



## DAFTAR PUSTAKA

- Aguilera Sammaritano, J. A., López Lastra, C. C., Leclerque, A., Vazquez, F., Toro, M. E., D'Alessandro, C. P., Cuthbertson, A. G. S., & Lechner, B. E. (2016). Control of *Bemisia tabaci* by entomopathogenic fungi isolated from arid soils in Argentina. *Biocontrol Science and Technology*, 26(12), 1668–1682. <https://doi.org/10.1080/09583157.2016.1231776>.
- Aidawati, N., Hidayat, S. H., Suseno, R., & Sosromarsono, S. (2002). Transmission of an Indonesian Isolate of Tobacco leaf curl virus (Geminivirus) by *Bemisia tabaci* Genn. (Hemiptera: Aleyrodidae). *Journal of Plant Pathology*, 18(5), 231–236. [10.5423/PPJ.2002.18.5.231](https://doi.org/10.5423/PPJ.2002.18.5.231).
- Barbedo, J. G. A. (2014). Using digital image processing for counting whiteflies on soybean leaves. *Journal of Asia-Pacific Entomology*, 17(4), 685–694. <https://doi.org/10.1016/j.aspen.2014.06.014>.
- Burban, C., Fishpool, L. D. C., Fauquet, C., Fargette, D., & Thouvenel, J. -C. (1992). Host-associated biotypes within West African populations of the whitefly *Bemisia tabaci* (Genn.), (Hom., Aleyrodidae). *Journal of Applied Entomology*, 113(1–5), 416–423. <https://doi.org/10.1111/j.1439-0418.1992.tb00682.x>.
- Chang, K. Y., & Yang, J. (2013). Analysis and Prediction of Highly Effective Antiviral Peptides Based on Random Forests. *PLoS ONE*, 8(8). <https://doi.org/10.1371/journal.pone.0070166>.
- Curnutte, L. B., Simmons, A. M., & Abd-Rabou, S. (2014). Climate change and *Bemisia tabaci* (Hemiptera: Aleyrodidae): Impacts of temperature and carbon dioxide on life history. *Annals of the Entomological Society of America*, 107(5), 933–943. <https://doi.org/10.1603/AN13143>.
- De Barro, P. J. (2005). Genetic structure of the whitefly *Bemisia tabaci* in the Asia-Pacific region revealed using microsatellite markers. *Molecular Ecology*, 14(12), 3695–3718. <https://doi.org/10.1111/j.1365-294X.2005.02700.x>.
- De Barro, Paul J., Liebregts, W., & Carver, M. (1998). Distribution and identity of biotypes of *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae) in member countries of the Secretariat of the Pacific Community. *Australian Journal of Entomology*, 37(3), 214–2. <https://doi.org/10.1111/j.1440-6055.1998.tb01574.x>.
- De Barro, Paul J., Liu, S. S., Boykin, L. M., & Dinsdale, A. B. (2011). *Bemisia tabaci*: A statement of species status. *Annual Review of Entomology*, 56(May 2014), 1–19. <https://doi.org/10.1146/annurev-ento-112408-085504>.
- Dewi, R., L. Andadari & K. E. Maharani. (2017). Tinjauan bioekologi dan pengendalianhama kutu kebul (*Bemisia tabaci* Genn.). Prosiding Seminar Nasional Perhimpunan Entomologi Indonesia Cabang Bandung, 40 – 45.
- Dinsdale, A., Cook, L., Riginos, C., Buckley, Y. M., & De Barro, P. (2010). Refined global analysis of *Bemisia tabaci* (Hemiptera: Sternorrhyncha: Aleyrodoidea: Aleyrodidae) Mitochondrial cytochrome oxidase 1 to identify species level genetic boundaries. *Annals of the Entomological Society of America*, 103(2), 196–208. <https://doi.org/10.1603/AN09061>.
- Fekrat, L., & Shishehbor, P. (2007). Some biological features of cotton whitefly, *Bemisia tabaci* (Homoptera: Aleyrodidae) on various host plants. *Pakistan Journal of Biological Sciences*, 10(18), 3180–3184. <https://doi.org/10.3923/pjbs.2007.3180.3184>.
- Firdaus, S., Vosman, B., Hidayati, N., Jaya Supena, E. D., G.F. Visser, R., & van Heusden, A. W. (2013). The *Bemisia tabaci* species complex: Additions from different parts of the world. *Insect Science*, 20(6), 723–733. <https://doi.org/10.1111/1744-7917.12001>.



- Folmer, O., Black, M., Hoeh, W., Lutz, R., & Vrijenhoek, R. (1994). DNA primers for amplification of mitochondrial cytochrome c oxidase subunit I from diverse metazoan invertebrates. *Molecular Marine Biology and Biotechnology*, 3(5), 294–299. <https://doi.org/10.1071/ZO9660275>.
- Foster, P. G., Jermiin, L. S., & Hickey, D. A. (1997). Nucleotide Composition Bias Affects Amino Acid Content in Proteins Coded by Animal Mitochondria Nucleotide Composition Bias Affects Amino Acid Content in Proteins Coded by Animal Mitochondria. April. <https://doi.org/10.1007/PL00006145>.
- Frohlich, D. R., Torres-Jerez, I., Bedford, I. D., Markham, P. G., & Brown, J. K. (1999). A phylogeographical analysis of the *Bemisia tabaci* species complex based on mitochondrial DNA markers. *Molecular Ecology*, 8(10), 1683–1691. <https://doi.org/10.1046/j.1365-294X.1999.00754.x>.
- Gangwar, R., & Gangwar, C. (2018). Lifecycle, Distribution, Nature of Damage and Economic Importance of Whitefly, *Bemisia tabaci* (Gennadius). *Acta Scientific Agriculture*, 2(4), 36–39.
- Gillham, N. W. (1994). *Organelle genes and genomes* [Book]. Oxford University Press.
- Götz, M., & Winter, S. (2016). Diversity of *Bemisia tabaci* in Thailand and Vietnam and indications of species replacement. *Journal of Asia-Pacific Entomology*, 19(2), 537–543. <https://doi.org/10.1016/j.aspen.2016.04.017>.
- Gray, S. M., & Banerjee, N. (1999). Mechanisms of Arthropod Transmission of Plant and Animal Viruses. *Microbiology and Molecular Biology Reviews*, 63(1), 128–148. <https://doi.org/10.1128/mmbr.63.1.128-148.1999>.
- Guruprasad, K., Reddy, B. V. B., & Pandit, M. W. (1990). Correlation between stability of a protein and its dipeptide composition: a novel approach for predicting in vivo stability of a protein from its primary sequence. 4(2), 155–161. <https://doi.org/10.1093/protein/4.2.155>.
- Hall, T.A. (1999) BioEdit: A User-Friendly Biological Sequence Alignment Editor and Analysis Program for Windows 95/98/NT. Nucleic Acids Symposium Series, 41, 95–98.
- Hasibuan, F. E., Mantiri, F. R., & Rumende, R. R. H. (2017). Kajian Variasi Sekunes Intraspesies Dan Filogenetik Monyet Hitam Sulawesi (*Macaca nigra*) Dengan Menggunakan Gen Coi. *Jurnal Ilmiah Sains*, 17(1). <https://dx.doi.org/10.35799/jis.17.1.2017.15558>.
- Hasyim, A., Setiawati, W., & L, L. (2016). Kutu Kebul *Bemisia tabaci* Gennadius (Hemiptera: Aleyrodidae) Penyebar Penyakit Virus Mosaik Kuning pada Tanaman Terung. *Iptek Hortikultura*, 12(12), 50–54. <http://repository.pertanian.go.id/handle/123456789/6731>.
- Hidayat, P., Aidawati, N., Hendrastuti Hidayat, S., & Sartiami, D. (2008). Tanaman Indikator Dan Teknik Rapd-Pcr Untuk Penentuan Biotipe *Bemisia tabaci* Gennadius (Hemiptera: Aleyrodidae). *Jurnal Hama Dan Penyakit Tumbuhan Tropika*, 8(1), 1–7. <https://doi.org/10.23960/j.hptt.181-7>.
- Hidayat, P., Kurniawan, H. A., Afifah, L., & Triwidodo, H. (2018). Siklus hidup dan statistik demografi kutukebul *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae) biotipe B dan non-B pada tanaman cabai (*Capsicum annuum* L.). *Jurnal Entomologi Indonesia*, 14(3), 143. <https://doi.org/10.5994/jei.14.3.87>.
- Hidayat, P., Yuliani, Y., & Sartiami, D. (2017). Identifikasi kutukebul (Hemiptera: Aleyrodidae) dari beberapa tanaman inang dan perkembangan populasinya. *Jurnal Entomologi Indonesia*, 3(1), 41. <https://doi.org/10.5994/jei.3.1.41>.
- Hoy, M. A. (2003). Insect Molecular Genetics: An Introduction to Principles and Applications: Second Edition. In *Insect Molecular Genetics: An Introduction*



to Principles and Applications: Second Edition.  
<https://doi.org/10.1016/B978-0-12-357031-4.X5018-3>.

- Joko, T., Kusumandari, N., & Hartono, S. (2011). Optimasi Metode PCR untuk Deteksi *Pectobacterium carotovorum*, Penyebab Penyakit Busuk Lunak Anggrek. *Jurnal Perlindungan Tanaman Indonesia*, 17(2), 54–59. <https://doi.org/10.22146/jpti.9813>.
- Jones, D. R. (2003). Plant viruses transmitted by whiteflies. *European Journal of Plant Pathology*, 109(3), 195–219. <https://doi.org/10.1023/A:1022846630513>.
- Kalshoven, L. G. E. (1981). The Pests of Crops in Indonesia (Revised and Translated by P. A. Van der Laan). Ichtiaar Baru, Jakarta.
- Kedar, S. C., Saini, R. K., & Kumarang, K. M. (2014). Biology of cotton whitefly, *Bemisia tabaci* (Hemiptera: Aleyrodidae) on cotton. *Journal of Entomological Research*, 38(2), 135–139.
- Legg, J. P., French, R., Rogan, D., Okao-Okuja, G., & Brown, J. K. (2002). A distinct *Bemisia tabaci* (Gennadius) (Hemiptera: Sternorrhyncha: Aleyrodidae) genotypecluster is associated with the epidemic of severe cassava mosaic virus disease in Uganda. *Molecular Ecology*, 11(7), 1219–1229. <https://doi.org/10.1046/j.1365-294X.2002.01514.x>.
- Lestari, S. M., Hidayat, P., Hidayat, S. H., Shim, J. K., & Lee, K. Y. (2021). *Bemisia tabaci* in Java, Indonesia: genetic diversity and the relationship with secondary endosymbiotic bacteria. *Symbiosis*, 83(3), 317–333. <https://doi.org/10.1007/s13199-021-00752-w>.
- Li, N., Li, Y., Zhang, S., Fan, Y., & Liu, T. (2017). Effect of elevated CO<sub>2</sub> concentration and temperature on antioxidant capabilities of multiple generations of *Bemisia tabaci* MEAM1 (Hemiptera: Aleyrodidae). *Journal of Insect Physiology*, 103, 91–97. <https://doi.org/10.1016/j.jinsphys.2017.10.009>.
- Liu, B., Preisser, E. L., Chu, D., Pan, H., Xie, W., Wang, S., Wu, Q., Zhou, X., & Zhang, Y. (2013). Multiple Forms of Vector Manipulation by a Plant-Infecting Virus: *Bemisia tabaci* and Tomato Yellow Leaf Curl Virus. *Journal of Virology*, 87(9), 4929–4937. <https://doi.org/10.1128/jvi.03571-12>.
- Liu, S. S., De Barro, P. J., Xu, J., Luan, J. B., Zang, L. S., Ruan, Y. M., & Wan, F. H. (2007). Asymmetric mating interactions drive widespread invasion and displacement in a whitefly. *Science*, 318(5857), 1769–1772. <https://doi.org/10.1126/science.1149887>.
- Lu, S., Chen, M., Li, J., Shi, Y., Gu, Q., & Yan, F. (2019). Changes in *Bemisia tabaci* feeding behaviors caused directly and indirectly by cucurbit chlorotic yellows virus. *Virology Journal*, 16(1), 1–14. <https://doi.org/10.1186/s12985-019-1215-8>.
- McCollum, T. G., Stoffella, P. J., Powell, C. A., Cantliffe, D. J., & Hanif-Khan, S. (2004). Effects of silverleaf whitefly feeding on tomato fruit ripening. *Postharvest Biology and Technology*, 31(2), 183–190. <https://doi.org/10.1016/j.postharvbio.2003.09.001>.
- Nei M, Kumar S. (2000). Molecular Evolution and Phylogenetics. Oxford UniversityPress, USA.
- Oliveira, M. R. V., Henneberry, T. E., & Anderson, P. (2001). *History, current status, and collaborative research projects.pdf*. 20, 20(9): 709-723. [https://doi.org/10.1016/S0261-2194\(01\)00108-9](https://doi.org/10.1016/S0261-2194(01)00108-9).
- Ou, D., Ren, L. M., Liu, Y., Ali, S., Wang, X. M., Ahmed, M. Z., & Qiu, B. L. (2019). Compatibility and efficacy of the parasitoid *Eretmocerus hayati* and the entomopathogenic fungus *Cordyceps javanica* for biological control of whitefly *Bemisia tabaci*. *Insects*, 10(12), 1–11.



<https://doi.org/10.3390/insects10120425>.

Perring, T. M. (2001). The *Bemisia tabaci* species complex. *Crop Protection*, 20(9), 725–737. [https://doi.org/10.1016/S0261-2194\(01\)00109-0](https://doi.org/10.1016/S0261-2194(01)00109-0).

Perring, Thomas M., Cooper, A. D., Rodriguez, R. J., Farrar, C. A., & Bellows, T. S. (1993). Identification of a whitefly species by genomic and behavioral studies. *Science*, 259(5091), 74–77. <https://doi.org/10.1126/science.8418497>.

Rahayuwati, S., Hendrastuti Hidayat, S., & Hidayat, P. (2016). Identitas genetik *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae) dari daerah endemik penyakit kuning cabai di Indonesia bagian barat berdasarkan fragmen mitokondria sitokrom oksidase I (mtCOI). *Jurnal Entomologi Indonesia*, 13(3), 156–164. <https://doi.org/10.5994/jei.13.3.156>.

Rahayuwati, S., Hidayat, P., & Hidayat, S. H. (2020). Variasi morfologi puparium *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae) pada berbagai inang dan ketinggian tempat dari daerah endemik penyakit kuning cabai di Wilayah Sundaland. *Jurnal Entomologi Indonesia*, 17(2), 61. <https://doi.org/10.5994/jei.17.2.61>.

Rosell, R. C., Bedford, I. D., Frohlich, D. R., Gill, R. J., Brown, J. K., & Markham, P. G. (1997). Analysis of morphological variation in distinct populations of *Bemisia tabaci* (Homoptera: Aleyrodidae). *Annals of the Entomological Society of America*, 90(5), 575–589. <https://doi.org/10.1093/aesa/90.5.575>.

Saxena, R. C., & Barrion, A. A. (1987). Biotypes of insect pests of agricultural crops. *International Journal of Tropical Insect Science*, 8(4-5-6), 453–458. <https://doi.org/10.1017/s1742758400022475>.

Shadmany, M., Boykin, L. M., Muhamad, R., & Omar, D. (2019). Genetic Diversity of *Bemisia tabaci* (Hemiptera: Aleyrodidae) Species Complex Across Malaysia. *Journal of Economic Entomology*, 112(1), 75–84. <https://doi.org/10.1093/jee/toy273>.

Simón, B., Cenis, J. L., Demichelis, S., Rapisarda, C., Caciagli, P., & Bosco, D. (2003). Survey of *Bemisia tabaci* (Hemiptera: Aleyrodidae) biotypes in Italy with the description of a new biotype (T) from Euphorbia characias. *Bulletin of Entomological Research*, 93(3), 259–264. <https://doi.org/10.1079/ber2003233>.

Simons, C., Frati, F., Beckenbach, A., & Crespi, B. (1994). Evolution, Weighting, and Phylogenetic Utility of Mitochondrial Gene Sequences and a Compilation of Conserved Polymerase Chain Reaction Primers. *Annals of the Entomological Society of America*, 87(6), 651–701. <https://doi.org/10.1093/aesa/87.6.651>

Solanki R.D & Jha S. (2018). Population dynamics and biology of whitefly ( *Bemisia tabaci* Gennadius ) on sunflower ( *Helianthus annuus* L .). *Journal of Pharmacognosy and Phytochemistry At*, 3055–3058.

Srinivasan, R., Hsu, Y., Kadivel, P., & Lin, M. (2013). Analysis of *Bemisia tabaci* (Hemiptera: Aleyrodidae) Species Complex in Java, Indonesia Based on Mitochondrial Cytochrome Oxidase I Sequences. *The Philippine Agricultural Scientist*, 96(3), 290–295.

Struck, T. H., & Cerca, J. (2019). Cryptic Species and Their Evolutionary Significance. *ELS*, 1–9. <https://doi.org/10.1002/9780470015902.a0028292>

Tamura, K., Stecher, G., Peterson, D., Filipski, A., & Kumar, S. (2013). MEGA6: Molecular Evolutionary Genetics Analysis version6 0. 1–5. <https://doi.org/10.1093/molbev/mst197>.

Tay, W. T., Evans, G. A., Boykin, L. M., & de Barro, P. J. (2012). Will the Real *Bemisia tabaci* Please Stand Up? *PLoS ONE*, 7(11), 7–11. <https://doi.org/10.1371/journal.pone.0050550>.



- Trianom, B., Arwiyanto, T., & Joko, T. (2018). *Perancangan Primer Spesifik Subspesies Berbasis Gen Endoglukanase untuk Deteksi Ralstonia syzygii subsp.syzygii Development of Novel Subspecies-Specific Primers Based on the Endoglucanase Gene for Detection of Ralstonia syzygii subsp . syzygii.* 22(2), 124–131. <https://doi.org/10.22146/jpti.32217>.
- Van de Ven, W. T. G., LeVesque, C. S., Perring, T. M., & Walling, L. L. (2000). Local and systemic changes in squash gene expression in response to silverleaf whitefly feeding. *Plant Cell*, 12(8), 1409–1423. <https://doi.org/10.1105/tpc.12.8.1409>.
- Widodo, A., L, Mohammad dan Umie. (2003). Evolusi. Malang: UM Press.



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**Analisis Molekuler Gen Mitokondria Sitokrom C Oksidase I Pada Populasi Kutu Kebul (Bermisia tabaci)**

**Dari Empat Kabupaten Di Daerah Istimewa Yogyakarta**

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