

## DAFTAR PUSTAKA

- Afrinda, D., Salbiah, D., & Laoh, J.H. 2014. Uji Beberapa Konsentrasi *Beauveria bassiana*. Pada Kopi Robusta (*Coffea robusta*). *Jurnal Sains dan Seni ITS* 6 (2): 13-16
- Al Khoury C, Guillot J, Nemer N. 2019. Lethal activity of beauvericin, a *Beauveria bassiana* mycotoxin, against the two spotted spider mites, *Tetranychus urticae* Koch. *Journal of Applied Entomology* 143(9):
- Ali S, Mereghetti V, Faoro F, Bocchi S, Azmeh FA, Montagna M. 2010. Thermotolerant isolates of *Beauveria bassiana* as potential control agent of insect pest in subtropical climates. *Plos One*.
- Arief M, C, W., Mesin, T., Raminim, S dan Fazrin, R. 2011. Panduan Sekolah Lapangan Budidaya Kopi Konservasi. Conservation International Indonesia.
- Aristizábal L, Johnson M, Shriner S, Hollingsworth R, Manoukis N, Myers R, Bayman P, Arthurs S. 2017. Integrated pest management of coffee berry borer in Hawaii and Puerto Rico: Current status and prospects. *Insects*. 8(4):123. <https://doi.org/10.3390/insects8040123>
- Aristizábal, L.F., Bustillo, A.E., & Arthurs, S.P. 2016. Integrated pest management of coffee berry borer: Strategies from Latin America that could be useful for coffee farmers in Hawaii. *Insects* 7(1): 11–14.
- Arlus, F., Tjandra, M.A., & Yanti, D. 2017. Analisis Kesesuaian Lahan Untuk Pengembangan Komoditas Kopi Arabika Di Kabupaten Solok. *Jurnal Teknologi Pertanian Andalas*, 21(1), 70 <https://doi.org/10.25077/jtpa.21.1.70-78.2017>
- Arthurs, S., Aristizábal, L., & Avery, P. 2013. Evaluation of entomopathogenic fungi against chilli thrips, *Scirtothrips dorsalis*. *Journal of Insect Science*, 13(31), 1–16.
- Asis, Ardiansyah, R., Jaya, R., & Ishar. 2020. Peningkatan produktivitas Kopi Arabika Gayo I dan II berbasis aplikasi biourine dan biokompos. *Jurnal Ilmu Pertanian Indonesia (JIPI)* 25(4): 493–502.
- Badan Pusat Statistik (BPS). 2021. Statistik Kopi Indonesia 2019. Jakarta : Badan Pusat Statistik.
- Bayman M, Rad B, Amani M, Rahkhodaei E. 2021. Massproduction of entomopathogenic fungi *Beauveria bassiana* (Balsamo) by using agricultural products based on liquid-solid diphasic method for date palm pest control. *International Journal of Agriculture and Crop Sciences* 5(19):2337-2341.
- Bayu MSYI, Prayogo Y. 2021. Field efficacy of entomopathogenic fungi *Beauveria bassiana* (Balsamo.) to the management of mungbean insect pests. *IOP Conf. Series: Earth and Environmental Science* 102(2018): 012032.

- Behie SW, Jones SJ, Bidochka MJ. 2015. Plant tissue localization of the endophytic insect pathogenic fungi *Metarhizium* and *Beauveria*. *Fungal Ecology* 13(2015):112-119.
- Benavides P, Talaei-Hassanloui R, Askary H. 2012. Effect of culture substrates on virulence of *Beauveria bassiana* (Ascomycota: Cordycipitaceae) conidia against the browntail moth, *Euproctis chrysorrhoea* (Lepidoptera: Lymantriidae). *Biocontrol Science and Technology* 21(5-6):619-624
- Bich 2004. Distribution of chitinases in the entomopathogen *Metharizium anisopliae* and effect of Nacetylglucosamine in protein secretion. *Current Microbiology* 48(2):102-107.
- Boucias Y, Reitz SR, Wang J, Tamez-Querra P, Wang E, Xu Y, Lei Z. 2000. Potential use of the *Beauveria bassiana* against the western flower thrips *Frankliniella occidentalis* without reducing the effectiveness of its natural predator *Orius sauteri* (Hemiptera: Anthocoridae). *Biocontrol Science and Technology* 22(7):803-812.
- Budiman, Hendra, Rahmawati, F., & Sanjaya, F. 2010. Isolasi dan Identifikasi Alkaloid pada Biji Kopi Robusta (*Coffea robusta* Lindl. Ex De Will) Dengan Cara Kromatografi Lapis Tipis. *CERATA Journal of Pharmacy Science*. 2(4).
- Candrasekharan K, Nataraju B. 2011. *Beauveria bassiana* (Hyphomycetes: Moniliales) infection during ecdysis of silkworm *Bombyx mori* (Lepidoptera: Bombycidae). *Munis Entomol Zoo* 6(2011):312-316.
- Carvalho M, Lopes A, Bento A, Santos L, Narciso C, Guedes R, A. Casquero P. 2021. Can coffee variety affect the population dynamics of coffee berry borer (*Hypothenemus hampei*) on Sao Tome Island. *Int J Adv Res*. 9(02):592–603. <https://doi.org/10.21474/IJAR01/12487>
- Cruz-López, L, B Díaz-Díaz, and JC Rojas. 2016. Coffee volatiles induced after mechanical injury and beetle herbivory attract the coffee berry borer and two of its parasitoids. *Arthropod-Plant Interactions*. 10(2): 151–159.
- Damon A. 2000. A review of the biology and control of the coffee berry borer, *Hypothenemus hampei* (Coleoptera: Scolytidae). *Bull Entomol Res*. 90(6):453–465. <https://doi.org/10.1017/S0007485300000584>
- Dannon HF, Dannon AE, Douro-Kpindou OK, Zinsou AV, Houndete AT, Toffa-Mehinto J, Elegbede IATM, Olou BD, Tamo M. 2020. Toward the efficient use of *Beauveria bassiana* in integrated cotton insect pest management. *Journal of Cotton Research* 3(1):1-21.
- Darmawan, E. 2016. Eksplorasi Cendawan Entomopatogen *Beauveria Bassiana*, *Metarhizium anisopliae*, dan Cendawan Antagonis *Trichoderma* sp Pada Beberapa Sampel Tanah Pertanian Tembakau. Skripsi. Jurusan Agroteknologi. Fakultas Pertanian. Universitas Negeri Jember.
- de Souza, R.A., Pratisoli, D., de Araujo Junior, I.M., Pinheiro, J.de A., Souza, J.F.V., Madalon, F.Z., Deolindo, F.D., & Damascena, A.P. 2020.

*Hypothenemus hampei* Ferrari (Coleoptera: Curculionidae) answer to visual and olfative stimuli in field. *Coffee Science* 15: e151656

- Dhar S, Jindal V, Jariyal M, Gupta VK. 2019. Molecular characterization of new isolates of the entomopathogenic fungus *Beauveria bassiana* and their efficacy against the tobacco caterpillar, *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae). *Egyptian Journal of Biological Pest Control* 29(8):1-9
- Effendy, Hanani N, Setiawan B, Muhaimin AW. 2013. Effect Characteristics of Farmers on the Level of Technology Adoption Side-Grafting in Cocoa Farming at Sigi Regency-Indonesia. *JAS*. 5 (12): 72.doi:10.
- Elawati, N. E., Sri, P., & Endang, K. 2018. Karakteristik dan Sifat Kinetika Enzim Kitinase Asal Jamur Entomopatogen *Beauveria bassiana*. *Jurnal Bioteknologi & Biosains Indonesia*, 5 (1), 1-7.
- Erfandi D. 2013. Teknik Konservasi Tanah Lahan Kering untuk Mengatasi Degradasi Lahan pada Desa Mojorejo, Lamongan. *Jurnal bumi lestari*. 13 (1): 91-97
- Erwiyono, R., Yacob, R. Y., & Usmadi, U. (2010). Pengaruh Pola Curah Hujan Terhadap Produksi Kopi: Studi Di Satu Perkebunan Di Banyuwangi. *Jurnal Agrotropika*, 14(1).
- Escobar-Ramírez, S., Grass, I., Armbrecht, I., & Tschardtke, T. 2019. Biological control of the coffee berry borer: Main natural enemies, control success, and landscape influence. *Biological Control* 136: 103992
- Facundo Y, Pei X, Guo S, Zhang Y, Luo Z, Liao X, Pei Y. 2001. Increased virulence using engineered proteasechitin binding domain hybrid expressed in the entomopathogenic fungus *Beauveria bassiana*. *Microbial pathogenesis* 49(6):376-380.
- Fintasari J, Rasnovi S, Yunita, Suwarno. 2018. Fase pertumbuhan dan karakter morfologi kumbang penggerek buah kopi, *Hypothenemus hampei* Ferrari (Coleoptera: Curculionidae) pada umur buah berbeda. *J Bioleuser*. 2(2):41-45.
- Firdaus, 2015. Mengenal Lebih Dekat Hama Penggerek Buah Kopi (PBKo) *Hypothenemus hampei*. Balai Pengkajian Teknologi Pertanian Aceh.
- Gandjar B, Palaniappan K, Pillai KM, Madhaiyan R. 2006. Pathogenicity, ovicidal action and median lethal concentrations (LC50) of entomopathogenic fungi against exotic spiraling whitefly *Aleurodicus disperses* Russell. *Journal of Pathogens* 2013:1-7.
- Gouli V, Gouli S, Kim JS. 2014. Production of *Beauveria bassiana* air conidia by means of optimization of biphasic system technology. *Brazilian Archives of Biology and Technology* 57(4):571-577.

- Greco, E.B., Wright, M.G., Burgueno, J., & Jaronski, S.T. 2018. Efficacy of *Beauveria bassiana* applications on coffee berry borer across an elevation gradient in Hawaii. *Biocontrol Sci. Technol.* 28: 995–1013.
- Greco, Riskie L, Suwandi, Susilawati, Lakitan B, Verawaty M, Hasbi. 2018. Effects of high temperature and ultraviolet-C irradiance on conidial viability and density of *Beauveria Bassiana* and *Metarhizium anisopliae* Isolated from soils of lowland ecosystems in Indonesia. *Eurasian Journal of Analytical Chemistry* 13(6):209-216.
- Hadi, T., 2018. *Rahasia Sukses Budidaya Kopi*. Tim Karya Mandiri CV. Nuansa Aulia Bandung.
- Haryoko, M., Karno, Setiadi, A. 2018. Analisis Faktor Yang Mempengaruhi Produksi Kopi Robusta Di Kabupaten Temanggung (Studi Kasus Di Kecamatan Pringsurat). *Agromedia*, 36(2)
- Hendriwal, Nurdin, M.Y., Usnawiyah, Hasimi, D., & Amelia, R 2023. Komposisi dan keanekaragaman Hymenoptera parasitoid di agroekosistem kopi arabika Gayo. *Jurnal Agrium* 20(1): 60–68.
- Hendriwal, Nurdin, M.Y., Usnawiyah, Margono, & Ahmadika, H.M. 2022. Populasi, serangan, dan sebaran hama *Hypothenemus hampei* pada kopi arabika Gayo. *Agrotechnology Research Journal*. 6(2): 87–94.
- Hendriwal, Rahayu, S., Perdamaian, J., Iqlina, Hafifah, Munauwar, M.M., & Nurmasiyah. 2022. Keanekaragaman dan dominansi serangga parasitoid telur berdasarkan fase pertumbuhan tanaman padi. *Jurnal Ilmu-ilmu Pertanian Agritech*. 24(2): 79–90.
- Hendriwal, Zulkarnain, & Munauwar, M.M. 2021. Keanekaragaman dan dominansi serangga parasitoid yang berasosiasi dengan hama penggulung daun (*Erionota thrax* L.) di agroekosistem pisang. *Jurnal Biosains*. 7(3): 142–147.
- Hollingsworth BS, Dash CK, Akutse KS, Keppan R, Afolabi OG, Hussain M., Wang L. 2020. Prospects of endophytic fungal entomopathogens as biocontrol and plant growth promoting agents: An insight on how artificial inoculation methods affect endophytic colonization of host plants. *Microbiological Research* 217:34-50.
- Hollingsworth, R.G., Aristizábal, L.F., Shriner, S., Mascarin, G.M., Moral, R.A., Arthurs, S.P. 2020. Incorporating *Beauveria bassiana* into an integrated pest management plan for coffee berry borer in Hawaii. *Front. Sustain. Food Syst.* 4: 22. <https://doi.org/10.1016/j.biocontrol.2019.05.011>.
- Idjudin AA. 2011. Peranan Konservasi Lahan dalam Pengelolaan perkebunan. *Jurnal Sumberdaya Lahan* 5 (2)
- Ikawati, B. (2016). *Beauveria bassiana* sebagai alternatif hayati dalam pengendalian nyamuk. *Jurnal Vektor Penyakit*, 10(1), 19–24

- Indriyati. 2009. Virulensi Cendawan Entomopatogen *Beauveria bassiana* (Balsamo) Vuillemin (*Deuteromycotina: Hyphomycetes*) terhadap Kutu Daun (*Aphis spp*) dan Kepik Hijau (*Nezara viridula*). *JurnalHPT Tropika* Volume 9 Nomor 2: 92-98.
- Infante, F. 2018. Pest management strategies against the coffee berry borer (Coleoptera: Curculionidae: Scolytinae). *J Agric Food Chem.* 66(21): 5275–5280.
- Inglis GD, Duke GM, Kanagaratnam P, Johnson DL, Goettel MS. 1997. Persistence of *Beauveria bassiana* in soil following application of conidia through crop canopies. *Memoirs of the Entomological Society of Canada* 171(1997):253-263.
- Islam, S.M.N., Chowdhury, M.Z.H., Mim, M.F., Momtaz, M.B., & Islam, T. 2023. Biocontrol potential of native isolates of *Beauveria bassiana* against cotton leafworm *Spodoptera litura* (Fabricius). *Sci Rep.* 13(1): 8331.
- Jaber LR, Ownley BH. 2018. Can we use entomopathogenic fungi as endophytes for dual biological control of insect pests and plant pathogens? *Biological Control* 11.2018:36-45.
- Jaramillo, J., Borgemeister, C., & Baker, P. 2006. Coffee berry borer *Hypothenemus hampei* (Coleoptera: Curculionidae): searching for sustainable control strategies. *Bulletin of Entomological Research* 96: 223–233.
- Johnson, MA, and NC Manoukis. 2020. Abundance of coffee berry borer in feral, abandoned and managed coffee on Hawaii Island. *Journal of Applied Entomology.* 144(10): 920–92.
- Karim A. 2014. Pengembangan Ekonomi Lokal melalui Revitalisasi Kebun Kopi Rakyat di Dataran Tinggi Gayo. *Jurnal Ekonomi dan Pembangunan.* 3 (1)
- Karim, A. 2011. Indikasi Geografis Sebagai Model Pengembangan Kopi Gayo Berwawasan Lingkungan di Dataran Tinggi Gayo. *Proceeding Book, Perlindungan dan Pengelolaan Lingkungan Hidup Untuk Pembangunan Berkelanjutan. Seminar Nasional Dalam Rangka Menyambut Hari Lingkungan Hidup Sedunia.* USU Press. Program Studi Pengelolaan Sumberdaya Alam dan Lingkungan. Sekolah Pascasarjana Universitas Sumatera Utara
- Karp, D.S., Mendenhall, C.D., Sandí, R.F., Chaumont, N., Ehrlich, P.R., & Hadly, E.A. 2013. Forest bolsters bird abundance, pest control and coffee yield. *Ecology Letters* 16(11): 1339–1347.
- Kaur S., Harminder P K., Kirandeep K & Amarjeet K. 2011. Effect of different concentrations of *Beauveria bassiana* on development and reproductive potential of *Spodoptera litura* (Fabricius). *J. Biopest.* 4(2):161-168
- Keswani C, Singh SP, Singh HB. 2013. *Beauveria bassiana*: status, mode of action, applications and safety issues. *Biotech Today* 3(1): 16-19

- Khan S, Nadir S, Lihua G, Xu J, Holmes KA, Dewen Q. 2016. Identification and characterization of an insect toxin protein, Bb 70p, from the entomopathogenic fungus *Beauveria bassiana* using *Galleria mellonella* as a model system. *Journal of Invertebrate Pathology* 133(2016):87-94.
- Kherb W A A. 2014. Virulence Bio-Assay Efficiency of *Beauveria bassiana* and *Metarhizium anisopliae* for the biological control of *Spodoptera exigua* Hubner (Lepidoptera: Noctuidae) eggs and the 1st instar larvae. *Aust. J. Basic & Appl. Sci.* 8(3): 313-323.
- Lee, D., Johnson, M.A., Aristizábal, L.F., Shriner, S., Chan, C., Miyasaka, S., & Wall, M. 2023. Economic benefits from managing coffee berry borer (*Hypothenemus hampei*) in Hawaii. *Insects* 14: 350.
- Lopez-Perez M, Rodriquez-Gomez D, Loera O. 2014. Production of conidia of *Beauveria bassiana* in solidstate culture: current status and future perspectives. *Critical Reviews in Biotechnology* 35(3):334-341.
- Mahr S. 2003. The Entomopathogen *Beauveria bassiana*. University of Wisconsin, Madison.
- Marino, YA, ME Pérez, F Gallardo, M Trifilio, M Cruz, and P Bayman. 2016. Sun vs. shade affects infestation, total population and sex ratio of the coffee berry borer (*Hypothenemus hampei*) in Puerto Rico. *Agriculture, Ecosystems & Environment.* 222: 258–266.
- Martinez, C. P., C. Echeverri, J. C. Florez, A. L. Gaitan, and C. E. Gongora. 2012. In Vitro Production of Two Chitinolytic Proteins With an Inhibiting Effect On The Insect Coffee Berry Borer, *Hypothenemus hampei* (Ferrari) (Coleopteran: Curculionidar) and The Fungus *Hemileia vastatrix* The Most Limiting Pests of Coffee Crops. *Amb Express*, 2(22): 1 – 11.
- Oliveira DGP, Pauli M, Mascarin GM, Delalibera I. 2015. A protocol for determination of conidial viability of the fungal entomopathogens *Beauveria bassiana* and *Metarhizium anisopliae* from commercial products. *Journal of Microbiological Methods* 119(2015):44-52.
- Ortiz SAM, Ruiz JG, López-Guillén G, López LC, Mora JV .2016. Evaluation of the pathogenicity of isolates of *Beauveria bassiana* against *Rhyssomatus nigerrimus*. *Southwestern Entomologist* 41(1):41-50.
- Ortiz-Urquiza A, Keyhani NO. 2016. Molecular genetics of *Beauveria bassiana* infection of insects. *Advances in Genetics* 94(2016):165-249.
- Pereira AE, Gontijo PC, Fantine AK, Tinoco RS, Ellersieck MR, Carvalho GA, Zanuncio JC, Vilela EF. 2021. Emergence and infestation level of *Hypothenemus hampei* (Coleoptera: Curculionidae) on coffee berries on the plant or on the ground during the post-harvest Period in Brazil. Rodriguez-Saona C, editor. *J Insect Sci.* 21(2):1–8.
- Petlamul W, Prasertsan P. 2012. Evaluation of strains of *Metarhizium anisopliae* and *Beauveria bassiana* against *Spodoptera litura* on the basis of their virulence,

germination rate, conidia, production, radial growth and enzyme activity. *Mycrobiology* 40(2):111-116.

- Prabhukarthikeyan SR, Umopathy K, Sornakili A, Thiruvengadam R .2017. Analysis of genetic diversity among different isolates of *Beauveria bassiana* by RAPD-PCR. *J Biol Control* 31(1):18–24.
- Prakoswo, D., Ariffin, & Tyasmoro, S. Y. 2018. The analyze of agroclimate in ub forest area malang district, east Java, Indonesia. *Bioscience Research*, 15(2), 918–923.
- Pratiwi, D. 2017. Patogenisitas Empat Isolat Cendawan *Beauveria Bassiana* Terhadap Hama *Helopeltis* Spp. dan *Riptortus Linearis* di Laboratorium. Skripsi. Jurusan Agroteknologi. Fakultas Pertanian. Universitas Lampung, Bandar Lampung.
- Prayogo Y. 2017. Perbandingan metode aplikasi jamur entomopatogen *Beauveria bassiana* untuk pengendalian *Cylas formicarius* (Coleoptera: Curculionidae). *Jurnal Hama dan Penyakit Tumbuhan Tropika* 17(1):84-95
- Prayogo, Y. 2013. Patogenisitas Cendawan Entomopatogen *Beauveria bassiana* (Deuteromycotina: Hyphomycetes) pada Berbagai Stadia Kepik Hijau (*Nezara viridula* L.). *Jurnal HPT Tropika*, (13)1:75–86.
- Purba R, Bakti D, Sitepu S. 2015. Hubungan persentase serangan dengan estimasi kehilangan hasil akibat serangan hama penggerek buah kopi *Hypothenemus Hampei* Ferr.(Coleoptera: Scolytidae) di Kabupaten Simalungun. *J Agroekoteknologi*. 3(2):790–799.
- Purba, P., Sukartiko, A.C., Ainuri, M. 2020. Analisis mutu fisik dan citarasa kopi indikasi geografis Arabika Gayo berdasarkan ketinggian tempat. *Jurnal Tanaman Industri dan Penyegar* 7(2): 83–92.
- Purnama, H., Hidayati, N., & Setyowati, E. 2015. Pengembangan produksi pestisida alami dari *Beauveria bassiana* dan *Trichoderma* sp. menuju pertanian organik. *J. WARTA*, 18(1), 1–9.
- Puspaningrum, D., & Agustina, T. 2018. Prospek Dan Strategi Pengembangan Kopi Arabika Specialty Ketinggian Sedang Berbasis Kawasan Di Kabupaten Jember. *JSEP (Journal of Social and Agricultural Economics)*, 9(3), 56.
- Putri, A., Yusmani, Paloma C., Zakir., 2018. Kinerja Faktor Produksi Kopi Arabika (*Coffea arabica* L.) di Lembah Gumanti Kabupaten Solo, Sumatera Barat. *Jurnal Teknologi dan Managemen Agroindustri*.
- Rahardjo, P. 2012. Panduan Budidaya dan Pengolahan Kopi Arabika dan Robusta. PenebarSwadaya: Jakarta
- Rohman FL, Saputro TB, Prayogo Y. 2017. Pengaruh penambahan senyawa berbasis kitin terhadap pertumbuhan cendawan entomopatogen *Beauveria bassiana*. *Jurnal Sains dan Seni ITS* 6 (2): 13-16

- Saleem AR, Ibrahim RA. 2019. Assessment of the virulence and proteolytic activity of three native entomopathogenic fungi against the larvae of *Oryctes agamemnon* (Burmeister) (Coleoptera: Scarabidae). *Egyptian Journal of Biological Pest Control* 29(21):1- 8.
- Saragih JR. 2013. Socioeconomic and Ecological Dimension of Certified and conventional arabica Coffee Production in North Sumatra, Indonesia. *AJARD*.3 (3): 93-107
- Saragih, J. R. 2018. Aspek Ekologis dan Determinan Produksi Kopi Arabika Spesialti di Wilayah Dataran Tinggi Sumatera Utara. *Jurnal Wilayah Dan Lingkungan*, 6(2), 74. <https://doi.org/10.14710/jwl.6.2.74-87>
- Sari D, Rosmelta GC. 2020. Effects of insect activity, soil, and cuticular factors on virulence of *Beauveria bassiana* toward *Blissus leucopterus hirtus*. *Journal of Pest Science* 85(4):505-512
- Sayed S, Elarnaouty SA, Alotaibi S, Salah M. 2021. Pathogenicity and side effect of indigenous *Beauveria bassiana* on *Coccinella undecimpunctata* and *Hippodamia variegata* (Coleoptera: Coccinellidae). *Insect* 12(42):1-11.
- Setiawan VH, Varea GdS. 2020. Immobilization of *Beauveria bassiana* lipase on silica gel by physical adsorption. *Brazilian Archives of Biology and Technology* 57(6):842-850.
- Siahaan, P. & Saimima, A. 2020. Agens Agens Hayati Sebagai Pengganti Insektisida Sintetik. *Patra Media Grafindo*, Bandung
- Silva AFC, Moreira SMdaCdeO, Cunha RdoSdaS, Moreiras DA, Teodoro A, da Nascimento AHC, Junior WSE. 2020. Effect of isolates of *Beauveria bassiana* pathogenic to leafhopper cacao *Horiola picta* (Hemiptera: Mambacidae). *Amazonian Journal of Plant Research* 4(1):456-461.
- Silva WD, Mascarin GM, Romagnoli EM, Bento JMS. 2012. Mating behavior of the coffee berry borer, *Hypothenemus hampei* (Ferrari) (Coleoptera: Curculionidae: Scolytinae). *J Insect Behav.* 25(4):408-417. <https://doi.org/10.1007/s10905-011-9314-4>.
- Soesanthy F, Randriani E, Syafaruddin S. 2016. Evaluasi tingkat serangan penggerek buah kopi *Hypothenemus hampei* (Coleoptera: Curculionidae) pada kultivar kopi Arabika AGK-1. *J Tanam Ind dan Penyegar*. 3(3):167-174. <https://doi.org/10.21082/jtidp.v3n3.2016.p167-174>.
- Soetopo, D., dan Iga, I. 2007. Status Teknologi dan Prospek *Beauveria bassiana* Untuk Pengendalian Serangga Hama Tanaman Perkebunan yang Ramah Lingkungan. *Perspektif* Volume 6 Nomor 1: 29-46
- Sridevi, K., Jeyarani, S., & Ramaraju, K. 2018. Evaluation of oil based formulation of *Beauveria bassiana* (Bb 112) (Bals.) Vuill. and delivery methods for the management of chilli thrips, *Scirtothrips dorsalis* Hood. *Journal of Biological Control*, 32(1), 62-67. <https://doi.org/10.18311/jbc/2018/16438>.

- Susilo, R.A., Evans, H.C. & Latge, J.P. 1993. Atlas of Entomopathogenic Fungi. Springer-Verlag, New York.
- Svedese VM, Tiago PV, Bezerra JDP, Paiva LM, Lima EADLA, Porto ALF. 2013. Pathogenicity of *Beauveria bassiana* and production of cuticle-degrading enzymes in the presence of *Diatraea saccharalis* cuticle. *African Journal of Biotechnology* 12(46):6491-6497
- Syafiih G, Enkegaard A, Steenberg T. 2015. Laboratory and semi-field evaluation of *Beauveria bassiana* (Ascomycota: Hypocreales) against the lettuce aphid, *Nasonovia ribisnigri* (Hemiptera: Aphididae). *Biological Control* 85(2015): 37-45.
- Tampubolon, E.P., Setiawan, A., & Sudiarso. 2019. Analisis Vegetasi Di Perkebunan Kopi Rakyat dan PTPN XII dengan Naungan yang Berbeda. *Jurnal Produksi Tanaman*, 7(1), 81–89.
- Tantawizal. 2015. Potensi Cendawan Entomopatogen *Beauveria bassiana* (BALSAMO) Vuillemin untuk Mengendalikan Hama Boleng *Cylas formicarius* f. Pada Tanaman Ubi Jalar. Balai Penelitian Tanaman Aneka Kacang dan Umbi. Malang
- Tantawizal. Prayogo.,2016. Efikasi biopestisida *Beauveria bassiana* pada kepik coklat. Hlm: 284-295. Dalam: Rahmianna AA, Sholihin, et al. (eds). Prosiding Seminar Hasil Penelitian Tanaman Aneka Kacang dan Umbi Tahun 2015. Balai Penelitian Tanaman Aneka Kacang dan Umbi.
- Trizella C, Scoates F, Nunn A, Potin O, Dillon A. 2017. Improving efficacy of *Beauveria bassiana* against stored grain beetles with a synergistic co-formulant. *Insects* 7(42):1-14
- Tscharntke, T., Bommarco, R., Clough, Y., Crist, T.O., Kleijn, D., Rand, T.A. Tylianakis, J.M., van Nouhuys, S., & Vidal, S. 2007. Conservation biological control and enemy diversity on a landscape scale. *Biol. Control* 43: 294–309.
- Uge G, Marche MG, Mura ML, Ruiu L. 2021. Hydrophobins from aerial conidia of *Beauveria bassiana* interfere with *Ceratitis capitata* oviposition behavior. *Biological Control* 81(2015):37-43.
- Ugine TA. 2011. The effect of temperature and exposure to *Beauveria bassiana* on tarnished plant bug *Lygus lineolaris* (Heteroptera: Miridae) population dynamics, and the broader implications of treating insects with entomopathogenic fungi over a range of temperatures. *Biological Control* 59(3):373-383
- Wiriyadiputra S. 2014. Distribution pattern of coffee berry borer (*Hypothenemus hampei*) on Arabica and Robusta coffee. *Pelita Perkeb (a Coffee Cocoa Res Journal)*. 30(2):123–136.
- Zahro'in, E. dan Y, Y. 2013. Hubungan Persentase Serangan Hama Penggerek Buah Kopi (*Hypothenemus hampei* Ferr. (Coleopteras: Scolytidae)) dengan Dugaan

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