physiology in Yuanyang Terraces. *Photochemical & Photobiological Sciences* 17(1): 8-17.
- Livak, K. J. and T. D. Schmittgen. 2001. Analysis of Relative Gene Expression Data Using Real-Time Quantitative PCR and the  $2^{-\Delta\Delta Ct}$  method. *Methods*, 25: 402-408.
- Loeffelholz, M. and H. Deng. Advanced Techniques in Diagnostic Microbiology. Springer Science+Business Media LLC., New York.
- Lubis, U. A. 2004. Perkembangan Inang Laboratorium Parasit Telur, *Corcyra cephalonica* Stainton (Lepidoptera: Pyralidia) Pada Berbagai Umur Telur dan Lama Radiasi Ultraviolet (tidak dipublikasikan).
- McLay, E. R., Pontaroli, A. C. & Wargent, J. J. 2020. UV-B Induced Flavonoids Contribute to Reduced Biotropic Disease Susceptibility in Lettuce Seedlings. *Frontiers in Plant Science*, 11.
- Mahadiptha, I.M.S., Raka, I.G.N. 2017. Pengaruh Rhizobakteria Pelarut Fosfat terhadap Pertumbuhan dan Ketahanan Tanaman Kedelai (*Glycine max* (L) Merrill) terhadap Patogen Virus Mosaic. *E-Jurnal Agroekoteknologi Tropika* Vol.6(12): 2301-6515.
- Major, N., Perkovic, J., Palcic, I. 2022. The Phytochemical and Nutritional Composition of Shallot Species (*Allium × cornutum*, *Allium × proliferum* and *A. cepa* Aggregatum) Is Genetically and Environmentally Dependent. *Antioxidants (Basel)*. 2022;11(8):1547.
- Malab, G. S. S., E. T. Aspuria, and E. L. Bernardo. 2017. Ultraviolet-B Induced Flavonoid Production in In Vitro Cultures of Shallot (*Allium cepa* var.

- Mandal, S., Mallick, N., & Mitra, A. 2009. Salicylic Acid-Induced Resistance to *Fusarium oxysporum* f.sp. *lycopersici* in Tomato. *Journal Plant Physiology and Biochemistry* 47: 642 – 649.
- Meyer, P., Van de Poel, B. & de Coninck, B. 2021. UV-B Light and Its Application Potential to Reduce Disease and Pest Incidence in Crops. *Horticulture Research* 8:1-20.
- Moekasan, T.K., Prabaningrum, L., Setiawati, W., Prathama, M. & Rahayu, A. 2016. Pengelolaan Tanaman Terpadu Bawang Merah Modul Pendampingan Pengembangan Kawasan. Puslitbang Hortikultura Badan Litbang Pertanian.
- Mubarok, M.S. 2018. Budidaya Bawang Merah di Lahan Gambut. Badan LitbangPertanian.<<https://kalbar.litbang.pertanian.go.id/index.php/teknologi-teraktual/>>. Diakses pada 29 September 2023.
- NASA Science. 2023. Ultraviolet Waves. Retrieved from [https://science.nasa.gov/ems/13\\_ultravioletwaves](https://science.nasa.gov/ems/13_ultravioletwaves).
- Neil, C. R., M. W. Seiler, D. J. Reynold, J. J. Smith, F. H. Vaillancourt, P. G. Smith, and A. A. Agrawal. 2022. Reprogramming RNA processing: an emerging therapeutic landscape. *Trends in Pharmacological Sciences* 43(5): 437-454.
- Nugroho, A. W., Hadiwiyono & Sudadi. 2015. Potensi Jamur Perakaran sebagai Agens Pengendalian Hayati Penyakit Moler (*Fusarium oxysporum* f.sp. *Cepae*) pada Bawang Merah. *Agrosains* 17 (1): 4-8.
- Ojha, S. & Chatterjee, N. 2012. Induction of Resistance in Tomato Plants Against *Fusarium oxysporum* f.sp. *lycopersici* Mediated Through Salicylic Acid and *Trichoderma harzianum*. *Journal of Plant Protection Research* 52(2): 220 – 225.
- Okamura, S., N. Mumtahina, H. Shimono, and M. Matsunami. 2021. Root Sampling and RNA Extraction Methods for Field-based Gene Expression Analysis of Soybeans. *Plant Production Science* 24(3): 339-345.

Olson, N. D. and J. B. Morrow. 2012. DNA Extract Characterization Process for Microbial Detection Methods Development and Validation. BMC Research Notes 5: 1-14.

Pangestuti, R., & Sulistyaningsih, E. 2011. Potensi Penggunaan True Seed Shallot (TSS) sebagai Sumber Benih Bawang Merah di Indonesia. Prosiding Semiloka Nasional “Dukungan Agro-Inovasi untuk Pemberdayaan Petani”. Semarang.

Pieterse, C.M.J., Zamioudis, C., Berendsen, R.L., Weller, D.M., Van Wees, S.C.M., Bakker, P.A.H.M. 2014. Induced systemic resistance by beneficial microbes. Annual Review of Phytopathology 52: 347-375.

Priwiratama, H dan Bambang, W. 2022. Potensi Teknologi Iradiasi Energi Foton untuk Pengendalian Penyakit Bercak Daun *Curvularia* sp. Pada Tanaman Kelapa Sawit. Warta PPKS.

Pushpalatha, H.G., Sudisha, J., Geetha, N.P., Amruthesh, K.N., Shetty, H.S. 2011. Perlakuan Biji Tiamin Meningkatkan Ekspresi LOX, Mendorong Pertumbuhan dan Menginduksi Resistensi Penyakit Bulai pada Millet Mutiara. Pabrik Biol. 55:522–527.

Qi, J., J. Li., X. Han., R. Li., J. Wu., H. Yu., L. Hu., Y. Xiao., J. Lu and Y. Lou. 2015. Jasmonic Acid Carboxyl Methyltransferase Regulates Development and Herbivory Induced Defense Response in Rice. Journal of Integrative Plant Biology, 58(6):564576.

Rachman, R.S., Umami, S.S. 2019. Isolasi dan Identifikasi Fungi pada Pasca Panen Bawang Merah *Allium ascalonicum* L. var. Super Philip. Biodidaktika: Jurnal Biologi dan Pembelajarannya Vol. 14(1)2527-4562.

Rawal, H.C., Singh, N.K., Sharma, T.R. 2013. Konservasi, Divergensi, dan Distribusi Genom Keluarga Gen PAL Dan POX A Pada Tanaman. Genomik Internasional Journal.

Retnaningati, D. 2020. Optimasi Metode Ekstraksi DNA pada Melon (*Cucumis melo* L.) Berdasarkan Suhu, Lama Inkubasi, dan Kondisi Daun. Jurnal Ilmiah Ilmu-Ilmu Hayati, Vol. 5 (2): 109-114.

- Rivero, R. M., R. Mittler, E. Blumwald, and S. I. Zandalinas. 2022. Developing climate resilient crops: improving plant tolerance to stress combination. *The Plant Journal* 109: 373-389.
- Rodrigues, M., Crespo, I., Sequeira, A., & Cunha, L. (2019). Impact of Environmental Conditions on the Progress of Fusarium Head Blight and Mycotoxin Accumulation in Wheat. *Plant Pathology*, 68(5), 1080-1092.
- Safitri, A. 2021. Isolasi dan identifikasi penyebab penyakit moler pada tanaman bawang merah di Lampung Tengah dan Tanggamus. Skripsi. Universitas Lampung. Bandar Lampung.
- Saidah, E., Wibowo, A., & Pramono, H. 2019. Fusarium disease management in shallots. *Journal of Plant Protection Research*, 59(3), 307-315.
- Saidah, Muchtar, Syafruddin, & Pangestuti, R. (2019). The effect of plant spacing at the growth and yield of shallot from true shallot seed in Sigi District, Central Sulawesi. *Prosiding Seminar Nasional Masyarakat Biodiversitas Indonesia*, 5(2), 209-212.
- Sanderson, K. and D. Nichols. 'Genetic Techniques: PCR, NASBA, Hybridisation and Microarrays'. Dalam McMeekin, T.A. (ed.). 2003. *Detecting Pathogens in Food*. Woodhead Publishing Limited, Cambridge and CRC Press LLC., Boca Raton.
- Shehzadi, A., Muhammad, H., Abbas, K., Ahmed, Z., Saleem, S. 2018. Memengaruhi Gen Ketahanan Penyakit Tanaman: Aplikasi Terkini dan Perspektif Masa Depan. *Jurnal Innov Bio-Res.* 1:86–103.
- Siagian, V.J. 2015. *Outlook Bawang Merah*. Pusat Data dan Sistem Informasi Pertanian, Kementerian Pertanian.
- Simamora, D. Y., Wibowo, A., & Widiastuti, A. (2021). Pengendalian penyakit moler pada bawang merah dengan menggunakan fungisida. Skripsi S1 Proteksi Tanaman, Fakultas Pertanian, Universitas Gadjah Mada
- Singh, O.P., Usha, K., Saboki, E., Srivastav, M., Dahuja, A., Singh, B. 2012. Sistem Pemulungan Spesies Oksigen Reaktif (ROS) Enzimatis pada Varietas Mangga Tahan dan Rentan terhadap Malformasi. *Sains Hortik.* 138:81–89.
- Sumarni, N., dan A. Hidayat. 2005. *Budidaya bawang merah. Panduan teknis PTT bawang merah No. 3*. Balai Penelitian Tanaman Sayuran. Pusat Penelitian dan Pengembangan Hortikultura. Badan Penelitian dan

- Suparman. 2003. Induksi resistensi. Matreri Kuliah (Pengendalian Hayati dan Pengendalian Habitat. (tidak dipublikasikan).
- Suriana, N. 2011. Bawang Bawa Untung. Budidaya Bawang Merah dan Bawang Merah. Cahaya Atma Pustaka. Yogyakarta.
- Susanti, D.M., dan Wiyatiningsih, S. 2016. Characterization of Isolates of *Fusarium oxysporum* f *Cepae* moler cause shallot of diseases in the region of Nganjuk and Probolinggo. *Plumula*, 5(2): 153-160.
- Syawal, Y., Marlina, dan A. Kuningingsih. 2019. Budidaya Tanaman Bawang Merah (*Allium cepa* L.) dalam *Polybag* dengan Memanfaatkan Kompos Tandan Kosong Kelapa Sawit (TKKS) pada Tanaman Bawang Merah. *Jurnal Pengabdian Sriwijaya* 7(1): 671-677.
- Triyaningsih, T. R. Nuringtyas, Y. Asih, Purwestri, dan A. Sebastian. 2022. Optimasi suhu annealing qRT-PCR gen WRKY45 sebagai deteksi gen ketahanan terhadap infeksi *Xanthomonas oryzae* pv. *oryzae* pada padi hitam cempo abang. *Jurnal Ilmu Dasar* 23(1): 23-28.
- Vanhaelewyn, L., D. van der Straeten, B. de Coninck, and F. Vandenbussche. 2020. Ultraviolet radiation from a plant perspective: The plant-microorganism context. *Frontiers in plant science* 11: 1-18.
- Vincenti, S., Brunini-Bronzini de Caraffa, V., Berti, L., & Maury, J. 2019. Biocatalytic Synthesis of Natural Green Leaf Volatiles Using the Lipoxigenase Metabolic Pathway. *Catalysts*, 9(10), 873.
- Wahyuni T. 2004. Penyinaran UV Untuk Mengendalikan Penyakit Antraknosa pada Buah Cabai Pasca Panen. [Skripsi]. Universitas Sriwijaya. Palembang.
- Wicaksono, A. W. 2021. Optimasi Isolasi mRNA dan Sintesis cDNA pada Bawang Merah (*Allium cepa* L. Kelompok *Aggregatum*). Fakultas Pertanian. Universitas Gadjah Mada. Skripsi.
- Widiastuti, A., Widhi, D., Sawitri., Muhammad, I., Valentina, D. S. H., Belinda, W., Clarenca, M. S., Deden, D. M., Febri, D., & Adia, H. S. 2024. Unraveling the potential UV-B induced gene expression of the primary and secondary metabolisms against environmental stress in shallot. *Reviews in Agricultural Science*.
- Wijoyo, R. B., E. Sulistyanyingsih, and A. Wibowo. 2020. Growth, Yield and

Resistance Responses Of Three Cultivars On True Seed Shallots To Twisted Disease With Salicylic Acid Application. *Caraka Tani: Journal of Sustainable Agriculture* 35(1): 1-11.

Wiyatiningsih S. 2010. *Pengelolaan Epidemik Penyakit Moler Pada Bawang Merah*. UPN Press. Yogyakarta.

Wong, M. L. and Juan, F., M. 2005. Real-time PCR for mRNA quantitation. *BioTechniques* 39(1): 75-85.

Yuwono, T. 2006. *Bioteknologi Pertanian*. Gadjah Mada University Press, Yogyakarta.

Yuwono, T. 2018. *Bioteknologi Pertanian*. Edisi ke-4. Gadjah Mada University Press, Yogyakarta.

Zhang, J., F Shao, Y., Li, H., Cui, L., Chen, H., Li, Y., Zou, C., Long, L., Lan, J., Chai, S., Chen, X., Tang, and J.M Zhou. 2007. A *Pseudomonas syringae* effector inactivates MAPKs to suppress PAMP-induced immunity in plants. *Cell Host & Microbe* Article. 1: 175-185

Zhang XY, Zhang WD, Tian L, Gong XD, Zhang YF, Gu SQ, Fan YS. 2014. Efek Infeksi Dengan Isolat Virulen Yang Berbeda *Setosphaeria Turisica* Pada Aktivitas PAL Daun Jagung Yang Rentan. *Jurnal Jagung Sci.* 2014. 2(1):154–158.