DAFTAR PUSTAKA

Annisa, R. T. (2023). *Pemanfaatan daun Afrika (Vernonia amygdalina Delile, 1826) sebagai pestisida nabati larva Plutella xylostella Linnaeus, 1767 (Lepidoptera: Plutellidae) pada tanaman pakcoy*. Bachelor's thesis, Fakultas Sains Teknologi UIN Syarif Hidayatullah Jakarta.

Arlita, D. I., Hadiastono, T., Martosudiro, M., & Bedjo, B. (2014). Pengaruh Suhu Awal terhadap Infektivitas *Spodoptera litura Nuclear Polyhedrosis Virus* (*Sl*NPV) JTM 97C untuk Mengendalikan *Crocidolomia binotalis* Zell.(Lepidoptera: Pyralidae) pada Tanaman Kubis (*Brassica oleracea* var. capitata L.). *Jurnal HPT (Hama Penyakit Tumbuhan)*, *2*(3), 28-35.

Bedjo, B. (2004). Pemanfaatan *Spodoptera litura Nuclear Polyhedrosis Virus* (*Sl*NPV) untuk pengendalian ulat grayak (*Spodoptera litura* Fabricius) pada Tanaman Kedelai. *Buletin Palawija*, (7), 1-9.

Bedjo, B. (2012). Peningkatan efektivitas *Nuclear Polyhedrosis Virus* (NPV) dengan beberapa bahan pembawa untuk mengendalikan hama polong kedelai *Helicoverpa armigera*. *Buletin Palawija*, (23), 38-43.

Budi, G. P. (2021). Beberapa aspek pengelolaan OPT ramah lingkungan, suatu upaya mendukung pertanian berkelanjutan. *Proceedings Series on Physical & Formal Sciences*, *2*, 31-38.

Cabi. (2021). *Crocidolomia pavonana (large cabbageheart caterpillar).* Plantwise Plus Knowledge Bank.

Cabi. (2022). *Plutella xylostella (diamondback moth).* Invasive Species Compendium.

Chaeychomsri, S., Chaeychomsri, W., & Siruntawineti, J. (2020). Evidence for covert baculovirus infections in the field-collected *Spodoptera Litura* larvae. *Journal of Advanced Agricultural Technologies Vol*, *7*(2).

Datau, R., James, B. K., & Noni, N. W. (2018). Serangan hama *Crocidolomia pavonana* F.(Lepidoptera: Pyralidae) pada pertanaman kubis di Rurukan, Pa*Sl*aten, dan Kumelembuai Kota Tomohon. In *Cocos*, *10*(6), 1-5.

Deka, B., Babu, A., Sarkar, S., Kuriakose, B., & Thomas, G. (2023). *Hyposidra talaca* NPV (*Hyta*NPV): a potential baculovirus for efficient control of the black inch worm, *Hyposidra talaca* Walker (Lepidoptera: Geometridae), a major pest of tea *Camellia sinensis* (Ericales: Theaceae (L.) O. Kuntze). *Egyptian Journal of Biological Pest Control*, *33*(1), 116.

Devara, M. (2016). *Perilaku kawin ngengat Crocidolomia pavonana*. SKRIPSI: Universitas Jember.

Gautam, M. P., Singh, H., Kumar, S., Kumar, V., Singh, G., & Singh, S. N. (2018). Diamondback moth, *Plutella xylostella* (Linnaeus)(Insecta: Lepidoptera: Plutellidae) a major insect of cabbage in India: A review. *Journal of Entomology and Zoology Studies*, *6*(4), 1394-1399.

Ghosh, P., Satpute, N. S., Thakare, V., & Dadmal, S. M. (2018). Bioassay, cross-infectivity and shelf life studies of *Spodoptera litura nuclear Polyhedrosis Virus*. *Journal of Entomology and Zoology Studies*, *6*(1), 365-369.

Ginting, M. S., Janje, P., & Betsy, A. N. (2017). Efektivitas beberapa insektisida nabati terhadap hama *Plutella xylostella* Linn. (Lepidoptera; Plutellidae) pada tanaman kubis (*Brassica oleracea* L.) di Kabupaten Minahasa. *AGRI-SOSIOEKONOMI*, *13*(3A), 295-302.

Gowri, G., & Manimegalai, K. (2016). Biology of Diamond Back Moth, *Plutella xylostella* (Lepidoptera: Plutellidae) of cauliflower under laboratory condition. *International Journal of Fauna and Biological Studies*, *3*(5), 29-31.

Gupta, R. K., Gani, M., Jasrotia, P., Srivastava, K., & Kaul, V. (2014). A comparison of infectivity between polyhedra of the *Spodoptera litura* multiple NPV before and after passage through the gut of the stink bug, *Eocanthecona furcellata*. *Journal of Insect Science*, *14*(1), 96.

Hardiani, F., Melanie, M., & Rustama, M. M. (2014). Efektivitas Formulasi *Helicoverpa armigera Nuclear Polyhedrosis Virus* (*Ha*-npv) Hasil Sub-Kultur terhadap Berat Maksimum dan Lolos Hidup Larva *Plutella xylostella*. *BIOTIKA Jurnal Ilmiah Biologi*, *12*(1), 64-69.

Harrison, R., & Hoover, K. (2012). Baculoviruses and other occluded insect viruses. *Insect pathology*, *4*, 73-110.

Hasanah, U., & Haryadi, N. T. (2022). Efektivitas Bahan Pelindung *Spodoptera Litura* Nuclear Polyhedrosis Virus (*Sl*NPV) Untuk Mengendalikan *Spodoptera Litura* (F.) Pada Tanaman Kedelai. *Jurnal HPT (Hama Penyakit Tumbuhan)*, *10*(3), 148-155.

Hoover, K., Grove, M., Gardner, M., Hughes, D. P., McNeil, J., & *Sl*avicek, J. (2018). A gene for an extended phenotype. *Science*, *333*(6048), 1401-1401.

Huang, Y., Yazhou, C., Baosheng, Z., Yajun, W., James, A. A., Gurr, G. M., Yang, G., Lin, X., Huang, Y., & You, M. (2016). CRISPR/Cas9 mediated knockout of the abdominal-A homeotic gene in the global pest, diamondback moth (*Plutella xylostella*). *Insect Biochemistry and Molecular Biology*, *75*, 98-106.

Integrated Taxonomic Information System (ITIS). (2025). *Taxonomic hierarchy of Crocidolomia pavonana (Frabicius, 1794).* Retrieved July 12, 2025, from the Integrated Taxonomic Information System (ITIS) on-line database, https://www.itis.gov/

Integrated Taxonomic Information System (ITIS). (2025). *Taxonomic hierarchy of Plutella (Linnaeus, 1758).* Retrieved July 12, 2025, from the Integrated Taxonomic Information System (ITIS) on-line database, https://www.itis.gov/

Irsyadah, F. T., Astono, T. H., Martosudiro, M., & Bedjo, B. (2014). Efektivitas penggunaan sunblock komersial pada beberapa nilai SPF (*Sun Protection Factor*) sebagai pelindung *Spodoptera litura Nuclear Polyhedroses Virus*

(*Sl*NPV) dari sinar ultraviolet. *Jurnal HPT (Hama Penyakit Tumbuhan)*, *2*(1), 43-51.

Khorir, F., Irda, S., & Suzanna, F. S. (2018). Uji efektivitas *Spodoptera litura* NPV (*Splt*NPV) sebagai agen hayati terhadap *Spodoptera Litura* Fabr.(Lepidoptera: Noctuide) di Laboratorium. In *Talenta Conference Series: Agricultural and Natural Resources (ANR)*, 1(1), 1-5.

Krinski, D., & Godoy, A. F. (2015). First record of *Helicoverpa armigera* (Lepidoptera: Noctuidae) feeding on *Plectranthus neochilus* (Lamiales: Lamiaceae) in Brazil. *Florida Entomologist*, *98*(4), 1238-1240.

Kumar, C. S., Ranga Rao, G. V., Sireesha, K., & Kumar, P. L. (2011). Isolation and characterization of baculoviruses from three major lepidopteran pests in the semi-arid tropics of India. *Indian Journal of Virology*, *22*(1), 29-36.

Landry, J. F., & Hebert, P. D. (2013). *Plutella australiana* (Lepidoptera, Plutellidae), an overlooked diamondback moth revealed by DNA barcodes. *ZooKeys*, (327), 43.

Li, S., Xu, X., Shakeel, M., Xu, J., Zheng, Z., Zheng, J., Yu,, X., Zhao, Q., & Jin, F. (2018). *Bacillus thuringiensis* suppresses the humoral immune system to overcome defense mechanism of *Plutella xylostella*. *Frontiers in physiology*, *9*, 1478.

Lyle Buss. 2015. *Larva of the diamondback moth, Plutella xylostella (Linnaeus).* University of Florida.

Magholi, Z., Habib, A., & Rasoul, M. (2014). Effects of *Helicoverpa armigera* nucleopolyhedrosis virus (*Ha*NPV) on the larvae of the diamondback moth, *Plutella xylostella* (L.)(Lepidoptera: Plutellidae). *Plant Protection Sciences*, *50*(4), 184-189.

Martínez-Balerdi, M., Caballero, J., Aguirre, E., Caballero, P., & Beperet, I. (2025). Baculoviruses as microbial pesticides: Potential, challenges, and market overview. *Viruses*, *17*(7), 917.

Miranti, M., Ratu, S., Melanie, & Nurullia, F. (2016). *Aplikasi Helicoverpa armigera Nuclear Polyhedrosis Virus Subkultur (Hanpv1) pada Ectropis burmitra.* In Prosiding SNPBS (Seminar Nasional Pendidikan Biologi dan Saintek), 404-407.

Mulki, S. M., Sugiarto, Afifak, L. 2022. Uji efektivitas pestisida nabati terhadap mortalitas dan intensitas serangan ulat grayak (*Spodoptera litura* Fabricus) pada tanaman sawi (*Brassica juncea L.*). *Jurnal Agrifarm: Jurnal Ilmu Pertanian*, *11*(1), 41-48.

Narayanan, K. (2004). Insect defence: its impact on microbial control of insect pests. *Current Science, 86*(6), 800-814.

Onkarappa, D., Pandi, R. K., Gopal, A., Thiruvengadam, V., Muthugounder, M., Nayyar, N., & Gopalsamy, S. (2023). Sub-lethal effects of indigenous isolate of *Spodoptera frugiperda* nucleopolyhedrovirus on fall armyworm growth and reproduction in India. *Egyptian Journal of Biological Pest Control*, *33*(1), 10.

Paat, F. J., & Pelealu, J. (2020). Morfologi dan perilaku hama *Crocidolomia pavonana* pada tanaman kubis. *In Cocos, 12*(4), 1-16.

Paudel, A., Yadav, P. K., & Karna, P. (2022). Diamondback moth *Plutella xylostella* (Linnaeus, 1758) (Lepidoptera: Plutellidae); A real menace to crucifers and its integrated management tactics. *Turkish Journal of Agriculture-Food Science and Technology*, *10*(12), 2504-2515.

Pavan, J. S., Patel, N. B., Raghunandan, B. L., Gouda, M. N. R., Ahmed, A. M., & Alansi, S. (2024). Natural occurrence, infection dynamics, and molecular characterization of nucleopolyhedrovirus (SpfrNPV) infecting fall armyworm, *Spodoptera frugiperda* (JE Smith) from maize ecosystems in Gujarat, India. *Journal of King Saud University-Science*, *36*(7), 103274.

Pum, J. (2019). A practical guide to validation and verification of analytical methods in the clinical laboratory. *Advances in clinical chemistry*, *90*, 215-281.

Putri, N., Wardhani, T., Sugiarti, U., Suharjato, T., & Hidayat, F. (2021). Potensi mangkokan (*Nothopanax scutellarium*) dan kemangi (*Ocimum sanctum* L.) sebagai UV Protektan SlNPV JTM 97C. *Ilmu-ilmu Pertanian*, *15*, 55-68.

Raghunandan, B. L., Patel, N. M., Dave, H. J., & Mehta, D. M. (2019). Natural occurrence of NPV infecting fall armyworm, *Spodoptera frugiperda* (JE Smith)(Lepidoptera: Noctuidae) in Gujarat, India. *Journal of Entomology and Zoology Studies*, *7*(2), 1040-1043.

Rimadhani, A. S., Darma, B., & Maryani, C. T. (2013). Virulensi *nuclear polyhedrosis virus* (NPV) terhadap ulat grayak (*Spodoptera litura* F.)(Lepidoptera: Noctuidae) pada tanaman tembakau Deli di rumah kaca. *Jurnal Agroekoteknologi Universitas Sumatera Utara*, *1*(3), 678-688.

Rizkiah, I. (2020). *Spodoptera litura pada Kedelai (Glycine max)*. Skripsi, Program Studi Agroteknologi, Fakultas Pertanian, Universitas Jember. Tersedia di: Universitas Jember Repository.

Rohrmann, G. F. (2019). *Baculovirus molecular biology 4th edition.* : Bethesda (MD): National Center for Biotechnology Information (US).

Samsudin, S. (2017). Prospek pengembangan bioinsektisida NPV (NPV) untuk pengendalian. *Perspektif: Review Penelitian Tanaman Industri*, *15*(1), 18-30.

Saputra, R. D., Tutung, H., Aminudin, A., & Bedjo, B. (2016). Sinergisme *Spodoptera litura Nuclear Polyhedrosis Virus* JTM 97C (*Sl*NPV-JTM 97C) dengan ekstrak biji sirsak (*Annona muricata* L.) dalam pengendalian *Helicoverpa armigera* Hubner (Lepidoptera: Noctuidae) pada tanaman kedelai (*Glycine max* L.) di laborator. *Jurnal Hama dan Penyakit Tumbuhan*, *3*(3), 26-33.

Scholefield, J. A., Shikano, I., Lowenberger, C. A., & Cory, J. S. (2019). The impact of baculovirus challenge on immunity: The effect of dose and time after infection. *Journal of invertebrate pathology*, *167*, 107232.

Setiawati, S., Hasibuan, R., Nuryasin, N., & Purnomo, P. (2018). Efikasi Ekstrak Daun Mengkudu terhadap Mortalitas Larva *Crocidolomia binotalis* zell. *Jurnal Agrotek Tropika*, *6*(2).

Shakeel, M., Xu, X., Xu, J., Zhu, X., Li, S., Zhou, X., Yu, J., Xu, X., Hu, Q., Yu, X., & Jin, F. (2017). Identification of immunity-related genes in *Plutella xylostella* in response to fungal peptide destruxin A: RNA-Seq and DGE analysis. *Scientific Reports*, *7*(1), 10966.

Sitohang, M., Juliet, M. E. M., & Sandra, E. P. (2022). Inovasi bomb fizzies antifeedant dari ekstrak daun pangi (*Pangium edule* Reinw.) untuk pengendalian hama kubis *Plutella xylostella* L. *Jurnal Agroekoteknologi Terapan*, *3*(2), 124-130.

Sulifoa, J. B., Sateki, F., & Rashmi, K. (2016). Oviposition periodicity, egg morphology and life history of large cabbage moth *Crocidolomia pavonana* population in Samoa. *The South Pacific Journal of Natural and Applied Sciences*, *34*(2), 29-34.

Syahroni, M. N. G., & Haryadi, N. T. (2019). Uji efektivitas konsentrasi *Spodoptera litura–Nuclear Polyhedrosis Virus* (*Sl*NPV) JTM 97C formulasi bubuk terhadap larva *Spodoptera litura* Fabricius (Lepidoptera: Noctuidae) pada tanaman kedelai. *Jurnal Pengendalian Hayati*, *2*(2), 46-52.

Uge, E., Yusnawan, E., & Baliadi, Y. (2021). Pengendalian ramah lingkungan hama ulat grayak (*Spodoptera litura* Fabricius) pada tanaman kedelai. *Buletin Palawija*, *19*(1), 64-80.

Wainwright, C., Jenkins, S., Wilson, D., Elliott, M., Jukes, A., & Collier, R. (2020). Phenology of the diamondback moth (*Plutella xylostella*) in the UK and provision of decision support for *Brassica growers*. *Insects*, *11*(2), 118.

Wild, A. (2024). *Plutella xylostella pupa rests in the characteristically open silk cocoon*. Texas, USA. www.alexanderwild.com/Insects/Lepidoptera-moths-and-butterflies/Moths/i-78rkk3v/buy

Williams, T., Cristina, V., Rosa, M., & Primitivo, C. (2017). Covert Infection of Insects by Baculoviruses. *Frontiers in microbiology*, *8*, 1337.

Xia, X., Yu, L., Xue, M., Yu, X., Vasseur, L., Gurr, G. M., Baxter, S. W., Lin, H., Lin, H., & You, M. (2015). Genome-wide characterization and expression profiling of immune genes in the diamondback moth, *Plutella xylostella* (L.). *Scientific reports*, *5*(1), 9877.

Xu, X., Zhong, A., Wang, Y., Lin, B., Li, P., Ju, W., Zhu, X., Yu, J., De Mandal, S., & Jin, F. (2019). Molecular identification of a moricin family antimicrobial peptide (*px*-mor) from *Plutella xylostella* with activities against the opportunistic human pathogen *Aureobasidium pullulans*. *Frontiers in microbiology*, *10*, 2211.

Yang, Y., Dai, J., Zhang, G., Singh, D., Zhang, X., & Liang, Z. (2024). *Mamestra brassicae* multiple nucleopolyhedroviruses prevents pupation of *Helicoverpa armigera* by regulating juvenile hormone titer. *Insects*, *15*(3), 202.