



DAFTAR PUSTAKA

- Abdullah, R. R. H. 2019. Insecticidal Activity of Secondary Metabolites of Locally Isolated Fungal Strains against some Cotton Insect Pests. *J. of Plant Protection and Pathology*, 10 (12): 647-653.
- Adenkunel, C. P., S. O. Akinbode, D. Akerele, T. O. Oyekale, and O. V. Koyi. 2017. Effects of agricultural pesticide utilization on farmers health in egbeda local government area, oyo state, nigeria. *Nigerian Journal of Agricultural Economics*, 7 (1): 73-88.
- Adeyemi, M. M. and Mohammed, M. 2014. Prospect of antifeedant secondary metabolites as post harvest material. *International Journal of Innovative Research in Science, Engineering and Technology*, 3 (1): 8701-8710.
- Adiyoga, W., A. Laksanawati, T.A. Soetiarno, dan A. Hidayat. 2004. Persepsi petani terhadap status dan prospek penggunaan SeMNPV pada usaha tanaman bawang merah. *Jurnal Hortikultura*, 11(1), 58-70.
- Ahmad, S., N. Ilmi, A. A. Ambar., dan Nuraliyah. 2022. Description of Infection Symptoms in Armyworm Larvae (*Spodoptera exigua* F.) by The Insect Pathogen *Beauveria bassiana* (Bals.). *Mataram*, 1: 346-352.
- Al-Rubaye, A. F., I. H. Hameed, dan Moh. J. Kadhim. 2017. A Review: Uses of Gas Chromatography-Mass Spectrometry (GCMS) Technique for Analysis of Bioactive Natural Compounds of Some Plants. *International Journal of Toxicological and Pharmacological Research.*, 9(1): 81-85
- Ali E. 2020. Indigenous tocopherol improves tolerance of oilseed rape to cadmium stress. *Front Plant Sci* 11:1536
- Ali, E., S. Hussain, N. Hussain, K. U. Kakar, J. M. Shah, S. H. R. Zaidi, M. Jan, K. Zhang, M. A. Khan, and M. Imtiaz. 2022. Tocopherol as plant protector: an overview of Tocopherol biosynthesis enzymes and their role as antioxidant and signaling molecules. *Acta Physiologiae Plantarium*, 44 (20): 18-29.
- Amala, K., S.Karthi, R. Ganesan, N.Radhakrishnan, K. Srinivasan, A. E.M. A. Mostafa, A. A.Al-Ghamdi, Ja.Alkahtani, M.Soliman Elshikh, S. Senthil-Nathan, P.Vasantha-Srinivasan, and P. Krutmuang. 2021. Bioefficacy of *Epaltes divaricata* (L.) n-Hexane Extracts and Their Major Metabolites

- against the Lepidopteran Pests *Spodoptera litura* (fab.) and Dengue Mosquito *Aedes aegypti* (Linn.). *Molecules*, 26(12): 3695
- Ameriana, M. 2008. Perilaku petani sayuran dalam menggunakan pestisida kimia. *Jurnal Hortikultura*, 18 (1): 95-106.
- Anindhita, M. A. dan Arsanto, C. J. 2020. Formulasi Krim Ekstrak Daun Kersen (*Muntingia calabura L.*) Dengan Variasi Kombinasi Span 60 dan Tween 80 Sebagai Emulgator. *Jurnal Ilmiah Farmasi*, 9 (2): 50-60
- Apriyani, A., P. M. Azzumar, dan S. Wahyuni. 2021. Keragaman Hama Pada Pertanaman Bawang Merah (*Allium ascalonicum L.*) di Kabupaten Pati. *Jurnal Litbang Provinsi Jawa Tengah*, 19 (1): 13-20.
- Bandeira, G. N., C. A. G. Camara, M. M. Moraes, R. Barros, S. Muhammad, Y. Akhtar. 2012. Insecticidal activity of *Muntingia calabura* extracts against larvae and pupae of diamondback, *Plutella xylostella* (Lepidoptera, Plutellidae). *Journal of King Saud University – Science*, 25: 83–89.
- Buhian, W. P. C., R.O. Rubio, D.L. Valle, J. J. Martin-Puzon. 2016. Bioactive metabolite profiles and antimicrobial activity of ethanolic extracts from *Muntingia calabura L.* leaves and stems. *Asian Pacific Journal of Tropical Biomedicine*: 682–685.
- Caceres LA, McGarvey BD, Briens C, Berruti F, Yeung KK-C, Scott IM (2015) Insecticidal properties of pyrolysis bio-oil from greenhouse tomato residue biomass. *Journal of Analytical and Applied Pyrolysis* 112: 333–340.
- Chapman, R. F. 1998. *The insects: Structure and Function*. Cambridge university press.
- Chen X, Zhang L, Miao X, Hu X, Nan S, Wang J, Fu H. 2018. Effect of salt stress on Asam lemak and alpha-tocopherol metabolism in two desert shrub species. *Planta* 247:499–511. <https://doi.org/10.1007/s00425-017-2803-8>
- Connel, D. W., & Miller, G. J. 2006. *Kimia dan Ekotoksikologi Pencemaran*. Universitas Indonesia: UI-Press.
- Dai, J. and Mumper, R. J. 2010. Plant phenolics: extraction, analysis and their antioxidant and anticancer properties. *Molecules*, 15 (10): 7313–7352.
- Dakebo, A. 2019. *Introduction Chapter: Plant Extract*. IntechOpen. London, p. 3-4.

- Darmapatni, K. A. G., A. Basori, dan N. M. Suaniti. 2016. Pengembangan Metode GCMS Untuk Penetapan Kadar Acetaminophen Pada Spesimen Rambut Manusia. *Jurnal Biosains Pascasarjana*. 3(18): 62-69.
- Dehkharghanian, M., H. Adenier, and M. A. Vijayalakshmi. 2010. Study of flavonoids in aqueous spinach extract using positive electrospray ionisation tandem quadrupole mass spectrometry. *Food Chemistry*, 121 (3): 863–870.
- Dirjen Tanaman Holtikultura. 2020. Laporan Kinerja Direktorat Jenderal Hortikultura Tahun 2016 Kementerian Pertanian (Kementan). 2016. *Outlook Komoditas Pertanian Sub Sektor Holtikultura*. Pusat Data dan Sistem informasi Pertanian, Jakarta, 5(1).
- Dmitruk, M., Sulborska, A., Żuraw, B., Stawiarz, E., & Weryszko-Chmielewska, E.. 2019. Sites of secretion of bioactive compounds in leaves of *Dracocephalum moldavica* L.: anatomical, histochemical, and essential oil study. *Revista Brasileira de Botanica*, 42(4): 701–715. Doi: 10.1007/s40415-019-00559-6
- Dorly, B. A. Wiryo, I. Nurfaizah, dan R. R. S. Nidyasari. 2015. Struktur Sekretori dan Uji Histokimia Tumbuhan Obat Anggota Suku Asteraceae di Hutan Pendidikan Gunung Walat. *Semnas Pendidikan Biologi*, hal. 667-673.
- Fattah, A. dan Ilyas, A. 2016. Siklus Hidup Ulat Grayak (*Spodoptera exigua*, F) dan Tingkat Serangan pada Beberapa Varietas Unggul Kedelai di Sulawesi Selatan. *Prosiding Seminar Nasional Inovasi Teknologi Pertanian*: 834-842.
- Feng, H., C. Gou, D. Aimaiti, P. Sun, L. Wang, and H. Hao. 2022. Plant volatile organic compounds attractive to *Lygus pratensis*. *Open Life Sciences*, 17: 362-371.
- Fillianty, F., E. Noor, P. Suryadarma, dan I. Yuliasih. 2021. Eksplorasi Potensi Akar *Millettia sericea* sebagai Sumber Antioksidan Alami. *Teknotan*, 15 (2): 119-124.
- Firdausi, A., T. A., Siswoyo, dan S. Wiryadiputra. 2013. Identifikasi tanaman potensial penghasil tanin-protein kompleks untuk penghambatan aktivitas α -amylase kaitannya sebagai pestisida nabati. *Pelita Perkebunan*, 29(1), 31–43.



- Gautam, V., S. K. Kohli, S. Arora, R. Bhardwaj, M. Kazi, A. Ahmad, M. Raish, M. A. Ganaie, and P. Ahmad. 2018. Antioxidant and Antimutagenic Activities of Different Fractions from the Leaves of *Rhododendron arboreum* Sm. and Their GC-MS Profiling. *Molecules*, 23(9): 2239.
- Gitahi, S. M., M. P. Ngugi, D. N. Mburu, and A. K. Machoho. 2021. Contact Toxicity Effects of Selected Organic Leaf Extracts of *Tithonia diversifolia* (Hemsl.) A. Gray and *Vernonia lasiopus* (O. Hoffman) against *Sitophilus zeamais* Motschulsky (Coleoptera: Curculionidae). *International Journal of Zoology*, 2021: 1-14.
- Gopalakrishnan, V., & Vadlamudi, S. 2021. Biopesticides in Sustainable Agriculture: Recent Developments and Future Prospects. In Biopesticides for Sustainable Agriculture (pp. 1-22). Springer.
- Handa, S. S., S. P. S. Khanuja, G. Longo, D. D. Rakesh. 2008. *Extraction Technologies for Medicinal and Aromatic Plants*. ICS-UNIDO. Trieste, p. 25.
- Hassanin, M. M., M. F. Tolba, M. G. Tadros, M. M. Elmazar, and A. SIngab. 2019. Wogonin a Promising Component of *Scutellaria baicalensis*: A Review on its Chemistry, Pharmacokinetics, and Biological Activities. *Archives of Pharmaceutical Sciences Ain Shams University*, 3(2):170-179
- Hastuti, D., A. Syailendra, N. I. Muztahidin. 2016. Patogenesitas spodoptera exigua nucleo polyhedro virus untuk mengendalikan hama ulat grayak (spodoptera exigua hubn) di pertanaman bawang merah (*Allium ascalonicum*) secara in vitro. *Jur.Agroekotek*, 8 (2): 154 – 164.
- Hasyim, A., W. Setiawati, L. Lukman, dan L. S. Marhaeni. 2019. Evaluasi Konsentrasi Lethal dan Waktu Lethal Insektisida Botani Terhadap Ulat Bawang (*Spodoptera exigua*) di Laboratorium. *J. Hort.*, 29 (1): 69-80.
- Hotmian, E., E. Suoth, Fatimawali, dan T. Tallei. 2021. GC-MS (gas chromatography - mass spectrometry) analysis of nut grass tuber (*Cyperus rotundus* L.) Methanolic extract. *Pharmacon*, 10 (2): 849-857.
- Hubschmann, H. 2015. Handbook of GC-MS. Wiley-VCH. New York, p. 7.
- Hussein and Al-Ansarry. 2018.



- Ilmiah, H. H., Nuringtyas, T. R. and Nugroho, L. H. 2018. Accumulation of potential photo-protective compound groups in mangrove (*sonneratia caseolaris* (L.) engler.) leaves. *Pharmacognosy Journal*, 10(3): 576–580.
- Insecticide Resistance Action Committee (IRAC). 2012. *Strategies for Sustainable Control of Beet Armyworm, Spodoptera exigua*. (Online: www.irac-online.org. Diakses pada 9 Januari 2023).
- Isman, M. B. 2006. Botanical insecticides, deterrents, and repellents in modern agriculture and an increasingly regulated world. *Annual Review of Entomology*, 51: 45-66.
- Isman, M. B. 2006. Botanical insecticides, deterrents, and repellents in modern agriculture and an increasingly regulated world. *Annual Review of Entomology*, 51: 45-66.
- Isman, M. B. 2008. Botanical insecticides, deterrents, and repellents: In the field and in the laboratory. In Pest Management with Natural Products (pp. 3-29). ACS Publications.
- Julianto, T. S. 2019. *Fitokimia: Tinjauan Metabolit Sekunder dan Skrining Fitokimia*. UII Press. Yogyakarta, hal. 9-15; 17-32.
- Kim, G. N., Shin, J. G., Jang, H. D. 2009. Antioxidant and antidiabetic activity of Dangyuja (*Citrus grandis* Osbeck) extract treated with *Aspergillus saitoi*. *Food Chem*, 117 (1):35-41
- Kuntorini, E. M., S. Fitriana, dan M. D. Astuti. 2013. Struktur anatomi dan uji aktivitas antioksidan ekstrak methanol daun kersen (*Muntingia calabura*). *Pros. Semirata FMIPA Univ. Lampung*, 2013; 291-297.
- Latarang, B. dan Syakur, A. 2006. Pertumbuhan dan hasil bawang merah (*Allium ascalonicum* L.) pada berbagai dosis pupuk kandang. *Jurnal Agroland*, 13 (3): 265-269.
- Lee, J. H. 2015. In-vitro evaluation for antioxidant and anti-inflammatory property of flavanone derivatives. *Food Biosci*, 11:1-7
- Lin, H. Y., Y.-H. Kuo, Y.-L. Lin, and W. Chiang. 2009. Antioxidative effect and active components from leaves of Lotus (*Nelumbo nucifera*). *Journal of Agricultural and Food Chemistry*, 57 (15): 6623–6629.

Makkar, H. P., P. Siddhuraju, and K. Becker. 2007. *Plant secondary metabolites*.

Springer.

Mangurana, W. O. I., Yusnaini, dan Sahidin. 2019. Analisis LC-MS/MS (Liquid Chromatograph Mass Spectrometry) dan Metabolit Sekunder serta Potensi Antibakteri Ekstrak n-Heksana Spons Callyspongia aerizusa yang diambil pada kondisi tutupan Terumbu Karang yang berbeda di Perairan Teluk Staring. *Jurnal Biologi Tropis*, 19(2): 131-141.

Maqsood, A., P. Qin, G. Zumin. 2020. Insecticidal activity and biochemical composition of *Citrullus colocynthis*, *Cannabis indica* and *Artemisia argyi* extracts against cabbage aphid (*Brevicoryne brassicae* L.). *Scientific Reports Nature research*, 10: 522.

Marpaung, A. E. and Roslini, R. 2019. Adaptability of Growth and Yield on 5 Varieties of Shallot (*Allium ascalonicum* L.) in Wet Highland. *Journal of Tropical Horticulture*, 2(1): 1-5.

Marsadi, D., I W. Supartha, dan A. A. A. A. S. Sunari. 2017. Invasi dan Tingkat Serangan Ulat Bawang (*Spodoptera exigua* Hübner) pada Dua Kultivar Tanaman Bawang Merah di Desa Songan, Kecamatan Kintamani, Kabupaten Bangli. *E-Jurnal Agroekoteknologi Tropika*, 6 (4): 360-370.

Maulana, A. W., D. Rochdiani, dan Sudrajat. 2020. Analisis Agroindustri Tahu. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, 7 (1): 237-243.

Mukhriani, 2014. Ekstraksi, Pemisahan Senyawa, dan Identifikasi Senyawa Aktif. *Jurnal Kesehatan*, 7 (2): 361-367.

Ngugi, M. P., D. N. Mburu, and A. K. Machocho. 2021. Contact Toxicity Effects of Selected Organic Leaf Extracts of *Tithonia diversifolia* (Hemsl.) A. Gray and *Vernonia lasiopus* (O. Hoffmann) against *Sitophilus zeamais* Motschulsky (Coleoptera: Curculionidae). *International Journal of Zoology*, 21: 1-14.

Nurholis dan Saleh, I. 2019. Hubungan Karakteristik Morfofisiologi Tanaman Kersen (*Muntingia Calabura*). *Agrovigor* 12 (2): 47 – 52.

Pan L, Ren L, Chen F, Feng Y, Luo Y. 2016. Antifeedant Activity of *Ginkgo biloba* Secondary Metabolites against *Hyphantria cunea* Larvae: Mechanisms and

Applications. *PLoS ONE*, 11 (5): e0155682.

<https://doi.org/10.1371/journal.pone.0155682>

- Pawar, P., P. K. M. Baskaran, K. C. Sharma, and A. Marathe. 2023. Enhancing biocontrol potential of *Trichogramma chilonis* against borer pests of wheat and chickpea. *Iscience*, 26: 1-17.
- Poudel, S., B. Acharya, and P. Poudel. 2020. Pesticide use and its impacts on human health and environment. *Environment & Ecosystem Science*, 4(1): 47-51
- Pratima, N. A. and Gadikar, R. 2018. Liquid Chromatography-Mass Spectrometry and Its Applications: A Brief Review. *Arc Org Inorg Chem Sci*, 1(1): 26-35.
- Purcell, M. F., & Fuglie, K. O. 2012. The potential for developing insect-resistant soybeans in the United States. *AgBioForum*, 15(3): 213-220.
- Puspitasari, A. M. Kiloes, Hardiyanto, and A. Sulistyaningrum. 2019. Farmer's behavior in using pesticides on shallots cultivation in Solok Highlands, West Sumatera. *IOP Conf. Series: Earth and Environmental Science*, 399 (2019). doi:10.1088/1755-1315/399/1/012116.
- Putri, A. A. 2016. pengaruh pemberian ekstrak daun kersen (*Muntingia calabura*) terhadap lalat buah *Bactrocera carambolae*. *Journal of Biology*, 9(2): 139-144.
- Putri, D. A. 2016. Pengaruh pemberian ekstrak daun kersen (*muntingia calabura*) terhadap lalat buah *Bactrocera carambolae*. *Journal of Biology*, 9 (2): 139-143.
- Raman, V, S. La, P. Saradhi, N. Rao, N.V.Krishna, Sudhakar, and Radhakrishnan. 2015. Antibacterial, Antioxidant Activity And Gc-Ms Analysis Of *Eupatorium Odoratum*. *Asian Journal of Pharmaceutical and Clinical Research*, 5 (2): 99-106.
- Regnault-Roger, C., Vincent, C., & Arnason, J. T. (2012). Essential oils in insect control: Low-risk products in a high-stakes world. *Annual Review of Entomology*, 57: 405-424.
- Ruttanaphan, T., Pluempanupat, W., Aungsirisawat, C., Boonyarat, P., Goff, G. L., and Bullangpoti, V. 2019. Effect of Plant Essential Oils and Their Major



- Constituents on Cypermethrin Tolerance Associated Detoxification Enzyme Activities in *Spodoptera litura* (Lepidoptera: Noctuidae). *Journal of Economic Entomology*, 112(5): 2167–2176. doi: 10.1093/jee/toz126.
- Ryu, J., J. I. Lyu, D. Kim, J. Kim, Y. D. Jo, S. Kang, J. Kim, J. Ahn, and S. H. Kim. 2020. Comparative Analysis of Volatile Compounds of Gamma-Irradiated Mutants of Rose (*Rosa hybrida*). *Plants*, 9 (1221): 1-15.
- Sahrifi-Rad, J., J. Herrera-Bravo, L. A. Salazar, S. Shaheen, S. A. Ayatollahi, F. Kobarfard, M. Imran, Ali Imran, L. Custo' dio, M. Dolores Lo' pez, M. Schoebitz, M. M. M. Kumar , H. A. R. Suleria, and W. C. Cho. 2021. The Therapeutic Potential of Wogonin Observed in Preclinical Studies. *Evidence-Based Complementary and Alternative Medicine*, 2021: 1-9.
- Schmutterer, H. 1990. Properties and potential of natural pesticides from the neem tree, *Azadirachta indica*. *Annual Review of Entomology*, 35: 271-297.
- Schoonhoven, L. M., J. J. A. van Loon, and M. Dicke. 2005. *Insect Plant Biology*. Oxford University Press.
- Sereflioglu S, Dinler BS, Tasci E. 2017. Alpha-tocopherol-dependent salt tolerance is more related with auxin synthesis rather than enhancement antioxidant defense in soybean roots. *Acta Biol Hung* 68:115–125. <https://doi.org/10.1556/018.68.2017.1.10>
- Shahid, I., M. Rizwan, and S. Menhaz. 2018. Identification and Quantification of Secondary Metabolites by LC-MS from Plant-associated *Pseudomonas aurantiaca* and *Pseudomonas chlororaphis*. *Bio-protocol*, 8 (2): 1-12.
- Shelton, A. M., Badenes-Pérez, F. R., & Zhang, J. (2006). Interactions among transgenic *Bacillus thuringiensis* maize, insecticides, and the European corn borer, *Ostrinia nubilalis*. *Environmental Entomology*, 35(6): 1436-1442.
- Sotubo, S. E., O. A. Lawal, A. A. Osunsami, and I. A. Ogunwande. 2016. Constituents and Insecticidal Activity of *Deinbollia pinnata* Essential Oil. *Natural Product Communications*. 11 (12): 1889-1891.
- Straten, M. Vossenberg, B. V., and Germain, J. 2015. PM 7/124 (1) *Spodoptera littoralis*, *Spodoptera litura*, *Spodoptera frugiperda*, *Spodoptera eridania*. *Bulletin*, 45 (3): 410-444.



- Suswadi, S. and Prasetyo, A. 2019. Factors affecting the income of organic shallot farmers in Boyolali Regency. *IOP Conf. Series: Earth and Environmental Science 1001* (2022) 012032. doi:10.1088/1755-1315/1001/1/012032
- Tang Y, Fu X, Shen Q, Tang K. 2016. Roles of MPBQ-MT in promoting alpha/gamma-tocopherol production and photosynthesis under high light in lettuce. PLoS ONE 11:e0148490. <https://doi.org/10.1371/journal.pone.0148490>
- Taufika, R., Sumarmi, S., & Nugroho, S. A. 2020. Efek Subletal Campuran Ekstrak Daun Srikaya (*Annona squamosa* L.) dan Rimpang Kunyit (*Curcuma domestica* Val.) terhadap Larva *Spodoptera litura* F. AGROMIX, 11(1), 66–78. <https://doi.org/10.35891/agx.v11i1.1901>
- Thakur, M., Bhattacharya, S., Khosla, P. K., & Puri, S. 2019. Improving production of plant secondary metabolites through biotic and abiotic elicitation. *Journal of Applied Research on Medicinal and Aromatic Plants*, 12: 1–12. doi: 10.1016/j.jarmap.2018.11.004.
- Tran, D. H., M. Takagi, and T. Ueno. 2017. Efficacy of the Extract from Pongam Leaves (*Pongamia pinnata* L.) Against *Spodoptera exigua* (Hübner) and *Spodoptera litura* Fabricius (Lepidoptera: Noctuidae). J. Fac. Agr., 62 (2): 439–443.
- Vandivelan, S., Jebaseelan, B. E. Jose, R. Meera, S. Manikandan, R. Kalirajan, and T. Sarojini. 2021. Phytochemical Investigation and Antimicrobial Activities of Leaf Extract of *Muntingia calabura* LinnInt. J. Pharm. Sci. Res. Res., 69(2): 42-46.
- Zahara, M. dan Suryady. 2018. Kajian Morfologi dan Review Fitokimia Tumbuhan Kersen (*Muntingia calabura* L.). *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 5 (2): 69-76.
- Zhang, J. F., Chen, L., Huang, S., Shan, L. H., Gao, F., & Zhou, X. L. 2017. Diterpenoid Alkaloids from Two *Aconitum* Species with Antifeedant Activity against *Spodoptera exigua*. *Journal of Natural Products*, 80(12): 3136–3142.