



DAFTAR PUSTAKA

- Ajri, M., Indarti, S., Soffan, A., Huu, N.N. 2021. Morphological and phylogenetic characteristics of *Ditylenchus dipsaci* among garlic plants. *Jordan Journal of Biological Sciences*. 14(4): 769-773.
- Abolafia, J., & Peña-Santiago, R. 2007. Nematodes of the Order Rhabditida from Andalucía Oriental, Spain. The Genera *Protorhabditis* (Osche, 1952) Dougherty, 1953 and *Diploscapter* Cobb, 1913, with description of *P. spiculocrestata* sp. n. and a Species *Protorhabditis* Key. *Journal of Nematology*, 39(3): 263–274. <https://pubmed.ncbi.nlm.nih.gov/19259497>
- Alister V., P. L. S. 2003. Soil Ecology. *Vadose Zone Journal*, 2(2): 277–278. Kluwer Academic Publishers. <https://doi.org/10.2136/vzj2003.2770>
- Amritha, M. L., & Budijastuti, W. 2018. Tingkat Serangan Nematoda Parasit pada Bawang Putih (*Allium sativum*) Impor dan Lokal di Jawa Timur. *LenteraBio: Berkala Ilmiah Biologi*, 7(3): 214–221.
- Arifin, L., Indarti, S., & Wibowo, A. 2021. Identification of pathogens causing bulb rot disease on garlic (*Allium sativum* L.) in Central Java, Indonesia. *Jurnal Perlindungan Tanaman Indonesia*, 25, 74. <https://doi.org/10.22146/jpti.64743>
- Azizah, N., Indarti, S., Widiastuti, A., Trisyono, Y.A. 2019. Detection and development of infestation rate of *Aphelenchoides besseyi* on various rice seed varieties. *Jurnal Perlindungan Tanaman Indonesia* 23(2).
Bernard, G. C. 2017. The Impact of Plant-Parasitic Nematodes on Agriculture and Methods of Control (M. Egnin (ed.); p. Ch. 7). IntechOpen. <https://doi.org/10.5772/intechopen.68958>
- Badan Pusat Statistik. 2017. Produksi, Produktivitas dan Luas Areal Panen Bawang Putih Tahun 2000-2016. Jakarta.
- Bernard, G. C. 2017. The Impact of Plant-Parasitic Nematodes on Agriculture and Methods of Control (M. Egnin (ed.); Ch. 7). IntechOpen. <https://doi.org/10.5772/intechopen.68958>
- Blaxter M.L., De Ley P., Garey J.R., Liu L.X., Scheldeman P., Vierstraete A., Vanfleteren J.R., Mackey L.Y., Dorris M., Frisse L.M., Vida J.T., Thomas W.K.. 1998. A molecular evolutionary framework for the Phylum Nematoda. *Nature*. 6671:71-5. doi: 10.1038/32160.
- Bogale, M., Baniya, A., & Digennaro, P. 2020. Nematode identification techniques and recent advances. *Plants*, 9(10): 1–15. <https://doi.org/10.3390/plants9101260>
- Bongers, T. 1990. The maturity index: an ecological measure of environmental disturbance based on nematode species composition. *Oecologia*, 83(1): 14–19. <https://doi.org/10.1007/BF00324627>
- Bridge, J., R.A. Plowright, and D. Peng. Nematode Parasites of Cereals. In: Luc, M., R.A. Sikora, J. Bridge. 2005. Plant Parasitic Nematodes in Subtropical and Tropical Agriculture 2nd Edition. Wallingford, CAB International.
- Carmen, E. U., & Zaborski. 2020. Soil Nematodes in Organic Farming Systems | eOrganic. EORGANIC. <https://eorganic.org/node/4495>



- Chan, A. H. E., Chaisiri, K., Morand, S., Saralamba, N., & Thaenkham, U. 2020. Evaluation and utility of mitochondrial ribosomal genes for molecular systematics of parasitic nematodes. *Parasites and Vectors*, 13(1): 1–13. <https://doi.org/10.1186/s13071-020-04242-8>
- Cseke, L., Kaufman, P., Podila, G.K., & Tsai, C. 2003. Handbook of Molecular and Cellular Methods in Biology and Medicine (2nd ed.). CRC Press. <https://doi.org/https://doi.org/10.1201/9781420041712>
- de Oliveira, C.M.G., Monteiro, A.R., Blok, V.C. 2011. Morphological and molecular diagnostics for plant-parasitic nematodes: working together to get the identification done. *Tropical Plant Pathology*, 36(2): 65–76.
- Decraemer, Wilfrida & Hunt, David J. 2006. Structure and classification. In Perry, Roland N and Moens, Maurice (Ed.), *Plant nematology* :3–32. CABI.
- Derycke, S., De Ley, P., Tandingan De Ley, I., Holovachov, O., Rigaux, A., & Moens, T. 2010. Linking DNA sequences to morphology: cryptic diversity and population genetic structure in the marine nematode *Thoracostoma trachygaster* (Nematoda, Leptosomatidae). *Zoologica Scripta*, 39(3): 276–289. <https://doi.org/https://doi.org/10.1111/j.1463-6409.2009.00420.x>
- Direktur Jenderal Hortikultura, Kementerian Pertanian. 2017. Pengembangan Bawang Putih Nasional. <<http://riph.pertanian.go.id/asset/media/download/file/547a6106025e209a3517aa07db2f27b7.pdf>>>EPPO. 2013. PM 7/119 (1) Nematode extraction. EPPO Bulletin, 43(3): 471–495. <https://doi.org/https://doi.org/10.1111/epp.12077>
- Donn, S., Griffiths, B. S., Neilson, R., & Daniell, T. J. 2008. DNA extraction from soil nematodes for multi-sample community studies. *Applied Soil Ecology*, 38(1): 20–26. <https://doi.org/10.1016/j.apsoil.2007.08.006>
- Dropkin, V. H. 1996. Introduction To Plant Nematology (Pengantar Nematologi Tumbuhan). Gadjah Mada University Press, Yogyakarta.
- EPPO. 2013. PM 7/119 (1) Nematode extraction. *EPPO Bulletin*, 43(3): 471–495. <https://doi.org/https://doi.org/10.1111/epp.12077>
- El-Borai, F.E., and L.W. Duncan. Nematode Parasites of Subtropical and Tropical Fruit Tree Crops. In: Luc, M., R.A. Sikora, J. Bridge. 2005. Plant Parasitic Nematodes in Subtropical and Tropical Agriculture 2nd Edition. Wallingford, CAB International.
- Fang, Y. 2018. Identification, Systematics And Phylogeny Of The Genera In The Aphelenchoididae (Nematoda: Tylenchomorpha). Thesis. Ghent University.
- Ferris, H., Bongers, T., & De Goede, R. G. M. 2001. A framework for soil food web diagnostics: Extension of the nematode faunal analysis concept. *Applied Soil Ecology*, 18(1): 13–29. [https://doi.org/10.1016/S0929-1393\(01\)00152-4](https://doi.org/10.1016/S0929-1393(01)00152-4)
- Ferris, V.R., Ferris, J.M., Faghihi, J., & Ireholm,A. 1994. Comparisons of isolates of *Heterodera avenae* using 2D PAGE protein patterns and ribosomal DNA. *J.Nematol.* 26:144-151.



- Floyd, R. M., A. D. Rogers, P.J.D. Lambshead, & C.R. Smith. 2005. Nematode-specific PCR primers for the 18S small subunit rRNA gene. *Molecular Ecology Notes* 5: 611–612.
- Folmer O, Black M, Hoeh W, Lutz R, Vrijenhoek R. 1994. DNA primers for amplification of mitochondrial cytochrome c oxidase subunit I from diverse metazoa.
- Fortuner, R. 1984. Morphometrical variability in *Helicotylenchus* Steiner, 1945-6 : value of the characters used for specific identification.
- Geraert, E. 2008. The Tylenchidae of the World: Identification of the Family Tylenchidae (Nematoda). Academia Press.
- Gissi, C., Iannelli, F., & Pesole, G. 2008. Evolution of the mitochondrial genome of Metazoa as exemplified by comparison of congeneric species. *Heredity*, 101(4): 301–320. <https://doi.org/10.1038/hdy.2008.62>
- Gomes, G. S., Huang, S. P., & Cares, J. E. 2003. Nematode community, trophic structure and population fluctuation in soybean fields. *Fitopatologia Brasileira*, 28(3): 258–266. <https://doi.org/10.1590/s0100-41582003000300006>
- Haraguchi, S., & Yoshiga, T. 2020. Potential of the fungal feeding nematode *Aphelenchus avenae* to control fungi and the plant parasitic nematode *Ditylenchus destructor* associated with garlic. *Biological Control*, 143. 104203. <https://doi.org/10.1016/j.biocontrol.2020.104203>
- Heyns, J. 1971. A Guide To The Plant And Soil Nematodes Of South Africa. Cape Town, A. A. Balkema.
- Htay, C., Peng, H., Huang, W., Kong, L., He, W., Holgado, R., & Peng, D. 2016. The development and molecular characterization of a rapid detection method for Rice root-knot nematode (*Meloidogyne graminicola*). *European Journal of Plant Pathology*, 146(2): 281–291. <https://doi.org/10.1007/s10658-016-0913-y>
- Huibschchen, J., Kling, L., Ipach, U., Zinkernagel, V., Bosselut, N., Esmenjaud, D., Brown, D. J. F., & Neilson, R. 2004. Validation of the specificity and sensitivity of species-specific primers that provide a reliable molecular diagnostic for *Xiphinema diversicaudatum*, *X. index* and *X. vittenezi*. *European Journal of Plant Pathology*, 110: 779–788.
- Huang, R. E., Ye, W., Liang, J., Lu, Q., & Zhang, X. Y. 2012. *Tylaphelenchus jiaae* n. sp. and *Aphelenchoides varicaudatus* (Nematoda: Aphelenchoidinae) from Simao pine in Yunnan Province, China. *Nematology*, 14(1): 93–108. <https://doi.org/10.1163/138855411X579418>
- Hunt, D. 2008. A checklist of the Aphelenchoidea (Nematoda: Tylenchina). *Journal of Nematode Morphology and Systematics*, 10(2): 99–135.
- Hunt, D. J., M. Luc., and R. H. Manzanilla-Lopez. 2005. Identification, morphology and biology of plant parasitic nematodes. In: M. Luc., R.A. Sikora, and J. Bridge. Plant Parasitic Nematodes in Subtropical and Tropical Agriculture 2n Edition. Wallingford, CAB International.
- Ibrahim, S.K. and Hooper, D.J. 1994. *Aphelenchoides varicaudatus* sp. n. (Nematoda: Aphelenchoididae). *AfroAsian Journal of Nematology* 4: 210-214.



- Indarti, S., Wibowo, A., Subandiyah, S., & Ajri, M. 2018. First Record: A Stem and Bulb Plant Parasitic Nematode at Garlic Area Centre Temanggung, Central Java, Indonesia with species reference to *Ditylenchus dipsaci*. *Jurnal Perlindungan Tanaman Indonesia*, 22(2): 233-237. <https://doi.org/10.22146/jpti.35321>
- IPPC. 2016. DP 17: *Aphelenchoides besseyi*, *A. fragariae* and *A. ritzemabosi*. *International Plant Protection Convention* : 3–28.
- Irdani, T., 2008. Molecular identification of some plant parasitic. *REDIA*: 125–128.
- Ishibashi, N., & Choi, D. R. 1991. Biological control of soil pests by mixed application of entomopathogenic and fungivorous nematodes. *Journal of Nematology*, 23(2): 175–181.
<http://www.ncbi.nlm.nih.gov/pubmed/19283109%0A><http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=Nucleotide&term=PMC2619159>
- Joyce, S., Reid, A., Driver, F., & Curran, J. 1994. Application of polymerase chain reaction (PCR) methods to identification of entomopathogenic nematodes.
- Kanzaki, N. & Kazuyoshi, Futai. 2002. A PCR primer set for determination of phylogenetic relationships of *Bursaphelenchus* species within the xylophilus group. *Nematology*, 2002, Vol. 4(1): 35-41.
- Kanzaki, N. & Giblin-Davis, R. 2014. Chapter 7: Aphelenchoidea. In: Manzanilla-Lopez R. & Mendoza, N. Practical Plant Nematology. Biblioteca Básica de Agricultura, Guadalajara, México.
- Kementerian Pertanian. 2017. Pengembangan Bawang Putih Nasional. Direktorat Jenderal Hortikultura.<<<http://riph.pertanian.go.id/asset/media/download/file/547a6106025e209a3517aa07db2f27b7.pdf>>>
- Kementerian Pertanian. 2019. Produktivitas Bawang Putih Menurut Provinsi Tahun 2015-2019. <<<https://www.pertanian.go.id/home/index.php?show=repo&fileNum=339>>>
- Koenning, S. R., Overstreet, C., Noling, J. W., Donald, P. A., Becker, J. O., & Fortnum, B. A. 1999. Survey of crop losses in response to phytoparasitic nematodes in the United States for 1994. *Journal of Nematology*, 31: 587–618.
<https://pubmed.ncbi.nlm.nih.gov/19270925>
- Kumari, S. 2012. *Aphelenchus avenae* (Nematoda: Aphelenchidae) under the rhizosphere of *Brassica napus*. *Helminthologia*, 49(1): 57–59. <https://doi.org/10.2478/s11687-012-0009-y>
- Kusuma, M. D., Supramana, S., & Giyanto, G. 2021. Phytonematodes community and polyphasic character of *Aphelenchoides varicaudatus* on garlic plants in Tegal Regency, Central Java. *Jurnal Perlindungan Tanaman Indonesia*, 24(2): 216-223.
<https://doi.org/10.22146/jpti.49779>
- Lambert, K., & Bekal, S. 2002. Introduction to Plant-Parasitic Nematodes. *The Plant Health Instructor*. <https://doi.org/10.1094/PHI-I-2002-1218-01>
- Mai, W. F., & Mullin, P. G. 1996. Plant-Parasitic Nematodes: A Pictorial Key To Genera. Plant-Parasitic Nematodes: A Pictorial Key To Genera. Comstock Pub. Associates, Cornell University Press.



- Malysheva, S., Boris D. Efeykin and Anastasia A. Teterina. 2016. A new primer set for amplification of COI mtDNA in parasitic nematodes. *Russian Journal of Nematology*, 2016, 24 (1): 73 – 75.
- Mandal, H. R., Katelyn S., Subedi, S., & Shrestha, J. 2021. Plant parasitic nematodes and their management in crop production: a review. *Journal of Agriculture and Natural Resources*, 4(2): 327–338. <https://doi.org/10.3126/janr.v4i2.33950>
- Mareka, M., M. Zouhara, O. Doudab, J. Mazakova and P. Rysanek. 2010. Bioinformatics-assisted characterization of the ITS1-5.8S-ITS2 segments of nuclear rRNA gene clusters, and its exploitation in molecular diagnostics of European crop-parasitic nematodes of the genus
- Mondino, E. A., Covacevich, F., Studdert, G. A., Pimentel, J. P., & Berbara, R. L. L. 2015. Extracting DNA of nematodes communities from argentine pampas agricultural soils. *Anais Da Academia Brasileira de Ciencias*, 87(2): 691–697. <https://doi.org/10.1590/0001-3765201520130110>
- Mulyadi. 2009. Nematologi Pertanian. Yogyakarta, Gadjah Mada Press.
- Musyarofah, A., & Indarti, S. 2020. Host Range of Stem and Bulb Rot Parasite Nematode (*Ditylenchus dipsaci*). In Tutik DR, Roto R., Rohana A., Laurent C., Kuwat T., Indriana K., Julius M., and Dwi S. (Eds.) Key Engineering Materials. Vol. 840: 137–141. Trans Tech Publications Ltd, Switzerland.
- Mwamula, A. O., Kim, Y. H., Lee, H. W., Bae, E. J., Kim, Y. H., & Lee, D. W. 2020. Taxonomic notes on three *Tylenchorhynchus* spp. (Nematoda, Telotylenchidae) associated with turfgrass in Korea. *European Journal of Plant Pathology*, 156(4): 1101–1117. <https://doi.org/10.1007/s10658-020-01966-2>
- Nalini C.G., and K.M.Mohotti. Nematode Parasites of Tea. In: Luc, M., R.A. Sikora, J. Bridge. 2005. Plant Parasitic Nematodes in Subtropical and Tropical Agriculture 2nd Edition. Wallingford, CAB International.
- Neher, D. A. 1999. Soil community composition and ecosystem processes: Comparing agricultural ecosystems with natural ecosystems. *Agroforestry Systems*, 45(1): 159–185. <https://doi.org/10.1023/A:1006299100678>
- Nickle, W.R., and Hooper, D.J. 1991. The Aphelenchina: bud, leaf and insect nematodes. In: Nickle, W.R. (Ed.). Manual of agricultural nematology. New York, NY, USA, Marcel Dekker.
- Nugrohorini. 2012. Nematoda Parasit Tumbuhan. UPN Press.
- Petersen, H., & Luxton, M. 1982. A comparative analysis of soil fauna populations and their role in decomposition processes. *Oikos*, 39(3): 288–388. <https://doi.org/10.2307/3544689>
- Poinar, G. O. 2001. Nematoda And Nematomorpha (Second E. Covich (Eds.); pp. 255–295). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-012690647-9/50010-7>
- Powers, T. 2004. Nematode molecular diagnostics: from bands to barcodes. *Annual Review of Phytopathology*, 42(1): 367–383. <https://doi.org/10.1146/annurev.phyto.42.040803.140348>



- Powers, T. O., & Harris, T. S. 1993. A polymerase chain reaction method for identification of five major meloidogyne species. *Journal of Nematology*, 25(1): 1–6. <http://www.ncbi.nlm.nih.gov/pubmed/19279734> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2619349/>
- Price, T. V. 2000. Plant parasitic nematodes. Integrated pest management for smallholder estate crops project. *Plant Quarantine Component*, 4: 173–180.
- Puspitaningrum, R., Adhiyanto, C., & Solihin. 2018. Genetika Molekuler Dan Aplikasinya. Deepublish.
- Qi Li, Liang, W., Zhang, X., & Mahamood, M. 2017. Soil Nematodes of Grasslands in Northern China. Academic Press. <https://doi.org/10.1016/j.gca.2017.01.001>
- Riascos-Ortiz, D., Mosquera-Espinosa, A. T., De Agudelo, F. V., de Oliveira, C. M. G., & Muñoz-Florez, J. E. 2021. An integrative approach to the study of *Helicotylenchus* (Nematoda: Hoplolaimidae) Colombian and Brazilian populations associated with Musa crops. *Journal of Nematology*, 52: 1–19. <https://doi.org/10.21307/jofnem-2020-054>
- Roberts, D., Oliveira, C., Neilson, R., & Blok, V. 2016. Molecular diagnostics of plant-parasitic nematodes. *Diagnose Molecular De Nematoides Parasitos De Plantas*: 277–320.
- Saeed, M. 2015. Plant-Parasitic Nematodes associated with garlic in Yemen. *Egyptian Journal of Agronematology*, 14(1): 37–44. <https://doi.org/10.21608/ejaj.2015.57489>
- Sanchez-Monge, A., Flores, L., Salazar, L., Hockland, S., Bert, W. 2015. An updated list of the plants associated with plant-parasitic Aphelenchoides (Nematoda: Aphelenchoididae) and its implications for plant-parasitism within this genus. *Zootaxa* 4013(2):207.
- Sandrakirana, R. 2018. Panduan budidaya bawang putih kementerian. *Balai Pengkajian Teknologi Pertanian Jawa Timur*: 1–16. <http://repository.pertanian.go.id/bitstream/handle/123456789/7121/BAWANG%20PUTIH%20-%203.pdf?sequence=1&isAllowed=y>
- Sauer, M. R., & Winoto, R. 1975. The Genus *Helicotylenchus* Steiner 1945 in West Malaysia. 341–350.
- Shah, M. M., & Mahamood, M. 2017. Introductory Chapter: Nematodes - A Lesser Known Group of Organisms (M. M. E.-M. M. S. E.-M. Mahamood (ed.); p. Ch. 1). IntechOpen. <https://doi.org/10.5772/intechopen.68589>
- Sher, S. A. 1966. Revision of the Hoplolaiminae (Nematoda) VI. *Helicotylenchus* Steiner, 1945. *Nematologica*, 12(1): 1–56. <https://doi.org/10.1163/187529266X00013>
- Sikora, A. R., & Fernández, E. 2005. Nematode parasites of vegetables. *Plant Parasitic Nematodes in Subtropical and Tropical Agriculture: Second Edition*: 319–392.
- Surzycki, S. 2012. Basic Techniques in Molecular Biology. Springer Berlin Heidelberg.
- Tarjan, A. C., Esser, R. P., & Chang, S. L. 1977. An illustrated key to nematodes found in fresh water. *Journal (Water Pollution Control Federation)*, 49(11): 2318–2337. <http://www.jstor.org/stable/25039452>
- Thoden, T. C., Korthals, G. W., & Termorshuizen, A. J. 2011. Organic amendments and



- their influences on plant-parasitic and free-living nematodes: A promising method for nematode management? In *Nematology* 13 (2): 133–153. <https://doi.org/10.1163/138855410X541834>
- Ugarte, C., & Zaborski. 2020. Soil Nematodes in Organic Farming Systems | eOrganic. EORGANIC. <https://eorganic.org/node/4495>
- Uzma, I., Nasira, K., Firoza, K., & Shahina, F. 2015. Review of the genus *Helicotylenchus* Steiner, 1945 (Nematoda: Hoplolaimidae) with updated diagnostic compendium. *Pakistan Journal of Nematology*, 33(2): 115–160. <https://doi.org/10.18681/2015.v33.i02.p01201507310001>
- Vrain T.C., Wakarchuk D.A., Lévesque A.C., Hamilton R.I. 1992. Intraspecific rDNA restriction fragment length polymorphism in the *Xiphinema americanum* group. *Fundamental and Applied Nematology*, 1992, 15 (6): 563–573.
- Wood, W. 1988. The Nematode *Caenorhabditis elegans*. Cold Spring Harbour Laboratory.
- Wouts, W. M., & Yeates, G. W. 1994. *Helicotylenchus* species (Nematoda: Tylenchida) from native vegetation and undisturbed soils in New Zealand. *New Zealand Journal of Zoology*, 21(2): 213–224. <https://doi.org/10.1080/03014223.1994.9517988>
- Wulandari A.S. and Indarti S. 2020. Distribution and abundance of a new pest “root and bulb parasitic nematode” at different elevation levels and soil abiotic factors garlic growing centres in Central Java. In: Tutik DW, Roto R, Rohana A, Laurent C, Kuwat T, Indriana K, Julius M, and Dwi S (Eds.), Key Engineering Materials. Vol. 840. Trans Tech Publications Ltd, Switzerland. 124–130.
- Wulandari AS, Indarti, S., Massadeh, M.I., and Van Minh, N. 2021. The effect of abiotic factors and elevation on the diversity of plant parasitic nematodes in garlic on Central Java, Indonesia. *Sarhad J. Agric.*, 37 (Special issue 1): 75–83.
- Xu, C. L., Zhao, C. B., Ding, S., Zhang, J. F., & Xie, H. 2016. A modified crude DNA preparation for direct PCR reaction of single plant-parasitic nematodes. *Nematology*, 18(5): 625–628. <https://doi.org/10.1163/15685411-00002975>
- Yavuzaslanoglu, E., Dikici, A., Elekcioglu, I. H., & Aydogdu, M. 2015. Distribution of nematodes on onion and their relationship with soil physicochemical characteristics in Karaman province, Turkey. *Turkish Journal of Entomology*, 39: 251–259.
- Ye, W., Zeng, Y., & Kerns, J. 2015. Molecular characterisation and diagnosis of root-knot nematodes (*Meloidogyne spp.*) from turfgrasses in North Carolina, USA. *PLoS ONE*, 10(11): 1–17. <https://doi.org/10.1371/journal.pone.0143556>
- Yuwono, T. 2006. Teori Dan Aplikasi Polymerase Chain Reaction Panduan eksperimen PCR. Yogyakarta, Andi Offset.
- Zhang, Y., Li, S., Li, H., Wang, R., Zhang, K.-Q., & Xu, J. 2020. Fungi–nematode interactions: diversity, ecology, and biocontrol prospects in agriculture. In *Journal of Fungi* 6(4). <https://doi.org/10.3390/jof6040206>
- Zunke, U. 1990. Observations on the invasion and endoparasitic behavior of the root lesion nematode *Pratylenchus penetrans*. *Journal of Nematology*, 22(3): 309–320.