



REFERENCES

- Agrios, G. N. (2005). *Plant Pathology* (Fifth Edition). Elsevier Academic Press.
- Álvarez, B., Biosca, E. G., & López, M. M. (2010). *On the life of Ralstonia solanacearum, a destructive bacterial plant pathogen*. 13.
- Arwiyanto, T. (2014). *Ralstonia solanacearum: Biologi, Penyakit yang Ditimbulkan dan Pengelolaannya* (Vol. 2014). Gadjah Mada University Press.
- Barchi, L., Pietrella, M., Venturini, L., Minio, A., Toppino, L., Acquadro, A., Andolfo, G., Aprea, G., Avanzato, C., Bassolino, L., Comino, C., Molin, A. D., Ferrarini, A., Maor, L. C., Portis, E., Reyes-Chin-Wo, S., Rinaldi, R., Sala, T., Scaglione, D., ... Rotino, G. L. (2019). A chromosome-anchored eggplant genome sequence reveals key events in Solanaceae evolution. *Scientific Reports*, 9(1), 11769. <https://doi.org/10.1038/s41598-019-47985-w>
- Barik, S., Reddy, A. C., Ponnam, N., Kumari, M., C, A. G., Reddy D C, L., Petikam, S., & Gs, S. (2020). Breeding for bacterial wilt resistance in eggplant (*Solanum melongena* L.): Progress and prospects. *Crop Protection*, 137, 105270. <https://doi.org/10.1016/j.cropro.2020.105270>
- Bennett, L. L., Rojas, S., & Seefeldt, T. (2012). Role of Antioxidants in the Prevention of Cancer. *Journal of Experimental & Clinical Medicine*, 4(4), 215–222. <https://doi.org/10.1016/j.jecm.2012.06.001>
- Bi-hao, C., Jian-jun, L., Yong, W., & Guo-ju, C. (2009). Inheritance and identification of SCAR marker linked to bacterial wilt-resistance in eggplant. *African Journal of Biotechnology*, 8(20), 5201–5207.
- Bittner, R. J., Arellano, C., & Mila, A. L. (2016). Effect of temperature and resistance of tobacco cultivars to the progression of bacterial wilt, caused by *Ralstonia solanacearum*. *Plant and Soil*, 408(1–2), 299–310. <https://doi.org/10.1007/s11104-016-2938-6>
- Chaudhary, D. R. (2000). Inheritance of resistance to bacterial wilt (*Ralstonia solanacearum* E.F. Smith) in eggplant. *Haryana J. of Hort. Sci*, 29(1/2), 89–90.
- Chen Nung, C., HueiMei, L., & Wang, J. (1997). Bacterial wilt resistance sources in eggplant, *Solanum melongena*. *Capsicum and Eggplant News*, 16, 111–114.
- Choudhary, D. K., Nabi, S. U., Dar, M. S., & Khan, K. A. (2018). *Ralstonia solanacearum: A wide spread and global bacterial plant wilt pathogen*. 7(2), 85–90.
- Daunay, M.-C. (2008). Eggplant. In *Vegetables II* (Vol. 2, pp. 163–220). Springer.
- Deberdt, Queneherve, Darrasse, & Prior. (1999). Increased susceptibility to bacterial wilt in tomatoes by nematode galling and the role of the Mi gene in resistance to nematodes and bacterial wilt. *Plant Pathology*, 48(3), 408–414. <https://doi.org/10.1046/j.1365-3059.1999.00346.x>



Denny, T. P. (2007). Plant pathogenic *Ralstonia* species. In *Plant-Associated Bacteria* (pp. 573–644). Springer, Dordrecht.

Esposito. (2007). *Studio Dell'Interazione Ospite-Patogeno Tra Il Batterio Fitopatogeno Ralstonia solanacearum E Patata*. Anno Academico.

FAO. (2018). FAOSTAT. <http://www.fao.org/faostat/en/#data/QC>

Fradin, E. F., Zhang, Z., Juarez Ayala, J. C., Castroverde, C. D. M., Nazar, R. N., Robb, J., Liu, C.-M., & Thomma, B. P. H. J. (2009). Genetic Dissection of *Verticillium* Wilt Resistance Mediated by Tomato Ve1. *Plant Physiology*, 150(1), 320–332. <https://doi.org/10.1104/pp.109.136762>

Frary, A., Doganlar, S., & Daunay, M. C. (2007). Eggplant. In *Vegetables* (Vol. 5, pp. 287–313). Springer.

Gayoso, C., Pomar, F., Novo-Uzal, E., Merino, F., & Martínez de Ilárduya, Ó. (2010). The Ve-mediated resistance response of the tomato to *Verticillium dahliae* involves H₂O₂, peroxidase and lignins and drives PALgene expression. *BMC Plant Biology*, 10(1), 232. <https://doi.org/10.1186/1471-2229-10-232>

Genin, S. (2010). Molecular traits controlling host range and adaptation to plants in *Ralstonia solanacearum*: Research review. *New Phytologist*, 187(4), 920–928. <https://doi.org/10.1111/j.1469-8137.2010.03397.x>

Genin, S., & Boucher, C. (2002). *Ralstonia solanacearum*: Secrets of a major pathogen unveiled by analysis of its genome: Genome analysis of *Ralstonia solanacearum*. *Molecular Plant Pathology*, 3(3), 111–118. <https://doi.org/10.1046/j.1364-3703.2002.00102.x>

Genin, S., & Denny, T. P. (2012). Pathogenomics of the *Ralstonia solanacearum* Species Complex. *Annual Review of Phytopathology*, 50(1), 67–89. <https://doi.org/10.1146/annurev-phyto-081211-173000>

Grimault, V., & Prior, P. (1994). Grafting Tomato Cultivars Resistant or Susceptible to Bacterial Wilt: Analysis of Resistance Mechanisms. *Journal of Phytopathology*, 141(3), 330–334. <https://doi.org/10.1111/j.1439-0434.1994.tb01477.x>

Hikichi, Y., Yoshimochi, T., Tsujimoto, S., Shinohara, R., Nakaho, K., Kanda, A., Kiba, A., & Ohnishi, K. (2007). Global Regulation of Pathogenicity Mechanism of *Ralstonia solanacearum*. *Plant Biotechnology*, 24, 149–154.

Hirakawa, H., Shirasawa, K., Miyatake, K., Nunome, T., Negoro, S., Ohyama, A., Yamaguchi, H., Sato, S., Isobe, S., Tabata, S., & Fukuoka, H. (2014). Draft Genome Sequence of Eggplant (*Solanum melongena* L.): The Representative Solanum Species Indigenous to the Old World. *DNA Research*, 21(6), 649–660. <https://doi.org/10.1093/dnarecs/dsu027>

Huet, G. (2014). Breeding for resistances to *Ralstonia solanacearum*. *Frontiers in Plant Science*, 5. <https://doi.org/10.3389/fpls.2014.00715>



ITIS. (2019). ITIS Standard Report Page: *Solanum melongena*. https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=30446#null

Jiang, G., Wei, Z., Xu, J., Chen, H., Zhang, Y., She, X., Macho, A. P., Ding, W., & Liao, B. (2017). Bacterial Wilt in China: History, Current Status, and Future Perspectives. *Frontiers in Plant Science*, 8, 1549. <https://doi.org/10.3389/fpls.2017.01549>

John M. Whipps & Berndt Gerhardson. (2007). Biological pesticides for control of seed- and soil-borne plant pathogens. In Jan Dirk Van Elsas, Janet K. Jansson, & Jack T. Trevors (Eds.), *Modern Soil Microbiology* (2nd Edition, pp. 479–501). CRC Press.

Kelman, A. (1954). The relationship of pathogenicity of *Pseudomonas solanacearum* to colony appearance in a tetrazolium medium. *Phytopathology*, 44(12), 693–695.

Kim, B.-S., French, E., Caldwell, D., Harrington, E. J., & Iyer-Pascuzzi, A. S. (2016). Bacterial wilt disease: Host resistance and pathogen virulence mechanisms. *Physiological and Molecular Plant Pathology*, 95, 37–43. <https://doi.org/10.1016/j.pmpp.2016.02.007>

Knapp, S., Vorontsova, M. S., & Prohens, J. (2013). Wild Relatives of the Eggplant (*Solanum melongena* L.: Solanaceae): New Understanding of Species Names in a Complex Group. *PLoS ONE*, 8(2), e57039. <https://doi.org/10.1371/journal.pone.0057039>

Lebeau, A., Daunay, M.-C., Frary, A., Palloix, A., Wang, J.-F., Dintinger, J., Chiroleu, F., Wicker, E., & Prior, P. (2011). Bacterial Wilt Resistance in Tomato, Pepper, and Eggplant: Genetic Resources Respond to Diverse Strains in the *Ralstonia solanacearum* Species Complex. *Phytopathology*, 101(1), 154–165. <https://doi.org/10.1094/PHYTO-02-10-0048>

Lebeau, A., Gouy, M., Daunay, M. C., Wicker, E., Chiroleu, F., Prior, P., Frary, A., & Dintinger, J. (2013). Genetic mapping of a major dominant gene for resistance to *Ralstonia solanacearum* in eggplant. *Theoretical and Applied Genetics*, 126(1), 143–158. <https://doi.org/10.1007/s00122-012-1969-5>

Lester, R. N., & Hasan, S. M. Z. (n.d.). *Origin and domestication of the brinjal-eggplant, Solanum melongena, from S. incanum in Africa and Asia*. 369–387.

Lowe-Power, T. M., Khokhani, D., & Allen, C. (2018). How *Ralstonia solanacearum* Exploits and Thrives in the Flowing Plant Xylem Environment. *Trends in Microbiology*, 26(11), 929–942. <https://doi.org/10.1016/j.tim.2018.06.002>

Mansfield, J., Genin, S., Magori, S., Citovsky, V., Sriariyanum, M., Ronald, P., Dow, M., Verdier, V., Beer, S. V., Machado, M. A., Toth, I., Salmond, G., & Foster, G. D. (2012). Top 10 plant pathogenic bacteria in molecular plant pathology: Top 10 plant pathogenic bacteria. *Molecular Plant Pathology*, 13(6), 614–629. <https://doi.org/10.1111/j.1364-3703.2012.00804.x>



Manson, J. E., Gaziano, J. M., Jonas, M. A., & Hennekens, C. H. (1993). Antioxidants and cardiovascular disease: A review. *Journal of the American College of Nutrition*, 12(4), 426–432. <https://doi.org/10.1080/07315724.1993.10718332>

McGarvey, J. A., Bell, C. J., Denny, T. P., & Schell, M. A. (1998). Analysis of Extracellular Polysaccharide I In Culture and In *Planta* Using Immunological Methods: New Insights and Implications. In P. Prior, C. Allen, & J. Elphinstone (Eds.), *Bacterial Wilt Disease* (pp. 157–163). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-03592-4_23

Meng, F. (2013). *Ralstonia Solanacearum Species Complex and Bacterial Wilt Disease*. *Journal of Bacteriology & Parasitology*, 04(02). <https://doi.org/10.4172/2155-9597.1000e119>

Mochizuki, H., & Yamakawa, K. (1979). Resistance of selected eggplant cultivars and related wild *Solanum* species to bacterial wilt (*Pseudomonas solanacearum*). *Bull. Veg. Ornamental Crop Res*, 6(10).

Namisy, Chen, Prohens, Metwally, Elmahrouk, & Rakha. (2019). Screening Cultivated Eggplant and Wild Relatives for Resistance to Bacterial Wilt (*Ralstonia solanacearum*). *Agriculture*, 9(7), 157. <https://doi.org/10.3390/agriculture9070157>

Peeters, N., Guidot, A., Vailleau, F., & Valls, M. (2013). *Ralstonia solanacearum*, a widespread bacterial plant pathogen in the post-genomic era: *Ralstonia solanacearum* and bacterial wilt disease. *Molecular Plant Pathology*, 14(7), 651–662. <https://doi.org/10.1111/mpp.12038>

Rahman, M. A., Abdullah, H., & Vanhaecke, M. (1999). Histopathology of Susceptible and Resistant *Capsicum annuum* Cultivars Infected with *Ralstonia solanacearum*. *J. Phtopathology*, 147, 129–140.

Salgon, S., Jourda, C., Sauvage, C., Daunay, M.-C., Reynaud, B., Wicker, E., & Dintinger, J. (2017). Eggplant Resistance to the *Ralstonia solanacearum* Species Complex Involves Both Broad-Spectrum and Strain-Specific Quantitative Trait Loci. *Frontiers in Plant Science*, 8. <https://doi.org/10.3389/fpls.2017.00828>

Singh, D., Yadav, D. K., Sinha, S., & Choudhary, G. (2014). Effect of temperature, cultivars, injury of root and inoculum load of *Ralstonia solanacearum* to cause bacterial wilt of tomato. *Archives Of Phytopathology And Plant Protection*, 47(13), 1574–1583. <https://doi.org/10.1080/03235408.2013.851332>

Taher, D., Solberg, S. Ø., Prohens, J., Chou, Y., Rakha, M., & Wu, T. (2017). World Vegetable Center Eggplant Collection: Origin, Composition, Seed Dissemination and Utilization in Breeding. *Frontiers in Plant Science*, 8. <https://doi.org/10.3389/fpls.2017.01484>

USDA. (2018). *Food Composition Databases Show Foods—Eggplant, raw*. <https://ndb.nal.usda.gov/ndb/foods/show/11209?fgcd=&manu=&format=&cont=&max=25&offset=&sort=default&order=asc&qlookup=Eggplant%2C+raw&ds=&qt=&qp=&qa=&qn=&q=&ing=>



UNIVERSITAS
GADJAH MADA

THE DEVELOPMENT OF SCREENING TECHNIQUE OF BACTERIAL WILT RESISTANCE (*Ralstonia solanacearum*) IN

EGGPLANT (*Solanum melongena*)

IRFAN ISLAMI, Dr. Ir. Taryono, M. Sc.; Dr. Ir. Aziz Purwantoro, M.Sc.

Universitas Gadjah Mada, 2022 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Vasse, J. (1995). Microscopic Studies of Intercellular Infection and Protoxylem Invasion of Tomato Roots by *Pseudomonas solanacearum*. *Molecular Plant-Microbe Interactions*, 8(2), 241. <https://doi.org/10.1094/MPMI-8-0241>

Vinh, M. T., T.T. Tung, & H.X. Quang. (2005). Primary bacterial wilt tudy on tomato in vegetable areas of Ho Chi Minch city, Vietnam. In C. Allen, P. Prior, & A. Hayward (Eds.), *Bacterial Wilt Disease and the Ralstonia solanacearum Species Complex* (pp. 177–184). American Phytopathological Society Press.

Weese, T. L., & Bohs, L. (2010). Eggplant origins: Out of Africa, into the Orient. *TAXON*, 59(1), 49–56. <https://doi.org/10.1002/tax.591006>

Yadeta, K. A., & J. Thomma, B. P. H. (2013). The xylem as battleground for plant hosts and vascular wilt pathogens. *Frontiers in Plant Science*, 4. <https://doi.org/10.3389/fpls.2013.00097>

Yuliar, Nion, Y. A., & Toyota, K. (2015). Recent Trends in Control Methods for Bacterial Wilt Diseases Caused by *Ralstonia solanacearum*. *Microbes and Environments*, 30(1), 1–11. <https://doi.org/10.1264/jsme2.ME14144>