

DAFTAR PUSTAKA

- Araujo, J. P. M., and Hughes, D. P. 2016. Diversity of Entomopathogenic fungi which groups conquered the insect body. *Advances in Genetiks* 24. Penn. State University, University Park, PA. United States.
- Baehaki, S.E. dan Noviyanti. 1993. Pengaruh Umur Biakan *Metarhizium anisopliae* strain lokal Sukamandi terhadap Perkembangan Wereng Coklat. hlm.113-124
- Bakeri, S. A., Ali, S. R. A., Tajuddin, N. S. and Kamaruzzaman, N. E. 2009. Jurnal of Oil Palm Research. (21): 693-699
- Beilharz VC, Parbery DG, Swart HJ. 1982. Dodine: a selective agent for certain soil fungi. *Trans Br Mycol Soc* 79:507–511
- Bidochka, M. J., Kamp, A.M., and Decroos, J.N.A. 2000. Insect pathogenic fungi: from genes to populations. *Fungal Pathol.* 171-193
- Bidochka, M. J., Kasperski, J. E. & Wild, G. A. M. 1998. Occurrence of the entomopathogenic fungi *Metarhizium anisopliae* and *Beauveria bassiana* in soils from temperate and near- northern habitats. *Canadian Journal of Botany*, **76**, 1198-1204.
- Borror , D. J., Triplehorn, C. A. dan Johnson, N. F. 1982. *Pengenalan Pelajaran Serangga*. Edisi ke-6. Terjemahan : Partosoedjono, S. Gadjah Mada University Press. Yogyakarta.
- Cabral, J. P. S. 1991. Damage to the cytoplasmic membrane and cell death caused by dodine (Dodecylguanidine monoacetate) in *Pseudomonas syringae* ATCC 12271. *Antim Ag Chemother* 35:341–344
- Carlile, M. J, Watkinson SC, Goodday GW. 2001. *The Fungi. 2nd*. New York, London. Academy Press.
- Chandler D, Hay D, Reid AP. 1997. Sampling and occurrence of entomopathogenic fungi and nematodes in UK soils. *Applied Soil Ecology* 5: 133-141
- Chandler, D., Hay, D. and Reid, A.P. 1997. Sampling and occurrence of entomopathogenic fungi and nematodes in UK soils. *Applied Soil Ecology*, 5, 133-141.
- Chase AR, Osborne LS, Ferguson VM. 1986. Selective isolation of the entomopathogenic fungi *Beauveria bassiana* and *Metarhizium anisopliae* from an artificial potting medium. *Fla Entomol* 69:285–292
- Cotton, R. T. 1927. Notes on the biology of the meal worms, *Tenebrio molitor* Linne and *T. obscurus* Fab. *Ann Entomol Soc Am* 20(1): 81-86(6)
- de Souza, P. C., A. T. Morey, G. M. Castanheira, K. P. Bocate, L. A. Panagio, F. A. Ito, M. C. Furlaneto, S. Fumie. 2015. *Tenebrio molitor* (Coleoptera: Tenebrionidae) as

an alternative host to study fungal infections. *Journal of Microbiological Methods*. 118 (2015) : 182–186

- Doberski J, Tribe HT. 1980. Isolation of entomogenous fungi from elm bark and soil with reference to ecology of *Beauveria bassiana* and *Metarhizium anisopliae*. *Trans Br Mycol Soc* 74:95–100
- Evans, C. H. 1982. Entomogenous fungi in tropical forest ecosystems: an appraisal. *Ecological Entomology* 7:47-60
- Ferron, P. 1985. Fungal kontrol. *Comprehensive Insect Physiology, Biochem. Pharmacol.* (12): 313-346.
- Finke, M. D. 2002 Complete nutrient composition of commercially raised invertebrates used as food for insectivores. *Zoo Biol* 21, 269-285
- Frost, W.S. 1959. *Insect Life and Insect Natural History*. Dover Publications, Inc. New York.
- Gabriel, B. P. & Riyatno. 1989. *Metarhizium anisopliae* (Metch) Sor: *Taksonomi, Patologi, Produksi dan Aplikasinya*. Jakarta. Direktorat Perlindungan Tanaman Perkebunan, Departemen Pertanian
- Ghaly, A. E. and Alkoaik, F.N. 2009. The Yellow Mealworm as a Novel Source of Protein. *American Journal of Agricultural and Biological Sciences*. 4 (4): 319-331
- Glare, T.R. and R.J. Milner. 1991. Ecology of entomopathogenic fungi, p. 547-612
- Indiati, S. S. dan Marwoto. 2017. *Penerapan Pengendalian Hama Terpadu (PHT) pada Tanaman Kedelai*. Buletin Palawija. 15 (2): 87-100
- Jaber, L. R. and Salem, N. M. 2014. Endophytic colonization of squash by the fungal entomopathogen *Beauveria bassiana* (Ascomycota: Hypocreales) for managing *Zucchini Yellow Mosaic Virus* (ZYMV) in cucurbits. *Biokontrol Sci Technol* 24: 1096–1109
- Kanga, L.B.B., Jones, W.A. and James, R.R. 2003. Field trials using fungal pathogen, *Metarhizium anisopliae* (Deuteromycetes: Hyphomycetes) to kontrol the ectoparasitic mite, *Varroa destructor* (Acari:Varroidae) in honey bee, *Apis mellifera* (Hymenoptera: Apidae) colonies. *J. Environ. Entomol* (96): 1.091-1.099
- Kementrian Pertanian. 2015. *Rencana Strategis Direktorat Jenderal Tanaman Pangan Tahun 2015-2019*. Jakarta. Direktorat Jenderal Tanaman Pangan. Hal: 20
- Klingen, I., Eilenberg, J. & Meadow, R. 2002. Effects of farming system, field margins and bait insect on the occurrence of insect pathogenic fungi in soils. *Agriculture Ecosystems & Environment*, **91**, 191-198
- Lacey, L. A., Fransen J. J., Carruthers, R. 1996. Global distribution of naturally occurring fungi of *Bemisia*, their biologies and use as biological control agents. In: Gerling

- D, Mayer R, editors. *Bemisia: 1995. Taxonomy, biology, damage, kontrol and management*. Andover: Intercept. pp. 401-433.
- Lantang, D. dan Runtuboi, D. Y. 2012. Karakterisasi Bakteri *Bacillus thuringiensis* asal Hutan Lindung Kampus Uncen Jayapura, serta Deteksi Toksisitasnya terhadap Larva Nyamuk *Anopheles*. *Jurnal Biologi Papua*. 4(1):19–24
- Lee, P. C. and Hou, R. 1989. Pathogenesis of *Metarhizium anisopliae* var. *anisopliae* in the smaller brown planthopper, *laodelphax striatellus*. *Chinese J. Entomol.* (9): 13-19
- Lee, S. J., Kim, S. H., Nai., Y/. Je., Y. H., Parker, B. L., and Kim, S. 2014. Management of entomopathogenic fungi in cultures of *Tenebrio molitor* (Coleoptera: Tenebrionidae). Korea. Chonbuk National University. *Entomological Research* 44 (2014): 236-243
- Lestari, A. S., dan Rao, S. 2016. Laboratory Bioassay of *Metarhizium* spp. and *Beauveria* spp. Against *Tenebrio molitor* Larvae. Bogor. The 6th International Symposium for Sustainable Humanospore: 207-212
- Liu ZY, Milner RJ, McRae CF, Lutton GG. 1993. The use of dodine in selective media for the isolation of *Metarhizium* spp. from soil. *J Invertebr Pathol* 62:248–251
- Mahmoud, M. F. 2009. Pathogenicity of three commercial products of entomopathogenic fungi *Beauveria bassiana*, *Metarhizium anisopliae*, *Lecanicillium lecanii* against adults of olive fly *Bactrocera oleae* (Gmelin) (Diptera: Tephritidae) in the laboratory. *Plant Protect Science* 45(3): 98-102.
- Meyling, N. V. 2007. *Methods For Isolation of Entomopathogenic Fungi From the Soil Environment*. Denmark. University of Copenhagen. p: 5
- Meyling, N. V. 2007. *Methods For Isolation of Entomopathogenic Fungi From the Soil Environment*. Denmark. University of Copenhagen. p: 5
- Meyling, N. V. and Eilenberg, J. 2007. Ecology of the entomopathogenic fungi *Beauveria bassiana* and *Metarhizium anisopliae* in temperate agroecosystems: Potential for conservation biological kontrol. *Biological Kontrol* 43: 145-155.
- Oka, I. N. 2005. Pengendalian Hama Terpadu dan Implementasinya di Indonesia. Cetakan ketiga. Gadjah Mada University Press. 254 hal
- Perry, D. F., Tyrrell, D., and Delyzer, A. J. 1982. The mode of germination of *Zoophthora radicans* zygospores. *Mycologia* (74): 549-554.
- Posadas, J. B., Comerio, R. M., Mini, J. I., Nussenbaum, A. L and Lecuona, R. E. 2017. A novel dodine-free selective medium based on the use of cetyl trimethyl ammonium bromide (CTAB) to isolate *Beauveria bassiana*, *Metarhizium anisopliae* sensu lato and *Paecilomyces lilacinus* from soil. *America. Journal Mycologia*. 104 (4):974-980

- Prashar, P. and Shah, S. 2016. *Impact of Fertilizer and Pesticide Microflora in Agriculture*. Springer International Publizing. Switzerland. P : 332-333
- Rai, D., Updhyay, V., Mehra, P., Rana, M., Pandey, A. K. 2014. Potential of entomopathogenic fungi as biopesticides. *Ind J Sci Res and Tech*. 2(5):7-13.
- Safitri, A. Herlinda, S and Setiawan, A. 2018. Entomopathogenic fungi of soils of freshwater swamps, tidal lowlands, peatlands, and highlands of South Sumatra, Indonesia. 19 (6): 2365-2373
- Salaki , C. L. 2011. Exploration Of Entomopathogenic Bacteria For Bio-Pesticide To Kontrol *Plutella xylostella* and *Spodoptera sp.* On Cabbage And Broccoli. *Eugenia*.17 (3) : 209-217
- Samson, R. A., Evans, H. C., and Latge, J. 1988. *Atlas of Entomophatogenic Fungi*. Berlin. Springer-Verlag.
- Sánchez-Peña, S.R. 1990. Some insect- and spider-pathogenic fungi from Mexico with data on their host range. *Florida Entomologist* 73(3): 517-522
- Santoso, S. 1991. Prospek Pengembangan *Beauveria bassiana* untuk Pengendalian Hama Bubuk Buah Kopi *Hypothenemus hampei* di Jawa Timur. Dinas Perkebunan Tingkat I Jawa Timur. hal 12
- Sapieha-Waszkiewics, A., Marjanska-Cichon, B., Piwowarczyk, Z. 2005. The Occurrence of Entomophatogenic Fungi In The Soil From The Plantations of Black Currant and Aronia. *Electronic Journal of Polish Agricultural Universities*. 8 (1): 1-8
- Schroeckenstein, D. C., Meier-Davis, S., Bush, R.K. 1990. Occupational sensitivity to *Tenebrio molitor* Linnaeus (yellow mealworm). *J Allergy Clin Immunol* 86(2), 182-188
- Setiawati, W.T., S. Uhan dan B.K. Udarto, 2004. *Pemanfaatan Musuh Alami Dalam Pengendalian Hayati Hama pada Tanaman Sayuran*. Jakarta. Balai Penelitian Tanaman Sayuran. Pusat Penelitian dan Pengembangan Hortikultura. Badan Penelitian dan Pengembangan Pertanian. Hal: 30-31.
- Sharma, L. and Marques, G. 2018. *Fusarium*, an Entomopathogen – A Myth or Reality?. *CITAB*. 7 (93): 1-15
- Siemianowska, E., Kosewska, A., Aljewicz, M., Skibniewska, K. A., Polak-Juszczak, L., Jarocki, A., and Jędras, M. 2013. Larvae of mealworm (*Tenebrio molitor* L.) as European novel food. *Agricultural Sciences*. 4 (6) : 287-291
- Silva, J. C. and Messias, C.L. 1985. Virulence of *Metarhizium anisopliae* to *Rhodnius prolixus*. *Cienc Cult*. (7): 37-40
- Subinprasert S. 1987. Natural enemies and their impact on overwintering codling moth populations (*Laspeyresia pomonella* L.) (Lepidoptera: Tortricidae) in South Sweden. *Journal of Applied Entomology* 103:46–55

- Sudibyo, D. 1994. *Petunjuk Praktis Cara Menghitung Jumlah, Kerapatan dan Viabilitas Spora Jamur*. Jawa Timur. Laboratorium Utama Pengendalian Hayati, Dinas Perkebunan Propinsi Jawa Timur.
- Sumartini. 2016. Biopestisida Untuk Pengendalian Hama dan Penyakit Tanaman Aneka Kacang dan Umbi. Malang. Iptek Tanaman Pangan. 11 (2):160
- Tanada, Y. & Kaya, H.K. 1993. *Insect Pathology*. New York. Academic Press.
- Toledo J, Liedo P, Flores S, Campos SE, Villasenor A, Montoyo P. 2006. Use of *Beauveria bassiana* and *Metarhizium anisopliae* for fruit fly kontrol: A novel approach. Proceedings of the 7th International Symposium on Fruit Flies of economic importance. 10-15 September 2006, Salvador, Brazil pp: 127-132
- Trizelia, Armon, N. dan Jailani, H. 2015. Keanekaragaman Cendawan Entomopatogen pada Rizosfer Berbagai Tanaman Sayuran. Padang. Pro Sem Nas Masy Biodiv Indon. 1 (5):998-1004
- Tyrrell, D. and MacLeod, D.M. 1975. In vitro germination of entomophthora aphids resting spores. Can. J. Bot. (53): 1.188-1.191
- Utami, R. S., Isnawati, and R. Ambarwati. 2014. Exploration and Characterization of Entomopathogenic Fungi *Beauveria bassiana* from Malang and Magetan Regency. *LenteraBio*. 3 (1) : 59–66
- Veen KH, Ferron P. 1966. A selective medium for the isolation of *Beauveria tenella* and of *Metarrhizium anisopliae*. J Invertebr Pathol 8:268–269
- Vieira, D.B., Carmona-Ribeiro, A.M. 2006. Cationic lipids and surfactants as antifungal agents: mode of action. J Antimicrob Chemother 58:760–767
- Vincent, C., Goettel, M. S., and Lazarovits, G. 2007. *Biological Kontrol, a Global Perspective*. Oxfordshire. CABI
- Wang, H. C., Liao, H. Y. and Che, H. L. 2012. *Tenebrio* small-scale ecological farming feasibility study. Adv Mat Res, 267-270
- Watanabe, T. 2002. *Pictorial Atlas of Soil and Seed Fungi Morphologies of Cultured Fungi and Key to Spesies: Second Edition*. USA. CRC Press LLC
- Wraight SP, Inglis GD, Goettel MS. 2007. Fungi. In: Lacey LA, Kaya HK, eds. Field manual of techniques in invertebrate pathology: application and evaluation of pathogens for kontrol of insects and other invertebrate pests. Dordrecht, the Netherlands: Kluwer Academic. p 223–248.
- Wraight, S. P., Carruthers, R. I., Bradley, C.A., Jaronski, S. T., Lacey, L. A., Wood, P. and Galaini, S. 1998. Jurnal of Intervertebrate Pathology 71, 217-226
- Zacharia, J.T. 2011. Identity, physical and chemical properties of pesticides. In: Stoytcheva M (ed) Pesticides in the modern world - trends in pesticides analysis. Intech Publisher, Rijeka, pp 1–18.

Zimmermann, G. 1986. The *Galleria* bait method for detection of entomopathogenic fungi in soil. *Journal of Applied Entomology* 102: 213-215.