

DAFTAR PUSTAKA

- Agustin, M., Lestari, R., Hesti, H., Mahani, S., Maharani, E. & Amri, M.Q. 2021. Tingkat Serangan Larva *Spodoptera frugiperda* terhadap Tanaman Jagung sebagai Tanaman Inang. *Prosiding Seminar Nasional Lahan Suboptimal ke-9 Tahun 2021*, 9: 763–770.
- Aini, L.M. 2019. Penentuan Provinsi-Provinsi Terbaik dalam Produksi Jagung Nasional Melalui Analisis Kuadran atas Variable Produksi dan Produktivitas Per Satuan Luas Lahan. *Jurnal Ekonomi Pertanian dan Agribisnis*, 3(4): 751–760.
- Anjarsari, D.T., Prasetyawati, E.T. & Wuryandari, Y. 2022. Uji Daya Hambat *Bacillus* sp. terhadap *Phytophthora palmivora* Penyebab Penyakit Busuk Buah Kakao. *Nusantara Science and Technology Proceedings*, 2022: 14–21.
- Astuti, K., Ramdhani, D.M. & Khasanah, I.N. 2022. *Analisis Produktivitas Jagung dan Kedelai di Indonesia 2021 (Hasil Survei Ubinan)*. Jakarta: BPS-Statistics Indonesia.
- Badan Pusat Statistik 2023. *Luas Panen dan Produksi Jagung di Indonesia 2022 (Angka Sementara)*. Berita Resmi Statistik, Jakarta.
- Bagariang, W., Tauruslina, E., Kulsum, U., PL, T.M., Suyanto, H., Surono, S., Cahyana, N.A. & Mahmuda, D. 2020. Efektifitas Insektisida Berbahan Aktif Klorantraniliprol terhadap Larva *Spodoptera frugiperda* (JE Smith). *JPT: Jurnal Proteksi Tanaman (Journal of Plant Protection)*, 4(1): 29–37.
- Bahaddad, S.A., Almalki, M.H.K., Alghamdi, O.A., Sohrab, S.S., Yasir, M., Azhar, E.I. & Chouayekh, H. 2023. *Bacillus* Species as Direct-Fed Microbial Antibiotic Alternatives for Monogastric Production. *Probiotics and Antimicrobial Proteins*, 15(1): 1–16.
- Bayyinah, L.N., Pratama, R.A. & Mutala'liah, M. 2022. Analisis Vegetasi Gulma pada Lahan Budidaya Jagung di Arcawinangun, Purwokerto Timur, Banyumas. *AGROSCRIPT: Journal of Applied Agricultural Sciences*, 4(2): 75–82.
- Van Den Berg, J. & Du Plessis, H. 2022. Chemical Control and Insecticide Resistance in *Spodoptera frugiperda* (Lepidoptera: Noctuidae). *Journal of Economic Entomology*, 115(6): 1761–1771.
- Chen, Y.C., Chen, D.F., Yang, M.F. & Liu, J.F. 2022. The Effect of Temperatures and Hosts on the Life Cycle of *Spodoptera frugiperda* (Lepidoptera: Noctuidae). *Insects*, 13(2): 1–15.

- Corrêa, R.S., Barbosa, J.Z., Poggere, G.C., Magri, E. & de Oliveira, S.A. 2023. Grain and Foliar Nutritional Responses of Corn (*Zea mays* L.) to Sewage Sludge Soil Application. *Waste and Biomass Valorization*, 14(8): 2629–2641. Tersedia di <https://doi.org/10.1007/s12649-023-02037-3>.
- da Costa, F.S.S., Praça, L.B., Gomes, A.C.M.M., Dos Santos, R.C., Soares, C.M.S. & Monnerat, R.G. 2020. *Bacillus thuringiensis* Effect on the Vegetative Development of Cotton Plants and the Biocontrol of *Spodoptera frugiperda*. *Agronomy*, 10(12): 1–14.
- Deden, D., Umiyati, U. & Dukat, D. 2023. Preferensi dan Intensitas Serangan *Spodoptera frugiperda* J.E. Smith (Lepidoptera: Noctuidae) pada Berbagai Varietas Tanaman Jagung Manis (*Zea mays saccharata*). *Jurnal Agrotek Tropika*, 11(2): 173–179.
- Dudurang, B., Rante, C.S. & Wanta, N.N. 2023. Persentase Serangan Hama *Spodoptera frugiperda* J.E. Smith (Lepidoptera: Noctuidae) pada Tanaman Jagung Manis di Kecamatan Matuari Kota Bitung. *ENFIT: Jurnal Entomologi dan Fitopatologi*, 3(1): 31–36.
- Fatikhasari, Z., Lailaty, I.Q., Sartika, D. & Ubaidi, M.A. 2022. Viabilitas dan Vigor Benih Kacang Tanah (*Arachis hypogaea* L.), Kacang Hijau (*Vigna radiata* (L.) R. Wilczek), dan Jagung (*Zea mays* L.) pada Temperatur dan Tekanan Osmotik Berbeda. *Jurnal Ilmu Pertanian Indonesia*, 27(1): 7–17.
- Fitri, A.F.N., Megasari, D. & Kusuma, R.M. 2024. Morphological and molecular characterization of *Stenocranus pacificus* (Hemiptera: Delphacidae) on maize plants. *Jurnal Ilmiah Pertanian*, 21(3): 166–173.
- Fitriana, I.N., Suryaminarsih, P. & Mujoko, T. 2019. Potential of Multientomopa *Streptomyces* sp. and *Trichoderma* sp. in Potato Extract Broth and Glucose Nitrate Broth Media on Pests (*Spodoptera litura*) Eating Behavior by In Vitro Test. *Nusantara Science and Technology Proceedings*, 2019: 270–276.
- Ge, S., Chu, B., He, W., Jiang, S., Lv, C., Gao, L., Sun, X., Yang, X. & Wu, K. 2022. Wheat-Bran-Based Artificial Diet for Mass Culturing of the Fall Armyworm, *Spodoptera frugiperda* Smith (Lepidoptera: Noctuidae). *Insects*, 13(12): 1–14.
- Gunawan, S., Kahar, K. & Karmini, M. 2023. Rancang Bangun Alat Peredam Kebisingan Berbasis Variasi Ketebalan Busa Dakron dan Egg Tray terhadap Penurunan Intensitas Kebisingan di Industri Farmasi Tahun 2023. *Jurnal Pengendalian Pencemaran Lingkungan (JPPL)*, 5(2): 118–125.
- Guo, J., Wu, S., Zhang, F., Huang, C., He, K., Babendreier, D. & Wang, Z. 2020. Prospects for Microbial Control of the Fall Armyworm *Spodoptera frugiperda*: A Review. *BioControl*, 65(6): 647–662. Tersedia di <https://doi.org/10.1007/s10526-020-10031-0>.

- Gustianingtyas, M., Herlinda, S. & Suwandi, S. 2021. The Endophytic Fungi from South Sumatra (Indonesia) and Their Pathogenecity Against the New Invasive Fall Armyworm, *Spodoptera frugiperda*. *Biodiversitas*, 22(2): 1051–1062.
- Hariyanto, A.L., Wuryandari, Y. & Suryaminarsih, P. 2022. Efektivitas Metabolit Sekunder Pseudomonad fluorescent sebagai Antimikroba Patogen *Fusarium oxysporum* secara In Vitro. *AGROHITA: Jurnal Agroteknologi Fakultas Pertanian Universitas Muhammadiyah Tapanuli Selatan*, 7(3): 514–518. Tersedia di <http://jurnal.um-tapsel.ac.id/index.php/agrohita>.
- Heriyati, S. 2023. *Kemampuan Beberapa Isolat *Bacillus* spp. dalam Menghambat Perkembangan Penyakit Layu *Fusarium* dan Memacu Pertumbuhan Tanaman Cabai Merah (*Capsicum annuum* L.)*. UPN “Veteran” Jawa Timur. Tersedia di <https://www.ncbi.nlm.nih.gov/books/NBK558907/>.
- Herlinda, S., Suharjo, R., Elbi Sinaga, M., Fawwazi, F. & Suwandi, S. 2022. First Report of Occurrence of Corn and Rice Strains of Fall Armyworm, *Spodoptera frugiperda* in South Sumatra, Indonesia and Its Damage in Maize. *Journal of the Saudi Society of Agricultural Sciences*, 21(6): 412–419. Tersedia di <https://doi.org/10.1016/j.jssas.2021.11.003>.
- Hong, S.Y., Yi, H.J., Yoon, Y.N., Jang, Y.W., Park, K. Do & Maharjan, R. 2022. Evaluation of Commercial Pheromones on the Population Dynamics of *Spodoptera frugiperda* (J. E. Smith) and *Mythimna loreyi* (Duponchel) (Lepidoptera: Noctuidae). *The Korean Journal of Crop Science*, 67(4): 285–295.
- Hudoyo, A. & Nurmayasari, I. 2019. Peningkatan Produktivitas Jagung di Indonesia. *Indonesian Journal of Socio Economics*, 1(2): 102–108.
- Hutagalung, R.P.S., Sitepu, S.F. & Marheni 2021. Biologi Fall Armyworm (*Spodoptera frugiperda* J. E. Smith) (Lepidoptera: Noctuidae) di Laboratorium. *Jurnal Pertanian Tropik*, 8(1): 1–10. Tersedia di <https://jurnal.usu.ac.id/index.php/Tropik%0APengaruh>.
- Huwaida, S.N., Huwaida, S.N., Handayani, G.S., Hamdah, L.N., Aditya, Y.P., Saputra, A.A., Amelia, E., Putri, A.Z., Ardiansyah, R., Fadhilah HS, F. & Laksmana, B.A.A. 2022. Inisiasi Gerakan Penyemprotan Hama Padi dan Jagung secara Massal di Desa Soropaten, Kecamatan Karanganom, Kabupaten Klaten. *I-Com: Indonesian Community Journal*, 2(3): 704–711.
- Irawan, F.P., Afifah, L., Surjana, T., Irfan, B., Prabowo, D.P. & Widiawan, A.B. 2022. Morfologi dan Aktifitas Makan Larva *Spodoptera frugiperda* J.E Smith (Lepidoptera:Noctuidae) pada Beberapa Inang Tanaman Pangan dan Hortikultura. *Jurnal Agroplasma*, 9(2): 170–182.
- Iswantoro, D. & Handayani UN, D. 2022. Klasifikasi Penyakit Tanaman Jagung Menggunakan Metode Convolutional Neural Network (CNN). *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(2): 900–905.

- Jani, R., Samharinto, S. & Liestiany, E. 2023. Kemampuan *Bacillus thuringiensis* untuk Mengendalikan Spodoptera frugiperda J.E. Smith. *Proteksi Tanaman Tropika*, 6(2): 630–637.
- Jin, M., Shan, Y., Peng, Y., Wang, P., Li, Q., Yu, S., Zhang, L. & Xiao, Y. 2022. An Integrative Analysis of Transcriptomics and Proteomics Reveals Novel Insights into the Response in the Midgut of *Spodoptera frugiperda* Larvae to Vip3Aa. *Toxins*, 14(1): 55–67.
- Jing, D.P., Guo, J.F., Jiang, Y.Y., Zhao, J.Z., Sethi, A., He, K.L. & Wang, Z.Y. 2020. Initial Detections and Spread of Invasive *Spodoptera frugiperda* in China and Comparisons with Other Noctuid Larvae in Cornfields Using Molecular Techniques. *Insect Science*, 27(4): 780–790.
- Karshanal, J. & Kalia, V.K. 2023a. Efficacy of Native *Bacillus* Isolates Against Different Larval Instars of Fall Armyworm, *Spodoptera frugiperda* Alone and In Combination. *Egyptian Journal of Biological Pest Control*, 33(1): 1–11. Tersedia di <https://doi.org/10.1186/s41938-023-00743-7>.
- Karshanal, J. & Kalia, V.K. 2023b. Endophytic Establishment of Native *Bacillus thuringiensis* Strain in Maize Plants and Its Efficacy Against *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae). *Egyptian Journal of Biological Pest Control*, 33(82): 1–11. Tersedia di <https://doi.org/10.1186/s41938-023-00726-8>.
- Kementerian Pertanian 2020. *Outlook Jagung 2020: Komoditas Pertanian Subsektor Tanaman Pangan. Pusat Data dan Sistem Informasi Pertanian Kementerian Pertanian*. Jakarta. Tersedia di <http://epublikasi.setjen.pertanian.go.id>.
- Kenis, M. 2023. Prospects for Classical Biological Control of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in Invaded Areas Using Parasitoids from the Americas. *Journal of Economic Entomology*, 116(2): 331–341.
- Kenis, M., Benelli, G., Biondi, A., Calatayud, P.A., Day, R., Desneux, N., Harrison, R.D., Kriticos, D., Rwmushana, I., van den Berg, J., Verheggen, F., Zhang, Y.J., Agboyi, L.K., Ahissou, R.B., Ba, M.N., Bernal, J., Freitas de Bueno, A., Carrière, Y., Carvalho, G.A., Chen, X.X., Cicero, L., du Plessis, H., Early, R., Fallet, P., Fiaboe, K.K.M., Firake, D.M., Goergen, G., Groot, A.T., Guedes, R.N.C., Gupta, A., Hu, G., Huang, F.N., Jaber, L.R., Malo, E.A., McCarthy, C.B., Meagher, R.L., Mohamed, S., Sanchez, D.M., Nagoshi, R.N., Nègre, N., Niassy, S., Ota, N., Nyamukondiwa, C., Omoto, C., Palli, S.R., Pavela, R., Ramirez-Romero, R., Rojas, J.C., Subramanian, S., Tabashnik, B.E., Tay, W.T., Virla, E.G., Wang, S., Williams, T., Zang, L.S., Zhang, L. & Wu, K. 2023. Invasiveness, Biology, Ecology, and Management of the Fall Armyworm, *Spodoptera frugiperda*. *Entomologia Generalis*, 43(2): 187–241.

- Knaak, N., Franz, A.R., Santos, G.F. & Fiuzza, L.M. 2010. Histopathology and The Lethal Effect of Cry Proteins and Strains of *Bacillus thuringiensis* erlinser in *Spodoptera frugiperda* J.E. Smith Caterpillars (Lepidoptera, Noctuidae). *Brazilian Journal of Biology*, 70(3): 677–684.
- Koffi, D., Kyerematen, R., Eziah, V.Y., Agboka, K., Adom, M., Goergen, G. & Meagher, R.L.J. 2020. Natural Enemies of the Fall Armyworm, *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae) in Ghana. *Florida Entomologist*, 103(1): 85–90.
- Kumar, R.M., Gadratagi, B.G., Paramesh, V., Kumar, P., Madivalar, Y., Narayappa, N. & Ullah, F. 2022. Sustainable Management of Invasive Fall Armyworm, *Spodoptera frugiperda*. *Agronomy*, 12(9): 1–17.
- Kurniawati, K., Purnawati, A. & Windriyanti, W. 2025. Efficacy of Endophytic Bacteria as Entomopathogens against *Spodoptera frugiperda* (Lepidoptera: Noctuidae) on Corn (*Zea mays* L.). *Jurnal Teknik Pertanian Lampung (Journal of Agricultural Engineering)*, 14(1): 1040–1050.
- Laili, N.H., Abida, I.W. & Junaedi, A.S. 2022. Nilai Total Plate Count (TPC) dan Jumlah Jenis Bakteri Air Limbah Cucian Garam (Bittern) dari Tambak Garam Desa Banyuajuh Kecamatan Kamal Kabupaten Bangkalan. *Juvenil: Jurnal Ilmiah Kelautan dan Perikanan*, 3(1): 26–31.
- Lestari, P., Helina, S., Ginting, C. & Maryono, T. 2023. Pemanfaatan Agensi Hayati untuk Mengendalikan Hama dan Penyakit Jagung di Desa Rejo Mulyo, Lampung Selatan. *Jurnal Pengabdian Fakultas Pertanian Universitas Lampung*, 02(01): 68–79.
- Li, T.H., de Freitas Bueno, A., Desneux, N., Zhang, L., Wang, Z., Dong, H., Wang, S. & Zang, L.S. 2023. Current Status of the Biological Control of the Fall Armyworm *Spodoptera frugiperda* by Egg Parasitoids. *Journal of Pest Science*, 96(4): 1345–1363. Tersedia di <https://doi.org/10.1007/s10340-023-01639-z>.
- Lugito, R., Yunus, M. & Asrul, A. 2023. Pengendalian Hayati Larva *Spodoptera frugiperda* J.E. Smith dengan Menggunakan Cendawan Entomopatogen *Metarhizium anisopliae* di Laboratorium. *Agrotekbis: E-Jurnal Ilmu Pertanian*, 11(2): 429–436.
- Lv, D., Liu, X., Dong, Y., Yan, Z., Zhang, X., Wang, P., Yuan, X. & Li, Y. 2021. Comparison of Gut Bacterial Communities of Fall Armyworm (*Spodoptera frugiperda*) Reared on Different Host Plants. *International Journal of Molecular Sciences*, 22(20): 11266.
- Maharani, Y., Dewi, V.K., Puspasari, L.T., Rizkie, L., Hidayat, Y. & Dono, D. 2019. Cases of Fall Army Worm *Spodoptera frugiperda* J. E. Smith (Lepidoptera: Noctuidae) Attack on Maize in Bandung, Garut and Sumedang District, West Java. *Cropsaver: Journal of Plant Protection*, 2(1): 38–46.

- Maharani, Y., Rohmah, A.N., Bari, I.N. & Ismail, A. 2022. Pendampingan Petani Desa Mekar Wargi, Nagreg dalam Mengenal Hama Tanaman Jagung. *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, 5(2): 294.
- Megasari, D. & Khouri, S. 2021. Tingkat Serangan Ulat Grayak Tentara *Spodoptera frugiperda* J. E. Smith (Lepidoptera: Noctuidae) pada Pertanaman Jagung di Kabupaten Tuban, Jawa Timur, Indonesia. *Agrovigor: Jurnal Agroekoteknologi*, 14(1): 1–5.
- Megasari, D., Putra, I.L.I., Martina, N.D., Wulanda, A. & Khotimah, K. 2022. Biologi *Spodoptera frugiperda* J.E. Smith pada Beberapa Jenis Pakan di Laboratorium. *Agrovigor: Jurnal Agroekoteknologi*, 15(1): 63–67.
- Melinda, A.T., Indriyanti, D.R., Widyaningrum, P. & Subekti, N. 2024. Keanekaragaman Serangga dan Tingkat Kerusakan Akibat Serangga Hama pada Tanaman Jeruk. *Life Science*, 13(2): 161–173. Tersedia di <https://journal.unnes.ac.id/journals/UnnesJLifeSci/article/view/10758>.
- Minarsih, S., Samijan, S., Supriyo, A., Praptana, R.H. & Komalawati, K. 2022. Efektivitas Pupuk Organik Cair Hasil Aktivasi Molekul dalam Meningkatkan Pertumbuhan dan Hasil Jagung. *Jurnal Pangandaran*, 31(2): 125–134.
- Mohammad, A.M., Elham, A.R., Khalil, A.F. & Ahmed, H.Y. 2024. The Potency of The Green Algae *Chlorella vulgaris* and *Bacillus thuringiensis* as Biocides Against *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae). *Functional Foods in Health and Disease*, 14(6): 445–454.
- Mulyani, Syafi, M., Afifah, L. & Irfan, B. 2024. Intensitas Serangan dan Fluktuasi Populasi Hama Ulat Grayak (*Spodoptera frugiperda* J.E Smith) pada Beberapa Galur Tetua Jagung Manis (*Zea mays saccharata* Sturt) MS-UNSIKA Mutan Generasi M7. *Jurnal Agrotech*, 14(1): 63–69.
- Nasution, G.S. & Lubis, E.A. 2022. Gambaran Keberadaan Bakteri *Bacillus* sp. pada Ruangan Ber-AC dan Non AC Systemic Review. *Sains Medisina*, 1(2): 130–140.
- Nehra, S., Gothwal, R.K., Varshney, A.K., Solanki, P.S., Chandra, S., Meena, P., Trivedi, P.C. & Ghosh, P. 2020. *Bio-Management of Fusarium spp. Associated with Fruit Crops. Fungi Bio-prospects in Sustainable Agriculture, Environment and Nano-technology: Volume 1: Fungal Diversity of Sustainable Agriculture*. INC. Tersedia di <http://dx.doi.org/10.1016/B978-0-12-821394-0.00019-6>.
- Nelly, N., Hamid, H., Lina, E.C., Yunisman, Rusli, R., Yanti, Y. & Kairunisa, M. 2024. Effectiveness of *Bacillus* spp. from West Sumatra, Indonesia in controlling *Spodoptera frugiperda* (Lepidoptera: Noctuidae). *Biodiversitas*, 25(4): 1472–1478.

- Omoregie, M.E., Enobakhare, D.A. & Omoregie, A.O. 2023. Population Dynamics of the Fall Armyworm, *Spodoptera Frugiperda* J. E. Smith (Lepidoptera: Noctuidae) on Early and Late Season Maize. *Animal Research International*, 20: 4734–4740.
- Perdana, M.I., Ruamcharoen, J., Panphon, S. & Leelakriangsak, M. 2021. Antimicrobial Activity and Physical Properties of Starch/Chitosan Film Incorporated with Lemongrass Essential Oil and Its Application. *LWT - Food Science and Technology*, 141: 1–8. Tersedia di <https://doi.org/10.1016/j.lwt.2021.110934>.
- Du Plessis, H., Schlemmer, M.L. & Van den Berg, J. 2020. The Effect of Temperature on the Development of *Spodoptera frugiperda* (Lepidoptera: Noctuidae). *Insects*, 11(4): 228.
- Prameisti, T. 2020. *Efek Residu Empat Insektisida terhadap Spodoptera frugiperda*. Universitas Gadjah Mada.
- Prasanna, B.M., Bruce, A., Beyene, Y., Makumbi, D., Gowda, M., Asim, M., Martinelli, S., Head, G.P. & Parimi, S. 2022. Host Plant Resistance for Fall Armyworm Management in Maize: Relevance, Status and Prospects in Africa and Asia. *Theoretical and Applied Genetics*, 135(11): 3897–3916. Tersedia di <https://doi.org/10.1007/s00122-022-04073-4>.
- Prasetya, G.I., Siregar, A.Z. & Marheni, M. 2022. Intensitas dan Persentase Serangan *Spodoptera frugiperda* J. E. Smith (Lepidoptera: Noctuidae) pada Beberapa Varietas Jagung di Kecamatan Namorambe Kabupaten Deli Serdang. *Jurnal Pertanian Cemara*, 19(1): 77–84.
- Prathima, T., Sudheer, K.V.S., Devaki, K., Madhuri, C.V., Subramanyam, G. & Aggile, L. 2023. Crop Weather Pest Relationship and Forewarning Model for *Spodoptera frugiperda* on Maize and Sorghum Crop Weather Pest Relationship and Forewarning Model for *Spodoptera frugiperda* on Maize and Sorghum. *Agricultural Science Digest*, 1–6.
- Pu'u, Y.M.S.. & Syatrawati, S. 2023. Potensi Pengendalian Hayati Hama *Spodoptera frugiperda* untuk Keberlanjutan Produksi Jagung. *Agrica*, 15(2): 144–160.
- Purnomo, P., Ananda, E.A., Fajar, A. Al, Wibowo, L., Lestari, P. & Swibawa, I.G. 2023. Hama-Hama Tanaman Jagung dan Keragaman Artropoda pada Pertanaman Jagung di Kabupaten Lampung Selatan dan Pesawaran, Provinsi Lampung. *Jurnal Agrotek Tropika*, 11(2): 337–349.
- Putra, I.L.I., Aulia, D.R. & Hanafi, Y. 2024. Bentuk Serangan *Spodoptera frugiperda* J.E. Smith pada Tanaman Selain Jagung di Kabupaten Kulon Progo. *Jurnal Sains dan Edukasi Sains*, 7(1): 58–67.

- Putra, I.P., Rusbandi, R. & Alamsyah, D. 2022. Klasifikasi Penyakit Daun Jagung Menggunakan Metode Convolutional Neural Network. *Jurnal Algoritme*, 2(2): 102–112.
- Putri, R.C., Megasari, D. & Rahmadhini, N. 2024. Photoperiod Effects on The Growth Stages of Fall Armyworm *Spodoptera frugiperda* (Lepidoptera: Noctuidae) under Laboratory Conditions. *Jurnal Ilmiah Pertanian*, 21(3): 198–208.
- Putri, S.N.S., Susanto, A., Bari, I.N. & Santriyani, A.S. 2022. Pengaruh Beberapa Pelarut Ekstrak Daun *Nerium oleander* L. terhadap Mortalitas, Konsumsi Makan dan Kelulushidupan *Spodoptera frugiperda* J.E. Smith. *Agrikultura*, 33(3): 369–378.
- Rahmadan, F., Wardi, R.Y. & Sohriati, E. 2023. Identifikasi Keanekaragaman Jenis Serangga yang Berpotensi Hama pada Tanaman Jagung (*Zea mays* L.) di Desa Bangun Jaya Kecamatan Tomoni Kabupaten Luwu Timur. *Cokroaminoto Journal of Biological Science*, 5(2): 1–7.
- Rokhim, N. 2022. Analisis Kandungan Bakteri pada Sampah di TPA Segawe Kabupaten Tulungagung. *Asian Journal of Natural Sciences*, 1(1): 1–8.
- Rosmania, R. & Yanti, F. 2020. Perhitungan Jumlah Bakteri di Laboratorium Mikrobiologi Menggunakan Pengembangan Metode Spektrofotometri. *Jurnal Penelitian Sains*, 22(2): 76–86.
- Rozi, F., Santoso, A.B., Mahendri, I.G.A.P., Hutapea, R.T.P., Wamaer, D., Siagian, V., Elisabeth, D.A.A., Sugiono, S., Handoko, H., Subagio, H. & Syam, A. 2023. Indonesian Market Demand Patterns for Food Commodity Sources of Carbohydrates in Facing the Global Food Crisis. *Helijon*, 9(6): e16809. Tersedia di <https://doi.org/10.1016/j.heliyon.2023.e16809>.
- Saakre, M., Kesiraju, K., Raman, K.V., Jaiswal, S., Tyagi, S., Tilgam, J., Paul, K., Bhattacharjee, S., Sreevaths, R. & Pattanayak, D. 2023. Transgenic Tobacco Expressing a Novel Bt Gene, Cry1AcF, Show Resistance Against Fall Armyworm (*Spodoptera frugiperda*). *Journal of Plant Biochemistry and Biotechnology*. Tersedia di <https://doi.org/10.1007/s13562-023-00849-x>.
- Sari, I.Y.H. & Wagiyana, W. 2023. Efektivitas Isolat Nematoda Entomopatogen *Steinernema* sp. Produksi PPAH Kabupaten Kediri terhadap Mortalitas Larva *Spodoptera frugiperda* J.E. Smith. *Berkala Ilmiah Pertanian*, 6(3): 129–134.
- Sari, K.K. 2020. Viral Hama Invasif Ulat Grayak (*Spodoptera frugiperda*) Ancam Panen Jagung di Kabupaten Tanah Laut Kalsel. *Jurnal Proteksi Tanaman Tropika*, 3(3): 244–247.

- Septian, R.D., Afifah, L., Surjana, T., Saputro, N.W. & Enri, U. 2021. Identifikasi dan Efektivitas Berbagai Teknik Pengendalian Hama Baru Ulat Grayak *Spodoptera frugiperda* J. E. Smith pada Tanaman Jagung berbasis PHT-Biointensif. *Jurnal Ilmu Pertanian Indonesia*, 26(4): 521–529.
- Sharma, S., Tiwari, S., Thapa, R.B., Neupane, S., Reddy, G.V., Pokhrel, S. & Muniappan, R. 2022. Life Cycle and Morphometrics of Fall Armyworm (*Spodoptera frugiperda* (Lepidoptera: Noctuidae) on Maize Crop. *SAARC Journal of Agriculture*, 20(1): 77–86.
- Sianipar, H.F., Sijabat, A. & Pane, E.P. 2019. Pengaruh Pemberian Berbagai Tingkat Mikoriza Arbuskula pada Tanah Terakumulasi Logam Pb terhadap Pertumbuhan Tanaman Belimbing Wuluh (*Averrhoa bilimbi*). *JBIO: Jurnal Biosains*, 5(2): 53–58. Tersedia di <https://doi.org/10.24114/jbio.v5i2.13918>.
- Siregar, H.D., Wassalwa, M., Khairina Janani & Harahap, I.S. 2024. Analisis Uji Hipotesis Penelitian Perbandingan Menggunakan Statistik Parametrika. *Al Itihadu Jurnal Pendidikan*, 3(1): 1–12. Tersedia di <https://jurnal.asrypersadaquality.com/index.php/alittihadu/article/view/44%0Ahttps://jurnal.asrypersadaquality.com/index.php/alittihadu/article/download/44/74>.
- Suby, S.B., Soujanya, P.L., Yadava, P., Patil, J., Subaharan, K., Prasad, G.S., Babu, K.S., Jat, S.L., Yathish, K.R., Vadassery, J., Kalia, V.K., Bakthavatsalam, N., Shekhar, J.C. & Rakshit, S. 2020. Invasion of Fall Armyworm (*Spodoptera frugiperda*) in India: Nature, Distribution, Management and Potential Impact. *Current Science*, 119(1): 44–51.
- Sulfiani, S. 2022. Indikasi Tingkat Kerusakan Daun Tanaman Jagung Akibat Serangan *Spodoptera frugiperda* di Desa Tadangpalie Kecamatan Sabbangparu Kabupaten Wajo. *Perbal: Jurnal Pertanian Berkelanjutan*, 10(2): 181–186.
- Sutriono, S. & Zahar, I. 2022. Perbandingan Efektivitas *Bacillus thuringiensis* dengan Teknologi Ozon dalam Pengendalian Hama *Spodoptera litura* pada Daun Cabai (*Capsicum annum*). *Jurnal Rona Teknik Pertanian*, 15(2): 13–22.
- Syafria, S., Reflinaldon, R. & Nelly, N. 2023. Distribusi dan Tingkat Serangan *Spodoptera frugiperda* pada Tanaman Jagung di Kabupaten Sijunjung , Sumatera Barat. *JPT: Jurnal Proteksi Tanaman (Journal of Plant Protection)*, 7(1): 44–54.
- Tay, W.T., Meagher, R.L., Czepak, C. & Groot, A.T. 2023. *Spodoptera frugiperda: Ecology, Evolution, and Management Options of an Invasive Species*. *Annual Review of Entomology*, 68: 299–317.

- Trisyono, Y.A., Suputa, Aryuwandari, V.E.F., Hartaman, M. & Jumari 2019. Occurrence of Heavy Infestation by the Fall Armyworm *Spodoptera frugiperda*, A New Alien Invasive Pest, in Corn Lampung Indonesia. *Jurnal Perlindungan Tanaman Indonesia*, 23(1): 156–160.
- Tshiabukole, J.P.K., Khonde, G.P., Phongo, A.M., Ngoma, N., Kankolongo, A.M., Vumilia, R.K. & Djamba, A.M. 2021. Simulation of Fall Armyworm (*Spodoptera frugiperda*) Attacks and the Compensative Response of Quality Protein Maize (*Zea mays*, var. Mudishi-1 and Mudishi-3) in Southwestern DR Congo. *Open Access Library Journal*, 8(3): 1–14.
- Wibawa, I.P.A.H. 2018. Perbandingan Efektivitas Beberapa Pestisida Organik pada Budidaya Brokoli (*Brassica rapa* L.) di Bedugul, Bali. *Agro Bali: Agricultural Journal*, 1(1): 1–9.
- Wilyus, W., Siregar, H.M. & Aulia, R. 2022. Intensitas Serangan *Spodoptera frugiperda* J.E. Smith (Lepidoptera: Noctuidae) pada Beberapa Fase Pertumbuhan Tanaman Jagung. *Jurnal Media Pertanian*, 7(1): 61–65.
- Yan, X.R., Wang, Z.Y., Feng, S.Q., Zhao, Z.H. & Li, Z.H. 2022. Impact of Temperature Change on the Fall Armyworm, *Spodoptera frugiperda* under Global Climate Change. *Insects*, 13(11): 981.
- Zakqy, N., Wuryandari, Y. & Purnawati, A. 2024. Potential of The Biological Agent *Bacillus* spp. in Inhibiting Fusarium Wild Disease and Its Effects on The Growth and Production of Cayenne Papper (*Capsicum frutescens* L.). *Jurnal Pembelajaran dan Biologi Nukleus*, 10(1): 38–51.
- Zimah, U.A., Herawati, H. & Aviny, E.Y. 2023. Analisis Pendapatan Usahatani Padi Berdasarkan Status Penguasaan Lahan di Kecamatan Grabag Kabupaten Purworejo. *Forum Agribisnis*, 13(1): 78–85.
- Zinidin, M. 2022. *Eksplorasi Bacillus spp. pada Rhizosfer Cabai Merah (*Capsicum annuum* L.) Dataran Tinggi dan Potensinya sebagai Agensi Pengendali Hayati Patogen *Ralstonia solanacearum* secara In Vitro*. UPN “Veteran” Jawa Timur. Tersedia di <http://repository.upnjatim.ac.id/id/eprint/6876>.