



DAFTAR PUSTAKA

- Abbott, W. S. 1987. A method of computing the effectiveness of an insecticid. *Journal of the American Mosquito Control Association*, 3(2): 302-303.
- Addas, A. Ragab, M. Maghrabi, A. Abo-Dahab, S. M and El-Nobi, E. F. 2021. UV index for public health awareness based on omi/nasa satellite data at king abdulaziz university, Saudi Arabia. *Advances in Mathematical Physics*, (2021): 1-11.
- Arlita, D. I. Hadiastono, T dan Bedjo, M. M. 2014. Pengaruh suhu awal terhadap infektivitas *Spodoptera litura* Nuclear Polyhedrosis Virus (SINPV) JTM 97C untuk mengendalikan *Crocidolomia binotalis* Zell. (Lepidoptera : Pyralidae) pada tanaman kubis (*Brassica oleracea var. capitata L.*). *Jurnal HPT*, 2(3): 28-35.
- Arsi, Sukma, A. T. Suparman S. H. K. Hamidson, H. Irsan, C. Suwandi, Pujiastuti, Y. Nurhayati, Umayah, A dan Gunawan, B. 2022. Penerapan pemakaian pestisida yang tepat dalam mengendalikan organisme penganggu tanaman sayuran di Desa Tanjung Baru, Indralaya Utara. *Jurnal Ilmu Pengetahuan, Teknologi, dan Seni bagi Masyarakat*, 11(1): 108-116.
- Aryawati, N. P. R dan Budhi, M. K. S. 2018. Pengaruh produksi, luas lahan, dan pendidikan terhadap pendapatan petani dan alih fungsi lahan Provinsi Bali. *E-Jurnal EP Unud*, 7(9): 1918-1952.
- Astuti, E. P and Dhewantara, P. W. 2014. Impact of deltamethrin on cockroaches (*Periplaneta americana*) and its residue on environment. *Health Science Indonesia*, 5(2): 94-99.
- Badan Meteorologi Klimatologi dan Geofisika. 2023. *Indeks Sinar Ultraviolet (UV)*. URL: <https://www.bmkg.go.id/kualitas-udara/indeks-uv.bmkg>. Diakses tanggal 23 Mei 2023.
- Badan Meteorologi Klimatologi dan Geofisika. 2022. *Buletin Meteorologi Edisi Desember*. Badan Meteorologi Klimatologi dan Geofisika. Banjarbaru, pp 7-11.
- Badan Pusat Statistik Indonesia. 2022. *Persentase Tenaga Kerja Informal Sektor Pertanian (Persen), 2020-2022*. URL:



<https://www.bps.go.id/indicator/6/1171/1/persentase-tenaga-kerja-informal-sektor-pertanian.html>. Diakses tanggal 23 Mei 2023.

Bandoly, M and Steppuhn, A. 2016. Bioassays to investigate the effects of insect oviposition on a plant's resistance to herbivores. *Bio-Protocol*, 6(11): 1-13.

Bardley, D. 2013. *Silky Sunscreen*. URL: https://www.chemistryviews.org/details/ezine/5281991/Silky_Sunscreen.html. Diakses tanggal 29 Maret 2022.

Bhuyan, D. Greene, G. W and Das, R. K. 2019. Dataset on the synthesis and physicochemicalcharacterization of blank and curcuminencapsulated sericin nanoparticles obtainedfrom *Philosamia ricini* silkworm cocoons. *Data in Brief*, 26: 1-8.

Bungthong, C and Siriamornpun, S. 2021. Changes in amino acid profiles and bioactive compounds ofthai silk cocoons as affected by water extraction. *Molecules*, 26(2033): 1-12.

Capinera, J. L. 2001. *Handbook of vegetable pest*. Academic Press. California.

Capinera. 2017. *Spodoptera exigua (Hübner)* (Insecta: Lepidoptera: Noctuidae). URL:https://entnemdept.ufl.edu/creatures/veg/leaf/beet_armyworm.htm#top. Diakses tanggal 29 Maret 2022.

Chaisabai, W. Khamhaengpol, K and Siri, S. 2017. Sericins of mulberry and non-mulberry silkworms for eco-friendly synthesis of silver nanoparticles. *Artificial Cells, Nanomedicine, and Biotechnology An International Journal*, 46(3): 536-543.

Dewi, M. K dan Sutrisna, I. K. 2016. Pengaruh tingkat produksi, harga, dan konsumsi terhadap impor bawang merah di Indonesia. *E-Jurnal EP Unud*, 5(1): 139-149.

Festing, M. F. 2020. The “completely randomised” and the “randomised block” are the only experimental designs suitable for widespread use in pre-clinical research. *Scientific Reports*, 10: 1-5.

Gabros, S. Nessel, T. A and Zito, P. M. 2023. *Sunscreens And Photoprotection*. URL: <https://www.ncbi.nlm.nih.gov/books/NBK537164/>. Diakses tanggal 25 Mei 2023.



- Gifani, A. Marzban, R. Safekordia, A. Ardjman, M and Dezianian, A. 2015. Ultraviolet protection of nucleopolyhedrovirus through microencapsulation with different polymers. *Biocontrol Science and Technology*, 25(7): 814-827.
- Greene, G. L. Leppa, N and Dickerson, W. A. 1976. Velvetbean caterpillar: A rearing procedure and artificial medium. *Journal of Economic Entomology*, 69(4): 487-488.
- Haase, S. Ferrelli, L. Pidre, M. L and Romanowski, V. 2013. *Genetic Engineering of Baculoviruses*. URL: <https://www.intechopen.com/chapters/45876>. Diakses tanggal 29 Maret 2022.
- Integrated Taxonomic Information System. 2022. *Samia cynthia* (Drury, 1773). URL:https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=936212#null. Diakses tanggal 29 Maret 2022.
- Integrated Taxonomic Information System. 2022. *Spodoptera exigua* (Hübner, 1808). URL: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=117471#null. Diakses tanggal 29 Maret 2022.
- International Committee on Taxonomy of Viruses. 2022. *Virus Taxonomy*. URL: <https://talk.ictvonline.org/taxonomy/>. Diakses tanggal 29 Maret 2022.
- Ismail, B. S. Mazlinda, M and Tayeb, M. A. 2015. The persistence of deltamethrin in Malaysian agricultural soils. *Sains Malaysiana*, 44(1): 83-89.
- Jaba, J. Mishra, S. P. Arora, N and Munghate, R. 2020. Impact of variegated temperature, co₂ and relative humidity on survival and development of beet armyworm *Spodoptera exigua* (Hubner) under controlled growth chamber. *American Journal of Climate Change*, 9: 357-370.
- Jehle, J. A. Blissard, G. W. Bonning, B. C. Cory, J. S. Herniou, E. A. Rohrmann, G. F. Theilmann, D. A. Thiem, S. M and Vlak, J. M. 2006. On the classification and nomenclature of baculoviruses: A proposal for revision. *Arch Virol*, 151: 1257-1266.
- Lasa, R. Pagola, I. Ibanez, I. Belda, J. E. Williams, T and Caballero, P. 2007. Efficacy of *Spodoptera exigua* multiple nucleopolyhedrovirus as a biological insecticide for beet armyworm control in greenhouses of southern Spain. *Biocontrol Science and Technology*, 17(3): 221-232.



- Lebsky, V. Poghosyan, A and Silva-Rosales, L. Application of scanning electron microscopy for diagnosing phytoplasmas in single and mixed (virus-phytoplasma) infection in *Papaya*. 5-10 Juli 2009, Neudtadt, Jerman. Pp. 70-78.
- Lisa, C. 2019. Karakteristik kokon ulat sutra eri (*Samia cynthia ricini*) berdasarkan corak tubuh ulat yang berbeda. Skripsi. Institut Pertanian Bogor.
- Maharjan, R. Ahn, J and Yi, H. 2022. Interactive effects of temperature and plant host on the development parameters of *Spodoptera exigua* (Hübner) (Lepidoptera: Noctuidae). *Insects*, 13(747): 1-25.
- Marsadi, D. Sapartha, I. W dan Sunari, A. A. A. A. S. 2017. Invasi dan tingkat serangan ulat bawang (*Spodoptera exigua* Hubner) pada dua kultivar tanaman bawang merah di Desa Songan, Kecamatan Kintamani, Kabupaten Bangli. *E-Jurnal Agroekoteknologi Tropika*, 6(4): 360-369.
- Michalsky, R. Pfromm, P. H. Czermak, P. Sorensen, C. M and Passarelli, A. L. 2008. Effects of temperature and shear force on infectivity of the baculovirus *Autographa californica* M nucleopolyhedrovirus. *Journal of Virological Methods*, 153(2): 90-96.
- Mkindi, A. G. Mtei, K. M. Njau, K. N and Ndakidemi, P. A. 2015. The potential of using indigenous pesticidal plants for insect pest control to small scale farmers in Africa. *American Journal of Plant Sciences*, 6: 3164-3174.
- Montecalvo, M. P and Navasero, M. M. 2019. Susceptibility of onion armyworm, *Spodoptera exigua* (Hübner) (lepidoptera: Noctuidae), larvae to *Spodoptera exigua* multiple nucleopolyhedrovirus (SeMNPV). *ISSAAS*, 25(2): 23-30.
- National Pesticide Information Center. 2023. *Pesticide Half-life*. URL: <http://npic.orst.edu/factsheets/halflife.html#:~:text=Pesticide%20half%2Dlives%20can%20be,to%20persist%20in%20the%20environment>. Diakses tanggal 23 Mei 2023.
- Pahlevan, B and Kovanci, O. B. 2016. Laboratory evaluation of tween 20 for potential use in control of *Cacopsylla pyri* L. eggs and nymphs (Homoptera: Psyllidae). *Journal Biology Environmental Science*, 10(29): 39-43.
- Paparang, M., V. V Memah, J. B. Kaligis. 2016. Populasi dan persentase serangan larva Spodoptera exiguaHubner pada tanaman bawang daun dan bawang



merah di Desa Ampreng Kecamatan Langowan Barat. *E-Journal Unstrat*, 7(7): 1-10.

Pardian, P. Noor, T. I dan Kusumah, A. 2016. Analisis penawaran dan permintaan bawang merah di Provinsi Jawa Barat. *Jurnal Agribisnis dan Sosial Ekonomi Pertanian*, 1(2): 95-104.

Putra, I. L. I and Khotimah, K. 2021. Life cycle *Spodoptera frugiperda* JE Smith with lettuce (*Lactuca sativa* L.) and pakcoy (*Brassica rapa* L.) in the laboratory. *Journal of Tropical Crops Protection*, 2(1): 8-13.

Rahmatullah, R. Sukirno, Ningtyas, N. S. Wiranto, A. S. P. Sa'adah, N. S. S. Alwandri, H. Arssalsabila, T. P. Asma', A and Adi, H. 2023. *Journal Tropical Agricultural Science*, 46(1): 347-357.

Rahmawati, R. T. 2022. UV proteksi baculovirus dengan sericin *Samia ricini* Drury (Lepidoptera : Saturniidae) pengendali *Spodoptera exigua* (Hübner) (Lepidoptera : Noctuidae). Skripsi. Universitas Gadjah Mada.

Rao, G. V. R. Kumar, C. S. Sireesha, K and Kumar, P. L. 2015. *Biocontrol of Lepidopteran Pest Use of Soil Microbes and Their Metabolites*. Springer Publication, Switzerland, pp 11-53.

Renuka, G and Shamitha, G. 2014. Studies on the economic traits of Eri silkworm, *Samia cynthia ricini*, in relation to seasonal variations. *International Journal of Advanced Research*, 2(2): 315-322.

Rohmah, M. M. Timotiwu, P. B. Manik, T. K. B and Ginting, Y. C. 2021. Effect intensity of solar radiation on the growth and quality of red lettuce (*Lactuca sativa* L.). *Jurnal Agrotek Tropika*, 9(1): 153-159.

Sajap, A. S. Bakir, M. A. Kadir, H. A and Samad, N. A. 2007. Effect of pH, rearing temperature and sunlight on infectivity of Malaysian isolate of nucleopolyhedrovirus to larvae of *Spodoptera litura* (Lepidoptera: Noctuidae). *International Journal of Tropical Insects Science*, 7(2): 108-113.

Samsudin, Santoso, T. Rauf, A dan Kusumah, Y. M. 2011. Keefektifan bahan pelindung alami dalam mempertahankan inefektivitas *Spodoptera exigua* Nucleopolyhedrovirus (SeNPV). *Berita Biologi*, 10(6): 689-697.



- Samsudin. 2016. Prospek pengembangan bioinsektisida nucleopolyhedrovirus (npv) untuk pengendalian hama tanaman perkebunan di Indonesia. *Prespektif*, 15(12): 18-30.
- Samsudin. Santoso, T. Rauf, A dan Kusumah, Y. M. 2011. Keefektifan bahan pelindung alami dalam mempertahankan infektivitas *Spodoptera exigua* Nucleopolyhedrovirus (SeNPV). *Berita Biologi*, 10(6): 689-697.
- Shapiro, M. Farrar, R. R. J. Domek, J and Javaid, I. 2002. Effects of virus concentration and ultraviolet irradiation on the activity of corn earworm and beet armyworm (Lepidoptera: Noctuidae) nucleopolyhedroviruses. *Journal of Economic Entomology*, 95(2): 243-249.
- Sparks, T. D and Nauen, R. 2015. IRAC: Mode of action classification and insecticide resistance management. *Pesticide Biochemistry and Physiology*, 121:122-128.
- Sukirno, Lukmawati, D. Serlinegita, S. Hanum, L. Ameliya, V. F. Sumarmi, S. Purwanto, H. Suparmin, Sudaryadi, I. Soesilohadi, R. C. H and Aldawood, A. S. 2021. The effectiveness of *Samia ricini* Drury (Lepidoptera: Saturniidae) and *Attacus atlas* L. (Lepidoptera: Saturniidae) cocoon extracts as ultraviolet protectants of *Bacillus thuringiensis* for controlling *Spodoptera litura* Fab. (Lepidoptera: Noctuidae). *International Journal of Tropical Insect Science*, 6:1-6.
- Sukirno, Prasetya, B. A. A. Pandu, A. S. Sumarmi, S. Purwanto, H. Sudaryadi, I. Suparmin and Soesilohadi, R. C. H. 2022. Effectivity of *Spodoptera littoralis* nucleopolyhedrovirus (SpliMNPV) and natural additives mixtures against *Spodoptera litura* Fab. (Lepidoptera: Noctuidae) on cabbage plants. *Journal of Tropical Biodiversity and Biotechnology*, 07(02): 1-8.
- Sukirno, Tufai, M. Rasoo, K. G. Salamouny, S. E. Sutanto, K. D and Aldawood, A. S. 2018. The Efficacy and persistence of spodoptera littoralis nucleopolyhedrovirus (splimnpv) applied in uv protectants against the beet armyworm, *Spodoptera exigua* (Hübner) (Lepidoptera: Noctuidae) under Saudi Field conditions. *Prespektif*, 15(12): 18-30.



- Taufika, R. Sumarmi, S dan Nugroho, S. A. 2020. Efek subletal campuran ekstrak daun srikaya (*Annona squamosa* L.) dan rimpang kunyit (*Curcuma domestica* Val.) terhadap larva *Spodoptera litura* F. *Jurnal Agromix*, 11(1): 66-78.
- Triwidodo, H daan Tanjung, M. H. 2020. Hama penyakit utama tanaman bawang merah (*Allium Ascalonicum*) dan tindakan pengendalian di Brebes, Jawa Tengah. *Jurnal Agroekoteknologi*, 13(2): 149-154.
- Ujiyani, F. Trisyono, Y. A. Witjaksono and Suputa. 2019. Population of *Spodoptera exigua* Hübner during on-and off-season of shallot in Bantul Regency, Yogyakarta. *Jurnal Perlindungan Tanaman Indonesia*, 23(2): 261-269.
- Vinha, G. L. Plata-Rueda, A. Soares, M. A. Zanuncio, J. C. Serrao, J. E and Martínez, L. C. 2021. Deltamethrin-mediated effects on locomotion, respiration, feeding, and histological changes in the midgut of *Spodoptera frugiperda* caterpillars. *Insects*, 12(438): 1-13.
- Widiawati, H. Sukirno, Sumarmi, S. Purwanto, H. Soesilohadi, R. C. H and Sudaryadi, I. 2021. UV protectant ability of *Attacus atlas* L. (Lepidoptera: Saturniidae) sericin extract to increase nucleopolyhedrovirus effectiveness against beet army worm, *Spodoptera exigua* (Hübner) (Lepidoptera: Noctuidae). *Advances in Biological Sciences Research*, 22: 82-89.
- Zhou, B and Wang, H. 2020. Structure and functions of cocoons constructed by eri silkworm. *Polymers*, 12(2701): 1-18.