Analisis residu fitokimia pada keong mas dari penelitian sebelumnya dengan aplikasi moluskisida sedian ekstrak etanol daun rambutan, agave angustifolia dan jambu mete, ditemukan bahwa terdapat senyawa yang dimiliki oleh salah satu jenis moluskisida namun tidak dimiliki jenis moluskisida lain sehingga efikasinya berbeda. Kombinasi moluskisida yang menggabungkan tiga jenis moluskisida nabati ini menghasilkan suatu moluskisida yang memiliki kandungan senyawa fitokimia lengkap yang dapat meyebabkan mortalitas pada keong mas.

4.5. Kesimpulan

Kombinasi moluskisida tepung daun agave angustifolia, jambu mete dan rambutan dengan perbandingan 1:1:1, 2:1:1, 1:2:1, dan 1:1:2 menunjukan efikasi yang tinggi dalam menekan populasi keong mas. Mortalitas pada keong mas yang diakibatkan empat jenis kombinasi moluskisida tidak berbeda nyata. Hal ini menunjukkan bahwa empat jenis kombinasi moluskisida memiliki efikasi yang sama dalam menekan populasi keong mas. Semua tingkatan konsentrasi dalam 24 jam paparan mampu menyebabkan mortalitas diatas 50% terhadap keong mas dan dalam 36 jam paparan semua konsentrasi moluskisida pada empat jenis kombinasi moluskisida menyebabkan mortalitas100%. Kombinasi moluskisida yang memiliki nilai LT50 dan LT90 terendah adalah Kombinasi moluskisida 1:1;1 konsentrasi 1,00 gr/L yaitu LT50 13,67 Jam dan LT90 17,13 jam.

DAFTAR PUSTAKA

Aziz, N. A., Abdullah, N. S., Harun, A., & Alias, S. A. M. (2021). The molluscicidal effect of the stem extracts of tinospora crispa in controlling the golden apple snail pomacea canaliculata. *Jurnal Teknologi*, *83*(6). https://doi.org/10.11113/JURNALTEKNOLOGI.V83.16779

Bakar, T. H. S. T. A., Idayu, N. M. Y. N. N., Suhana, Z., Sidek, N., Mukhtar, N. K., Azmin, S. N. H. M., & Jusoh, M. Z. (2022). The Effectiveness of Natural Plant Powder in Controlling Rice Weevils (Sitophilus oryzae). *IOP Conference Series: Earth and Environmental Science*, *1102*(1). https://doi.org/10.1088/1755-1315/1102/1/012003

Bermúdez-Bazán, M., Castillo-Herrera, G. A., Urias-Silvas, J. E., Escobedo-Reyes, A., & Estarrón-Espinosa, M. (2021). Hunting bioactive molecules from the agave genus: An update on extraction and biological potential. In *Molecules* (Vol. 26, Issue 22). https://doi.org/10.3390/molecules26226789

Brito, F. C. de, Gosmann, G., & Oliveira, G. T. (2019). Extracts of the unripe fruit of Ilex paraguariensis as a potential chemical control against the golden apple snail Pomacea canaliculata (Gastropoda, Ampullariidae). *Natural Product Research*, *33*(16). https://doi.org/10.1080/14786419.2018.1443084

Buddie, A. G., Rwomushana, I., Offord, L. C., Kibet, S., Makale, F., Djeddour, D., Cafa, G., Vincent, K. K., Muvea, A. M., Chacha, D., & Day, R. K. (2021). First report of the invasive snail *Pomacea canaliculata* in Kenya. *CABI Agriculture and Bioscience*, *2*(1), 11. https://doi.org/10.1186/s43170-021-00032-z

Chiu, Y. W., Wu, J. P., Hsieh, T. C., Liang, S. H., Chen, C. M., & Huang, D. J. (2014). Alterations of biochemical indicators in hepatopancreas of the golden apple snail, pomacea canaliculata, from paddy fields in Taiwan. *Journal of Environmental Biology*, *35*(4).

Costa, A. R., Silva, J. R. de L., de Oliveira, T. J. S., da Silva, T. G., Pereira, P. S., Borba, E. F. de O., de Brito, E. S., Ribeiro, P. R. V., Almeida-Bezerra, J. W., Júnior, J. T. C., de Menezes, I. R. A., Kamdem, J. P., Duarte, A. E., & Barros, L. M. (2020). Phytochemical profile of Anacardium occidentale L. (cashew tree) and the cytotoxic and toxicological evaluation of its bark and leaf extracts. *South African Journal of Botany*, *135*. https://doi.org/10.1016/j.sajb.2020.09.017

Dao, T. P., Nguyen, D. V., Tran, T. Y. N., Pham, T. N., Nguyen, P. T. N., Bach, L. G., Nguyen, V. H., Do, V. Q., Nguyen, V. M., & Tran, T. T. (2021). Effects of tannin, ascorbic acid, and total phenolic contents of cashew (Anacardium occidentale L.) apples blanched with saline solution. *Food Research*, *5*(1), 409–416. https://doi.org/10.26656/fr.2017.5(1).454

de Brito, F. C., & Joshi, R. C. (2016). The golden apple snail pomacea canaliculata: A review on invasion, dispersion and control. In *Outlooks on Pest Management* (Vol. 27, Issue 4, pp. 157–163). Research Information Ltd. https://doi.org/10.1564/v27_aug_03

Desai, S. D., Desai, D. G., & Kaur, H. (2009). Saponins and their biological activities. *Pharma Times*, *41*(3).

Dougnon, T. V., Hounsa, E., Agbodjento, E., Koudokpon, H., Legba, B., Fabiyi, K., Afaton, A., Sintondji, K., Akpode, B., Klotoé, J. R., Tchobo, F., Bankole, H., & Dougnon, T. J. (2021). Toxicological Characterization of Ten Medicinal Plants of the Beninese Flora Used in the Traditional Treatment of Diarrheal Diseases. *Evidence-Based Complementary and Alternative Medicine*, *2021*. https://doi.org/10.1155/2021/6676904

Gao, J., Yang, C., Zhang, Z., Liu, Z., & Jeppesen, E. (2021). Effects of co-occurrence of invading Procambarus clarkii and Pomacea canaliculata on Vallisneria denseserrulata-dominated clear-water ecosystems: A mesocosm approach. *Knowledge and Management of Aquatic Ecosystems*, *2021-Janua*(422). https://doi.org/10.1051/kmae/2021029

Hoekstra, J. A. (1987). Acute bioassays with control mortality. *Water, Air, and Soil Pollution*, *35*(3–4). https://doi.org/10.1007/BF00290938

Horgan, F. G., Nogues Palenzuela, A., Stuart, A. M., Naredo, A. I., Ramal, A. F., Bernal, C. C., & Almazan, M. L. P. (2017). Effects of silicon soil amendments and nitrogen fertilizer on apple snail (Ampullariidae) damage to rice seedlings. *Crop Protection*, *91*, 123–131. https://doi.org/10.1016/j.cropro.2016.10.006

Horgan, F. G., Zhu, Q., Portalanza, D. E., & Felix, M. I. (2021). Costs to Ecuador's rice sector during the first decade of an apple snail invasion and policy recommendations for regions at risk. *Crop Protection*, *148*.

https://doi.org/10.1016/j.cropro.2021.105746

Huang, H.-C., Liao, S.-C., Chang, F.-R., Kuo, Y.-H., & Wu, Y.-C. (2003). Molluscicidal Saponins from Sapindus mukorossi, Inhibitory Agents of Golden Apple Snails, Pomacea canaliculata. *Journal of Agricultural and Food Chemistry*, *51*(17), 4916–4919. https://doi.org/10.1021/jf0301910

Huang, H. C., Liao, S. C., Chang, F. R., Kuo, Y. H., & Wu, Y. C. (2003). Molluscicidal saponins from Sapindus mukorossi, inhibitory agents of golden apple snails, Pomacea canaliculata. *Journal of Agricultural and Food Chemistry*, *51*(17), 4916–4919. https://doi.org/10.1021/jf0301910

Idris, H., Nurmansyah, Gustia, H., & Ramadhan, A. I. (2020). The potential of essential oil as botanical molluscicide for controlling golden apple snail (Pomacea canaliculata, lamarck) in Indonesia. *Journal of Critical Reviews*, *7*(13). https://doi.org/10.31838/jcr.07.13.159

Joshi, R. C., San Martín, R., Saez-Navarrete, C., Alarcon, J., Sainz, J., Antolin, M. M., Martin, A. R., & Sebastian, L. S. (2008). Efficacy of quinoa (Chenopodium quinoa) saponins against golden apple snail (Pomacea canaliculata) in the Philippines under laboratory conditions. *Crop Protection*, *27*(3–5). https://doi.org/10.1016/j.cropro.2007.08.010

Marwoto, R. M., Isnaningsih, R. N., & Joshi, R. C. (2018). fentin. *Agriculture for Development*, *35*(January 2017).

Mugford, S. T., & Osbourn, A. (2013). Saponin synthesis and function. In *Isoprenoid Synthesis in Plants and Microorganisms: New Concepts and Experimental Approaches*. https://doi.org/10.1007/978-1-4614-4063-5_28

Osman, W. N. A. W., Selvarajah, D., & Samsuri, S. (2021). Saponin stabilization via progressive freeze concentration and sterilization treatment. *Molecules*, *26*(16). https://doi.org/10.3390/molecules26164856

Pablico, P. P., & Moody, K. (1991). Effect of fentin acetate on wet-seeded rice, Pistia stratiotes and Azolla pinnata. *Crop Protection*, *10*(1). https://doi.org/10.1016/0261-2194(91)90024-L

Pereira, G. M., Ribeiro, M. G., da Silva, B. P., & Parente, J. P. (2017). Structural characterization of a new steroidal saponin from Agave angustifolia var. Marginata and a preliminary investigation of its in vivo antiulcerogenic activity and in vitro membrane permeability property. *Bioorganic and Medicinal Chemistry Letters*, *27*(18). https://doi.org/10.1016/j.bmcl.2017.08.026

Pérez-Méndez, N., Alcaraz, C., Bertolero, A., Català-Forner, M., Garibaldi, L. A., González-Varo, J. P., Rivaes, S., & Martínez-Eixarch, M. (2022). Agricultural policies against invasive species generate contrasting outcomes for climate change mitigation and biodiversity conservation. *Proceedings of the Royal Society B: Biological Sciences*, *289*(1985). https://doi.org/10.1098/rspb.2022.1081

Rejab, M. R. M., Manam, N. K. A., Fauzi, N. S., Mohamed, S., & Ngah, N. (2023). The effectiveness of Furcraea plants in controlling golden apple snail and their effects on the non-target organism at the rice field. *Asian Journal of Agriculture and Biology*, *2023*(1). https://doi.org/10.35495/ajab.2021.04.164

Retnowati, Y., & Katili, A. S. (2021). Identification of fermentative bacteria on local microorganisms of golden snail (Pomacea canaliculata lamarck, 1822). *Biodiversitas*, *22*(2), 778–784. https://doi.org/10.13057/biodiv/d220231

Rohmatin Isnaningsih, N., Ristiyanti Marwoto, dan M., & Penelitian Biologi-, P. (2011). KEONG HAMA Pomacea DI INDONESIA: KARAKTER MORFOLOGI DAN SEBARANNYA(MOLLUSCA, GASTROPODA: AMPULLARIIDAE) 1 [Snail Pest of Pomacea in Indonesia: Morphology and Its Distribution (Mollusca, Gastropoda: Ampullariidae)]. In *Berita Biologi* (Vol. 10, Issue 4).

Roonjho, A. R., Muhamad, R., & Omar, D. (2021). Determination of lethal and feeding deterrent activities of saponin from phaleria macrocarpa against pomacea maculata. *Journal of Animal and Plant Sciences*, *31*(4), 1070–1077. https://doi.org/10.36899/JAPS.2021.4.0304

Rusli, R., Gani, S., & Hutasoit, R. T. (2018). Preferensi Dan Tingkat Serangan Keong Mas (Pomaceae canaliculata Lamarck) Terhadap Beberapa Varietas Padi (Oryza sativa Linnaeus). *JPT: Jurnal Proteksi Tanaman*, *1*(1).

Rusli, R., Hidrayani, & Putra, R. E. (2023). Golden apple snail management (Pomacea canaliculata Lamarck) using integrated pest management (IPM) and non-integrated pest management (non-IPM) on paddy cultivation. *IOP Conference Series: Earth and Environmental Science*, *1160*(1). https://doi.org/10.1088/1755-1315/1160/1/012048

Saad, N. M., Teo, C. H., Rahman, Z. A., & Zainal, Z. (2023). Constitutive Expression of Cyclotide Kalata B1 Gene in Transgenic Rice Conferring Resistance to Golden Apple Snail (Pomacea canaliculata). *Malaysian Applied Biology*, *52*(3), 59–72. https://doi.org/10.55230/mabjournal.v52i3.2670

San Martín, R., Ndjoko, K., & Hostettmann, K. (2008). Novel molluscicide against Pomacea canaliculata based on quinoa (Chenopodium quinoa) saponins. *Crop Protection*, *27*(3–5). https://doi.org/10.1016/j.cropro.2007.03.015

Santi, I. S., Kurniawan, I., & Manto, A. (2024). Cashew Nut Shell Liquid (Anacardium occidentale) as a Botanical Insecticide to Control Helopeltis sp on Cocoa plants. *Tropical Plantation Journal*, *3*(1). https://doi.org/10.56125/tpj.v3i1.38

Schneiker, J., Weisser, W. W., Settele, J., Nguyen, V. S., Bustamante, J. V., Marquez, L., Villareal, S., Arida, G., Chien, H. Van, Heong, K. L., & Türke, M. (2016). Is there hope for sustainable management of golden apple snails, a major invasive pest in irrigated rice? *NJAS - Wageningen Journal of Life Sciences*, *79*, 11–21. https://doi.org/10.1016/j.njas.2016.07.001

Shen, X., Wang, Z., Liu, L., & Zou, Z. (2018). Molluscicidal activity of Solidago canadensis L. extracts on the snail Pomacea canaliculata Lam. *Pesticide Biochemistry and Physiology*, *149*. https://doi.org/10.1016/j.pestbp.2018.06.009

Singh, B., Sharma, D. K., Kumar, R., & Gupta, A. (2010). Development of a new controlled pesticide delivery system based on neem leaf powder. *Journal of Hazardous Materials*, *177*(1–3). https://doi.org/10.1016/j.jhazmat.2009.12.031

Sujono, T. A., Kamilia, D., & Kinasih, A. S. (2023). Immune-Enhancing Effect of Ethanol Extract of Rambutan (Nephelium lappaceum L.) Fruit Peel on phagocytosis index, Paw Edema Formation, and Antibody Titer in Mice. *Tropical Journal of Natural Product Research*, *7*(9), 4038–4042. https://doi.org/10.26538/tjnpr/v7i9.28

Yang, C. P., Zhang, M., Lei, B., Gong, G. S., Yue, G. Z., Chang, X. L., Sun, X. F., Tian, Y., & Chen, H. B. (2017). Active saponins from root of Pueraria peduncularis (Grah. ex Benth.) Benth. and their molluscicidal effects on Pomacea canaliculata. *Pest Management Science*, *73*(6). https://doi.org/10.1002/ps.4432

Yang, C., Zhou, Y., Wu, C., Yan, X., Cheng, P., Luo, L., Qiu, X., Zhang, M., Qin, G., Zhang, Y., & Chen, H. (2022). Study on the Synergistic Molluscicidal Effect of Pedunsaponin A and Niclosamide. *Molecules*, *27*(21). https://doi.org/10.3390/molecules27217623

Yin, Y., He, Q., Pan, X., Liu, Q., Wu, Y., & Li, X. (2022). Predicting Current Potential Distribution and the Range Dynamics of Pomacea canaliculata in China under Global Climate Change. *Biology*, *11*(1). https://doi.org/10.3390/biology11010110

Yu, Z. L., Yang, M. J., Song, H., Zhang, T., & Yuan, X. T. (2023). Gastropod chemoreception behaviors—Mechanisms underlying the perception and location of targets and implications for shellfish fishery development in aquatic environments. In *Frontiers in Marine Science* (Vol. 9). https://doi.org/10.3389/fmars.2022.1042962

BAB V
EFIKASI MOLUSKISIDA FORMULASI PELLET DAUN AGAVE ANGUSTIFOLIA, DAUN JAMBU METE DAN DAUN RAMBUTAN UNTUK MENEKAN POPULASI HAMA KEONG MAS *Pomacea canaliculata* (GASTROPODA: AMPULLARIIDAE) PADA TANAMAN PADI

ABSTRAK

Latar belakang. Pengendalian keong mas banyak dilakukan oleh petani dengan menggunakan moluskisida sintetis. Penggunaan bahan alami dalam mengendalikan keong mas tidak banyak dipilih oleh petani karena cara aplikasinya yang kurang praktis. **Tujuan.** Penelitian ini bertujuan mengkaji efikasi formulasi pellet moluskisida daun Agave Angustifolia, Jambu Mete dan daun rambutan terhadap mortalitas keong mas. **Metode:** Penelitian dibagi dalam tiga tahap, yakni: 1). Persiapan keong mas yaitu menggunakan keong mas stadia dewasa diameter 2-3 cm yang diambil dari persawahan. 2). Persiapan Moluskisida tepung daun dengan mengeringkan daun menggunakan *food dehidrator* dan pembuatan tepung daun 100 mesh menggunakan mesin grinder. 3). Pembuatan moluskisida pellet. 4). Bioassay moluskisida pellet dalam bentuk Rancangan Acak Kelompok menggunakan satuan percobaan bedengan sawah 2 m x 2 m x 10 cm. Setiap bedengan ditanami 100 rumpun padi dan diintroduksi 24 ekor keong mas.. **Hasil**. Formulasi pellet dengan bahan pembawa berupa kompos dan sekam bakar padi yang telah ditepungkan, tidak menghambat efikasi moluskisida pellet. Moluskisida formulasi pellet daun agave angustifolia, jambu mete dan rambutan dapat menekan populasi hama keong mas. Moluskisida formulasi pellet bahan alami tanaman tersebut mampu menyebabkan mortalitas 100% pada 36 jam paparan. Intensitas serangan pada tanaman padi hanya terjadi pada kontrol yang tidak dilakukan aplikasi moluskisida pellet. **Kesimpulan**. Moluskisida pellet dari daun agave angustipolia, jambu mete, dan daun rambutan mampu menekan populasi hama keong mas. Formulasi pellet dengan bahan pembawa berupa kompos dan sekam bakar padi yang telah ditepungkan, tidak menghambat efikasi moluskisida pellet.

Kata kunci: Moluskisida Pellet, Pomacea canaliculata, Moluskisida nabati, agave angustifolia, jambu mete, rambutan

5.1. Pendahuluan

Keong mas (*Pomacea canaliculata* L.) merupakan salah satu hama utama pada tanaman padi (Pérez-Méndez et al., 2022; Roonjho et al., 2021; Saad et al., 2023; Yin et al., 2022). Serangan keong mas terhadap tanaman padi terjadi di berbagai negara seperti China, Filipina, India, Brunei, Kamboja, Laos, Malaysia, Myanmar, Amerika Serikat, Brazil, Jepang, Kenya, Thailand, Vietnam, Indonesia dan beberapa negara lainnya (Buddie et al., 2021; de Brito & Joshi, 2016; Horgan et al., 2021; Marwoto et al., 2018; Saad et al., 2023; Yin et al., 2022). Hama ini merupakan spesies paling invasif pada perairan air tawar dan persawahan dan dapat menyebabkan kerusakan parah pada tanaman padi (Gao et al., 2021; Retnowati & Katili, 2021; Roonjho et al., 2021). Keong mas merusak dengan memakan daun dan batang bibit padi muda yang baru ditanam hingga tiga minggu setelah tanam, yang mengakibatkan kematian pada tanaman padi (Buddie et al., 2021; Horgan et al., 2017; Rusli et al., 2023)

Diasumsikan tidak ada varietas padi yang tahan terhadap serangan keong mas (Rusli et al., 2018; Saad et al., 2023). Kerugian tahunan yang disebabkan oleh serangan keong mas di berbagai negara Asia Tenggara dan di luar Asia Tenggara diperkirakan mencapai USD 35 miliar dan tidak termasuk kerusakan lingkungan (de Brito & Joshi, 2016; Rejab et al., 2023). Keong mas mengakibatkan petani harus melakukan penanaman ulang di daerah dengan populasi keong mas yang tinggi sehingga biaya produksi yang dikeluarkan petani menjadi lebih tinggi (Rusli et al., 2023).

Berbagai langkah pengendalian keong mas ramah lingkungan telah dilakukan oleh petani. Pengendalian dengan langsung memungut keong mas dan kelompok telur, dan menggunakan bebek sebagai musuh alami (Rejab et al., 2023). Pengendalian juga dilakukan dengan mengatur ketinggian air, memasang jaring di saluran irigasi di sawah, dan menanam bibit padi tua atau batang yang mengeras (Horgan et al., 2017). Namun, hal itu dinilai kurang praktis oleh petani, dan serangan keong mas terhadap tanaman padi juga masih tinggi. Teknik pengendalian seperti ini membutuhkan lebih banyak tenaga kerja, waktu yang lama, dan biaya yang tinggi (Osman et al., 2021).

Sulitnya pengendalian keong mas membuat petani memilih pestisida sintetis untuk melindungi tanaman padi (Idris et al., 2020; Schneiker et al., 2016). Niclosamide dan metaldehyde adalah moluskisida sintetis yang paling umum digunakan yang efektif mengendalikan keong mas (Joshi et al., 2008; C. Yang et al., 2022). Namun, bahan kimia ini digunakan secara sewenang-wenang, sehingga menyebabkan pencemaran lingkungan dan mematikan organisme non-target (Chiu et al., 2014; Singh et al., 2010) Oleh karena itu, penggunaannya harus dibatasi atau diganti dengan bahan kimia alami tanaman (Bakar et al., 2022; Saad et al., 2023)

Bahan alami tanaman yang telah diteliti sebagai pengendali keong mas seperti tanaman lantana camara (Roonjho et al., 2021), (Roonjho et al., 2021)tanaman Furcraea (Rejab et al., 2023), Pueraria peduncularis (C. P. Yang et al., 2017), phaleria macrocarpa *(Roonjho et al., 2021) dan* (C. P. Yang et al., 2017) (Huang et al.(Roonjho et al., 2021) *,* 2003) yang dapat menyebabkan kematian pada keong mas. (H. C. Huang et al., 2003) Namun, karena bahan nabati ini sulit ditemukan dan jumlahnya terbatas, maka petani di Indonesia kurang tertarik untuk menggunakannya. Beberapa jenis tanaman berlimpah ketersediaannya dan mengandung metabolit sekunder potensial untuk mengendalikan keong mas. Tanaman *Agave angustifolia var. marginata*, jambu mete (*Anacardium occidentale),* dan rambutan *(Nephelium lappaceum*) mengandung metabolit sekunder seperti saponin, tanin dan flavonoid, alkaloid (Dao et al., 2021; Dougnon et al., 2021; Pereira et al., 2017; Sujono et al., 2023). Penelitian sebelumnya yang kami laksanakan menemukan bahwa ekstrak etanol daun rambutan mengandung senyawa fitokimia toksik terhadap keong keong mas berupa n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Phytol ($C_{20}H_{40}O$), Linoleic Acid ($C_{18}H_{32}O_2$), Octadecanoic acid ($C_{18}H_{36}O_2$) dan Docosahexaenoic acid methyl ester ($C_{23}H_{34}O_2$). Senyawa fitokimia toksik yang terkandung dalam agave angustifolia penyebab mortalitas pada keong mas adalah Hexadecanoic acid, methyl ester ($C_{17}H_{34}O_2$), n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Octadecanoic acid ($C_{18}H_{36}O_2$), Squalene ($C_{30}H_{50}$). Senyawa fitokimia toksik yang terkadung dalam ekstrak etanol daun jambu mete penyebab mortalitas pada keong mas adalah 2-Methoxy-4-vinylphenol ($C_9H_{10}O_2$), Hexadecanoic acid, methyl ester ($C_{17}H_{34}O_2$), n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Phytol ($C_{20}H_{40}O$), OCTADECANOIC ACID ($C_{18}H_{36}O_2$). Senyawa fitokimia toksik dari ekstrak etanol daun rambutan yang tidak terdapat pada moluskisida ekstrak etanol jambu mete maupun agave angustifolia adalah Linoleic Acid (C18H32O2) dan 4,7,10,13,16,19-Docosahexaenoic acid, methyl ester ($C_{23}H_{34}O_2$).

Penelitian sebelumnya menemukan bahwa moluskisida daun agave angustifolia, jambu mete dan rambutan dalam bentuk sediaan tepung daun dan sediaan ekstrak etanol mampu menyebabkan mortalitas pada keong mas. Namun belum ada penelitian tentang pemanfaatan bahan nabati tersebut dalam bentuk formulasi pellet. Penelitian ini bertujuan untuk mengetahui efikasi moluskisida formulasi pellet dari daun Agave angustifolia, daun jambu mete, dan daun rambutan sebagai penekan populasi keong mas. Penelitian ini akan menjadi dasar untuk menghasilkan teknologi pengendalian keong mas yang ramah lingkungan berupa moluskisida nabati formulasi pellet yang efektif mengendalikan keong mas dan mudah diadopsi oleh petani. Penelitian ini juga akan berkontribusi pada pengurangan pencemaran lingkungan akibat penggunaan moluskisida sintetis. Belum ada penelitian sebelumnya yang menggunakan ketiga jenis bahan nabati ini untuk mengendalikan keong mas dalam bentuk formulasi pellet. Oleh karena itu, diperlukan penelitian untuk mengetahui kemampuan moluskisida formulasi pellet Agave angustifolia, daun jambu mete, dan daun rambutan dalam mengendalikan keong mas.

5.2. Metode

5.2.1. Tempat dan Waktu

Penelitian ini dilaksanakan di laboratorium Agroteknologi Fakultas Pertanian Universitas Muhammadiyah Makassar. Lokasi pengambilan daun tanaman serta keong mas dan pelaksanaan percobaan lapangan dilakasanakan di Kelurahan Parang luara Kecamatan Polongbangkeng Utara Kabupaten Takalar. Pada daerah ini pertanaman padi banyak diserangan oleh hama keong mas. Didaerah ini pula banyak ditemukan tanaman agave angustifolia, jambu mete dan tanaman rambutan. Percobaan lapangan Penelitian dilaksanakan selama 2 bulan dari bulan Mei – Juni 2023.

5.2.2. Persiapan Keong Mas

Keong mas yang digunakan adalah keong mas stadia dewasa dengan kisaran diameter 2-3 cm . Sebanyak 500 ekor keong mas diambil dari lahan sawah di lingkungan Jenetallasa Kelurahan Parangluara Kecamatan Polombangkeng Utara Kabupaten Takalar. Keong mas disimpan dalam kolam atau petak penampungan dan diberikan pakan berupa daun gamal.

5.2.3. Persiapan Moluskisida Tepung Daun Tanaman

Daun Tanaman yang digunakan adalah daun rambutan, daun agave angustifolia dan daun jambu mete. Daun rambutan dan daun jambu mete yang digunakan adalah daun berwarna hijau tua. Sedangkan daun agave yang digunakan adalah daun yang dekat dengan pangkal batang. Sebanyak 2 kg dari masing – masing jenis daun diambil dan selanjutnya dibersihkan dari debu dengan cara dilap menggunakan kain kering. Selanjutnya dipotong kecil menggunakan cutter atau gunting. Daun yang telah dipotong kecil dikeringkan menggunakan food dehidrator pada suhu 50^0C selama 7 jam. Daun yang telah kering selanjutnya ditepungkan menggunakan mesin grinder selama 5 menit. Tepung daun selanjutnya disaring menggunakan saringan 100 mesh (0,15 mm). Masing - masing tepung daun disimpan dalam toples kaca dan dihindarkan dari paparan cahaya matahari.

5.2.4. Persiapan Moluskisida Formulasi Pellet

Moluskisida sediaan tepung daun sebagai bahan aktif ditambahkan dengan bahan pembawa berupa kompos dan sekam bakar yang sudah ditepungkan dan diayak dengan saringan 100 mesh (Sriwahyuni & Parmila, 2019). Formulasi Pellet yang diproduksi mengandung bahan aktif 50%, sehingga bahan pembawa sebanyak 50%. Bahan aktif dan bahan pembawa dicampurkan dan ditambahakan sedikit air sehingga menjadi kalis. Selanjutnya dilakukan pencetakan pellet menggunakan alat penggiling daging manual yang telah dimodifikasi. Setelah moluskisida pellet terbentuk, dilanjutkan dengan pengeringan menggunakan dehidrator suhu 50^0C selama 5 jam. Moluskisida pellet yang telah kering dimasukkan dalam plastic kemasan dan disimpan pada tempat kering dan terhindar dari paparan matahari.

5.2.5. Bioassay

Percobaan dilakukan dengan rancangan acak Kelompok (RAK). Perlakuan yang diujikan terdiri dari kontrol atau tanpa moluskisida, moluskisida pellet agave angustifolia, Moluskisida jambu mete, Moluskisida rambutan, saponin dan moluskisida sintetis. Konsentrasi moluskisida pellet bahan nabati tanaman adalah mengacu pada nilai LC 90 pada percobaan efikasi moluskisida sediaan tepung daun. Konsentrasi LC 90 kemudian dikonversi menjadi dosis berdasarkan volume air pada lahan percobaan. Moluskisida agave angustifolia menggunakan konsentrasi 0,46 gr/L dan dalam bentuk pellet menjadi 18,4 gr/M^2 . Moluskisida jambu mete menggunakan konsentrasi 0,42 gr/L dan dalam bentuk pellet menjadi 16,8 gr/M^2. Moluskisida rambutan menggunakan konsentrasi 1,37 gr/L menjadi 219,2 gr/M^2. Sedangkan saponin menggunakan dosis 4 gr/M^2 dan moluskisida sintetis berbahan aktif fentin asetat 60% WP menggunakan dosis 2 gr/M^2. Satuan percobaan menggunakan bedengan sawah ukuran 2 m x 2 m x 10 cm. Perlakuan diulang 3 kali dan setiap perlakuan ditanami rumpun padi sebanyak 100 rumpun padi umur 14 hari semai. Introduksi keong mas pada setiap satuan percobaan sebanyak 6 ekor per meter persegi atau 24 ekor perbedengan. Setelah dilakukan introduksi keong mas, dilanjutkan dengan aplikasi moluskisida formulasi pellet sesuai perlakuan. Pengamatan dilakukan terhadap aktifitas keong mas, Intensitas serangan pada rumpun padi, dan mortalitas keong mas pada 12 , 24, 36, 48, 60 dan 72 jam paparan.

5.2.6. Analisis data

Mortalitas keong mas dihitung menggunakan rumus mortalitas **Abbot Formula (Hoekstra, 1987).**

$$Mortalitas\ (\%) = \left(1 - \frac{Populasi\ Setelah\ Perlakuan}{Populasi\ Pada\ Kontrol}\right) * 100$$

Perbedaan mortalitas diantara perlakuan dianalisis dengan analisis varians (ANOVA) pada tingkat signifikansi (alfa) 0,05 menggunakan SPSS.

Sedangkan intensitas serangan terhadap rumpun padi dihitung dengan menggunakan rumus sebagai berikut:

$$\boldsymbol{IS} = \{(\sum \boldsymbol{n} \times \boldsymbol{v}) \div (\boldsymbol{Z} \times \boldsymbol{N})\} \times \mathbf{100}\%$$

Keterangan :

IS = Intensitas serangan (%)
n = Jumlah tanaman atau bagian tanaman pada skala – v

v = nilai skala kerusakan tanaman
N = Jumlah tanaman atau bagian tanaman contoh yang diamati
Z = Nilai skala kerusakan tertinggi.

Nilai skala kerusakan tanaman/ bagian tertentu tanaman adalah sebagai berikut:
0 : jika tidak ada bagian tanaman yang rusak
1 : jika bagian tanaman yang rusak 1-25%
2 : Jika bagian tanaman yang rusak 25-50%
3 : Jika bagian tanaman yang rusak 50 – 75%
4 : Jika bagian tanaman yang rusak > 75%

Dan kriteria / kategori kerusakan hama ditentukan sebagai berikut:
Tidak ada serangan/ kerusakan jika nilai IS = 0%
Serangan / Kerusakan ringan jika nilai IS < 25%
Serangan / Kerusakan sedang jika nilai IS 25%- 50%
Serangan / Kerusakan berat jika nilai IS 50% - 85%
Serangan / Kerusakan sangat berat (Puso) jika nilai IS > 85%

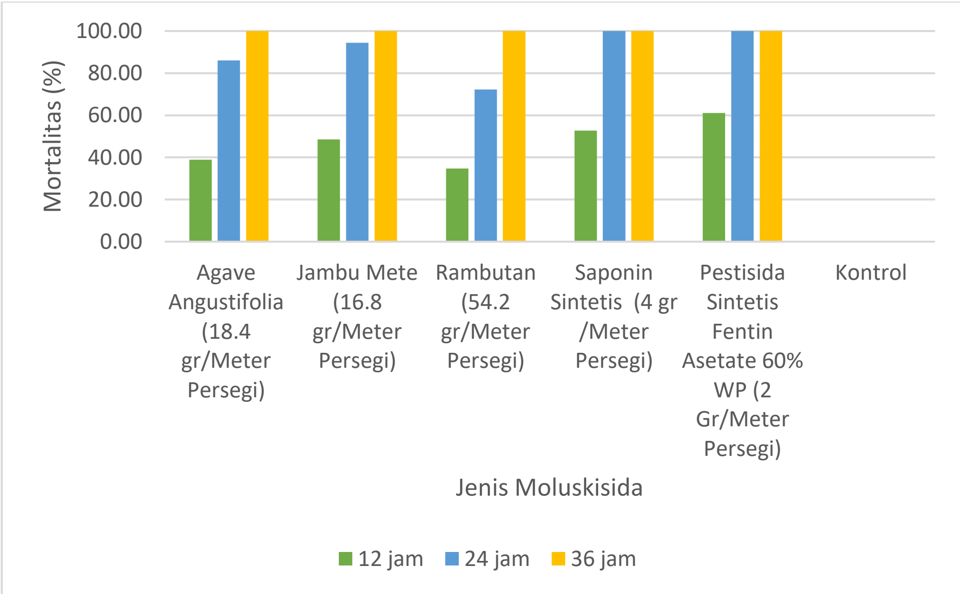
5.3. Hasil

5.3.1. Mortalitas Keong Mas

Penggunaan moluskisida formulasi pellet menyebabkan keong mas menutup operculum dan berdiam diri setelah satu jam aplikasi moluskisida. Bahan aktif yang terdapat dalam moluskisida pellet yang telah terlarut dalam air menimbulkan gangguang pada keong mas. Paparan bahan aktif moluskisida membuat keong mas menutup cangkang agar tidak terjadi paparan yang lebih lanjut. Menutupnya operculum keong mas dan tidak ada pergerakan membuat aktifitas makan juga tidak terjadi. Sehingga tidak terjadi serangan keong mas pada tanaman padi yang terdapat perlakuan moluskisida. Gejala mortalitas keong mas terjadi setelah 12 jam dengan keluarnya busa, operculum membuka tetapi tidak merespon Ketika disentuh, dan keong mas terapung. Gejala mortalitas pada keong mas akibat penggunaan moluskisida pellet dapat dilihat pada gambar berikut.



Gambar 28. Gejala mortalitas keong mas pada perlakuan moluskisida Formulasi pellet pada pertanaman padi

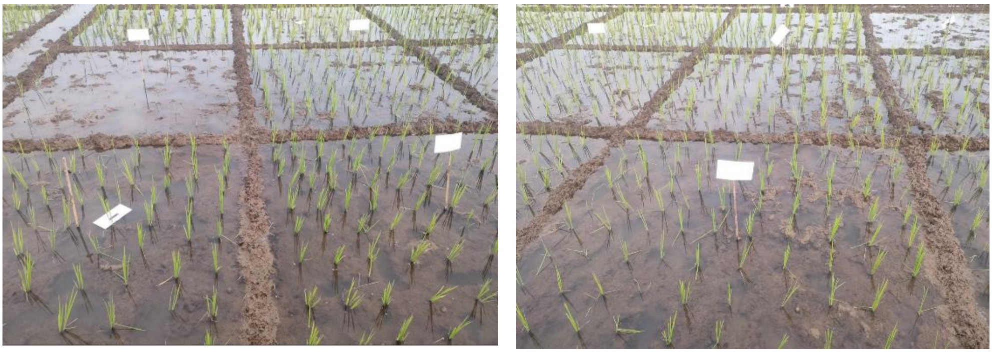


Gambar 29 . Mortalitas keong mas pada penggunaan moluskisida formulasi Pellet daun Agave angustifolia, Jambu mete dan Rambutan di Pertanaman Padi

Moluskisida pellet dari agave angustifolia, jambu mete dan rambutan dapat menyebabkan mortalitas keong mas hingga 100% pada 36 jam paparan. Dalam 24 jam paparan, moluskisida pellet daun jambu mete mencapai mortalitas 90%. Sedangkan penggunaan saponin dan moluskisida sintetis berbahan aktif fentin asetate 60% WP mampu menyebabkan mortalitas 100%. Toksisistas moluskisida pellet bahan alami tanaman tidak berbeda jauh dengan moluskisida kimia sintetis.

5.3.2. Intensitas Serangan

Penggunaan moluskisida formulasi pellet daun agave angustifolia, daun jambu mete, daun rambutan, saponin dan moluskisida sintetis menyebabkan keong mas menutup operculum setelah satu jam paparan. Penutupan operculum tersebut membuat keong mas tidak bisa memakan rumpun padi yang disiapkan sebagai pakan. Sehingga tidak terdapat kerusakan pada rumpun padi atau tidak ada serangan keong mas pada rumpun padi dari awal paparan sampai 72 jam paparan pada semua perlakuan moluskisida. Intensitas serangan terjadi pada kontrol mencapai 100% pada 72 jam.



Gambar 30. Intensitas serangan keong mas pada perlakuan moluskisida pellet daun agave angustifolia, jambu mete, rambutan pada pertanaman padi.

5.4. Pembahasan

Penggunaan moluskisida formulasi pellet dari daun agave angustifolia, jambu mente dan rambutan serta saponin dan moluskisida sintetis menyebabkan keong mas menutup operculum. Hal ini dilakukan oleh keong mas sebagai respon dari adanya bahan aktif yang terkandung dalam moluskisida yang dianggap akan membahayakan keong mas. Penutupan operculum pada keong mas dimungkinkan karena tentakel pendek sebagai kemoreseptor telah mendeteksi dan menerima ransangan kimia atau telah terjadi paparan bahan aktif pada bagian tubuh keong mas atau bahan aktif terdeteksi setelah adanya pengecapan sehingga kemoreseptor keong mas merespon dengan menutup operculum untuk menghindari terjadinya paparan yang lebih besar. Hewan mengenali dan membedakan isyarat kimia pada lingkungan melalui penciuman atau pengecapan, sehingga memperoleh informasi yang mempengaruhi perilaku mereka dengan tujuan kelangsungan hidup (Yu et al., 2023)

Moluskisida formulasi pellet daun agave angustifolia, jambu mete dan rambutan dapat menekan populasi keong mas. Terjadi mortalitas pada 50% lebih populasi keong mas dalam waktu 24 jam paparan moluskisida pellet. Hal ini menunjukkan bahwa ketiga jenis moluskisida pellet tersebut memiliki senyawa toksik terhadap keong mas yang sama fungsinya dengan senyawa yang terkandung pada moluskisida sintetis dan saponin. Mortalitas yang diakibatkan oleh moluskisida pellet agave angustifolia, jambu mente dan rambutan dikarenakan moluskisida nabati tersebut mengandung metabolit sekunder yang bersifat toksik (de Brito & Joshi, 2016). Agave angustifolia mengandung saponin, flavonoid dan tannin (Pereira et al., 2017), daun jambu mete memiliki kandungan tanin, saponin, dan alkaloid (Dougnon et al., 2021). Sedangkan daun rambutan mengandung saponin, flavonoid dan fenol (Sujono et al., 2023).

Mortalitas yang terjadi pada keong mas disebabkan oleh adanya kandungan saponin pada tepung daun. Beberapa penelitian seperti yang dilakukan de Brito & Joshi, 2016, C. P. Yang et al., 2017, H.-C. Huang et al., 2003, dan San Martín et al., 2008 menunjukkan bahwa penggunaan saponin dapat menyebabkan mortalitas pada keong mas. Saponin dapat menggangu sistem pernapasan keong mas dan merusak dinding sel darah dari keong mas. Saponin juga dapat merusak membran sel dari hewan berdarah dingin (Desai et al., 2009). Keong mas bereaksi dengan saponin ataupun senyawa toksit yang ada dalam moluskisida nabati sediaan tepung dengan mengeluarkan lendir yang bertujuan mengurangi kontak permukaan tubuh dengan moluskisida. Namun, pembentukan lendir yang berlebihan akan menghambat pernapasan dimana difusi oksigen melalui insang tersumbat oleh lendir (Desai et al., 2009). Sehingga dalam beberapa waktu akan mengalami kematian.

Bebebrapa penelitian telah menemukan bahwa spesies Agave seperti A. filifera, A. celsii, A. sisalana, A. decipiens Baker, dan A. lophanta memiliki aktivitas moluskisida terhadap Biomphalaria alexandrina. Agave angustifolia mengandung tigogenin diglikosida dan mampu membunuh 90% populasi B. alexandrina pada konsentrasi 61,4 mg / L setelah 24 jam paparan (Bermúdez-Bazán et al., 2021). Sedangkan daun rambutan dapat dijadikan insektisida karena bersifat toksik pada beberapa jenis hama dan juga bersifat antikanker (Costa et al., 2020). Ekstrak kulit biji jambu mete memiliki toksisitas yang kuat terhadap helopeltis pada tanaman kakao (Santi et al., 2024). Hal ini menujukkan bahwa agave angustifolia, jambu mete maupun rambutan mengandung senyawa yang bersifat toksik dan potensial untuk dijadikan pestisida nabati. Senyawa – senyawa yang dapat bersifat sebagai moluskisida adalah saponin, alkaloid, flavonoid dan tannin. Diantara senyawa tersebut saponin dianggap sebagai golongan yang paling penting untuk aktivitas moluskisida (C. P. Yang et al., 2017)

Saponin memiliki aktivitas kimia dengan mempengaruhi pembentukan pori-pori membrane sel. Sehingga meningkatkan aliran ion keluar dari sel ke media berair dan bisa menyebabkan homeostatis dan kematian (Brito et al., 2019). Saponin umumnya bekerja dengan cara menembus membran plasma, dimana saponin bereaksi dengan sterol dan menyebabkan pembentukan pori-pori. Saponin juga memiliki efek pada sel dengan mengganggu proses seluler, seperti aktivitas enzim, transportasi, integritas organel, fungsi yang berhubungan dengan redoks dan proses transduksi sinyal lainnya serta melalui pemicuan apoptosis (Mugford & Osbourn, 2013).

Moluskisida nabati formulasi pellet dengan bahan pembawa berupa kompos dan tepung sekam padi mudah terlarut dalam air. Bahan kompos yang ditambahkan membuat pellet menjadi berat sehingga dapat tenggelam dalam air. Sedangkan tepung sekam ketika bereaksi dengan air akan membuat pellet terpecah. Sehingga, bahan aktif yang ada dalam moluskisida pellet akan terlepas dan memapar keong mas. Ukuran partikel tepung daun yanf dijadikan moluskisida pellet adalah 100 mesh atau 0.149 mm, ukuran ini merupakan partikel yang sangat kecil sehingga luas permukaan partikel menjadi besar dan meningkatkan laju reaksi dalam air. Mortalitas yang diakibatkan oleh moluskisida pellet daun rambutan sedikit lebih lambat dibandingkan dengan moluskisida yang lainnya. Hal ini terjadi karena partikel tepung daun rambutan yang bereaksi dengan air akan membentuk lendir sehingga membutuhkan waktu lebih lama untuk terurai sempurna.

5.5. Kesimpulan

Moluskisida bahan alami tanaman formulasi pellet dapat menekan populasi keong mas pada pertanaman padi. Formulasi pellet dengan bahan pembawa berupa kompos dan sekam bakar padi yang telah ditepungkan tidak menjadi penghambat efikasi moluskisida dari bahan alami tanaman. Moluskisida formulasi pellet daun agave angustifolia, jambu mete dan rambutan menyebabkan mortalitas keong mas mencapai 100% pada 36 jam paparan. Penggunaan moluskisida formulasi pellet dari bahan alami tanaman menyebabkan tanaman padi tidak terserang oleh hama keong mas.

DAFTAR PUSTAKA

Aziz, N. A., Abdullah, N. S., Harun, A., & Alias, S. A. M. (2021). The molluscicidal effect of the stem extracts of tinospora crispa in controlling the golden apple snail pomacea canaliculata. *Jurnal Teknologi*, *83*(6). https://doi.org/10.11113/JURNALTEKNOLOGI.V83.16779

Bakar, T. H. S. T. A., Idayu, N. M. Y. N. N., Suhana, Z., Sidek, N., Mukhtar, N. K., Azmin, S. N. H. M., & Jusoh, M. Z. (2022). The Effectiveness of Natural Plant Powder in Controlling Rice Weevils (Sitophilus oryzae). *IOP Conference Series: Earth and Environmental Science*, *1102*(1). https://doi.org/10.1088/1755-1315/1102/1/012003

Bermúdez-Bazán, M., Castillo-Herrera, G. A., Urias-Silvas, J. E., Escobedo-Reyes, A., & Estarrón-Espinosa, M. (2021). Hunting bioactive molecules from the agave genus: An update on extraction and biological potential. In *Molecules* (Vol. 26, Issue 22). https://doi.org/10.3390/molecules26226789

Brito, F. C. de, Gosmann, G., & Oliveira, G. T. (2019). Extracts of the unripe fruit of Ilex paraguariensis as a potential chemical control against the golden apple snail Pomacea canaliculata (Gastropoda, Ampullariidae). *Natural Product Research*, *33*(16). https://doi.org/10.1080/14786419.2018.1443084

Buddie, A. G., Rwomushana, I., Offord, L. C., Kibet, S., Makale, F., Djeddour, D., Cafa, G., Vincent, K. K., Muvea, A. M., Chacha, D., & Day, R. K. (2021). First report of the invasive snail *Pomacea canaliculata* in Kenya. *CABI Agriculture and Bioscience*, *2*(1), 11. https://doi.org/10.1186/s43170-021-00032-z

Chiu, Y. W., Wu, J. P., Hsieh, T. C., Liang, S. H., Chen, C. M., & Huang, D. J. (2014). Alterations of biochemical indicators in hepatopancreas of the golden apple snail, pomacea canaliculata, from paddy fields in Taiwan. *Journal of Environmental Biology*, *35*(4).

Costa, A. R., Silva, J. R. de L., de Oliveira, T. J. S., da Silva, T. G., Pereira, P. S., Borba, E. F. de O., de Brito, E. S., Ribeiro, P. R. V., Almeida-Bezerra, J. W., Júnior, J. T. C., de Menezes, I. R. A., Kamdem, J. P., Duarte, A. E., & Barros, L. M. (2020). Phytochemical profile of Anacardium occidentale L. (cashew tree) and the cytotoxic and toxicological evaluation of its bark and leaf extracts. *South African Journal of Botany*, *135*. https://doi.org/10.1016/j.sajb.2020.09.017

Dao, T. P., Nguyen, D. V., Tran, T. Y. N., Pham, T. N., Nguyen, P. T. N., Bach, L. G., Nguyen, V. H., Do, V. Q., Nguyen, V. M., & Tran, T. T. (2021). Effects of tannin, ascorbic acid, and total phenolic contents of cashew (Anacardium occidentale L.) apples blanched with saline solution. *Food Research*, *5*(1), 409–416. https://doi.org/10.26656/fr.2017.5(1).454

de Brito, F. C., & Joshi, R. C. (2016). The golden apple snail pomacea canaliculata: A review on invasion, dispersion and control. In *Outlooks on Pest Management* (Vol. 27, Issue 4, pp. 157–163). Research Information Ltd. https://doi.org/10.1564/v27_aug_03

Desai, S. D., Desai, D. G., & Kaur, H. (2009). Saponins and their biological activities. *Pharma Times*, *41*(3).

Dougnon, T. V., Hounsa, E., Agbodjento, E., Koudokpon, H., Legba, B., Fabiyi, K., Afaton, A., Sintondji, K., Akpode, B., Klotoé, J. R., Tchobo, F., Bankole, H., & Dougnon, T. J. (2021). Toxicological Characterization of Ten Medicinal Plants of the Beninese Flora Used in the Traditional Treatment of Diarrheal Diseases. *Evidence-Based Complementary and Alternative Medicine*, *2021*. https://doi.org/10.1155/2021/6676904

Gao, J., Yang, C., Zhang, Z., Liu, Z., & Jeppesen, E. (2021). Effects of co-occurrence of invading Procambarus clarkii and Pomacea canaliculata on Vallisneria denseserrulata-dominated clear-water ecosystems: A mesocosm approach. *Knowledge and Management of Aquatic Ecosystems*, *2021-Janua*(422). https://doi.org/10.1051/kmae/2021029

Hoekstra, J. A. (1987). Acute bioassays with control mortality. *Water, Air, and Soil Pollution*, *35*(3–4). https://doi.org/10.1007/BF00290938

Horgan, F. G., Nogues Palenzuela, A., Stuart, A. M., Naredo, A. I., Ramal, A. F., Bernal, C. C., & Almazan, M. L. P. (2017). Effects of silicon soil amendments and nitrogen fertilizer on apple snail (Ampullariidae) damage to rice seedlings. *Crop Protection*, *91*, 123–131. https://doi.org/10.1016/j.cropro.2016.10.006

Horgan, F. G., Zhu, Q., Portalanza, D. E., & Felix, M. I. (2021). Costs to Ecuador's rice sector during the first decade of an apple snail invasion and policy recommendations for regions at risk. *Crop Protection*, *148*. https://doi.org/10.1016/j.cropro.2021.105746

Huang, H.-C., Liao, S.-C., Chang, F.-R., Kuo, Y.-H., & Wu, Y.-C. (2003). Molluscicidal Saponins from Sapindus mukorossi, Inhibitory Agents of Golden Apple Snails, Pomacea canaliculata. *Journal of Agricultural and Food Chemistry*, *51*(17), 4916–4919. https://doi.org/10.1021/jf0301910

Huang, H. C., Liao, S. C., Chang, F. R., Kuo, Y. H., & Wu, Y. C. (2003). Molluscicidal saponins from Sapindus mukorossi, inhibitory agents of golden apple snails, Pomacea canaliculata. *Journal of Agricultural and Food Chemistry*, *51*(17), 4916–4919. https://doi.org/10.1021/jf0301910

Huy Hung, N., Ngoc Dai, D., Satyal, P., Thi Huong, L., Thi Chinh, B., Quang Hung, D., Anh Tai, T., & Setzer, W. N. (2021). Lantana camara Essential Oils from Vietnam: Chemical Composition, Molluscicidal, and Mosquito Larvicidal Activity. *Chemistry and Biodiversity*, *18*(5). https://doi.org/10.1002/cbdv.202100145

Idris, H., Nurmansyah, Gustia, H., & Ramadhan, A. I. (2020). The potential of essential oil as botanical molluscicide for controlling golden apple snail (Pomacea canaliculata, lamarck) in Indonesia. *Journal of Critical Reviews*, *7*(13). https://doi.org/10.31838/jcr.07.13.159

Joshi, R. C., San Martín, R., Saez-Navarrete, C., Alarcon, J., Sainz, J., Antolin, M. M., Martin, A. R., & Sebastian, L. S. (2008). Efficacy of quinoa (Chenopodium quinoa) saponins against golden apple snail (Pomacea canaliculata) in the Philippines under laboratory conditions. *Crop Protection*, *27*(3–5). https://doi.org/10.1016/j.cropro.2007.08.010

Marwoto, R. M., Isnaningsih, R. N., & Joshi, R. C. (2018). fentin. *Agriculture for Development*, *35*(January 2017).

Mugford, S. T., & Osbourn, A. (2013). Saponin synthesis and function. In *Isoprenoid Synthesis in Plants and Microorganisms: New Concepts and Experimental Approaches*. https://doi.org/10.1007/978-1-4614-4063-5_28

Osman, W. N. A. W., Selvarajah, D., & Samsuri, S. (2021). Saponin stabilization via progressive freeze concentration and sterilization treatment. *Molecules*, *26*(16). https://doi.org/10.3390/molecules26164856

Pereira, G. M., Ribeiro, M. G., da Silva, B. P., & Parente, J. P. (2017). Structural characterization of a new steroidal saponin from Agave angustifolia var. Marginata and a preliminary investigation of its in vivo antiulcerogenic activity and in vitro membrane permeability property. *Bioorganic and Medicinal Chemistry Letters*, *27*(18). https://doi.org/10.1016/j.bmcl.2017.08.026

Pérez-Méndez, N., Alcaraz, C., Bertolero, A., Català-Forner, M., Garibaldi, L. A., González-Varo, J. P., Rivaes, S., & Martínez-Eixarch, M. (2022). Agricultural policies against invasive species generate contrasting outcomes for climate change mitigation and biodiversity conservation. *Proceedings of the Royal Society B: Biological Sciences*, *289*(1985). https://doi.org/10.1098/rspb.2022.1081

Rejab, M. R. M., Manam, N. K. A., Fauzi, N. S., Mohamed, S., & Ngah, N. (2023). The effectiveness of Furcraea plants in controlling golden apple snail and their effects on the non-target organism at the rice field. *Asian Journal of Agriculture and Biology*, *2023*(1). https://doi.org/10.35495/ajab.2021.04.164

Retnowati, Y., & Katili, A. S. (2021). Identification of fermentative bacteria on local microorganisms of golden snail (Pomacea canaliculata lamarck, 1822). *Biodiversitas*, *22*(2), 778–784. https://doi.org/10.13057/biodiv/d220231

Roonjho, A. R., Muhamad, R., & Omar, D. (2021). Determination of lethal and feeding deterrent activities of saponin from phaleria macrocarpa against pomacea maculata. *Journal of Animal and Plant Sciences*, *31*(4), 1070–1077. https://doi.org/10.36899/JAPS.2021.4.0304

Rusli, R., Gani, S., & Hutasoit, R. T. (2018). Preferensi Dan Tingkat Serangan Keong Mas (Pomaceae canaliculata Lamarck) Terhadap Beberapa Varietas Padi (Oryza sativa Linnaeus). *JPT: Jurnal Proteksi Tanaman*, *1*(1).

Rusli, R., Hidrayani, & Putra, R. E. (2023). Golden apple snail management (Pomacea canaliculata Lamarck) using integrated pest management (IPM) and non-integrated pest management (non-IPM) on paddy cultivation. *IOP Conference Series: Earth and Environmental Science*, *1160*(1). https://doi.org/10.1088/1755-1315/1160/1/012048

Saad, N. M., Teo, C. H., Rahman, Z. A., & Zainal, Z. (2023). Constitutive Expression of Cyclotide Kalata B1 Gene in Transgenic Rice Conferring Resistance to Golden Apple Snail (Pomacea canaliculata). *Malaysian Applied Biology*, *52*(3), 59–72. https://doi.org/10.55230/mabjournal.v52i3.2670

San Martín, R., Ndjoko, K., & Hostettmann, K. (2008). Novel molluscicide against Pomacea canaliculata based on quinoa (Chenopodium quinoa) saponins. *Crop Protection*, *27*(3–5). https://doi.org/10.1016/j.cropro.2007.03.015

Santi, I. S., Kurniawan, I., & Manto, A. (2024). Cashew Nut Shell Liquid (Anacardium occidentale) as a Botanical Insecticide to Control Helopeltis sp on Cocoa plants. *Tropical Plantation Journal*, *3*(1). https://doi.org/10.56125/tpj.v3i1.38

Schneiker, J., Weisser, W. W., Settele, J., Nguyen, V. S., Bustamante, J. V., Marquez, L., Villareal, S., Arida, G., Chien, H. Van, Heong, K. L., & Türke, M. (2016). Is there hope for sustainable management of golden apple snails, a major invasive pest in irrigated rice? *NJAS - Wageningen Journal of Life Sciences*, *79*, 11–21. https://doi.org/10.1016/j.njas.2016.07.001

Singh, B., Sharma, D. K., Kumar, R., & Gupta, A. (2010). Development of a new controlled pesticide delivery system based on neem leaf powder. *Journal of Hazardous Materials*, *177*(1–3). https://doi.org/10.1016/j.jhazmat.2009.12.031

Sriwahyuni, P., & Parmila, P. (2019). PERAN BIOTEKNOLOGI DALAM PEMBUATAN PUPUK HAYATI. *Agro Bali: Agricultural Journal*, *2*(1). https://doi.org/10.37637/ab.v2i1.369

Sujono, T. A., Kamilia, D., & Kinasih, A. S. (2023). Immune-Enhancing Effect of Ethanol Extract of Rambutan (Nephelium lappaceum L.) Fruit Peel on phagocytosis index, Paw Edema Formation, and Antibody Titer in Mice. *Tropical Journal of Natural Product Research*, *7*(9), 4038–4042. https://doi.org/10.26538/tjnpr/v7i9.28

Yang, C. P., Zhang, M., Lei, B., Gong, G. S., Yue, G. Z., Chang, X. L., Sun, X. F., Tian, Y., & Chen, H. B. (2017). Active saponins from root of Pueraria peduncularis (Grah. ex Benth.) Benth. and their molluscicidal effects on Pomacea canaliculata. *Pest Management Science*, *73*(6). https://doi.org/10.1002/ps.4432

Yang, C., Zhou, Y., Wu, C., Yan, X., Cheng, P., Luo, L., Qiu, X., Zhang, M., Qin, G., Zhang, Y., & Chen, H. (2022). Study on the Synergistic Molluscicidal Effect of Pedunsaponin A and Niclosamide. *Molecules*, *27*(21). https://doi.org/10.3390/molecules27217623

Yin, Y., He, Q., Pan, X., Liu, Q., Wu, Y., & Li, X. (2022). Predicting Current Potential Distribution and the Range Dynamics of Pomacea canaliculata in China under Global Climate Change. *Biology*, *11*(1). https://doi.org/10.3390/biology11010110

Yu, Z. L., Yang, M. J., Song, H., Zhang, T., & Yuan, X. T. (2023). Gastropod chemoreception behaviors—Mechanisms underlying the perception and location of targets and implications for shellfish fishery development in aquatic environments. In *Frontiers in Marine Science* (Vol. 9). https://doi.org/10.3389/fmars.2022.1042962

BAB VI
PEMBAHASAN UMUM

Paparan moluskisida dari bahan alami tanaman yaitu daun agave angustifolia, daun jambu mete dan daun rambutan dalam bentuk sediaan tepung daun tunggal, tepung yang dikombinasikan, tepung daun yang diformulasi dalam bentuk pellet maupuan dalam bentuk sediaan ekstrak etanol menyebabkan keong mas merespon dengan menutup operculum. Keong mas menutup operculum sebagai respon pertahanan diri karena tentakel pendek sebagai kemoreseptor telah mendeteksi dan menerima ransangan kimia toksik. Respon menutup operculum juga dapat terjadi karena telah ada paparan bahan toksik pada bagian tubuh keong mas atau bahan toksik terdeteksi setelah adanya pengecapan. Hal ini dilakukan keong mas supaya tidak terjadi paparan yang lebih lama dan tidak semakin banyak senyawa toksik yang masuk ke dalam tubuh keong mas. Suatu Organisme mengubah perilaku untuk bertahan dari serangan ketika mendeteksi bahan kimia toksik melalui kemoresptor atau pengecapan (Yu et al., 2023).

Moluskisida sediaan tepung daun maupun ekstrak etanol dari daun agave angustifolia, jambu mete dan rambutan dapat menyebabkan mortalitas terhadap keong mas pada berbagai tingkatan konsentrasi. Hal ini menunjukkan bahwa ketiga jenis moluskisida nabati tersebut memiliki senyawa toksik terhadap keong mas. Mortalitas yang terjadi pada keong mas karena penggunaan moluskisida agave angustifolia, jambu mente dan rambutan dikarenakan moluskisida nabati tersebut mengandung metabolit sekunder yang bersifat toksik (de Brito & Joshi, 2016). Agave angustifolia mengandung saponin, flavonoid dan tannin (Pereira et al., 2017), daun jambu mete memiliki kandungan tanin, saponin, dan alkaloid (Dougnon et al., 2021). Sedangkan daun rambutan mengandung saponin, flavonoid dan fenol (Sujono et al., 2023).

Bebebrapa penelitian telah menemukan bahwa spesies Agave seperti A. filifera, A. celsii, A. sisalana, A. decipiens Baker, dan A. lophanta memiliki aktivitas moluskisida terhadap Biomphalaria alexandrina. Agave angustifolia mengandung tigogenin diglikosida dan mampu membunuh 90% populasi B. alexandrina pada konsentrasi 61,4 mg/L setelah 24 jam paparan (Bermúdez-Bazán et al., 2021). Sedangkan daun rambutan dapat dijadikan insektisida karena bersifat toksik pada beberapa jenis hama dan juga bersifat antikanker (Costa et al., 2020). Ekstrak kulit biji jambu mete memiliki toksisitas yang kuat terhadap helopeltis pada tanaman kakao (Santi et al., 2024). Hal ini menujukkan bahwa agave angustifolia, jambu mete maupun rambutan mengandung senyawa yang bersifat toksik dan potensial untuk dijadikan pestisida nabati.

Fungsi saponin dan pengaruhnya terhadap organisme diungkapkan oleh penelitian de Brito & Joshi, 2016, C. P. Yang et al., 2017, H.-C. Huang et al., 2003, dan San Martín et al., 2008 menunjukkan bahwa saponin pada ekstrak tanaman dapat menyebabkan mortalitas pada keong mas. Saponin mampu merusak dinding sel darah dan menggangu sistem pernapasan keong mas. Pengaruh saponin bagi hewan berdarah dingin adalah terjadi kerusakan membran sel (Desai et al., 2009). Keong mas merespon serangan saponin ataupun senyawa toksik yang ada dalam moluskisida nabati sediaan ekstrak etanol daun rambutan dengan mengeluarkan lendir yang untuk mengurangi kontak permukaan tubuh dengan senyawa toksik. Namun, pembentukan lendir yang berlebihan berpengaruh terhadap terhambatnya pernapasan. Difusi oksigen melalui insang tersumbat oleh lendir yang berlebihan. Sehingga dalam beberapa waktu akan mengalami kematian (Desai et al., 2009).

Moluskisida sediaan ekstrak etanol daun jambu mete dan daun agave angustifolia mampu menyebabkan mortalitas 100% pada 24 jam paparan. Sedangkan jika diaplikasikan dalam bentuk sediaan ekstrak etanol, moluskisida daun jambu mete dan daun agave angustifolia memiliki efikasi yang sangat rendah dalam mengendalikan keong mas. Hal ini dimungkinkan terjadi karena senyawa fitokimia yang bersifat toksik yang ada dalam daun agave angustifolia maupun daun jambu mete tidak bisa larut dalam pelarut methanol 96%. Sedangkan jika diaplikasikan dalam bentuk sediaan tepung 100 mesh atau 0,149 mm memiliki efikasi yang tinggi terhadap mortalitas keong mas. Hal ini dikarenakan moluskisida nabati sediaan tepung dari daun agave angustifolia dan jambu mete mudah larut dalam air karena bahan ini berasal dari daun segar yang dikeringkan dengan metode dehidrator. Sehingga, ketika ditambahkan dengan air maka bahan aktif dalam tepung hampir menyerupai kondisi pada daun segar. Hal ini yang membuat mudah bereaksi dalam air sehingga cepat dalam melakukan pemaparan atau kontak dengan permukaan tubuh keong mas. Ukuran partikel tepung daun moluskisida 100 mesh atau 0.149 mm, ukuran ini merupakan partikel yang sangat kecil sehingga luas permukaan partikel menjadi besar dan meningkatkan laju reaksi dalam air. Jika harus diaplikasikan dalam bentuk ekstraksi maka harus dicari jenis pelarut yang cocok yang mampu menarik semua senyawa toksik yang ada pada daun jambu mete dan daun agave angustifolia.

Sedangkan moluskisida daun rambutan jika diaplikasikan dalam bentuk sediaan tepung daun, maka akan lambat menyebabkan mortalitas pada keong mas. Berbeda pada pengaplikasian dalam bentuk sediaan ekstrak etanol. Moluskisida ekstrak etanol daun rambutan memiliki efikasi tertinggi dan mampu menyebabkan mortalitas keong mas 100% dalam waktu 24 jam. Pada bentuk sediaan tepung daun, jika diaplikasikan dan bercampur dengan air maka tepung daun akan membentuk lendir yang saling bersatu. Tepung daun rambutan membutuhkan waktu yang lama untuk larut dan tersebar dalam air. Hal ini yang menyebabkan lambatnya paparan pada keong mas sehingga mortalitas keong mas juga lambat terjadi. Ekstraksi daun rambutan dengan etanol 96% mampu menarik senyawa fitokimia toksik daun rambutan. Sediaan ekstrak etanol daun rambutan mudah terlarut dalam air sehingga memudahkan memapar keong mas. Daun rambutan dalam bentuk sediaan tepung terbentuk lendir jika ditambahkan air, namun dalam bentuk ekstrak etanol tidak terbentuk lagi lendir saat dilarutkan dalam air. Hal ini yang membuat efikasi moluskisida ekstrak etanol daun rambutan tinggi dalam menyebabkan mortalitas pada keong mas.

Kombinasi moluskisida sediaan tepung daun agave angustifolia, jambu mete dan rambutan pada perbandingan 1:1:1, 2:1:1, 1:2:1, 1:1:2 mampu menyebabkan mortalitas keong mas. Semua tingkatan konsentrasi yaitu 0,25 gr/L, 0,50 gr/L, 0,75 gr/L, 1,00 gr/L dan 1,25 gr/L mampu menyebabkan mortalitas diatas 50% bahkan mencapai 100% pada 24 jam paparan. Hal ini menunjukkan bahwa empat jenis kombinasi moluskisida nabati tersebut mengandung senyawa toksik yang dapat menyebabkan mortalitas terhadap keong mas. Kombinasi moluskisida sediaan tepung daun agave angustifolia, jambu mete dan rambutan membuat moluskisida memiliki senyawa fitokimia yang beragam. Sehingga moluskisida mengandung senyawa metabolit sekunder yang lebih lengkap dan lebih banyak.

Mortalitas yang disebabkan jenis kombinasi moluskisida 1:1:1, 2:1:1, 1:2:1, 1:1:2 tidak berbeda nyata. Hal ini menunjukkan bahwa semua jenis kombinasi moluskida memiliki efikasi yang sama dalam mengendalikan keong mas. Pada konsentrasi yang sama dari masing – masing jenis kombinasi moluskisida akan menghasilkan mortalitas yang tidak berbeda nyata. Kombinasi moluskisida 1:1:1 adalah kombinasi yang seimbang antara setiap jenis moluskisida. Sedangkan kombinasi dengan perbandingan 2:1:1, 1:2:1 ataupun 1:1:2 adalah kombinasi yang dirancang untuk membuat salah satu jenis moluskisida nabati lebih dominan. Akan tetapi komposisi perbandingan yang seimbang maupun salah satu dominan menunjukkan hasil yang tidak berbeda nyata. Hal ini menunjukkan bahwa keberadaan jenis moluskisida dalam kombinasi meskipun jumlahnya sedikit akan tetap memberikan pengaruh terhadap toksisitas moluskisida. Kombinasi moluskisida yang menggabungkan tiga jenis moluskisida nabati menghasilkan moluskisida yang toksisistanya lebih tinggi dibandingkan moluskisida nabati tunggal.

Residu senyawa fitokimia moluskisida ekstrak etanol daun rambutan yang ditemukan dalam daging keong mas adalah n-Hexadecanoic acid (C16H32O2), Phytol (C20H40O), Linoleic Acid (C18H32O2), Octadecanoic acid (C18H36O2), Docosahexaenoic acid methyl ester (C23H34O2) dan .alpha.-Tocospiro A (C29H50O4). Residu senyawa fitokimia moluskisida ekstrak etanol daun agave angustifolia yang terdapat dalam daging keong mas adalah Hexadecanoic acid, methyl ester (CAS) (C17H34O2), n-Hexadecanoic acid (C16H32O2), Octadecanoic acid (C18H36O2), dan Squalene (C30H50). Sedangkan residu senyawa fitokimia moluskisida ekstrak etanol jambu mete yang ditemukan dalam daging keong mas adalah 2-Methoxy-4-vinylphenol (C9H10O2), Hexadecanoic acid, methyl ester (CAS) (C17H34O2), n-Hexadecanoic acid (C16H32O2), 2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R-[R*,R*-(E)]]- (CAS) , Phytol (C20H40O), OCTADECANOIC ACID (C18H36O2). Senyawa fitokimia yang ditemukan residunya pada daging keong mas inilah yang diduga bersifat toksik dan mampu menyebabkan mortalitas pada keong mas.

Terdapat senyawa fitokimia residu yang sama dari paparan tiga jenis moluskisida. Senyawa fitokimia n-Hexadecanoic acid (C16H32O2) dan Octadecanoic acid (C18H36O2) ditemukan sebagai residu pada daging keong mas dari tiga jenis moluskisida. Senyawa Fitokimia Phytol (C20H40O) ditemukan sebagai residu dari moluskisida ekstrak etanol daun rambutan dan jambu mete. Sedangkan senyawa fitokimia Hexadecanoic acid, methyl ester (CAS) ($C_{17}H_{34}O_2$) ditemukan sebagai residu dari moluskisida ekstrak etanol agave angustifolia dan jambu mete. Hal ini mengindikasikan bahwa senyawa fitokimia tersebut menjadi penyebab mortalitas pada keong mas. Namun jika dilihat dari tingkat mortalitas yang terjadi, keberadaan senyawa fitokimia tersebut belum memiliki efikasi yang tinggi sebagai moluskisida.

Senyawa fitokimia residu yang berbeda antar moluskisida adalah Squalene ($C_{30}H_{50}$) hanya ditemukan pada paparan moluskisida agave angustifolia. Senyawa fitokimia 2-Methoxy-4-vinylphenol ($C_9H_{10}O_2$) hanya ditemukan sebagai residu pada paparan moluskisida ekstrak etanol jambu mete. Sedangkan Linoleic Acid ($C_{18}H_{32}O_2$), Docosahexaenoic acid methyl ester ($C_{23}H_{34}O_2$) dan .alpha.-Tocospiro A ($C_{29}H_{50}O_4$) hanya ditemukan sebagai residu pada paparan moluskisida ekstrak etanol daun rambutan. Senyawa fitokimia ini yang diduga sebagai penentu tinggi rendahnya efikasi moluskisida terhadap mortalitas keong mas. Senyawa pembeda dari moluskisida ekstrak etanol daun rambutan diduga sebagai senyawa fitokimia yang menyebabkan tingginya mortalitas pada keong mas. Kombinasi moluskisida yang memadukan tiga jenis bahan alami tanaman menghasilkan suatu moluskisida yang memiliki kandungan senyawa fitokimia lengkap yang dapat meningkatkan toksisitas moluskisida terhadap mortalitas keong mas.

BAB VII
KESIMPULAN UMUM

Moluskisida dari daun Agave angustifolia, daun jambu mete dan daun rambutan memiliki efikasi yang tinggi terhadap mortalitas keong mas. Moluskisida daun jambu mete dan daun agave angustifolia memiliki efikasi tinggi apabila diaplikasikan dalam bentuk sediaan tepung daun. Sedangkan Moluskisida daun rambutan memiliki efikasi tinggi sebagai moluskisida terhadap keong mas apabila diaplikasikan dalam bentuk sediaan ekstrak etanol. Moluskisida sediaan tepung daun Agave angustifolia, jambu mete dan rambutan jika dikombinasikan dengan perbandingan 1:1:1, 2:1:1, 1:2:1, dan 1:1:2 maka semua tingkatan konsentrasi yaitu 0,25 gr/L, 0,50 gr/L, 0,75 gr/L mampu menyebabkan mortalitas keong mas 100% pada 36 jam paparan dan konsentrasi 1,00 gr/L dan 1,25 gr/L menyebabkan mortalitas 100% pada 24 jam paparan. Intensitas serangan keong mas terjadi hanya pada penggunaan moluskisida ekstrak etanol daun agave angustifolia dan ekstrak etanol daun jambu mete. Sedangkan penggunaan moluskisida ekstrak etanol daun rambutan, moluskisida sediaan tepung daun dari tiga jenis bahan alami tanaman serta kombinasi moluskisida dalam bentuk tepung daun tidak ada intensitas serangan keong mas. Formulasi moluskisida bahan alami tanaman dalam bentuk pellet yang diaplikasikan dilapangan dapat menekan populasi keong mas dan menekan serangan keong mas pada tanaman padi.

Senyawa fitokimia toksik dari ekstrak etanol daun rambutan penyebab mortalitas pada keong mas adalah n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Phytol ($C_{20}H_{40}O$), Linoleic Acid ($C_{18}H_{32}O_2$), Octadecanoic acid ($C_{18}H_{36}O_2$) dan Docosahexaenoic acid methyl ester ($C_{23}H_{34}O_2$). Senyawa fitokimia toksik yang terkandung dalam agave angustifolia penyebab mortalitas pada keong mas adalah Hexadecanoic acid, methyl ester ($C_{17}H_{34}O_2$), n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Octadecanoic acid ($C_{18}H_{36}O_2$), Squalene ($C_{30}H_{50}$). Senyawa fitokimia toksik yang terkadung dalam ekstrak etanol daun jambu mete penyebab mortalitas pada keong mas adalah 2-Methoxy-4-vinylphenol ($C_9H_{10}O_2$), Hexadecanoic acid, methyl ester ($C_{17}H_{34}O_2$), n-Hexadecanoic acid ($C_{16}H_{32}O_2$), Phytol ($C_{20}H_{40}O$), OCTADECANOIC ACID ($C_{18}H_{36}O_2$). Senyawa fitokimia toksik dari ekstrak etanol daun rambutan yang tidak terdapat pada moluskisida ekstrak etanol jambu mete maupun agave angustifolia adalah Linoleic Acid (C18H32O2) dan 4,7,10,13,16,19-Docosahexaenoic acid, methyl ester ($C_{23}H_{34}O_2$). Senyawa ini yang diduga menjadi pemicu tingginya mortalitas keong mas pada penggunaan moluskisida ekstrak etanol daun rambutan.

DAFTAR PUSTAKA

Bermúdez-Bazán, M., Castillo-Herrera, G. A., Urias-Silvas, J. E., Escobedo-Reyes, A., & Estarrón-Espinosa, M. (2021). Hunting bioactive molecules from the agave genus: An update on extraction and biological potential. In *Molecules* (Vol. 26, Issue 22). https://doi.org/10.3390/molecules26226789

Costa, A. R., Silva, J. R. de L., de Oliveira, T. J. S., da Silva, T. G., Pereira, P. S., Borba, E. F. de O., de Brito, E. S., Ribeiro, P. R. V., Almeida-Bezerra, J. W., Júnior, J. T. C., de Menezes, I. R. A., Kamdem, J. P., Duarte, A. E., & Barros, L. M. (2020). Phytochemical profile of Anacardium occidentale L. (cashew tree) and the cytotoxic and toxicological evaluation of its bark and leaf extracts. *South African Journal of Botany*, *135*. https://doi.org/10.1016/j.sajb.2020.09.017

de Brito, F. C., & Joshi, R. C. (2016). The golden apple snail pomacea canaliculata: A review on invasion, dispersion and control. In *Outlooks on Pest Management* (Vol. 27, Issue 4, pp. 157–163). Research Information Ltd. https://doi.org/10.1564/v27_aug_03

Desai, S. D., Desai, D. G., & Kaur, H. (2009). Saponins and their biological activities. *Pharma Times*, *41*(3).

Dougnon, T. V., Hounsa, E., Agbodjento, E., Koudokpon, H., Legba, B., Fabiyi, K., Afaton, A., Sintondji, K., Akpode, B., Klotoé, J. R., Tchobo, F., Bankole, H., & Dougnon, T. J. (2021). Toxicological Characterization of Ten Medicinal Plants of the Beninese Flora Used in the Traditional Treatment of Diarrheal Diseases. *Evidence-Based Complementary and Alternative Medicine*, *2021*. https://doi.org/10.1155/2021/6676904

Huang, H.-C., Liao, S.-C., Chang, F.-R., Kuo, Y.-H., & Wu, Y.-C. (2003). Molluscicidal Saponins from Sapindus mukorossi, Inhibitory Agents of Golden Apple Snails, Pomacea canaliculata. *Journal of Agricultural and Food Chemistry*, *51*(17), 4916–4919. https://doi.org/10.1021/jf0301910

Pereira, G. M., Ribeiro, M. G., da Silva, B. P., & Parente, J. P. (2017). Structural characterization of a new steroidal saponin from Agave angustifolia var. Marginata and a preliminary investigation of its in vivo antiulcerogenic activity and in vitro membrane permeability property. *Bioorganic and Medicinal Chemistry Letters*, *27*(18). https://doi.org/10.1016/j.bmcl.2017.08.026

San Martín, R., Ndjoko, K., & Hostettmann, K. (2008). Novel molluscicide against Pomacea canaliculata based on quinoa (Chenopodium quinoa) saponins. *Crop Protection*, *27*(3–5). https://doi.org/10.1016/j.cropro.2007.03.015

Santi, I. S., Kurniawan, I., & Manto, A. (2024). Cashew Nut Shell Liquid (Anacardium occidentale) as a Botanical Insecticide to Control Helopeltis sp on Cocoa plants. *Tropical Plantation Journal*, *3*(1). https://doi.org/10.56125/tpj.v3i1.38

Sujono, T. A., Kamilia, D., & Kinasih, A. S. (2023). Immune-Enhancing Effect of Ethanol Extract of Rambutan (Nephelium lappaceum L.) Fruit Peel on phagocytosis index, Paw Edema Formation, and Antibody Titer in Mice. *Tropical Journal of Natural Product Research*, *7*(9), 4038–4042. https://doi.org/10.26538/tjnpr/v7i9.28

Yang, C. P., Zhang, M., Lei, B., Gong, G. S., Yue, G. Z., Chang, X. L., Sun, X. F., Tian, Y., & Chen, H. B. (2017). Active saponins from root of Pueraria peduncularis (Grah. ex Benth.) Benth. and their molluscicidal effects on Pomacea canaliculata. *Pest Management Science*, *73*(6). https://doi.org/10.1002/ps.4432

Yu, Z. L., Yang, M. J., Song, H., Zhang, T., & Yuan, X. T. (2023). Gastropod chemoreception behaviors—Mechanisms underlying the perception and location of targets and implications for shellfish fishery development in aquatic environments. In *Frontiers in Marine Science* (Vol. 9). https://doi.org/10.3389/fmars.2022.1042962

LAMPIRAN

Lampiran 1: Gambar daun tanaman dan tepung daun Agave angustifolia, jambu mete, dan rambutan

Lampiran 2: Pelaksanaan percobaan laboratorium dan percobaan lapangan

Lampiran 3: Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Agave angustifolia

Tabel L3 a: Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Agave angustifolia

Waktu Paparan	Ulangan	Mortalitas Keong Mas (%)					
		0,00 gr/L	0,25 gr/ L	0,50 gr/ L	0,75 gr/ L	1,00 gr/ L	1,25 gr/ L
12 jam	U1	0	0	40	40	60	60
	U2	0	0	40	60	60	60
	U3	0	0	20	20	40	60
	jumlah	0	0	100	120	160	180
	Rata-rata	0.00	0.00	33.33	40.00	53.33	60.00
24 jam	U1	0	0	100	100	100	100
	U2	0	0	100	100	100	100
	U3	0	20	100	100	100	100
	jumlah	0	20	300	300	300	300
	Rata-rata	0.00	6.67	100.00	100.00	100.00	100.00
36 jam	U1	0	0	100	100	100	100
	U2	0	0	100	100	100	100
	U3	0	20	100	100	100	100
	jumlah	0	20	300	300	300	300
	Rata-rata	0.00	6.67	100.00	100.00	100.00	100.00
48 jam	U1	0	0	100	100	100	100
	U2	0	0	100	100	100	100
	U3	0	20	100	100	100	100
	jumlah	0	20	300	300	300	300
	Rata-rata	0.00	6.67	100.00	100.00	100.00	100.00
60 jam	U1	0	0	100	100	100	100
	U2	0	0	100	100	100	100
	U3	0	40	100	100	100	100
	jumlah	0	40	300	300	300	300
	Rata-rata	0.00	13.33	100.00	100.00	100.00	100.00
72 jam	U1	0	0	100	100	100	100
	U2	0	0	100	100	100	100
	U3	0	40	100	100	100	100
	jumlah	0	40	300	300	300	300
	Rata-rata	0.00	13.33	100.00	100.00	100.00	100.00

Tabel L3 b: Rata – Rata Mortalitas Keong Mas Pada Perlakuan Moluskisida Sediaan Tepung Daun Agave Angustifolia

Jenis Moluskisida	Konsentrasi	Waktu Paparan (Jam)					
		12	24	36	48	60	72
Tepung daun agave angustifolia	0.00 gr/l	0.00	0.00	0.00	0.00	0.00	0.00
	0.25 gr/ L	0.00	6.67	6.67	6.67	13.33	13.33
	0.50 gr/ L	33.33	100.00	100.00	100.00	100.00	100.00
	0,75 gr/ L	40.00	100.00	100.00	100.00	100.00	100.00
	1,00 gr/ L	53.33	100.00	100.00	100.00	100.00	100.00
	1,25 gr/ L	60.00	100.00	100.00	100.00	100.00	100.00

Lampiran 4: Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Jambu Mete

Tabel L4 a; Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Jambu Mete

Waktu Paparan	Ulangan	Mortalitas Keong Mas (%)					
		0.00 gr/L	0.25 gr/ L	0.50 gr/ L	0.75 gr/ L	1,00 gr/ L	1,25 gr/ L
12 jam	U1	0	0	20	20	80	60
	U2	0	0	40	60	60	60
	U3	0	0	20	60	20	60
	jumlah	0	0	80	140	160	180
	Rata-rata	0.00	0.00	26.67	46.67	53.33	60.00
24 jam	U1	0	20	100	100	100	100
	U2	0	20	100	100	100	100
	U3	0	20	100	100	100	100
	jumlah	0	60	300	300	300	300
	Rata-rata	0.00	20.00	100.00	100.00	100.00	100.00
36 jam	U1	0	40	100	100	100	100
	U2	0	20	100	100	100	100
	U3	0	40	100	100	100	100
	jumlah	0	100	300	300	300	300
	Rata-rata	0.00	33.33	100.00	100.00	100.00	100.00
48 jam	U1	0	60	100	100	100	100
	U2	0	40	100	100	100	100
	U3	0	60	100	100	100	100
	jumlah	0	160	300	300	300	300
	Rata-rata	0.00	53.33	100.00	100.00	100.00	100.00
60 jam	U1	0	60	100	100	100	100
	U2	0	60	100	100	100	100
	U3	0	80	100	100	100	100
	jumlah	0	200	300	300	300	300
	Rata-rata	0.00	66.67	100.00	100.00	100.00	100.00
72 jam	U1	0	80	100	100	100	100
	U2	0	80	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	260	300	300	300	300
	Rata-rata	0.00	86.67	100.00	100.00	100.00	100.00

Tabel L4 b: Rata – Rata Mortalitas Keong Mas Pada Perlakuan Moluskisida Sediaan Tepung Daun Jambu Mete

Jenis Moluskisida	Konsentrasi	Waktu Paparan (Jam)					
		12	24	36	48	60	72
Tepung daun Jambu Mete	0.00 gr/l	0.00	0.00	0.00	0.00	0.00	0.00
	0.25 gr/ L	0.00	20.00	33.33	53.33	66.67	86.67
	0.50 gr/ L	26.67	100.00	100.00	100.00	100.00	100.00
	0.75 gr/ L	46.67	100.00	100.00	100.00	100.00	100.00
	1,00 gr/ L	53.33	100.00	100.00	100.00	100.00	100.00
	1,25 gr/ L	60.00	100.00	100.00	100.00	100.00	100.00

Lampiran 5. Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Rambutan

Tabel L5 a: Mortalitas Keong Mas pada Perlakuan Moluskisida Sediaan Tepung Daun Rambutan

Waktu Paparan	Ulangan	Mortalitas Keong Mas (%)					
		0.00 gr/L	0.25 gr/ L	0.50 gr/ L	0.75 gr/ L	1,00 gr/ L	1.25 gr/ L
12 jam	U1	0	0	0	0	0	20
	U2	0	0	20	20	40	20
	U3	0	0	20	20	0	20
	jumlah	0	0	40	40	40	60
	Rata-rata	0.00	0.00	13.33	13.33	13.33	20.00
24 jam	U1	0	40	60	40	40	80
	U2	0	40	40	40	100	80
	U3	0	0	40	80	80	80
	jumlah	0	80	140	160	220	240
	Rata-rata	0.00	26.67	46.67	53.33	73.33	80.00
36 jam	U1	0	40	100	100	100	100
	U2	0	40	100	100	100	100
	U3	0	20	100	100	100	100
	jumlah	0	100	300	300	300	300
	Rata-rata	0.00	33.33	100.00	100.00	100.00	100.00
48 jam	U1	0	60	100	100	100	100
	U2	0	60	100	100	100	100
	U3	0	40	100	100	100	100
	jumlah	0	160	300	300	300	300
	Rata-rata	0.00	53.33	100.00	100.00	100.00	100.00
60 jam	U1	0	60	100	100	100	100
	U2	0	60	100	100	100	100
	U3	0	40	100	100	100	100
	jumlah	0	160	300	300	300	300
	Rata-rata	0.00	53.33	100.00	100.00	100.00	100.00
72 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00

Tabel L5 b: Rata – Rata Mortalitas Keong Mas Pada Perlakuan Moluskisida Sediaan Tepung Daun Rambutan

Jenis Moluskisida	Konsentrasi	Waktu Paparan (Jam)					
		12	24	36	48	60	72
Tepung daun Rambutan	0.00 gr/l	0.00	0.00	0.00	0.00	0.00	0.00
	0.25 gr/ L	0.00	26.67	33.33	53.33	53.33	100.00
	0.50 gr/ L	13.33	46.67	100.00	100.00	100.00	100.00
	0.75 gr/ L	13.33	53.33	100.00	100.00	100.00	100.00
	1,00 gr/ L	13.33	73.33	100.00	100.00	100.00	100.00
	1.25 gr/ L	20.00	80.00	100.00	100.00	100.00	100.00

Lampiran 6. Mortalitas Keong Mas pada Perlakuan Moluskisida Saponin

Tabel L6 a: Mortalitas Keong Mas pada Perlakuan Moluskisida Saponin

Waktu Paparan	Ulangan	Mortalitas Keong Mas (%)					
		0.00 gr/L	0.25 gr/ L	0.50 gr/ L	0.75 gr/ L	1,00 gr/ L	1.25 gr/ L
12 jam	U1	0	20	40	40	40	40
	U2	0	20	20	20	40	40
	U3	0	20	20	40	40	60
	jumlah	0	60	80	100	120	140
	Rata-rata	0.00	20.00	26.67	33.33	40.00	46.67
24 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
36 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
48 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
60 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
72 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00

Tabel L6 b: Rata – Rata Mortalitas Keong Mas Pada Perlakuan Moluskisida Saponin

Jenis Moluskisida	Konsentrasi	Waktu Paparan (Jam)					
		12	24	36	48	60	72
Saponin	0.00 gr/l	0.00	0.00	0.00	0.00	0.00	0.00
	0.25 gr/ L	20.00	100.00	100.00	100.00	100.00	100.00
	0.50 gr/ L	26.67	100.00	100.00	100.00	100.00	100.00
	0.75 gr/ L	33.33	100.00	100.00	100.00	100.00	100.00
	1,00 gr/ L	40.00	100.00	100.00	100.00	100.00	100.00
	1.25 gr/ L	46.67	100.00	100.00	100.00	100.00	100.00

Lampiran 7. Mortalitas Keong Mas pada Perlakuan Moluskisida Sintetis Bahan Aktif Fentin 60%

Tabel L7 a: Mortalitas Keong Mas pada Perlakuan Moluskisida Sintetis (Fentin 60%)

Waktu Paparan	Ulangan	Mortalitas Keong Mas (%)					
		0.00 gr/L	0.25 gr/ L	0.50 gr/ L	0.75 gr/ L	1,00 gr/ L	1.25 gr/ L
12 jam	U1	0	20	20	40	40	40
	U2	0	20	20	40	40	60
	U3	0	20	40	20	40	40
	jumlah	0	60	80	100	120	140
	Rata-rata	0.00	20.00	26.67	33.33	40.00	46.67
24 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
36 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
48 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
60 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00
72 jam	U1	0	100	100	100	100	100
	U2	0	100	100	100	100	100
	U3	0	100	100	100	100	100
	jumlah	0	300	300	300	300	300
	Rata-rata	0.00	100.00	100.00	100.00	100.00	100.00

Tabel L7 b: Rata – Rata Mortalitas Keong Mas Pada Perlakuan Moluskisida Sintetis (Fentin 60%)

Jenis Moluskisida	Konsentrasi	Waktu Paparan (Jam)					
		12	24	36	48	60	72
Moluskisida Sintetis (Fentin 60%)	0.00 gr/l	0.00	0.00	0.00	0.00	0.00	0.00
	0.25 gr/ L	20.00	100.00	100.00	100.00	100.00	100.00
	0.50 gr/ L	26.67	100.00	100.00	100.00	100.00	100.00
	0.75 gr/ L	33.33	100.00	100.00	100.00	100.00	100.00
	1,00 gr/ L	40.00	100.00	100.00	100.00	100.00	100.00
	1.25 gr/ L	46.67	100.00	100.00	100.00	100.00	100.00

Lampiran 8. Analisis varians (anova) dan uji lanjut jenis moluskisida dan tingkatan konsentrasi terhadap mortalitas keong mas pada paparan 12 jam

Tabel L8 a: Analisis annova mortalitas keong mas

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	94542.222[a]	32	2954.444	22.977	.000
JENIS_MOLUSCISIDA	5644.444	4	1411.111	10.974	.000
KONSENTARSI	25142.222	5	5028.444	39.107	.000
KELOMPOK	275.556	2	137.778	1.072	.349
JENIS_MOLUSCISIDA * KONSENTARSI	4702.222	20	235.111	1.828	.039
Error	7457.778	58	128.582		
Total	102000.000	90			

a. R Squared = .927 (Adjusted R Squared = .887)

Dependent Variable: MORTALITAS KEONG

Tabel L8 b: Uji Lanjut jenis moluskisida

JENIS MOLUSCISIDA		N	Subset 1	Subset 2
Duncan[a,b]	DAUN RAMBUTAN	18	10.00	
	SAPONIN	18		27.78
	SINTETIS	18		27.78
	DAUN AGAVE	18		31.11
	DAUN JAMBU METE	18		31.11
	Sig.		1.000	.429

Means for groups in homogeneous subsets are displayed. Based on observed means.
The error term is Mean Square(Error) = 128.582.
a. Uses Harmonic Mean Sample Size = 18.000.
b. Alpha = ,05.

Tabel L8 c: Uji Lanjut tingkatan konsentrasi

KONSENTRASI		N	Subset 1	Subset 2	Subset 3	Subset 4
Duncan[a,b]	0,00 gr/L	15	0.00			
	0,25 gr/L	15	8.00			
	0,50 gr/L	15		25.33		
	0,75 gr/L	15		33.33	33.33	
	1,00 gr/L	15			40.00	40.00
	1,25 gr/L	15				46.67
	Sig.		.058	.058	.113	.113

Means for groups in homogeneous subsets are displayed. Based on observed means.
The error term is Mean Square(Error) = 128.582.
a. Uses Harmonic Mean Sample Size = 15.000.
b. Alpha = ,05.

Tabel L8 d: Uji Lanjut jenis moluskisida dan Tingkat konsentrasi terhadap mortalitas keong mas

Duncan[a]

INTERAKSI	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
AG0.00	3	.00					
AG0.25	3	.00					
JM0.00	3	.00					
JM0.25	3	.00					
RB0.00	3	.00					
RB0.25	3	.00					
SP0.00	3	.00					
ST0.00	3	.00					
RB0.50	3	13.33	13.33				
RB0.75	3	13.33	13.33				
RB1.00	3	13.33	13.33				
RB1.25	3	20.00	20.00	20.00			
SP0.25	3	20.00	20.00	20.00			
ST0.25	3	20.00	20.00	20.00			
JM0.50	3		26.67	26.67	26.67		
SP0.50	3		26.67	26.67	26.67		
ST0.50	3		26.67	26.67	26.67		
AG0.50	3		33.33	33.33	33.33	33.33	
SP0.75	3		33.33	33.33	33.33	33.33	
ST0.75	3		33.33	33.33	33.33	33.33	
AG0.75	3			40.00	40.00	40.00	40.00
SP1.00	3			40.00	40.00	40.00	40.00
ST1.00	3			40.00	40.00	40.00	40.00
JM0.75	3				46.67	46.67	46.67
SP1.25	3				46.67	46.67	46.67
ST1.25	3				46.67	46.67	46.67
AG1.00	3					53.33	53.33
JM1.00	3					53.33	53.33
AG1.25	3						60.00
JM1.25	3						60.00
Sig.		.080	.077	.077	.077	.075	.073

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 9. Analisis varians (annova) dan uji lanjut jenis moluskisida dan tingkatan konsentrasi terhadap mortalitas keong mas pada paparan 24 jam

Tabel L9 a: Analisis varians

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	593902.222[a]	32	18559.444	239.329	.000
KELOMPOK	35.556	2	17.778	.229	.796
JENIS_MOLUSCISIDA	16284.444	4	4071.111	52.498	.000
KONSENTARSI	110382.222	5	22076.444	284.681	.000
JENIS_MOLUSCISIDA * KONSENTARSI	23395.556	20	1169.778	15.085	.000
Error	4497.778	58	77.548		
Total	598400.000	90			

a. R Squared = .992 (Adjusted R Squared = .988)

Dependent Variable: MORTALITAS KEONG

Tabel L9 b: Uji Lanjut Jenis Moluskisida

JENIS MOLUSCISIDA		N	Subset 1	2	3
Duncan[a,b]	DAUN RAMBUTAN	18	46.67		
	DAUN AGAVE	18		67.78	
	DAUN JAMBU METE	18		70.00	
	SAPONIN	18			83.33
	SINTETIS	18			83.33
	Sig.		1.000	.452	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 77.548.
a. Uses Harmonic Mean Sample Size = 18.000.
b. Alpha = ,05.

Tabel L9 c: Uji lanjut konsentrasi

KONSENTRASI		N	Subset 1	2	3
Duncan[a,b]	0,00 gr/L	15	0.00		
	0,25 gr/L	15		50.67	
	0,50 gr/L	15			89.33
	0,75 gr/L	15			90.67
	1,00 gr/L	15			94.67
	1,25 gr/L	15			96.00
	Sig.		1.000	1.000	.062

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 77.548.
a. Uses Harmonic Mean Sample Size = 15.000.
b. Alpha = ,05.

Tabel L9 d: Uji Lanjut jenis moluskisida dan Tingkat konsentrasi terhadap mortalitas keong mas pada paparan 24 jam

INTERAKSI		N	Subset for alpha = 0.05					
			1	2	3	4	5	6
Duncan[a]	AG0.00	3	0.00					
	JM0.00	3	0.00					
	RB0.00	3	0.00					
	SP0.00	3	0.00					
	ST0.00	3	0.00					
	AG0.25	3	6.67	6.67				
	JM0.25	3		20.00	20.00			
	RB0.25	3			26.67			
	RB0.50	3				46.67		
	RB0.75	3				53.33		
	RB01.00	3					73.33	
	RB1.25	3					80.00	
	AG0.50	3						100.00
	AG0.75	3						100.00
	AG1.00	3						100.00
	AG1.25	3						100.00
	JM0.50	3						100.00
	JM0.75	3						100.00
	JM1.00	3						100.00
	JM1.25	3						100.00
	SP0.25	3						100.00
	SP0.50	3						100.00
	SP0.75	3						100.00
	SP1.00	3						100.00
	SP1.25	3						100.00
	ST0.25	3						100.00
	ST0.50	3						100.00
	ST0.75	3						100.00
	ST1.00	3						100.00
	ST1.25	3						100.00
	Sig.		.420	.065	.351	.351	.351	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 10. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung daun Agave Angustifolia 12 jam paparan

Tabel L10 a: Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.893	.103	18.380	.000	1.691	2.095
	Intercept	-1.851	.125	-14.807	.000	-1.976	-1.726

a. PROBIT model: PROBIT(p) = Intercept + BX

Tabel L10 b: Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	3.209	-3.209	.032
	2	0.000	100	0	3.209	-3.209	.032
	3	0.000	100	0	3.209	-3.209	.032
	4	.250	100	0	8.414	-8.414	.084
	5	.250	100	0	8.414	-8.414	.084
	6	.250	100	0	8.414	-8.414	.084
	7	.500	100	40	18.285	21.715	.183
	8	.500	100	40	18.285	21.715	.183
	9	.500	100	20	18.285	1.715	.183
	10	.750	100	40	33.311	6.689	.333
	11	.750	100	60	33.311	26.689	.333
	12	.750	100	20	33.311	-13.311	.333
	13	1.000	100	60	51.669	8.331	.517
	14	1.000	100	60	51.669	8.331	.517
	15	1.000	100	40	51.669	-11.669	.517
	16	1.250	100	60	69.673	-9.673	.697
	17	1.250	100	60	69.673	-9.673	.697
	18	1.250	100	60	69.673	-9.673	.697

Tabel L10 c: Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.251	-1.115	.166
	.020	-.107	-.887	.278
	.030	-.016	-.744	.349
	.040	.053	-.636	.403
	.050	.109	-.549	.448
	.060	.156	-.475	.486
	.070	.198	-.411	.520
	.080	.236	-.354	.550
	.090	.270	-.302	.578
	.100	.301	-.254	.604
	.150	.430	-.059	.714
	.200	.533	.093	.804
	.250	.622	.220	.885
	.300	.701	.331	.960
	.350	.774	.431	1.033
	.400	.844	.523	1.105
	.450	.912	.609	1.177
	.500	**.978**	**.691**	**1.252**
	.550	1.044	.769	1.330
	.600	1.112	.845	1.412
	.650	1.181	.921	1.501
	.700	1.255	.997	1.598
	.750	1.334	1.075	1.706
	.800	1.423	1.158	1.831
	.850	1.525	1.251	1.980
	.900	**1.655**	**1.364**	**2.172**
	.910	1.686	1.390	2.220
	.920	1.720	1.418	2.271
	.930	1.758	1.449	2.328
	.940	1.799	1.484	2.392
	.950	1.847	1.522	2.465
	.960	1.903	1.567	2.552
	.970	1.972	1.622	2.658
	.980	2.063	1.694	2.801
	.990	2.207	1.806	3.028

a. A heterogeneity factor is used.

Lampiran 11. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung daun Agave Angustifolia 24 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	11.967	.685	17.478	.000	10.625	13.309
	Intercept	-4.271	.245	-17.441	.000	-4.516	-4.026

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.001	-.001	.000
	2	0.000	100	0	.001	-.001	.000
	3	0.000	100	0	.001	-.001	.000
	4	.250	100	0	10.033	-10.033	.100
	5	.250	100	0	10.033	-10.033	.100
	6	.250	100	20	10.033	9.967	.100
	7	.500	100	100	95.656	4.344	.957
	8	.500	100	100	95.656	4.344	.957
	9	.500	100	100	95.656	4.344	.957
	10	.750	100	100	100.000	.000	1.000
	11	.750	100	100	100.000	.000	1.000
	12	.750	100	100	100.000	.000	1.000
	13	1.000	100	100	100.000	.000	1.000
	14	1.000	100	100	100.000	.000	1.000
	15	1.000	100	100	100.000	.000	1.000
	16	1.250	100	100	100.000	0.000	1.000
	17	1.250	100	100	100.000	0.000	1.000
	18	1.250	100	100	100.000	0.000	1.000

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	.163	.109	.200
	.020	.185	.137	.220
	.030	.200	.154	.233
	.040	.211	.168	.242
	.050	.219	.178	.250
	.060	.227	.187	.257
	.070	.234	.195	.263
	.080	.240	.202	.268
	.090	.245	.208	.273
	.100	.250	.214	.278
	.150	.270	.238	.297
	.200	.287	.257	.312
	.250	.301	.272	.325
	.300	.313	.286	.338
	.350	.325	.299	.350
	.400	.336	.310	.361
	.450	.346	.321	.372
	.500	**.357**	**.332**	**.384**
	.550	.367	.343	.395
	.600	.378	.353	.407
	.650	.389	.364	.419
	.700	.401	.375	.432
	.750	.413	.386	.447
	.800	.427	.399	.463
	.850	.444	.414	.483
	.900	**.464**	**.432**	**.507**
	.910	.469	.437	.513
	.920	.474	.441	.520
	.930	.480	.447	.527
	.940	.487	.452	.535
	.950	.494	.459	.544
	.960	.503	.467	.555
	.970	.514	.476	.568
	.980	.529	.489	.586
	.990	.551	.508	.614

a. A heterogeneity factor is used.

Lampiran 12. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung daun Jambu Mete 12 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.977	.104	19.085	.000	1.774	2.180
	Intercept	-1.920	.122	-15.739	.000	-2.042	-1.798

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	2.741	-2.741	.027
	2	0.000	100	0	2.741	-2.741	.027
	3	0.000	100	0	2.741	-2.741	.027
	4	.250	100	0	7.691	-7.691	.077
	5	.250	100	0	7.691	-7.691	.077
	6	.250	100	0	7.691	-7.691	.077
	7	.500	100	20	17.566	2.434	.176
	8	.500	100	40	17.566	22.434	.176
	9	.500	100	20	17.566	2.434	.176
	10	.750	100	20	33.074	-13.074	.331
	11	.750	100	60	33.074	26.926	.331
	12	.750	100	60	33.074	26.926	.331
	13	1.000	100	80	52.245	27.755	.522
	14	1.000	100	60	52.245	7.755	.522
	15	1.000	100	20	52.245	-32.245	.522
	16	1.250	100	60	70.900	-10.900	.709
	17	1.250	100	60	70.900	-10.900	.709
	18	1.250	100	60	70.900	-10.900	.709

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.205	-1.220	.233
	.020	-.067	-.982	.337
	.030	.020	-.831	.404
	.040	.086	-.719	.455
	.050	.139	-.628	.497
	.060	.185	-.551	.533
	.070	.225	-.484	.565
	.080	.261	-.424	.594
	.090	.293	-.370	.621
	.100	.323	-.320	.645
	.150	.447	-.117	.751
	.200	.546	.040	.838
	.250	.630	.172	.917
	.300	.706	.286	.991
	.350	.777	.388	1.064
	.400	.843	.482	1.136
	.450	.908	.569	1.210
	.500	**.972**	**.650**	**1.286**
	.550	1.035	.728	1.366
	.600	1.100	.803	1.451
	.650	1.166	.877	1.543
	.700	1.237	.951	1.644
	.750	1.313	1.027	1.757
	.800	1.397	1.107	1.887
	.850	1.496	1.196	2.043
	.900	**1.620**	**1.302**	**2.245**
	.910	1.650	1.327	2.294
	.920	1.682	1.354	2.348
	.930	1.718	1.383	2.408
	.940	1.758	1.416	2.475
	.950	1.804	1.452	2.552
	.960	1.857	1.494	2.642
	.970	1.923	1.546	2.755
	.980	2.011	1.613	2.905
	.990	2.148	1.717	3.143

a. A heterogeneity factor is used.

Lampiran 13. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung daun Jambu Mete 24 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	12.067	.988	12.213	.000	10.130	14.003
	Intercept	-3.836	.369	-10.393	.000	-4.205	-3.467

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Prob ability
PROBIT	1	0.000	100	0	.006	-.006	.000
	2	0.000	100	0	.006	-.006	.000
	3	0.000	100	0	.006	-.006	.000
	4	.250	100	20	20.641	-.641	.206
	5	.250	100	20	20.641	-.641	.206
	6	.250	100	20	20.641	-.641	.206
	7	.500	100	100	98.602	1.398	.986
	8	.500	100	100	98.602	1.398	.986
	9	.500	100	100	98.602	1.398	.986
	10	.750	100	100	100.000	.000	1.000
	11	.750	100	100	100.000	.000	1.000
	12	.750	100	100	100.000	.000	1.000
	13	1.000	100	100	100.000	.000	1.000
	14	1.000	100	100	100.000	.000	1.000
	15	1.000	100	100	100.000	.000	1.000
	16	1.250	100	100	100.000	0.000	1.000
	17	1.250	100	100	100.000	0.000	1.000
	18	1.250	100	100	100.000	0.000	1.000

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	.125	.076	.162
	.020	.148	.103	.182
	.030	.162	.119	.195
	.040	.173	.132	.205
	.050	.182	.142	.213
	.060	.189	.150	.219
	.070	.196	.158	.225
	.080	.201	.165	.230
	.090	.207	.171	.235
	.100	.212	.176	.240
	.150	.232	.200	.258
	.200	.248	.218	.273
	.250	.262	.233	.286
	.300	.274	.247	.298
	.350	.286	.260	.309
	.400	.297	.272	.320
	.450	.307	.283	.330
	.500	**.318**	**.294**	**.340**
	.550	.328	.305	.350
	.600	.339	.316	.361
	.650	.350	.327	.372
	.700	.361	.339	.384
	.750	.374	.352	.397
	.800	.388	.365	.412
	.850	.404	.381	.430
	.900	**.424**	**.400**	**.452**
	.910	.429	.405	.457
	.920	.434	.410	.463
	.930	.440	.415	.470
	.940	.447	.421	.477
	.950	.454	.428	.486
	.960	.463	.437	.496
	.970	.474	.446	.508
	.980	.488	.459	.524
	.990	.511	.480	.550

Lampiran 14. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung daun Rambutan 12 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.078	.140	7.713	.000	.804	1.352
	Intercept	-2.088	.211	-9.910	.000	-2.299	-1.877

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	1.840	-1.840	.018
	2	0.000	100	0	1.840	-1.840	.018
	3	0.000	100	0	1.840	-1.840	.018
	4	.250	100	0	3.450	-3.450	.035
	5	.250	100	0	3.450	-3.450	.035
	6	.250	100	0	3.450	-3.450	.035
	7	.500	100	0	6.070	-6.070	.061
	8	.500	100	20	6.070	13.930	.061
	9	.500	100	20	6.070	13.930	.061
	10	.750	100	0	10.038	-10.038	.100
	11	.750	100	20	10.038	9.962	.100
	12	.750	100	20	10.038	9.962	.100
	13	1.000	100	0	15.627	-15.627	.156
	14	1.000	100	40	15.627	24.373	.156
	15	1.000	100	0	15.627	-15.627	.156
	16	1.250	100	20	22.952	-2.952	.230
	17	1.250	100	20	22.952	-2.952	.230
	18	1.250	100	20	22.952	-2.952	.230

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.221		
	.020	.032		
	.030	.192		
	.040	.313		
	.050	.411		
	.060	.495		
	.070	.568		
	.080	.633		
	.090	.693		
	.100	.748		
	.150	.975		
	.200	1.156		
	.250	1.311		
	.300	1.450		
	.350	1.579		
	.400	1.702		
	.450	1.820		
	.500	**1.937**		
	.550	2.053		
	.600	2.172		
	.650	2.294		
	.700	2.423		
	.750	2.563		
	.800	2.718		
	.850	2.898		
	.900	**3.126**		
	.910	3.181		
	.920	3.240		
	.930	3.306		
	.940	3.379		
	.950	3.463		
	.960	3.561		
	.970	3.682		
	.980	3.842		
	.990	4.095		

a. A heterogeneity factor is used.

Lampiran 15. Analisis Probit LC 50 & LC 90 Moluskisida Sediaan Tepung Daun Rambutan 24 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.882	.107	17.641	.000	1.673	2.091
	Intercept	-1.300	.131	-9.959	.000	-1.431	-1.169

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	9.680	-9.680	.097
	2	0.000	100	0	9.680	-9.680	.097
	3	0.000	100	0	9.680	-9.680	.097
	4	.250	100	40	20.343	19.657	.203
	5	.250	100	40	20.343	19.657	.203
	6	.250	100	0	20.343	-20.343	.203
	7	.500	100	60	35.986	24.014	.360
	8	.500	100	40	35.986	4.014	.360
	9	.500	100	40	35.986	4.014	.360
	10	.750	100	40	54.449	-14.449	.544
	11	.750	100	40	54.449	-14.449	.544
	12	.750	100	80	54.449	25.551	.544
	13	1.000	100	40	71.983	-31.983	.720
	14	1.000	100	100	71.983	28.017	.720
	15	1.000	100	80	71.983	8.017	.720
	16	1.250	100	80	85.381	-5.381	.854
	17	1.250	100	80	85.381	-5.381	.854
	18	1.250	100	80	85.381	-5.381	.854

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.545	-2.320	.061
	.020	-.400	-2.026	.162
	.030	-.309	-1.840	.226
	.040	-.239	-1.700	.275
	.050	-.183	-1.587	.315
	.060	-.135	-1.490	.350
	.070	-.093	-1.406	.380
	.080	-.056	-1.331	.407
	.090	-.022	-1.262	.432
	.100	.010	-1.199	.455
	.150	.140	-.941	.552
	.200	.244	-.737	.631
	.250	.332	-.564	.701
	.300	.412	-.411	.765
	.350	.486	-.271	.827
	.400	.556	-.140	.887
	.450	.624	-.016	.948
	.500	**.691**	**.104**	**1.011**
	.550	.757	.220	1.077
	.600	.825	.334	1.148
	.650	.895	.447	1.227
	.700	.969	.559	1.316
	.750	1.049	.673	1.419
	.800	1.138	.790	1.545
	.850	1.241	.914	1.704
	.900	**1.371**	**1.052**	**1.921**
	.910	1.403	1.083	1.976
	.920	1.437	1.116	2.036
	.930	1.475	1.152	2.103
	.940	1.517	1.190	2.179
	.950	1.564	1.232	2.268
	.960	1.621	1.281	2.373
	.970	1.690	1.339	2.504
	.980	1.782	1.413	2.680
	.990	1.927	1.525	2.963

a. A heterogeneity factor is used.

Lampiran 16. Analisis Probit LC 50 & LC 90 Moluskisida Saponin 12 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.139	.115	9.933	.000	.914	1.364
	Intercept	-1.375	.174	-7.891	.000	-1.549	-1.200

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	8.464	-8.464	.085
	2	0.000	100	0	8.464	-8.464	.085
	3	0.000	100	0	8.464	-8.464	.085
	4	.250	100	20	13.792	6.208	.138
	5	.250	100	20	13.792	6.208	.138
	6	.250	100	20	13.792	6.208	.138
	7	.500	100	40	21.043	18.957	.210
	8	.500	100	20	21.043	-1.043	.210
	9	.500	100	20	21.043	-1.043	.210
	10	.750	100	40	30.149	9.851	.301
	11	.750	100	20	30.149	-10.149	.301
	12	.750	100	40	30.149	9.851	.301
	13	1.000	100	40	40.698	-.698	.407
	14	1.000	100	40	40.698	-.698	.407
	15	1.000	100	40	40.698	-.698	.407
	16	1.250	100	40	51.973	-11.973	.520
	17	1.250	100	40	51.973	-11.973	.520
	18	1.250	100	60	51.973	8.027	.520

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.836	-3.238	-.033
	.020	-.596	-2.748	.131
	.030	-.444	-2.438	.236
	.040	-.330	-2.206	.316
	.050	-.237	-2.017	.382
	.060	-.158	-1.857	.437
	.070	-.089	-1.717	.487
	.080	-.027	-1.591	.531
	.090	.030	-1.478	.572
	.100	.082	-1.373	.610
	.150	.297	-.944	.769
	.200	.468	-.608	.900
	.250	.614	-.325	1.018
	.300	.746	-.076	1.129
	.350	.868	.149	1.238
	.400	.984	.354	1.350
	.450	1.096	.542	1.468
	.500	**1.207**	**.717**	**1.595**
	.550	1.317	.878	1.735
	.600	1.429	1.028	1.892
	.650	1.545	1.167	2.069
	.700	1.667	1.300	2.270
	.750	1.799	1.430	2.501
	.800	1.945	1.562	2.769
	.850	2.116	1.705	3.094
	.900	**2.332**	**1.874**	**3.513**
	.910	2.383	1.914	3.616
	.920	2.440	1.956	3.728
	.930	2.502	2.002	3.852
	.940	2.571	2.053	3.990
	.950	2.650	2.111	4.149
	.960	2.743	2.177	4.336
	.970	2.858	2.259	4.567
	.980	3.009	2.366	4.875
	.990	3.249	2.533	5.362

a. A heterogeneity factor is used.

Lampiran 17. Analisis Probit LC 50 & LC 90 Moluskisida saponin 24 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	7.945	.541	14.699	.000	6.886	9.005
	Intercept	-1.149	.099	-11.646	.000	-1.248	-1.050

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	12.528	-12.528	.125
	2	0.000	100	0	12.528	-12.528	.125
	3	0.000	100	0	12.528	-12.528	.125
	4	.250	100	100	79.880	20.120	.799
	5	.250	100	100	79.880	20.120	.799
	6	.250	100	100	79.880	20.120	.799
	7	.500	100	100	99.763	.237	.998
	8	.500	100	100	99.763	.237	.998
	9	.500	100	100	99.763	.237	.998
	10	.750	100	100	100.000	.000	1.000
	11	.750	100	100	100.000	.000	1.000
	12	.750	100	100	100.000	.000	1.000
	13	1.000	100	100	100.000	.000	1.000
	14	1.000	100	100	100.000	.000	1.000
	15	1.000	100	100	100.000	.000	1.000
	16	1.250	100	100	100.000	0.000	1.000
	17	1.250	100	100	100.000	0.000	1.000
	18	1.250	100	100	100.000	0.000	1.000

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.148	-.346	-.057
	.020	-.114	-.289	-.031
	.030	-.092	-.254	-.014
	.040	-.076	-.228	-.001
	.050	-.062	-.206	.010
	.060	-.051	-.188	.019
	.070	-.041	-.172	.027
	.080	-.032	-.158	.034
	.090	-.024	-.146	.041
	.100	-.017	-.134	.047
	.150	.014	-.087	.074
	.200	.039	-.051	.097
	.250	.060	-.021	.117
	.300	.079	.005	.137
	.350	.096	.028	.156
	.400	.113	.049	.175
	.450	.129	.068	.195
	.500	**.145**	**.086**	**.215**
	.550	.160	.103	.236
	.600	.176	.119	.258
	.650	.193	.135	.282
	.700	.211	.151	.308
	.750	.230	.168	.336
	.800	.251	.186	.369
	.850	.275	.207	.407
	.900	**.306**	**.232**	**.456**
	.910	.313	.237	.468
	.920	.321	.244	.481
	.930	.330	.251	.496
	.940	.340	.259	.512
	.950	.352	.267	.530
	.960	.365	.278	.552
	.970	.381	.290	.579
	.980	.403	.306	.615
	.990	.437	.332	.672

a. A heterogeneity factor is used.

Lampiran 18. Analisis Probit LC 50 & LC 90 Moluskisida sintetis Bahan aktif Fentin 60% 12 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	1.139	.115	9.933	.000	.914	1.364
	Intercept	-1.375	.174	-7.891	.000	-1.549	-1.200

b. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	8.464	-8.464	.085
	2	0.000	100	0	8.464	-8.464	.085
	3	0.000	100	0	8.464	-8.464	.085
	4	.250	100	20	13.792	6.208	.138
	5	.250	100	20	13.792	6.208	.138
	6	.250	100	20	13.792	6.208	.138
	7	.500	100	20	21.043	-1.043	.210
	8	.500	100	20	21.043	-1.043	.210
	9	.500	100	40	21.043	18.957	.210
	10	.750	100	40	30.149	9.851	.301
	11	.750	100	40	30.149	9.851	.301
	12	.750	100	20	30.149	-10.149	.301
	13	1.000	100	40	40.698	-.698	.407
	14	1.000	100	40	40.698	-.698	.407
	15	1.000	100	40	40.698	-.698	.407
	16	1.250	100	40	51.973	-11.973	.520
	17	1.250	100	40	51.973	-11.973	.520
	18	1.250	100	60	51.973	8.027	.520

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.836	-3.238	-.033
	.020	-.596	-2.748	.131
	.030	-.444	-2.438	.236
	.040	-.330	-2.206	.316
	.050	-.237	-2.017	.382
	.060	-.158	-1.857	.437
	.070	-.089	-1.717	.487
	.080	-.027	-1.591	.531
	.090	.030	-1.478	.572
	.100	.082	-1.373	.610
	.150	.297	-.944	.769
	.200	.468	-.608	.900
	.250	.614	-.325	1.018
	.300	.746	-.076	1.129
	.350	.868	.149	1.238
	.400	.984	.354	1.350
	.450	1.096	.542	1.468
	.500	**1.207**	**.717**	**1.595**
	.550	1.317	.878	1.735
	.600	1.429	1.028	1.892
	.650	1.545	1.167	2.069
	.700	1.667	1.300	2.270
	.750	1.799	1.430	2.501
	.800	1.945	1.562	2.769
	.850	2.116	1.705	3.094
	.900	**2.332**	**1.874**	**3.513**
	.910	2.383	1.914	3.616
	.920	2.440	1.956	3.728
	.930	2.502	2.002	3.852
	.940	2.571	2.053	3.990
	.950	2.650	2.111	4.149
	.960	2.743	2.177	4.336
	.970	2.858	2.259	4.567
	.980	3.009	2.366	4.875
	.990	3.249	2.533	5.362

a. A heterogeneity factor is used.

Lampiran 19. Analisis Probit LC 50 & LC 90 Moluskisida sintetis Bahan aktif Fentin 60% 24 Jam Paparan

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	konsentrasi	7.945	.541	14.699	.000	6.886	9.005
	Intercept	-1.149	.099	-11.646	.000	-1.248	-1.050

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		konsentrasi	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	12.528	-12.528	.125
	2	0.000	100	0	12.528	-12.528	.125
	3	0.000	100	0	12.528	-12.528	.125
	4	.250	100	100	79.880	20.120	.799
	5	.250	100	100	79.880	20.120	.799
	6	.250	100	100	79.880	20.120	.799
	7	.500	100	100	99.763	.237	.998
	8	.500	100	100	99.763	.237	.998
	9	.500	100	100	99.763	.237	.998
	10	.750	100	100	100.000	.000	1.000
	11	.750	100	100	100.000	.000	1.000
	12	.750	100	100	100.000	.000	1.000
	13	1.000	100	100	100.000	.000	1.000
	14	1.000	100	100	100.000	.000	1.000
	15	1.000	100	100	100.000	.000	1.000
	16	1.250	100	100	100.000	0.000	1.000
	17	1.250	100	100	100.000	0.000	1.000
	18	1.250	100	100	100.000	0.000	1.000

Confidence Limits

Probability		95% Confidence Limits for konsentrasi		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-.148	-.346	-.057
	.020	-.114	-.289	-.031
	.030	-.092	-.254	-.014
	.040	-.076	-.228	-.001
	.050	-.062	-.206	.010
	.060	-.051	-.188	.019
	.070	-.041	-.172	.027
	.080	-.032	-.158	.034
	.090	-.024	-.146	.041
	.100	-.017	-.134	.047
	.150	.014	-.087	.074
	.200	.039	-.051	.097
	.250	.060	-.021	.117
	.300	.079	.005	.137
	.350	.096	.028	.156
	.400	.113	.049	.175
	.450	.129	.068	.195
	.500	**.145**	**.086**	**.215**
	.550	.160	.103	.236
	.600	.176	.119	.258
	.650	.193	.135	.282
	.700	.211	.151	.308
	.750	.230	.168	.336
	.800	.251	.186	.369
	.850	.275	.207	.407
	.900	**.306**	**.232**	**.456**
	.910	.313	.237	.468
	.920	.321	.244	.481
	.930	.330	.251	.496
	.940	.340	.259	.512
	.950	.352	.267	.530
	.960	.365	.278	.552
	.970	.381	.290	.579
	.980	.403	.306	.615
	.990	.437	.332	.672

a. A heterogeneity factor is used.

Lampiran 20. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Agave angustifolia Konsentrasi 0,25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.018	.003	5.958	.000	.012	.024
	Intercept	-2.286	.251	-9.124	.000	-2.537	-2.036

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	1.112	-1.112	.011
	2	0.000	100	0	1.112	-1.112	.011
	3	0.000	100	0	1.112	-1.112	.011
	4	12.000	100	0	1.924	-1.924	.019
	5	12.000	100	0	1.924	-1.924	.019
	6	12.000	100	0	1.924	-1.924	.019
	7	24.000	100	0	3.192	-3.192	.032
	8	24.000	100	0	3.192	-3.192	.032
	9	24.000	100	20	3.192	16.808	.032
	10	36.000	100	0	5.084	-5.084	.051
	11	36.000	100	0	5.084	-5.084	.051
	12	36.000	100	20	5.084	14.916	.051
	13	48.000	100	0	7.775	-7.775	.078
	14	48.000	100	0	7.775	-7.775	.078
	15	48.000	100	20	7.775	12.225	.078
	16	60.000	100	0	11.431	-11.431	.114
	17	60.000	100	0	11.431	-11.431	.114
	18	60.000	100	40	11.431	28.569	.114
	19	72.000	100	0	16.171	-16.171	.162
	20	72.000	100	0	16.171	-16.171	.162
	21	72.000	100	40	16.171	23.829	.162

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-2.230		
	.020	12.884		
	.030	22.472		
	.040	29.686		
	.050	35.553		
	.060	40.547		
	.070	44.926		
	.080	48.847		
	.090	52.413		
	.100	55.695		
	.150	69.285		
	.200	80.085		
	.250	89.351		
	.300	97.673		
	.350	105.383		
	.400	112.700		
	.450	119.779		
	.500	126.746		
	.550	133.713		
	.600	140.792		
	.650	148.109		
	.700	155.819		
	.750	164.141		
	.800	173.407		
	.850	184.207		
	.900	197.797		
	.910	201.079		
	.920	204.645		
	.930	208.566		
	.940	212.945		
	.950	217.939		
	.960	223.806		
	.970	231.020		
	.980	240.608		
	.990	255.722		

a. A heterogeneity factor is used.

Lampiran 21. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Agave angustifolia Konsentrasi 0,50 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.047	.002	21.316	.000	.043	.051
	Intercept	-2.244	.139	-16.116	.000	-2.383	-2.105

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	1.242	-1.242	.012
	2	0.000	100	0	1.242	-1.242	.012
	3	0.000	100	0	1.242	-1.242	.012
	4	12.000	100	0	4.659	-4.659	.047
	5	12.000	100	0	4.659	-4.659	.047
	6	12.000	100	0	4.659	-4.659	.047
	7	24.000	100	20	13.270	6.730	.133
	8	24.000	100	20	13.270	6.730	.133
	9	24.000	100	20	13.270	6.730	.133
	10	36.000	100	40	29.164	10.836	.292
	11	36.000	100	20	29.164	-9.164	.292
	12	36.000	100	40	29.164	10.836	.292
	13	48.000	100	60	50.658	9.342	.507
	14	48.000	100	40	50.658	-10.658	.507
	15	48.000	100	60	50.658	9.342	.507
	16	60.000	100	60	71.958	-11.958	.720
	17	60.000	100	60	71.958	-11.958	.720
	18	60.000	100	80	71.958	8.042	.720
	19	72.000	100	80	87.425	-7.425	.874
	20	72.000	100	80	87.425	-7.425	.874
	21	72.000	100	100	87.425	12.575	.874

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-1.751	-20.829	10.607
	.020	4.038	-13.416	15.425
	.030	7.711	-8.725	18.494
	.040	10.474	-5.203	20.810
	.050	12.721	-2.344	22.700
	.060	14.634	.085	24.312
	.070	16.311	2.211	25.729
	.080	17.813	4.112	27.002
	.090	19.179	5.838	28.161
	.100	20.436	7.424	29.232
	.150	25.641	13.961	33.692
	.200	29.778	19.115	37.279
	.250	33.327	23.497	40.395
	.300	36.514	27.395	43.232
	.350	39.467	30.969	45.898
	.400	42.270	34.318	48.470
	.450	44.981	37.514	51.004
	.500	47.650	40.609	53.546
	.550	50.318	43.648	56.145
	.600	53.029	46.673	58.849
	.650	55.832	49.726	61.717
	.700	58.785	52.860	64.823
	.750	61.972	56.145	68.272
	.800	65.521	59.690	72.226
	.850	69.658	63.686	76.971
	.900	74.863	68.540	83.115
	.910	76.121	69.688	84.623
	.920	77.486	70.926	86.271
	.930	78.988	72.277	88.092
	.940	80.665	73.775	90.138
	.950	82.578	75.470	92.485
	.960	84.826	77.446	95.258
	.970	87.588	79.853	98.688
	.980	91.261	83.024	103.2m77
	.990	97.050	87.968	110.564

a. A heterogeneity factor is used.

Lampiran 22. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Agave angustifolia Konsentrasi 0,75 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.287	1.293	.196	-.191	.933
	Intercept	-4.705	3.448	-1.365	.172	-8.153	-1.258

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	39.943	.057	.399
	5	12.000	100	60	39.943	20.057	.399
	6	12.000	100	20	39.943	-19.943	.399
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	6.414		
	.020	7.149		
	.030	7.616		
	.040	7.966		
	.050	8.252		
	.060	8.495		
	.070	8.708		
	.080	8.898		
	.090	9.072		
	.100	9.231		
	.150	9.892		
	.200	10.418		
	.250	10.868		
	.300	11.273		
	.350	11.648		
	.400	12.004		
	.450	12.348		
	.500	12.687		
	.550	13.026		
	.600	13.370		
	.650	13.726		
	.700	14.101		
	.750	14.506		
	.800	14.957		
	.850	15.482		
	.900	16.143		
	.910	16.302		
	.920	16.476		
	.930	16.667		
	.940	16.880		
	.950	17.122		
	.960	17.408		
	.970	17.759		
	.980	18.225		
	.990	18.960		

a. A heterogeneity factor is used.

Lampiran 22. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Agave angustifolia Konsentrasi 1,00 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.351	1.056	.291	-.317	1.059
	Intercept	-4.368	4.214	-1.037	.300	-8.582	-.154

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.001	-.001	.000
	2	0.000	100	0	.001	-.001	.000
	3	0.000	100	0	.001	-.001	.000
	4	12.000	100	60	53.264	6.736	.533
	5	12.000	100	60	53.264	6.736	.533
	6	12.000	100	40	53.264	-13.264	.533
	7	24.000	100	100	100.000	.000	1.000
	8	24.000	100	100	100.000	.000	1.000
	9	24.000	100	100	100.000	.000	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	5.506		
	.020	6.241		
	.030	6.708		
	.040	7.059		
	.050	7.344		
	.060	7.587		
	.070	7.800		
	.080	7.991		
	.090	8.164		
	.100	8.324		
	.150	8.985		
	.200	9.510		
	.250	9.960		
	.300	10.365		
	.350	10.740		
	.400	11.096		
	.450	11.440		
	.500	11.779		
	.550	12.118		
	.600	12.462		
	.650	12.818		
	.700	13.193		
	.750	13.598		
	.800	14.049		
	.850	14.574		
	.900	15.235		
	.910	15.394		
	.920	15.568		
	.930	15.759		
	.940	15.972		
	.950	16.214		
	.960	16.500		
	.970	16.851		
	.980	17.317		
	.990	18.052		

Lampiran 24. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Agave angustifolia Konsentrasi 1.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.381	.374	1.021	.307	-.351	1.114
	Intercept	-4.326	4.482	-.965	.334	-8.807	.156

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.001	-.001	.000
	2	0.000	100	0	.001	-.001	.000
	3	0.000	100	0	.001	-.001	.000
	4	12.000	100	60	59.928	.072	.599
	5	12.000	100	60	59.928	.072	.599
	6	12.000	100	60	59.928	.072	.599
	7	24.000	100	100	100.000	.000	1.000
	8	24.000	100	100	100.000	.000	1.000
	9	24.000	100	100	100.000	.000	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	5.241		
	.020	5.956		
	.030	6.410		
	.040	6.751		
	.050	7.028		
	.060	7.264		
	.070	7.471		
	.080	7.657		
	.090	7.825		
	.100	7.981		
	.150	8.623		
	.200	9.134		
	.250	9.572		
	.300	9.966		
	.350	10.330		
	.400	10.676		
	.450	11.011		
	.500	11.341		
	.550	11.670		
	.600	12.005		
	.650	12.351		
	.700	12.716		
	.750	13.109		
	.800	13.547		
	.850	14.058		
	.900	14.701		
	.910	14.856		
	.920	15.024		
	.930	15.210		
	.940	15.417		
	.950	15.653		
	.960	15.931		
	.970	16.272		
	.980	16.725		
	.990	17.440		

Lampiran 25. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Jambu mete Konsentrasi 0.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.047	.002	21.316	.000	.043	.051
	Intercept	-2.244	.139	-16.116	.000	-2.383	-2.105

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	1.242	-1.242	.012
	2	0.000	100	0	1.242	-1.242	.012
	3	0.000	100	0	1.242	-1.242	.012
	4	12.000	100	0	4.659	-4.659	.047
	5	12.000	100	0	4.659	-4.659	.047
	6	12.000	100	0	4.659	-4.659	.047
	7	24.000	100	20	13.270	6.730	.133
	8	24.000	100	20	13.270	6.730	.133
	9	24.000	100	20	13.270	6.730	.133
	10	36.000	100	40	29.164	10.836	.292
	11	36.000	100	20	29.164	-9.164	.292
	12	36.000	100	40	29.164	10.836	.292
	13	48.000	100	60	50.658	9.342	.507
	14	48.000	100	40	50.658	-10.658	.507
	15	48.000	100	60	50.658	9.342	.507
	16	60.000	100	60	71.958	-11.958	.720
	17	60.000	100	60	71.958	-11.958	.720
	18	60.000	100	80	71.958	8.042	.720
	19	72.000	100	80	87.425	-7.425	.874
	20	72.000	100	80	87.425	-7.425	.874
	21	72.000	100	100	87.425	12.575	.874

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-1.751	-20.829	10.607
	.020	4.038	-13.416	15.425
	.030	7.711	-8.725	18.494
	.040	10.474	-5.203	20.810
	.050	12.721	-2.344	22.700
	.060	14.634	.085	24.312
	.070	16.311	2.211	25.729
	.080	17.813	4.112	27.002
	.090	19.179	5.838	28.161
	.100	20.436	7.424	29.232
	.150	25.641	13.961	33.692
	.200	29.778	19.115	37.279
	.250	33.327	23.497	40.395
	.300	36.514	27.395	43.232
	.350	39.467	30.969	45.898
	.400	42.270	34.318	48.470
	.450	44.981	37.514	51.004
	.500	47.650	40.609	53.546
	.550	50.318	43.648	56.145
	.600	53.029	46.673	58.849
	.650	55.832	49.726	61.717
	.700	58.785	52.860	64.823
	.750	61.972	56.145	68.272
	.800	65.521	59.690	72.226
	.850	69.658	63.686	76.971
	.900	74.863	68.540	83.115
	.910	76.121	69.688	84.623
	.920	77.486	70.926	86.271
	.930	78.988	72.277	88.092
	.940	80.665	73.775	90.138
	.950	82.578	75.470	92.485
	.960	84.826	77.446	95.258
	.970	87.588	79.853	98.688
	.980	91.261	83.024	103.277
	.990	97.050	87.968	110.564

a. A heterogeneity factor is used.

Lampiran 26. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Jambu mete Konsentrasi 0.50 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.370	.151	2.453	.014	.074	.666
	Intercept	-5.059	1.827	-2.768	.006	-6.886	-3.231

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	20	26.860	-6.860	.269
	5	12.000	100	40	26.860	13.140	.269
	6	12.000	100	20	26.860	-6.860	.269
	7	24.000	100	100	99.993	.007	1.000
	8	24.000	100	100	99.993	.007	1.000
	9	24.000	100	100	99.993	.007	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	7.382		
	.020	8.118		
	.030	8.586		
	.040	8.937		
	.050	9.223		
	.060	9.467		
	.070	9.680		
	.080	9.871		
	.090	10.045		
	.100	10.205		
	.150	10.867		
	.200	11.393		
	.250	11.845		
	.300	12.250		
	.350	12.626		
	.400	12.983		
	.450	13.328		
	.500	13.667		
	.550	14.007		
	.600	14.352		
	.650	14.708		
	.700	15.084		
	.750	15.489		
	.800	15.941		
	.850	16.467		
	.900	17.129		
	.910	17.289		
	.920	17.463		
	.930	17.654		
	.940	17.868		
	.950	18.111		
	.960	18.397		
	.970	18.748		
	.980	19.216		
	.990	19.952		

a. A heterogeneity factor is used.

Lampiran 27. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Jambu mete Konsentrasi 0.75 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.368	.330	1.118	.264	-.278	1.015
	Intercept	-4.506	3.958	-1.139	.255	-8.465	-.548

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	20	46.603	-26.603	.466
	5	12.000	100	60	46.603	13.397	.466
	6	12.000	100	60	46.603	13.397	.466
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	5.917		
	.020	6.657		
	.030	7.127		
	.040	7.480		
	.050	7.767		
	.060	8.011		
	.070	8.226		
	.080	8.418		
	.090	8.592		
	.100	8.753		
	.150	9.418		
	.200	9.947		
	.250	10.401		
	.300	10.808		
	.350	11.186		
	.400	11.544		
	.450	11.890		
	.500	12.231		
	.550	12.572		
	.600	12.919		
	.650	13.277		
	.700	13.655		
	.750	14.062		
	.800	14.516		
	.850	15.044		
	.900	15.710		
	.910	15.870		
	.920	16.045		
	.930	16.237		
	.940	16.451		
	.950	16.696		
	.960	16.983		
	.970	17.336		
	.980	17.806		
	.990	18.546		

a. A heterogeneity factor is used.

Lampiran 28. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Jambu mete Konsentrasi 1,00 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.351	1.056	.291	-.317	1.059
	Intercept	-4.368	4.214	-1.037	.300	-8.582	-.154

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.001	-.001	.000
	2	0.000	100	0	.001	-.001	.000
	3	0.000	100	0	.001	-.001	.000
	4	12.000	100	80	53.264	26.736	.533
	5	12.000	100	60	53.264	6.736	.533
	6	12.000	100	20	53.264	-33.264	.533
	7	24.000	100	100	100.000	.000	1.000
	8	24.000	100	100	100.000	.000	1.000
	9	24.000	100	100	100.000	.000	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	5.506		
	.020	6.241		
	.030	6.708		
	.040	7.059		
	.050	7.344		
	.060	7.587		
	.070	7.800		
	.080	7.991		
	.090	8.164		
	.100	8.324		
	.150	8.985		
	.200	9.510		
	.250	9.960		
	.300	10.365		
	.350	10.740		
	.400	11.096		
	.450	11.440		
	.500	11.779		
	.550	12.118		
	.600	12.462		
	.650	12.818		
	.700	13.193		
	.750	13.598		
	.800	14.049		
	.850	14.574		
	.900	15.235		
	.910	15.394		
	.920	15.568		
	.930	15.759		
	.940	15.972		
	.950	16.214		
	.960	16.500		
	.970	16.851		
	.980	17.317		
	.990	18.052		

a. A heterogeneity factor is used.

Lampiran 29. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Jambu mete Konsentrasi 1.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.381	.374	1.021	.307	-.351	1.114
	Intercept	-4.326	4.482	-.965	.334	-8.807	.156

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.001	-.001	.000
	2	0.000	100	0	.001	-.001	.000
	3	0.000	100	0	.001	-.001	.000
	4	12.000	100	60	59.928	.072	.599
	5	12.000	100	60	59.928	.072	.599
	6	12.000	100	60	59.928	.072	.599
	7	24.000	100	100	100.000	.000	1.000
	8	24.000	100	100	100.000	.000	1.000
	9	24.000	100	100	100.000	.000	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	5.241		
	.020	5.956		
	.030	6.410		
	.040	6.751		
	.050	7.028		
	.060	7.264		
	.070	7.471		
	.080	7.657		
	.090	7.825		
	.100	7.981		
	.150	8.623		
	.200	9.134		
	.250	9.572		
	.300	9.966		
	.350	10.330		
	.400	10.676		
	.450	11.011		
	.500	11.341		
	.550	11.670		
	.600	12.005		
	.650	12.351		
	.700	12.716		
	.750	13.109		
	.800	13.547		
	.850	14.058		
	.900	14.701		
	.910	14.856		
	.920	15.024		
	.930	15.210		
	.940	15.417		
	.950	15.653		
	.960	15.931		
	.970	16.272		
	.980	16.725		
	.990	17.440		

Lampiran 30. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Rambutan Konsentrasi 0.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.048	.003	18.860	.000	.043	.053
	Intercept	-2.239	.165	-13.585	.000	-2.404	-2.074

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	1.257	-1.257	.013
	2	0.000	100	0	1.257	-1.257	.013
	3	0.000	100	0	1.257	-1.257	.013
	4	12.000	100	0	4.839	-4.839	.048
	5	12.000	100	0	4.839	-4.839	.048
	6	12.000	100	0	4.839	-4.839	.048
	7	24.000	100	40	13.960	26.040	.140
	8	24.000	100	40	13.960	26.040	.140
	9	24.000	100	0	13.960	-13.960	.140
	10	36.000	100	40	30.728	9.272	.307
	11	36.000	100	40	30.728	9.272	.307
	12	36.000	100	20	30.728	-10.728	.307
	13	48.000	100	60	52.989	7.011	.530
	14	48.000	100	60	52.989	7.011	.530
	15	48.000	100	40	52.989	-12.989	.530
	16	60.000	100	60	74.330	-14.330	.743
	17	60.000	100	60	74.330	-14.330	.743
	18	60.000	100	40	74.330	-34.330	.743
	19	72.000	100	100	89.105	10.895	.891
	20	72.000	100	100	89.105	10.895	.891
	21	72.000	100	100	89.105	10.895	.891

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	-1.806	-54.260	19.269
	.020	3.848	-44.172	23.342
	.030	7.435	-37.788	25.944
	.040	10.133	-32.996	27.913
	.050	12.328	-29.106	29.521
	.060	14.197	-25.802	30.897
	.070	15.835	-22.909	32.108
	.080	17.302	-20.324	33.197
	.090	18.636	-17.977	34.191
	.100	19.864	-15.820	35.110
	.150	24.948	-6.933	38.958
	.200	28.988	.068	42.079
	.250	32.455	6.017	44.813
	.300	35.568	11.301	47.327
	.350	38.453	16.137	49.717
	.400	41.190	20.658	52.052
	.450	43.838	24.957	54.387
	.500	46.444	29.099	56.774
	.550	49.051	33.134	59.267
	.600	51.699	37.106	61.929
	.650	54.436	41.053	64.839
	.700	57.321	45.013	68.105
	.750	60.434	49.037	71.878
	.800	63.901	53.205	76.394
	.850	67.941	57.666	82.054
	.900	73.025	62.763	89.693
	.910	74.253	63.922	91.609
	.920	75.587	65.156	93.717
	.930	77.054	66.483	96.064
	.940	78.692	67.933	98.717
	.950	80.561	69.550	101.781
	.960	82.756	71.406	105.423
	.970	85.454	73.633	109.956
	.980	89.041	76.516	116.058
	.990	94.695	80.927	125.810

a. A heterogeneity factor is used.

Lampiran 31. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Rambutan Konsentrasi 0.50 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT [a]	waktu	.098	.007	14.909	.000	.085	.111
	Intercept	-2.364	.214	-11.040	.000	-2.578	-2.150

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.903	-.903	.009
	2	0.000	100	0	.903	-.903	.009
	3	0.000	100	0	.903	-.903	.009
	4	12.000	100	0	11.685	-11.685	.117
	5	12.000	100	20	11.685	8.315	.117
	6	12.000	100	20	11.685	8.315	.117
	7	24.000	100	50	49.303	.697	.493
	8	24.000	100	50	49.303	.697	.493
	9	24.000	100	50	49.303	.697	.493
	10	36.000	100	80	87.614	-7.614	.876
	11	36.000	100	80	87.614	-7.614	.876
	12	36.000	100	100	87.614	12.386	.876

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	.388	-18.355	9.349
	.020	3.176	-13.981	11.448
	.030	4.944	-11.213	12.788
	.040	6.275	-9.135	13.799
	.050	7.357	-7.447	14.625
	.060	8.278	-6.014	15.331
	.070	9.086	-4.759	15.952
	.080	9.809	-3.637	16.509
	.090	10.467	-2.618	17.018
	.100	11.073	-1.682	17.488
	.150	13.579	2.177	19.451
	.200	15.572	5.219	21.035
	.250	17.281	7.805	22.418
	.300	18.816	10.104	23.683
	.350	20.238	12.211	24.880
	.400	21.588	14.183	26.042
	.450	22.894	16.060	27.197
	.500	24.179	17.873	28.369
	.550	25.464	19.644	29.582
	.600	26.770	21.393	30.866
	.650	28.119	23.139	32.253
	.700	29.542	24.904	33.792
	.750	31.076	26.714	35.546
	.800	32.786	28.614	37.616
	.850	34.778	30.682	40.174
	.900	37.285	33.096	43.581
	.910	37.890	33.653	44.430
	.920	38.548	34.249	45.362
	.930	39.271	34.893	46.397
	.940	40.079	35.601	47.565
	.950	41.000	36.395	48.910
	.960	42.082	37.312	50.507
	.970	43.413	38.418	52.491
	.980	45.182	39.861	55.155
	.990	47.970	42.085	59.405

a. A heterogeneity factor is used.

Lampiran 32. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Rambutan Konsentrasi 0.75 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.135	.047	2.878	.004	.043	.227
	Intercept	-2.944	1.436	-2.051	.040	-4.380	-1.509

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	1.000	100	0	.248	-.248	.002
	2	1.000	100	0	.248	-.248	.002
	3	1.000	100	0	.248	-.248	.002
	4	12.000	100	0	9.302	-9.302	.093
	5	12.000	100	20	9.302	10.698	.093
	6	12.000	100	20	9.302	10.698	.093
	7	24.000	100	40	61.782	-21.782	.618
	8	24.000	100	40	61.782	-21.782	.618
	9	24.000	100	80	61.782	18.218	.618
	10	36.000	100	100	97.269	2.731	.973
	11	36.000	100	100	97.269	2.731	.973
	12	36.000	100	100	97.269	2.731	.973

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	4.573		
	.020	6.589		
	.030	7.869		
	.040	8.831		
	.050	9.614		
	.060	10.281		
	.070	10.865		
	.080	11.388		
	.090	11.864		
	.100	12.302		
	.150	14.115		
	.200	15.556		
	.250	16.793		
	.300	17.903		
	.350	18.932		
	.400	19.908		
	.450	20.853		
	.500	21.782		
	.550	22.712		
	.600	23.657		
	.650	24.633		
	.700	25.662		
	.750	26.772		
	.800	28.009		
	.850	29.450		
	.900	31.263		
	.910	31.701		
	.920	32.177		
	.930	32.700		
	.940	33.284		
	.950	33.951		
	.960	34.733		
	.970	35.696		
	.980	36.975		
	.990	38.992		

a. A heterogeneity factor is used.

Lampiran 33. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Rambutan Konsentrasi 1,00 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.155	.015	10.494	.000	.126	.184
	Intercept	-3.030	.394	-7.690	.000	-3.424	-2.636

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.122	-.122	.001
	2	0.000	100	0	.122	-.122	.001
	3	0.000	100	0	.122	-.122	.001
	4	12.000	100	0	12.077	-12.077	.121
	5	12.000	100	40	12.077	27.923	.121
	6	12.000	100	0	12.077	-12.077	.121
	7	24.000	100	40	75.417	-35.417	.754
	8	24.000	100	100	75.417	24.583	.754
	9	24.000	100	80	75.417	4.583	.754
	10	36.000	100	100	99.456	.544	.995
	11	36.000	100	100	99.456	.544	.995
	12	36.000	100	100	99.456	.544	.995

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	4.542		
	.020	6.302		
	.030	7.419		
	.040	8.259		
	.050	8.942		
	.060	9.524		
	.070	10.033		
	.080	10.490		
	.090	10.905		
	.100	11.287		
	.150	12.870		
	.200	14.127		
	.250	15.206		
	.300	16.175		
	.350	17.073		
	.400	17.925		
	.450	18.749		
	.500	19.561		
	.550	20.372		
	.600	21.196		
	.650	22.048		
	.700	22.946		
	.750	23.915		
	.800	24.994		
	.850	26.251		
	.900	27.834		
	.910	28.216		
	.920	28.631		
	.930	29.088		
	.940	29.598		
	.950	30.179		
	.960	30.862		
	.970	31.702		
	.980	32.819		
	.990	34.579		

a. A heterogeneity factor is used.

Lampiran 34. Analisis Probit LT 50 & LT 90 Moluskisida Sediaan Tepung Daun Rambutan Konsentrasi 1.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.151	.011	14.122	.000	.130	.172
	Intercept	-2.713	.270	-10.036	.000	-2.983	-2.443

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.333	-.333	.003
	2	0.000	100	0	.333	-.333	.003
	3	0.000	100	0	.333	-.333	.003
	4	12.000	100	20	18.292	1.708	.183
	5	12.000	100	20	18.292	1.708	.183
	6	12.000	100	20	18.292	1.708	.183
	7	24.000	100	80	81.708	-1.708	.817
	8	24.000	100	80	81.708	-1.708	.817
	9	24.000	100	80	81.708	-1.708	.817
	10	36.000	100	100	99.667	.333	.997
	11	36.000	100	100	99.667	.333	.997
	12	36.000	100	100	99.667	.333	.997

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	2.565	-1.094	5.387
	.020	4.373	.987	6.995
	.030	5.521	2.305	8.017
	.040	6.384	3.296	8.787
	.050	7.086	4.101	9.413
	.060	7.684	4.786	9.948
	.070	8.208	5.385	10.416
	.080	8.677	5.922	10.837
	.090	9.104	6.410	11.219
	.100	9.497	6.858	11.572
	.150	11.123	8.712	13.035
	.200	12.416	10.180	14.203
	.250	13.525	11.434	15.210
	.300	14.521	12.557	16.118
	.350	15.443	13.592	16.965
	.400	16.319	14.570	17.772
	.450	17.166	15.511	18.559
	.500	18.000	16.431	19.339
	.550	18.834	17.345	20.125
	.600	19.681	18.266	20.932
	.650	20.557	19.209	21.775
	.700	21.479	20.191	22.674
	.750	22.475	21.237	23.659
	.800	23.584	22.383	24.775
	.850	24.877	23.693	26.101
	.900	26.503	25.302	27.808
	.910	26.896	25.685	28.227
	.920	27.323	26.098	28.684
	.930	27.792	26.550	29.189
	.940	28.316	27.051	29.756
	.950	28.914	27.619	30.407
	.960	29.616	28.281	31.177
	.970	30.479	29.089	32.129
	.980	31.627	30.154	33.405
	.990	33.435	31.815	35.432

Lampiran 35. Analisis Probit LT 50 & LT 90 Moluskisida Saponin Konsentrasi 0.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.107	3.482	.000	.162	.580
	Intercept	-5.284	1.313	-4.024	.000	-6.597	-3.971

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	20	20.247	-.247	.202
	5	12.000	100	20	20.247	-.247	.202
	6	12.000	100	20	20.247	-.247	.202
	7	24.000	100	100	99.985	.015	1.000
	8	24.000	100	100	99.985	.015	1.000
	9	24.000	100	100	99.985	.015	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	7.974	2.337	9.678
	.020	8.709	3.983	10.183
	.030	9.175	5.020	10.511
	.040	9.526	5.794	10.764
	.050	9.811	6.419	10.974
	.060	10.054	6.946	11.158
	.070	10.267	7.404	11.324
	.080	10.457	7.809	11.477
	.090	10.631	8.173	11.620
	.100	10.790	8.504	11.756
	.150	11.451	9.808	12.388
	.200	11.976	10.723	13.010
	.250	12.427	11.386	13.666
	.300	12.831	11.882	14.355
	.350	13.206	12.275	15.059
	.400	13.562	12.605	15.770
	.450	13.906	12.899	16.485
	.500	14.245	13.170	17.205
	.550	14.584	13.429	17.938
	.600	14.928	13.683	18.692
	.650	15.284	13.939	19.477
	.700	15.659	14.203	20.311
	.750	16.064	14.483	21.215
	.800	16.514	14.790	22.227
	.850	17.039	15.145	23.410
	.900	17.700	15.586	24.904
	.910	17.860	15.692	25.265
	.920	18.033	15.806	25.658
	.930	18.224	15.932	26.090
	.940	18.437	16.073	26.573
	.950	18.679	16.233	27.124
	.960	18.965	16.420	27.772
	.970	19.315	16.650	28.569
	.980	19.782	16.955	29.629
	.990	20.517	17.434	31.301

Lampiran 36. Analisis Probit LT 50 & LT 90 Moluskisida Saponin Konsentrasi 0.50 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.370	.151	2.453	.014	.074	.666
	Intercept	-5.059	1.827	-2.768	.006	-6.886	-3.231

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	26.860	13.140	.269
	5	12.000	100	20	26.860	-6.860	.269
	6	12.000	100	20	26.860	-6.860	.269
	7	24.000	100	100	99.993	.007	1.000
	8	24.000	100	100	99.993	.007	1.000
	9	24.000	100	100	99.993	.007	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	7.382		
	.020	8.118		
	.030	8.586		
	.040	8.937		
	.050	9.223		
	.060	9.467		
	.070	9.680		
	.080	9.871		
	.090	10.045		
	.100	10.205		
	.150	10.867		
	.200	11.393		
	.250	11.845		
	.300	12.250		
	.350	12.626		
	.400	12.983		
	.450	13.328		
	.500	13.667		
	.550	14.007		
	.600	14.352		
	.650	14.708		
	.700	15.084		
	.750	15.489		
	.800	15.941		
	.850	16.467		
	.900	17.129		
	.910	17.289		
	.920	17.463		
	.930	17.654		
	.940	17.868		
	.950	18.111		
	.960	18.397		
	.970	18.748		
	.980	19.216		
	.990	19.952		

a. A heterogeneity factor is used.

Lampiran 37. Analisis Probit LT 50 & LT 90 Moluskisida Saponin Konsentrasi 0.75 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.370	.209	1.766	.077	-.041	.780
	Intercept	-4.866	2.523	-1.929	.054	-7.389	-2.343

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	33.441	6.559	.334
	5	12.000	100	20	33.441	-13.441	.334
	6	12.000	100	40	33.441	6.559	.334
	7	24.000	100	100	99.997	.003	1.000
	8	24.000	100	100	99.997	.003	1.000
	9	24.000	100	100	99.997	.003	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	6.867		
	.020	7.604		
	.030	8.071		
	.040	8.423		
	.050	8.709		
	.060	8.953		
	.070	9.166		
	.080	9.358		
	.090	9.532		
	.100	9.692		
	.150	10.354		
	.200	10.881		
	.250	11.333		
	.300	11.739		
	.350	12.115		
	.400	12.472		
	.450	12.817		
	.500	13.157		
	.550	13.496		
	.600	13.842		
	.650	14.198		
	.700	14.574		
	.750	14.980		
	.800	15.432		
	.850	15.959		
	.900	16.621		
	.910	16.782		
	.920	16.955		
	.930	17.147		
	.940	17.360		
	.950	17.604		
	.960	17.890		
	.970	18.242		
	.980	18.709		
	.990	19.446		

Lampiran 38. Analisis Probit LT 50 & LT 90 Moluskisida Saponin Konsentrasi 1.00 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.287	1.293	.196	-.191	.933
	Intercept	-4.705	3.448	-1.365	.172	-8.153	-1.258

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	39.943	.057	.399
	5	12.000	100	40	39.943	.057	.399
	6	12.000	100	40	39.943	.057	.399
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	6.414		
	.020	7.149		
	.030	7.616		
	.040	7.966		
	.050	8.252		
	.060	8.495		
	.070	8.708		
	.080	8.898		
	.090	9.072		
	.100	9.231		
	.150	9.892		
	.200	10.418		
	.250	10.868		
	.300	11.273		
	.350	11.648		
	.400	12.004		
	.450	12.348		
	.500	12.687		
	.550	13.026		
	.600	13.370		
	.650	13.726		
	.700	14.101		
	.750	14.506		
	.800	14.957		
	.850	15.482		
	.900	16.143		
	.910	16.302		
	.920	16.476		
	.930	16.667		
	.940	16.880		
	.950	17.122		
	.960	17.408		
	.970	17.759		
	.980	18.225		
	.990	18.960		

Lampiran 39. Analisis Probit LT 50 & LT 90 Moluskisida Saponin Konsentrasi 1.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.368	.330	1.118	.264	-.278	1.015
	Intercept	-4.506	3.958	-1.139	.255	-8.465	-.548

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	46.603	-6.603	.466
	5	12.000	100	40	46.603	-6.603	.466
	6	12.000	100	60	46.603	13.397	.466
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	5.917		
	.020	6.657		
	.030	7.127		
	.040	7.480		
	.050	7.767		
	.060	8.011		
	.070	8.226		
	.080	8.418		
	.090	8.592		
	.100	8.753		
	.150	9.418		
	.200	9.947		
	.250	10.401		
	.300	10.808		
	.350	11.186		
	.400	11.544		
	.450	11.890		
	.500	12.231		
	.550	12.572		
	.600	12.919		
	.650	13.277		
	.700	13.655		
	.750	14.062		
	.800	14.516		
	.850	15.044		
	.900	15.710		
	.910	15.870		
	.920	16.045		
	.930	16.237		
	.940	16.451		
	.950	16.696		
	.960	16.983		
	.970	17.336		
	.980	17.806		
	.990	18.546		

Lampiran 40. Analisis Probit LT 50 & LT 90 Moluskisida Sintetis Konsentrasi 0.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.107	3.482	.000	.162	.580
	Intercept	-5.284	1.313	-4.024	.000	-6.597	-3.971

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	20	20.247	-.247	.202
	5	12.000	100	20	20.247	-.247	.202
	6	12.000	100	20	20.247	-.247	.202
	7	24.000	100	100	99.985	.015	1.000
	8	24.000	100	100	99.985	.015	1.000
	9	24.000	100	100	99.985	.015	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	7.974	2.337	9.678
	.020	8.709	3.983	10.183
	.030	9.175	5.020	10.511
	.040	9.526	5.794	10.764
	.050	9.811	6.419	10.974
	.060	10.054	6.946	11.158
	.070	10.267	7.404	11.324
	.080	10.457	7.809	11.477
	.090	10.631	8.173	11.620
	.100	10.790	8.504	11.756
	.150	11.451	9.808	12.388
	.200	11.976	10.723	13.010
	.250	12.427	11.386	13.666
	.300	12.831	11.882	14.355
	.350	13.206	12.275	15.059
	.400	13.562	12.605	15.770
	.450	13.906	12.899	16.485
	.500	14.245	13.170	17.205
	.550	14.584	13.429	17.938
	.600	14.928	13.683	18.692
	.650	15.284	13.939	19.477
	.700	15.659	14.203	20.311
	.750	16.064	14.483	21.215
	.800	16.514	14.790	22.227
	.850	17.039	15.145	23.410
	.900	17.700	15.586	24.904
	.910	17.860	15.692	25.265
	.920	18.033	15.806	25.658
	.930	18.224	15.932	26.090
	.940	18.437	16.073	26.573
	.950	18.679	16.233	27.124
	.960	18.965	16.420	27.772
	.970	19.315	16.650	28.569
	.980	19.782	16.955	29.629
	.990	20.517	17.434	31.301

Lampiran 41. Analisis Probit LT 50 & LT 90 Moluskisida Sintetis Konsentrasi 0.50 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.370	.151	2.453	.014	.074	.666
	Intercept	-5.059	1.827	-2.768	.006	-6.886	-3.231

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	20	26.860	-6.860	.269
	5	12.000	100	20	26.860	-6.860	.269
	6	12.000	100	40	26.860	13.140	.269
	7	24.000	100	100	99.993	.007	1.000
	8	24.000	100	100	99.993	.007	1.000
	9	24.000	100	100	99.993	.007	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT[a]	.010	7.382		
	.020	8.118		
	.030	8.586		
	.040	8.937		
	.050	9.223		
	.060	9.467		
	.070	9.680		
	.080	9.871		
	.090	10.045		
	.100	10.205		
	.150	10.867		
	.200	11.393		
	.250	11.845		
	.300	12.250		
	.350	12.626		
	.400	12.983		
	.450	13.328		
	.500	13.667		
	.550	14.007		
	.600	14.352		
	.650	14.708		
	.700	15.084		
	.750	15.489		
	.800	15.941		
	.850	16.467		
	.900	17.129		
	.910	17.289		
	.920	17.463		
	.930	17.654		
	.940	17.868		
	.950	18.111		
	.960	18.397		
	.970	18.748		
	.980	19.216		
	.990	19.952		

a. A heterogeneity factor is used.

Lampiran 42. Analisis Probit LT 50 & LT 90 Moluskisida Sintetis Konsentrasi 0.75 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.370	.209	1.766	.077	-.041	.780
	Intercept	-4.866	2.523	-1.929	.054	-7.389	-2.343

c. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	33.441	6.559	.334
	5	12.000	100	40	33.441	6.559	.334
	6	12.000	100	20	33.441	-13.441	.334
	7	24.000	100	100	99.997	.003	1.000
	8	24.000	100	100	99.997	.003	1.000
	9	24.000	100	100	99.997	.003	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	6.867		
	.020	7.604		
	.030	8.071		
	.040	8.423		
	.050	8.709		
	.060	8.953		
	.070	9.166		
	.080	9.358		
	.090	9.532		
	.100	9.692		
	.150	10.354		
	.200	10.881		
	.250	11.333		
	.300	11.739		
	.350	12.115		
	.400	12.472		
	.450	12.817		
	.500	13.157		
	.550	13.496		
	.600	13.842		
	.650	14.198		
	.700	14.574		
	.750	14.980		
	.800	15.432		
	.850	15.959		
	.900	16.621		
	.910	16.782		
	.920	16.955		
	.930	17.147		
	.940	17.360		
	.950	17.604		
	.960	17.890		
	.970	18.242		
	.980	18.709		
	.990	19.446		

Lampiran 43. Analisis Probit LT 50 & LT 90 Moluskisida Sintetis Konsentrasi 1.00 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.371	.287	1.293	.196	-.191	.933
	Intercept	-4.705	3.448	-1.365	.172	-8.153	-1.258

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	39.943	.057	.399
	5	12.000	100	40	39.943	.057	.399
	6	12.000	100	40	39.943	.057	.399
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	6.414		
	.020	7.149		
	.030	7.616		
	.040	7.966		
	.050	8.252		
	.060	8.495		
	.070	8.708		
	.080	8.898		
	.090	9.072		
	.100	9.231		
	.150	9.892		
	.200	10.418		
	.250	10.868		
	.300	11.273		
	.350	11.648		
	.400	12.004		
	.450	12.348		
	.500	12.687		
	.550	13.026		
	.600	13.370		
	.650	13.726		
	.700	14.101		
	.750	14.506		
	.800	14.957		
	.850	15.482		
	.900	16.143		
	.910	16.302		
	.920	16.476		
	.930	16.667		
	.940	16.880		
	.950	17.122		
	.960	17.408		
	.970	17.759		
	.980	18.225		
	.990	18.960		

Lampiran 44. Analisis Probit LT 50 & LT 90 Moluskisida Sintetis Konsentrasi 1.25 gr/L

Parameter Estimates

Parameter		Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	waktu	.368	.330	1.118	.264	-.278	1.015
	Intercept	-4.506	3.958	-1.139	.255	-8.465	-.548

a. PROBIT model: PROBIT(p) = Intercept + BX

Cell Counts and Residuals

Number		waktu	Number of Subjects	Observed Responses	Expected Responses	Residual	Probability
PROBIT	1	0.000	100	0	.000	.000	.000
	2	0.000	100	0	.000	.000	.000
	3	0.000	100	0	.000	.000	.000
	4	12.000	100	40	46.603	-6.603	.466
	5	12.000	100	40	46.603	-6.603	.466
	6	12.000	100	60	46.603	13.397	.466
	7	24.000	100	100	99.999	.001	1.000
	8	24.000	100	100	99.999	.001	1.000
	9	24.000	100	100	99.999	.001	1.000

Confidence Limits

Probability		95% Confidence Limits for waktu		
		Estimate	Lower Bound	Upper Bound
PROBIT	.010	5.917		
	.020	6.657		
	.030	7.127		
	.040	7.480		
	.050	7.767		
	.060	8.011		
	.070	8.226		
	.080	8.418		
	.090	8.592		
	.100	8.753		
	.150	9.418		
	.200	9.947		
	.250	10.401		
	.300	10.808		
	.350	11.186		
	.400	11.544		
	.450	11.890		
	.500	12.231		
	.550	12.572		
	.600	12.919		
	.650	13.277		
	.700	13.655		
	.750	14.062		
	.800	14.516		
	.850	15.044		
	.900	15.710		
	.910	15.870		
	.920	16.045		
	.930	16.237		
	.940	16.451		
	.950	16.696		
	.960	16.983		
	.970	17.336		
	.980	17.806		
	.990	18.546		

Lampiran 45. Bukti Publikasi Jurnal

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JGIAS No. **2024-1452**
Dated: **19-7-2024**

Hamzah Hamzah [1,3]*, Sylvia Sjam[2], Ahdin Gassa[2] and Tamrin Abdullah[2]

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Subject: Acceptance Paper No. 2024-1452

Dear Authors

I am pleased to inform you that your manuscript entitled "**Molluscicides Efficacy of Leaf Powders from Agave angustifolia, Cashew and Rambutan on Mortality of the Golden Snails (Pomacea canaliculata L.)**" has been accepted for publication Journal of Global Innovations in Agricultural Sciences (JGIAS) **Vol. 12 No.4, 2024**. Thanking you for submitting your paper for publicación.

Regards

Editor in Chief
Muhammad Jafar Jaskani, Ph.D.
Professor
Institute of Horticultural Sciences, University of Agriculture,
Faisalabad, Pakistan

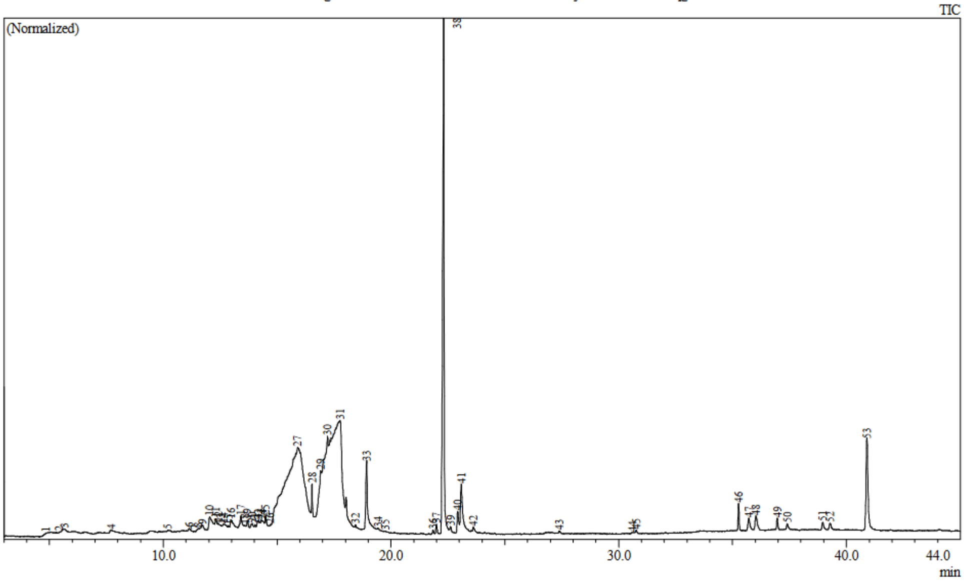
Lampiran 46. Cromatogram dan spektrum massa Daun Rambutan

DATA REPORT GCMS-QP2010 ULTRA SHIMADZU

Sample Information

Analyzed by	: Admin
Analyzed	: 24/01/2024 4:58:44 PM
Sample Type	: Unknown
Level #	: 1
Sample Name	: Rambutan 2
Sample ID	: Rambutan 2
IS Amount	: [1]=1
Sample Amount	: 1

Chromatogram Rambutan 2 C:\GCMSsolution\Data\Project1\Rambutan 2.qgd



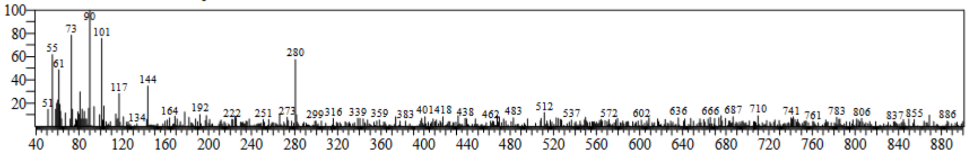
Peak Report TIC

Peak#	R.Time	Area	Area%	A/H	Name
1	4.850	47135	0.02	5.88	Gluconic acid
2	5.433	66546	0.03	9.63	Isobutyl (2-(2-methoxyethoxy)ethyl) carbonate
3	5.658	405942	0.20	10.79	2,5-Furandione, dihydro-3-methylene-
4	7.707	100764	0.05	5.50	4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl-
5	10.200	106249	0.05	8.14	Adipic acid, 4-tert-butylphenyl undecyl ester
6	11.147	162813	0.08	5.48	3-Methyl-2-thiabicyclo[2.2.2]octane
7	11.375	24496	0.01	3.89	ETHANONE, 1-(2,3-DIHYDRO-1,1-DIMETHYL-1H-INDEN-4-YL)-
8	11.533	278019	0.13	7.92	8-Nonynoic acid (CAS)
9	11.723	688361	0.33	8.84	trans-.beta.-Farnesene
10	12.041	2263374	1.09	13.32	3-OXABICYCLO(3.3.1)NONANE
11	12.307	858871	0.41	5.75	1-Pyridineacetic acid, 4-(aminocarbonyl)hexahydro-, decyl ester
12	12.414	571672	0.28	5.87	.alpha.-Farnesene
13	12.525	288246	0.14	3.83	PHENOL, 2,4-BIS(1,1-DIMETHYLETHYL)-
14	12.653	1250896	0.60	14.00	Benzoic acid, 2-methoxy-
15	12.871	321128	0.15	4.47	4,7,10,13,16,19-Docosahexaenoic acid, methyl ester, (all-Z)-
16	12.975	1581446	0.76	11.31	D-Allose
17	13.401	1954026	0.94	10.65	Phenol, 4-ethenyl-2,6-dimethoxy-
18	13.575	217435	0.10	2.85	Cyclopropanecarboxylic acid, 1-methyl-, 2,6-bis(1,1-dimethylethyl)-4-methylphenyl este
19	13.692	974142	0.47	7.11	11-Hexadecyn-1-ol
20	13.901	816218	0.39	8.68	5-(2',3',5',6'-TETRADEUTERIOOCTA-2',5'-DIEN-1'-YL)-4,5-DIDEUTERIOTETRAH
21	14.030	436409	0.21	5.14	4-[3,4-Dimethoxycyclohexyl]-n-butanol
22	14.164	874584	0.42	6.69	Methyl isopropylidene-.beta.-d-arabinoside
23	14.295	985062	0.48	6.98	BICYCLO[2.2.1]HEPTAN-2-ONE, 5-HYDROXY-4,7,7-TRIMETHYL-, EXO-
24	14.369	670121	0.32	4.99	10,12-Tricosadiynoic acid, methyl ester
25	14.487	1132542	0.55	6.24	4-(6,6-Dimethyl-2-methylenecyclohex-3-enylidene)pentan-2-ol
26	14.692	689526	0.33	8.17	Pentyl filicinate

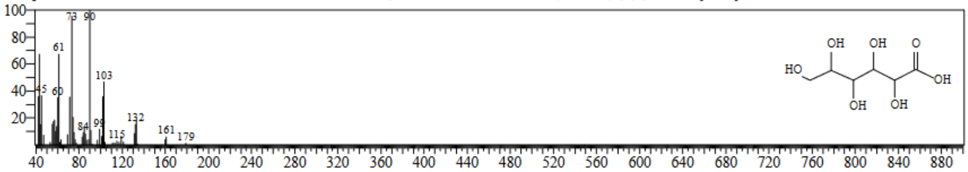
Peak#	R.Time	Area	Area%	A/H	Name
27	15.903	59623219	28.76	60.68	MOME INOSITOL
28	16.531	2525533	1.22	4.48	Neophytadiene
29	16.913	7269612	3.51	10.18	2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R-[R*,R*-(E)]]- (CAS)
30	17.213	17486944	8.44	15.67	2-HEXADECEN-1-OL, 3,7,11,15-TETRAMETHYL-, [R-[R*,R*-(E)]]-
31	17.762	48450034	23.37	37.34	MOME INOSITOL
32	18.450	102990	0.05	3.12	Isophytol
33	18.930	6892216	3.32	8.33	n-Hexadecanoic acid
34	19.433	64476	0.03	3.76	Hexadecanoic acid, ethyl ester
35	19.750	90942	0.04	9.25	Benzeneacetic acid, 4-hydroxy-3,5-dimethoxy-, methyl ester
36	21.854	192874	0.09	4.03	9,12-Octadecadienoic acid (Z,Z)-, methyl ester
37	22.001	449243	0.22	3.93	9,12,15-Octadecatrienoic acid, methyl ester (CAS)
38	22.313	28170688	13.59	4.73	2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R-[R*,R*-(E)]]- (CAS)
39	22.617	143610	0.07	3.15	Methyl stearate
40	22.936	1303097	0.63	5.29	9,12-Octadecadienoic acid (Z,Z)-
41	23.092	4224445	2.04	7.83	9,12,15-Octadecatrienoic acid, (Z,Z,Z)-
42	23.620	525588	0.25	7.97	Octadecanoic acid
43	27.401	116542	0.06	4.24	4,8,12,16-Tetramethylheptadecan-4-olide
44	30.600	143824	0.07	8.89	Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester
45	30.778	175392	0.08	4.41	Bis(2-ethylhexyl) phthalate
46	35.268	1052264	0.51	3.38	2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)-
47	35.715	905756	0.44	6.43	.alpha.-Tocospiro A
48	36.031	1170178	0.56	7.12	.alpha.-Tocospiro A
49	36.965	482170	0.23	3.71	2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl- (CAS)
50	37.408	330219	0.16	5.30	.delta.-Tocopherol
51	38.961	544661	0.26	6.33	.delta.-Tocopherol, O-methyl-
52	39.287	514281	0.25	6.60	.delta.-Tocopherol, O-methyl-
53	40.905	6573437	3.17	6.26	dl-.alpha.-Tocopherol
		207290258	100.00		

Library

<< Target >>
Line#:1 R.Time:4.850(Scan#:223) MassPeaks:547
RawMode:Averaged 4.842-4.858(222-224) BasePeak:89.85(391)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:37464 Library:NIST147.LIB
SI:53 Formula:C6H12O7 CAS:526-95-4 MolWeight:196 RetIndex:0
CompName:Gluconic acid $$ D-Gluconic acid $$ Gluconic acid, technical $$ Gluconic acid, D- $$ 2,3,4,5,6-Pentahydroxyhexanoic acid $$ Dextronic acid $$ C



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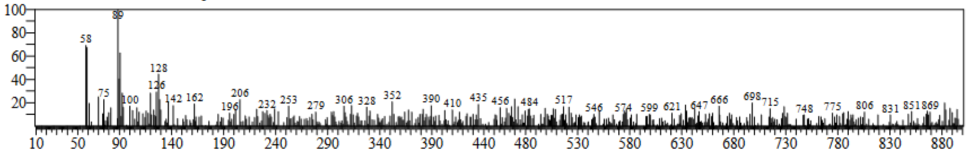
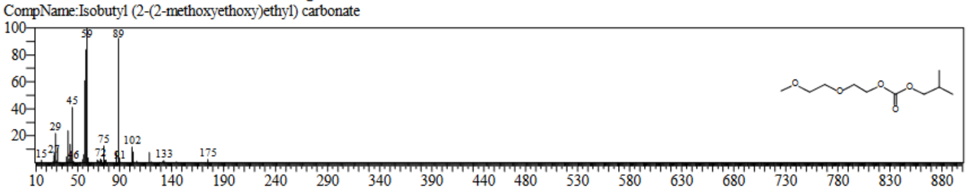
Line#:2 R.Time:5.433(Scan#:293) MassPeaks:526
RawMode:Averaged 5.425-5.442(292-294) BasePeak:88.90(220)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:90742 Library:NIST17.lib
SI:40 Formula:C10H20O5 CAS:0-00-0 MolWeight:220 RetIndex:1346
CompName:Isobutyl (2-(2-methoxyethoxy)ethyl) carbonate



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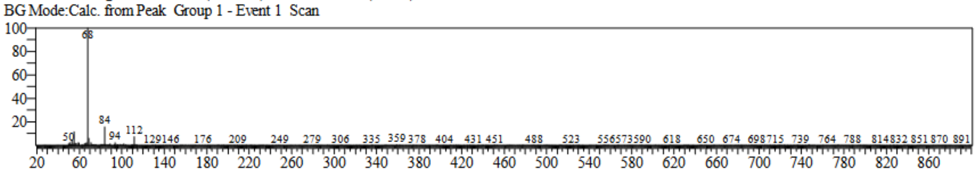
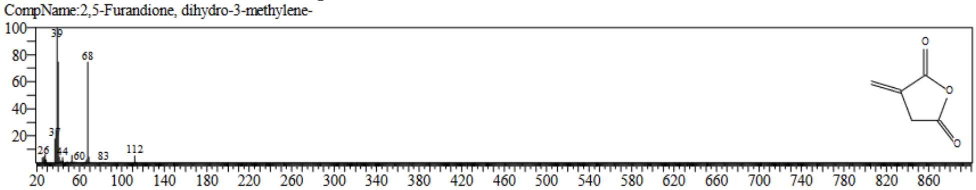
Line#:3 R.Time:5.658(Scan#:320) MassPeaks:473
RawMode:Averaged 5.650-5.667(319-321) BasePeak:67.90(15364)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:6938 Library:NIST17.lib
SI:87 Formula:C5H4O3 CAS:2170-03-8 MolWeight:112 RetIndex:1063
CompName:2,5-Furandione, dihydro-3-methylene-



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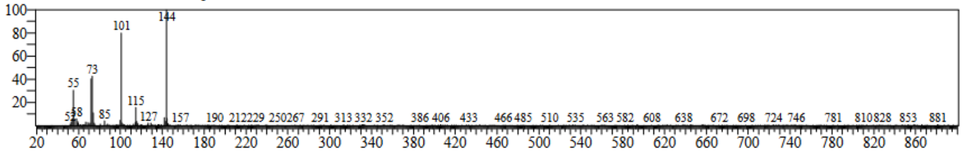
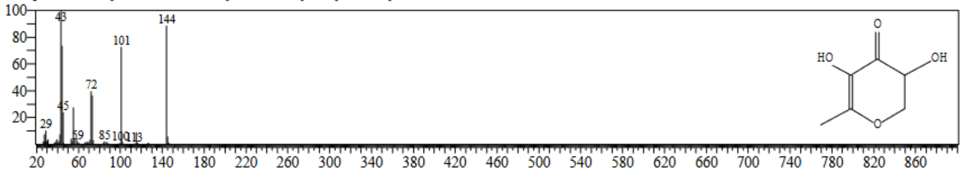
Line#:4 R.Time:7.708(Scan#:566) MassPeaks:479
RawMode:Averaged 7.700-7.717(565-567) BasePeak:143.85(3822)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:22919 Library:NIST17.lib
SI:92 Formula:C6H8O4 CAS:28564-83-2 MolWeight:144 RetIndex:1269
CompName:4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl-



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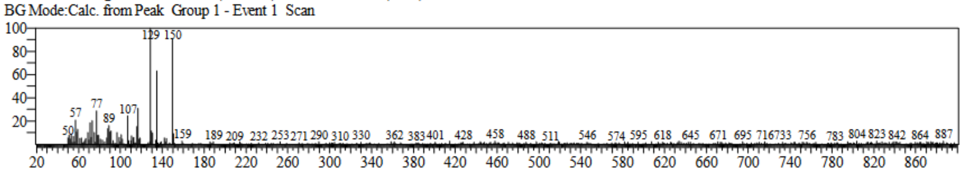
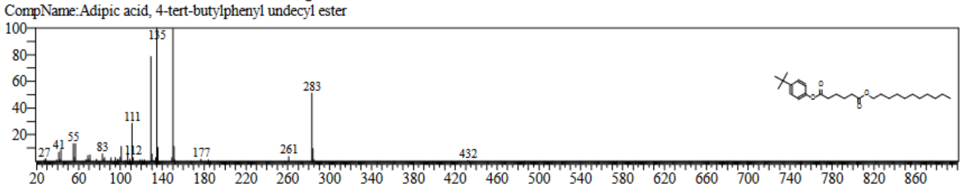
Line#:5 R.Time:10.200(Scan#:865) MassPeaks:489
RawMode:Averaged 10.192-10.208(864-866) BasePeak:128.85(1469)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:279681 Library:NIST17.lib
SI:62 Formula:C27H44O4 CAS:0-00-0 MolWeight:432 RetIndex:3046
CompName:Adipic acid, 4-tert-butylphenyl undecyl ester



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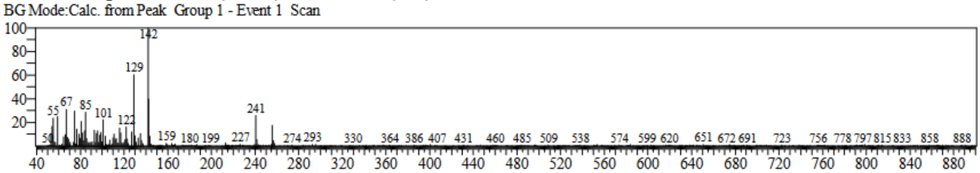
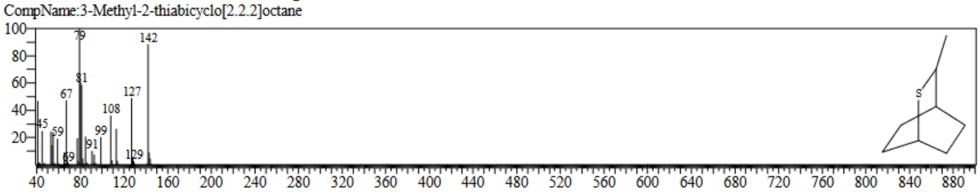
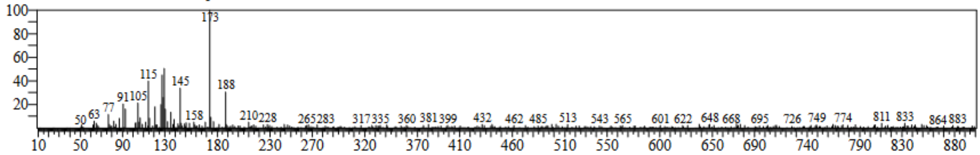
Line#:6 R.Time:11.150(Scan#:979) MassPeaks:540
RawMode:Averaged 11.142-11.158(978-980) BasePeak:141.85(3001)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



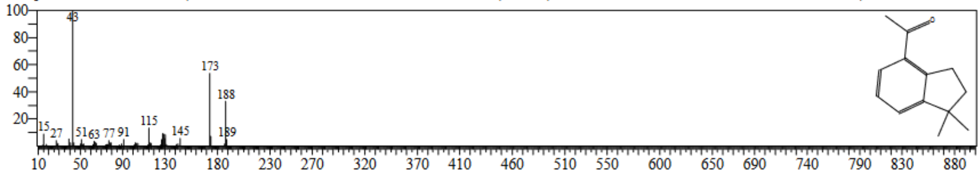
Hit#:1 Entry:22061 Library:NIST17.lib
SI:63 Formula:C8H14S CAS:0-00-0 MolWeight:142 RetIndex:1064
CompName:3-Methyl-2-thiabicyclo[2.2.2]octane



<< Target >>
Line#:7 R.Time:11.375(Scan#:1006) MassPeaks:379
RawMode:Averaged 11.367-11.383(1005-1007) BasePeak:172.85(1112)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:88029 Library:WILEY8.LIB
SI:68 Formula:C13H16O CAS:55591-10-1 MolWeight:188 RetIndex:0
CompName:ETHANONE, 1-(2,3-DIHYDRO-1,1-DIMETHYL-1H-INDEN-4-YL)- $$ 1-(1,1-DIMETHYL-2,3-DIHYDRO-1H-INDEN-4-YL)ETHANONE $$ 1-



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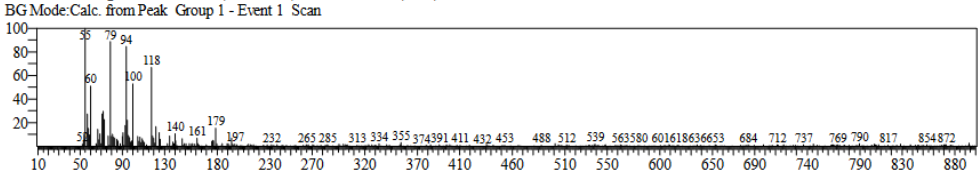
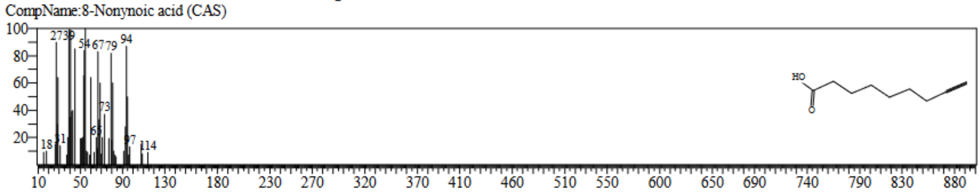
Line#:8 R.Time:11.533(Scan#:1025) MassPeaks:433
RawMode:Averaged 11.525-11.542(1024-1026) BasePeak:54.95(1804)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:57063 Library:Wiley9.lib
SI:67 Formula:C9H14O2 CAS:30964-01-3 MolWeight:154 RetIndex:0
CompName:8-Nonynoic acid (CAS)



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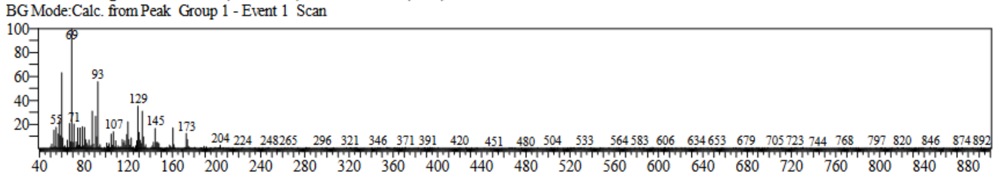
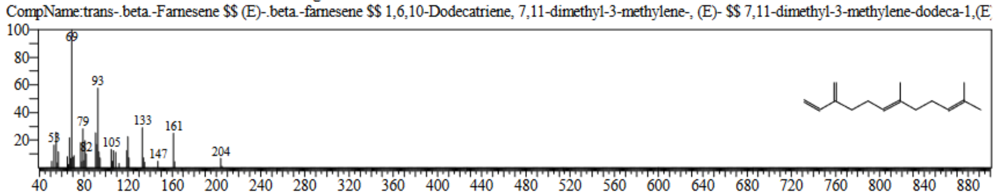
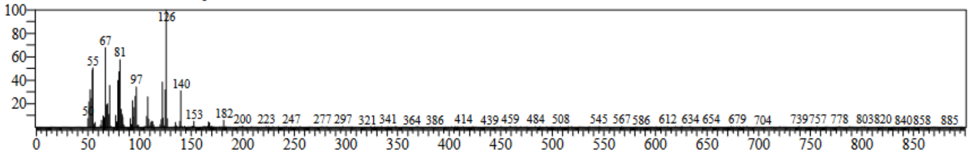
Line#:9 R.Time:11.725(Scan#:1048) MassPeaks:447
RawMode:Averaged 11.717-11.733(1047-1049) BasePeak:68.95(5095)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



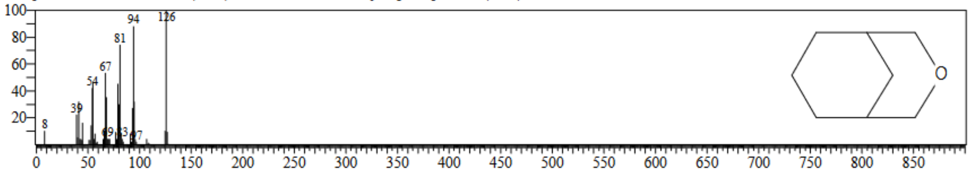
Hit#:1 Entry:151751 Library:Wiley9.lib
SI:71 Formula:C15H24 CAS:502-60-3 MolWeight:204 RetIndex:0
CompName:trans-.beta.-Farnesene $$ (E)-.beta.-farnesene $$ 1,6,10-Dodecatriene, 7,11-dimethyl-3-methylene-, (E)- $$ 7,11-dimethyl-3-methylene-dodeca-1,(E



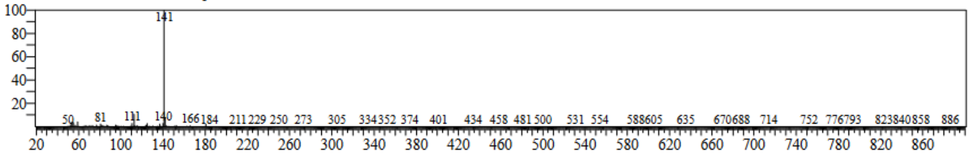
<< Target >>
Line#:10 R.Time:12.042(Scan#:1086) MassPeaks:466
RawMode:Averaged 12.033-12.050(1085-1087) BasePeak:125.85(11569)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



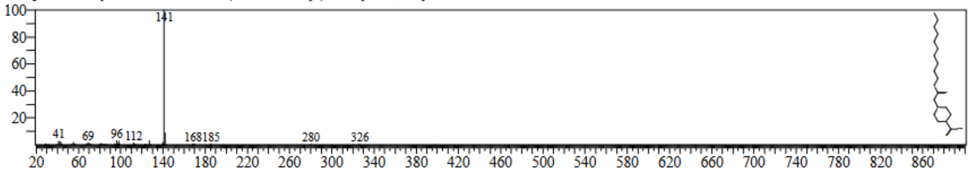
Hit#:1 Entry:23800 Library:Wiley9.lib
SI:78 Formula:C8H14O CAS:280-71-7 MolWeight:126 RetIndex:0
CompName:3-OXABICYCLO(3.3.1)NONANE $$ 3-Oxabicyclo[3.3.1]nonane (CAS)



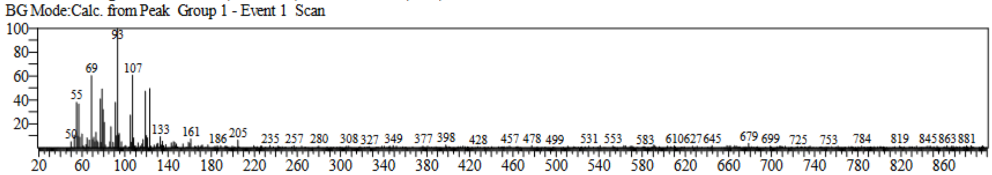
<< Target >>
Line#:11 R.Time:12.308(Scan#:1118) MassPeaks:469
RawMode:Averaged 12.300-12.317(1117-1119) BasePeak:140.85(31592)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



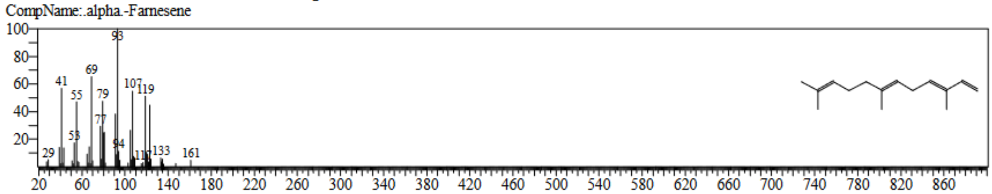
Hit#:1 Entry:204375 Library:NIST17.lib
SI:83 Formula:C18H34N2O3 CAS:0-00-0 MolWeight:326 RetIndex:2564
CompName:1-Pyridineacetic acid, 4-(aminocarbonyl)hexahydro-, decyl ester



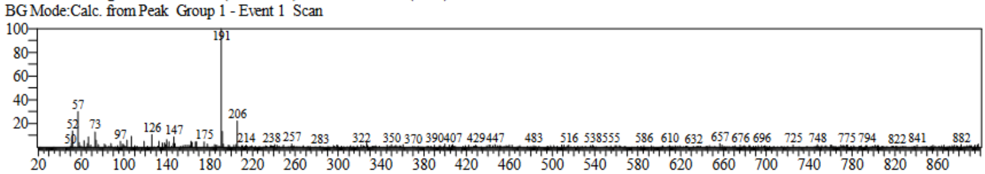
<< Target >>
Line#:12 R.Time:12.417(Scan#:1131) MassPeaks:449
RawMode:Averaged 12.408-12.425(1130-1132) BasePeak:92.95(1775)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



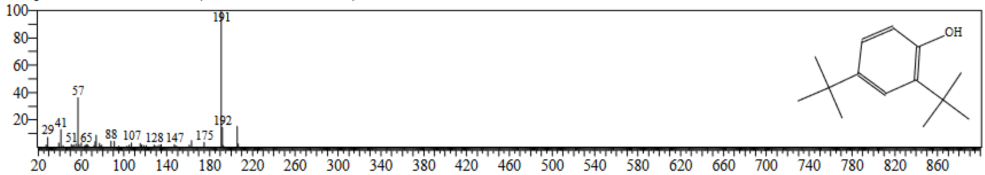
Hit#:1 Entry:75284 Library:NIST17.lib
SI:85 Formula:C15H24 CAS:502-61-4 MolWeight:204 RetIndex:1458
CompName:.alpha.-Farnesene



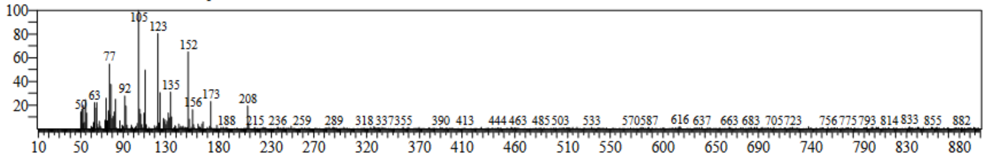
<< Target >>
Line#:13 R.Time:12.525(Scan#:1144) MassPeaks:450
RawMode:Averaged 12.517-12.533(1143-1145) BasePeak:190.85(1338)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



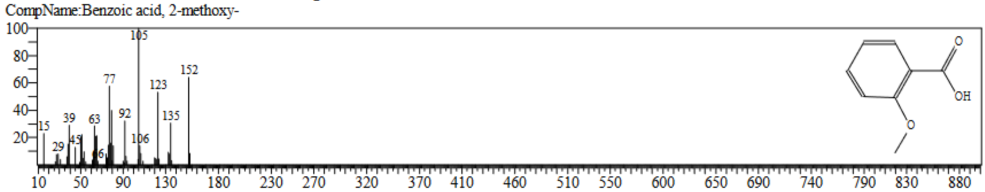
Hit#:1 Entry:113212 Library:WILEY8.LIB
SI:71 Formula:C14H22O CAS:96-76-4 MolWeight:206 RetIndex:0
CompName:PHENOL, 2,4-BIS(1,1-DIMETHYLETHYL)- $$ 2,4-DITERT-BUTYLPHENOL $$ 1-HYDROXY-2, 4-DI-TERT-BUTYLBENZENE $$ 1-HYDRO



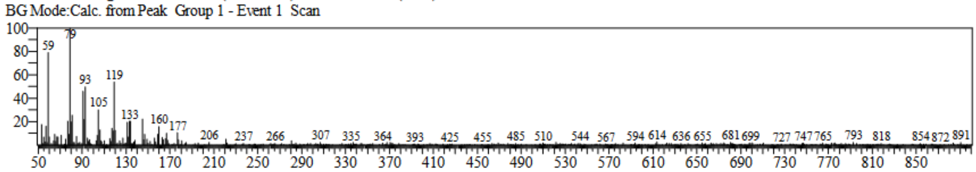
<< Target >>
Line#:14 R.Time:12.650(Scan#:1159) MassPeaks:612
RawMode:Averaged 12.642-12.658(1158-1160) BasePeak:104.85(2232)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



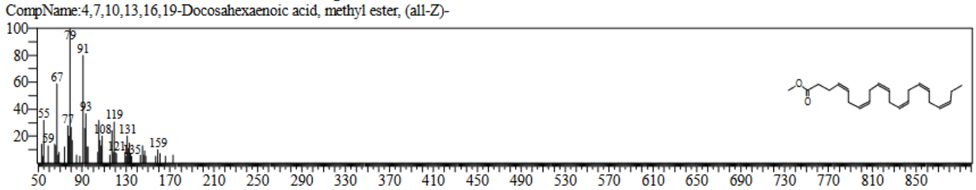
Hit#:1 Entry:28375 Library:NIST17.lib
SI:77 Formula:C8H8O3 CAS:579-75-9 MolWeight:152 RetIndex:1339
CompName:Benzoic acid, 2-methoxy-



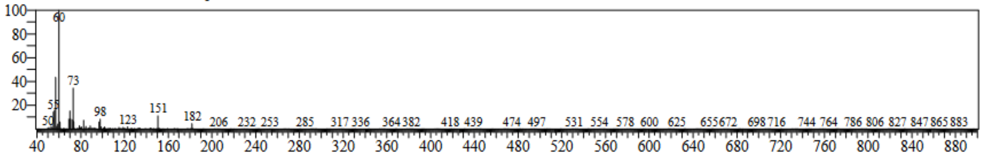
<< Target >>
Line#:15 R.Time:12.875(Scan#:1186) MassPeaks:469
RawMode:Averaged 12.867-12.883(1185-1187) BasePeak:78.95(1593)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



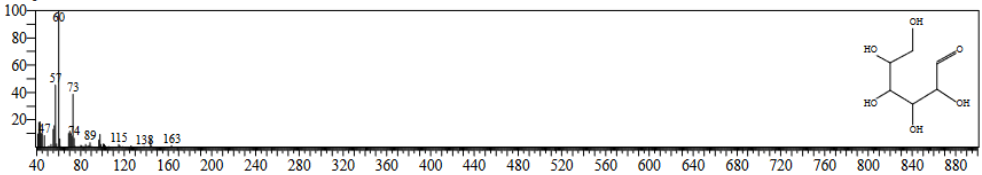
Hit#:1 Entry:221723 Library:NIST17.lib
SI:75 Formula:C23H34O2 CAS:2566-90-7 MolWeight:342 RetIndex:2523
CompName:4,7,10,13,16,19-Docosahexaenoic acid, methyl ester, (all-Z)-



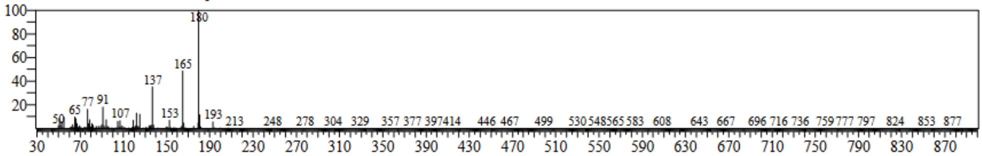
<< Target >>
Line#:16 R.Time:12.975(Scan#:1198) MassPeaks:457
RawMode:Averaged 12.967-12.983(1197-1199) BasePeak:59.95(22919)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



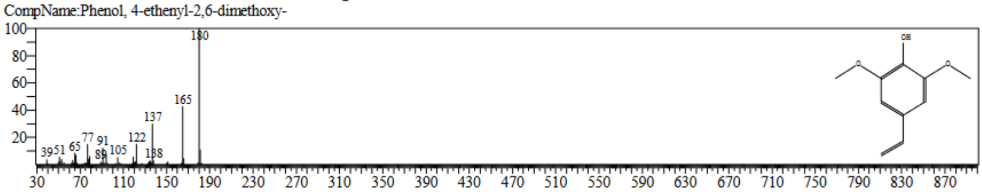
Hit#:1 Entry:51526 Library:NIST17.lib
SI:91 Formula:C6H12O6 CAS:2595-97-3 MolWeight:180 RetIndex:1698
CompName:D-Allose



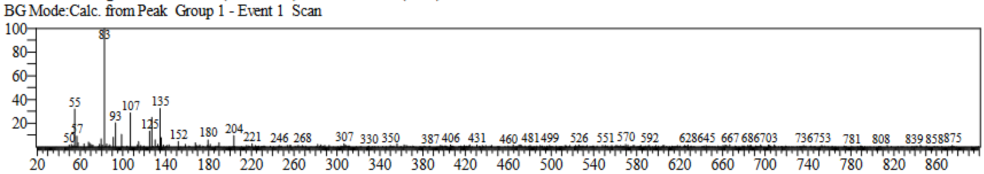
<< Target >>
Line#:17 R.Time:13.400(Scan#:1249) MassPeaks:470
RawMode:Averaged 13.392-13.408(1248-1250) BasePeak:179.80(26120)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



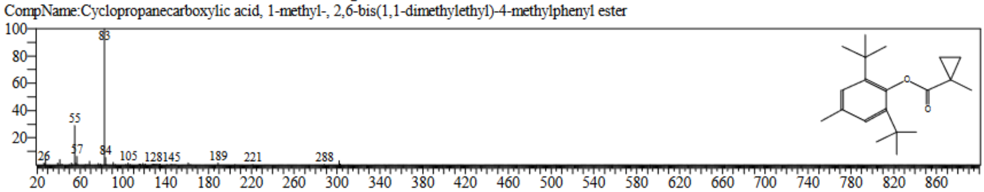
Hit#:1 Entry:52143 Library:NIST17.lib
SI:87 Formula:C10H12O3 CAS:28343-22-8 MolWeight:180 RetIndex:1482
CompName:Phenol, 4-ethenyl-2,6-dimethoxy-



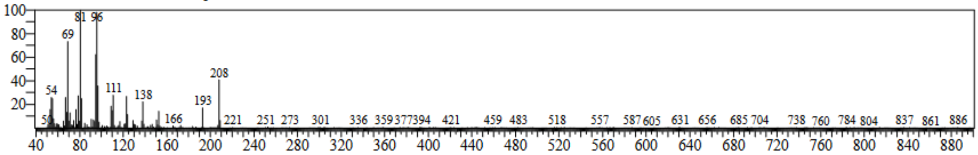
<< Target >>
Line#:18 R.Time:13.575(Scan#:1270) MassPeaks:458
RawMode:Averaged 13.567-13.583(1269-1271) BasePeak:82.95(1707)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



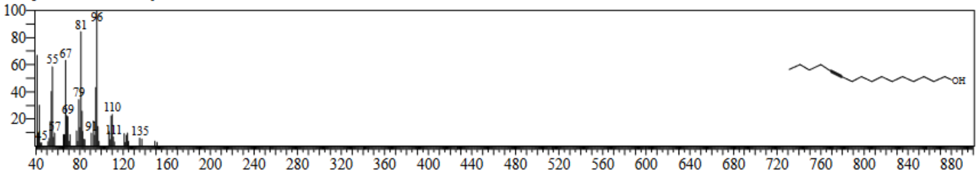
Hit#:1 Entry:179162 Library:NIST17.lib
SI:63 Formula:C20H30O2 CAS:108546-68-5 MolWeight:302 RetIndex:2102
CompName:Cyclopropanecarboxylic acid, 1-methyl-, 2,6-bis(1,1-dimethylethyl)-4-methylphenyl ester



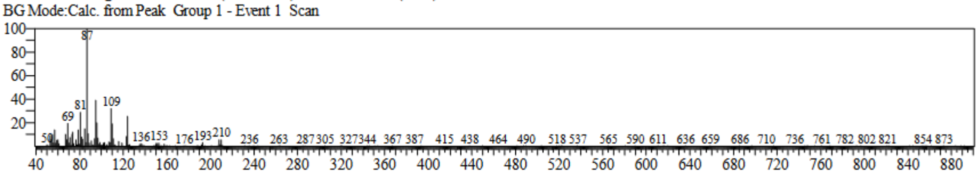
<< Target >>
Line#:19 R.Time:13.692(Scan#:1284) MassPeaks:474
RawMode:Averaged 13.683-13.700(1283-1285) BasePeak:80.95(7981)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



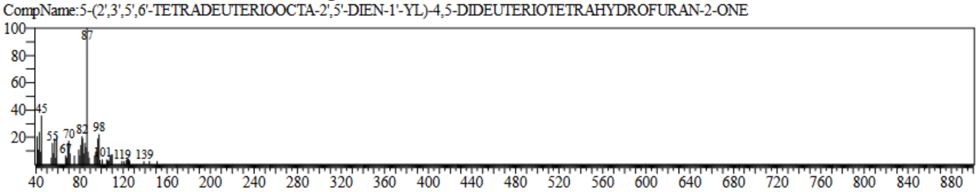
Hit#:1 Entry:110530 Library:NIST17.lib
SI:78 Formula:C16H30O CAS:65686-49-9 MolWeight:238 RetIndex:1872
CompName:11-Hexadecyn-1-ol



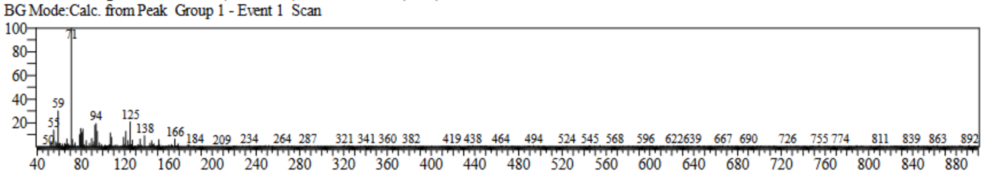
<< Target >>
Line#:20 R.Time:13.900(Scan#:1309) MassPeaks:411
RawMode:Averaged 13.892-13.908(1308-1310) BasePeak:86.90(7005)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



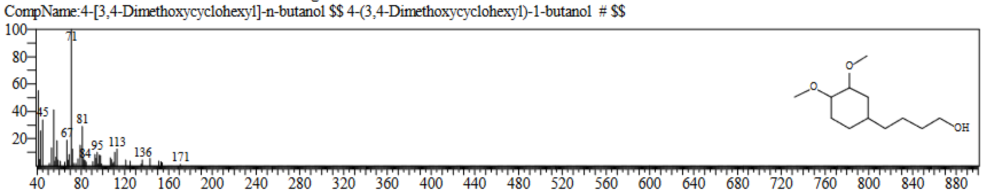
Hit#:1 Entry:103989 Library:WILEY8.LIB
SI:74 Formula:C12H12D6O2 CAS:0-00-0 MolWeight:200 RetIndex:0
CompName:5-(2',3',5',6'-TETRADEUTERIOOCTA-2',5'-DIEN-1'-YL)-4,5-DIDEUTERIOTETRAHYDROFURAN-2-ONE



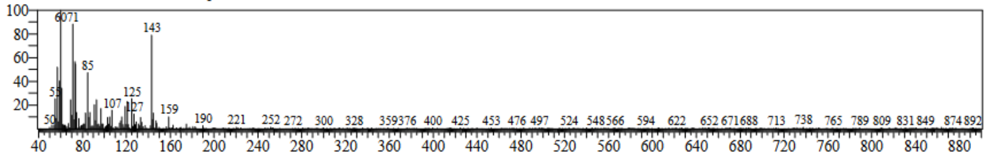
<< Target >>
Line#:21 R.Time:14.033(Scan#:1325) MassPeaks:482
RawMode:Averaged 14.025-14.042(1324-1326) BasePeak:70.95(4269)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



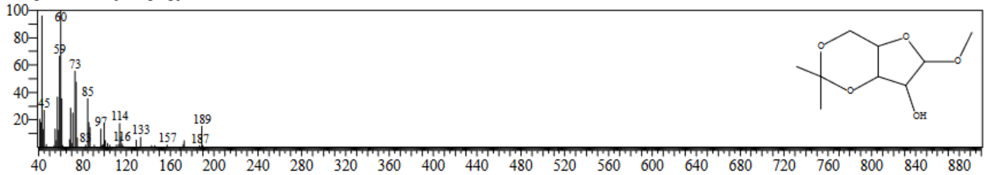
Hit#:1 Entry:48863 Library:NIST147.LIB
SI:68 Formula:C12H24O3 CAS:0-00-0 MolWeight:216 RetIndex:0
CompName:4-[3,4-Dimethoxycyclohexyl]-n-butanol $$ 4-(3,4-Dimethoxycyclohexyl)-1-butanol # $$



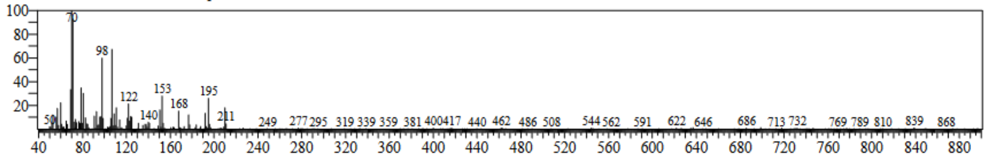
<< Target >>
Line#:22 R.Time:14.167(Scan#:1341) MassPeaks:494
RawMode:Averaged 14.158-14.175(1340-1342) BasePeak:59.95(2947)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



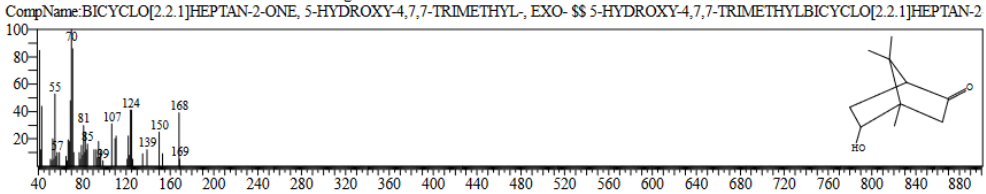
Hit#:1 Entry:74201 Library:NIST17.lib
SI:72 Formula:C9H16O5 CAS:0-00-0 MolWeight:204 RetIndex:1408
CompName:Methyl isopropylidene-.beta.-d-arabinoside



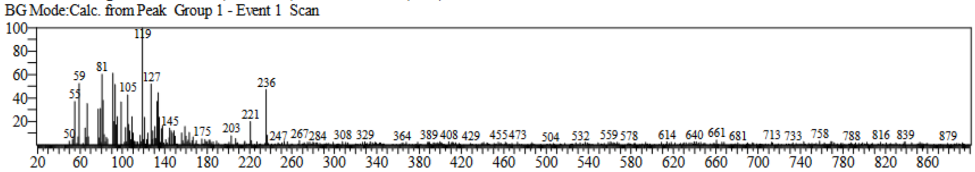
<< Target >>
Line#:23 R.Time:14.292(Scan#:1356) MassPeaks:311
RawMode:Averaged 14.283-14.300(1355-1357) BasePeak:69.95(2786)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



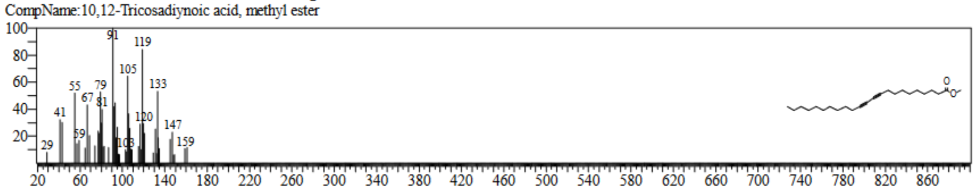
Hit#:1 Entry:62570 Library:WILEY8.LIB
SI:66 Formula:C10H16O2 CAS:79465-66-0 MolWeight:168 RetIndex:0
CompName:BICYCLO[2.2.1]HEPTAN-2-ONE, 5-HYDROXY-4,7,7-TRIMETHYL-, EXO- $$ 5-HYDROXY-4,7,7-TRIMETHYLBICYCLO[2.2.1]HEPTAN-2



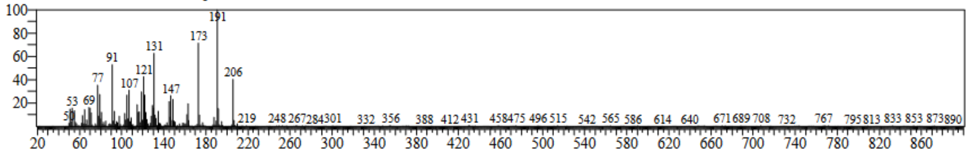
<< Target >>
Line#:24 R.Time:14.367(Scan#:1365) MassPeaks:488
RawMode:Averaged 14.358-14.375(1364-1366) BasePeak:118.90(1161)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



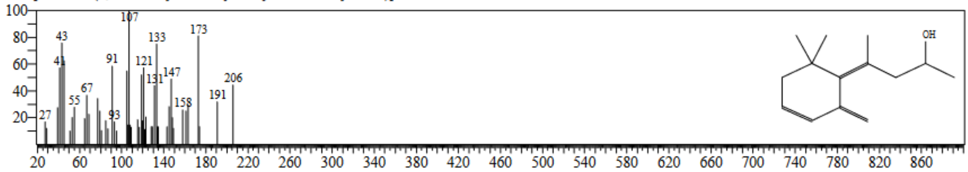
Hit#:1 Entry:237661 Library:NIST17.lib
SI:70 Formula:C24H40O2 CAS:0-00-0 MolWeight:360 RetIndex:2609
CompName:10,12-Tricosadiynoic acid, methyl ester



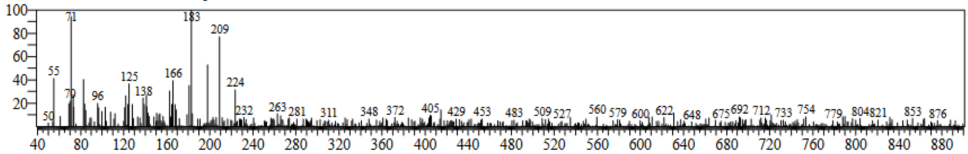
<< Target >>
Line#:25 R.Time:14.483(Scan#:1379) MassPeaks:387
RawMode:Averaged 14.475-14.492(1378-1380) BasePeak:190.80(7434)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



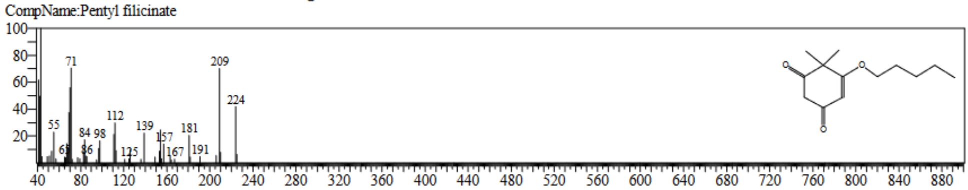
Hit#:1 Entry:77281 Library:NIST17.lib
SI:76 Formula:C14H22O CAS:0-00-0 MolWeight:206 RetIndex:1525
CompName:4-(6,6-Dimethyl-2-methylenecyclohex-3-enylidene)pentan-2-ol



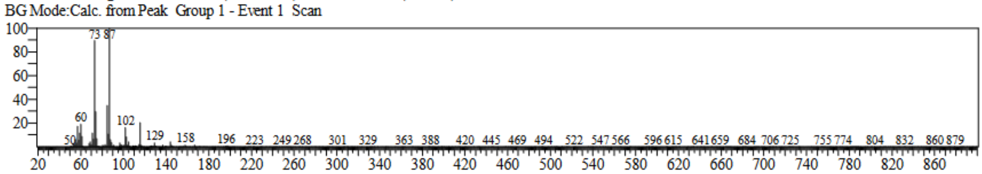
<< Target >>
Line#:26 R.Time:14.692(Scan#:1404) MassPeaks:516
RawMode:Averaged 14.683-14.700(1403-1405) BasePeak:182.80(402)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



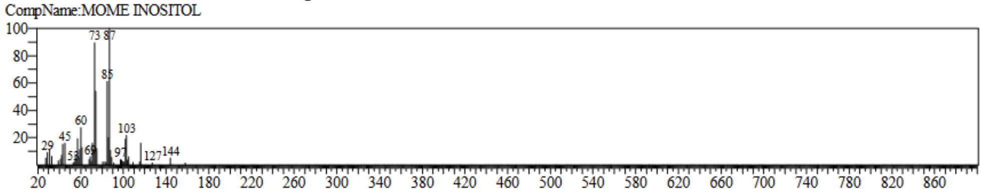
Hit#:1 Entry:95875 Library:NIST17.lib
SI:51 Formula:C13H20O3 CAS:0-00-0 MolWeight:224 RetIndex:1742
CompName:Pentyl filicinate



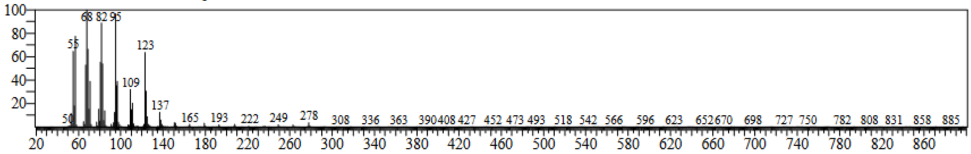
<< Target >>
Line#:27 R.Time:15.900(Scan#:1549) MassPeaks:400
RawMode:Averaged 15.892-15.908(1548-1550) BasePeak:86.90(167418)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



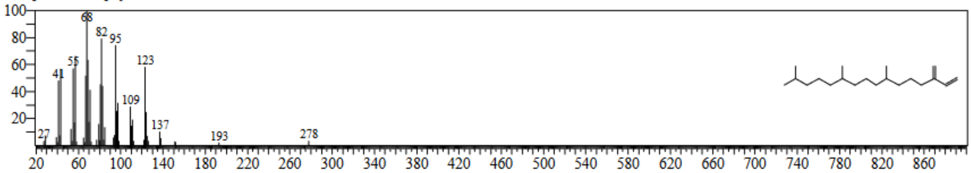
Hit#:1 Entry:94297 Library:WILEY8.LIB
SI:92 Formula:C7H14O6 CAS:0-00-0 MolWeight:194 RetIndex:0
CompName:MOME INOSITOL



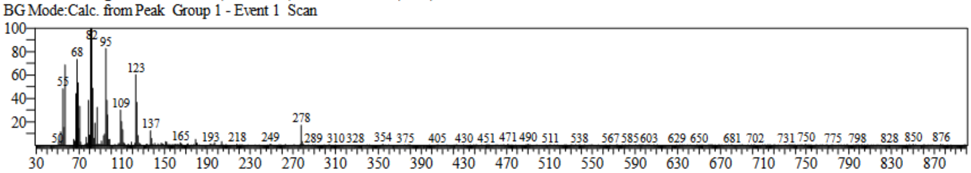
<< Target >>
Line#:28 R.Time:16.533(Scan#:1625) MassPeaks:534
RawMode:Averaged 16.525-16.542(1624-1626) BasePeak:67.95(28112)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



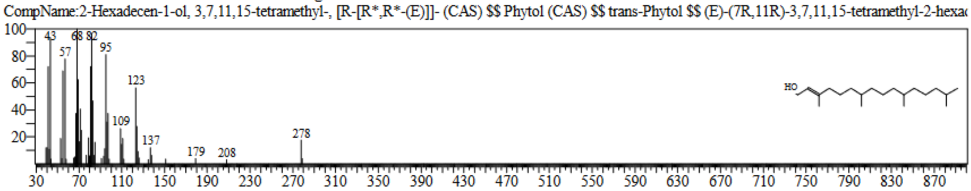
Hit#:1 Entry:152927 Library:NIST17.lib
SI:96 Formula:C20H38 CAS:504-96-1 MolWeight:278 RetIndex:1774
CompName:Neophytadiene



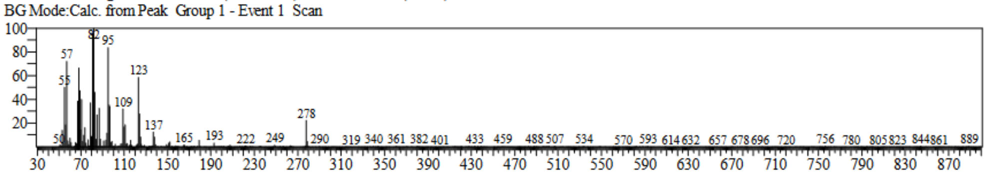
<< Target >>
Line#:29 R.Time:16.917(Scan#:1671) MassPeaks:497
RawMode:Averaged 16.908-16.925(1670-1672) BasePeak:81.95(5139)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



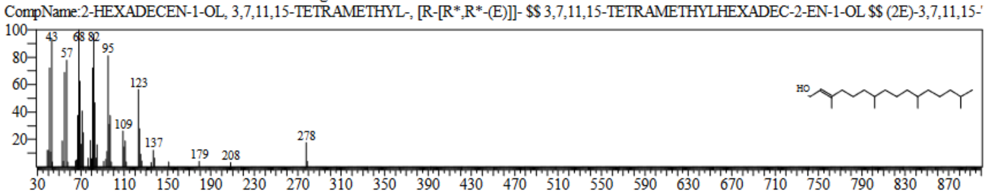
Hit#:1 Entry:366595 Library:Wiley9.lib
SI:91 Formula:C20H40O CAS:150-86-7 MolWeight:296 RetIndex:0
CompName:2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R-[R*,R*-(E)]]- (CAS) $$ Phytol (CAS) $$ trans-Phytol $$ (E)-(7R,11R)-3,7,11,15-tetramethyl-2-hexa



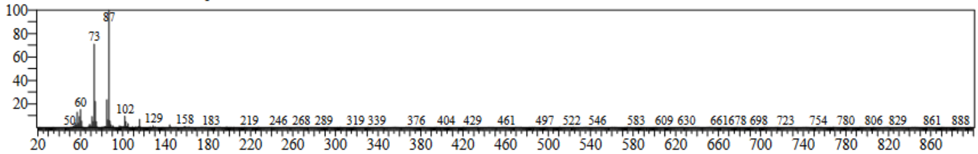
<< Target >>
Line#:30 R.Time:17.217(Scan#:1707) MassPeaks:523
RawMode:Averaged 17.208-17.225(1706-1708) BasePeak:81.95(11406)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



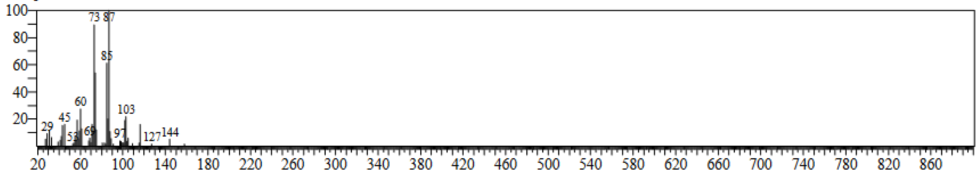
Hit#:1 Entry:235588 Library:WILEY8.LIB
SI:90 Formula:C20H40O CAS:150-86-7 MolWeight:296 RetIndex:0
CompName:2-HEXADECEN-1-OL, 3,7,11,15-TETRAMETHYL-, [R-[R*,R*-(E)]]- $$ 3,7,11,15-TETRAMETHYLHEXADEC-2-EN-1-OL $$ (2E)-3,7,11,15-



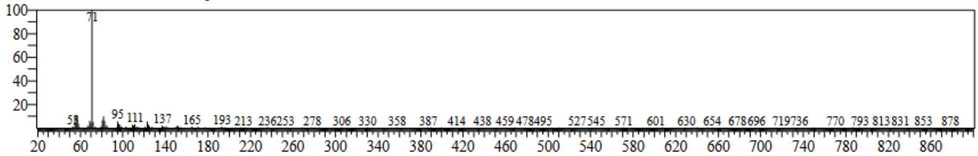
<< Target >>
Line#:31 R.Time:17.758(Scan#:1772) MassPeaks:512
RawMode:Averaged 17.750-17.767(1771-1773) BasePeak:86.90(171150)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



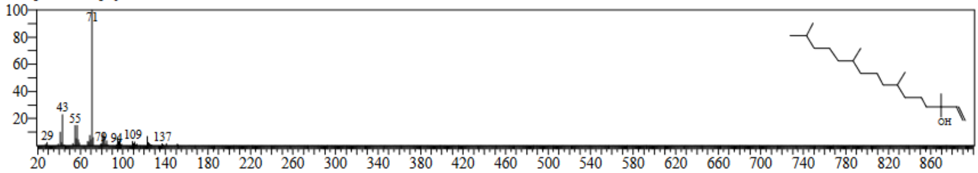
Hit#:1 Entry:94297 Library:WILEY8.LIB
SI:87 Formula:C7H14O6 CAS:0-00-0 MolWeight:194 RetIndex:0
CompName:MOME INOSITOL



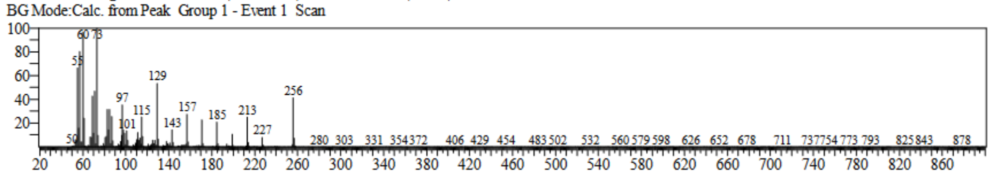
<< Target >>
Line#:32 R.Time:18.450(Scan#:1855) MassPeaks:468
RawMode:Averaged 18.442-18.458(1854-1856) BasePeak:70.95(13302)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



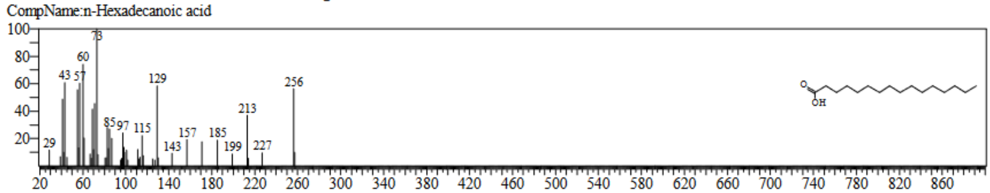
Hit#:1 Entry:172531 Library:NIST17.lib
SI:95 Formula:C20H40O CAS:505-32-8 MolWeight:296 RetIndex:1899
CompName:Isophytol



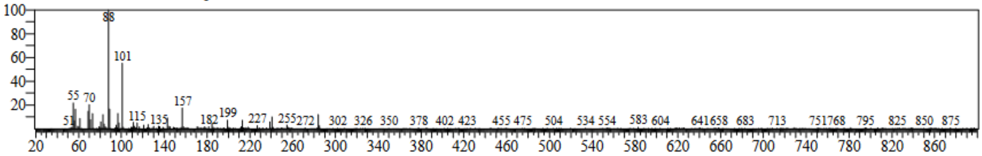
<< Target >>
Line#:33 R.Time:18.933(Scan#:1913) MassPeaks:513
RawMode:Averaged 18.925-18.942(1912-1914) BasePeak:72.95(64097)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



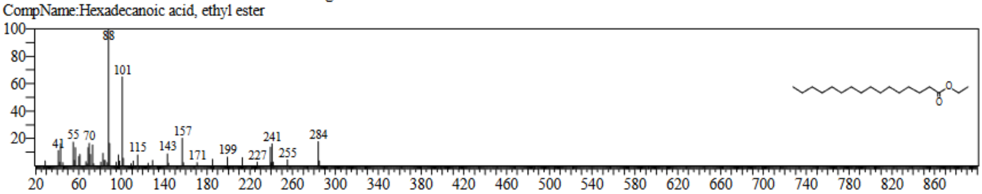
Hit#:1 Entry:129355 Library:NIST17.lib
SI:94 Formula:C16H32O2 CAS:57-10-3 MolWeight:256 RetIndex:1968
CompName:n-Hexadecanoic acid



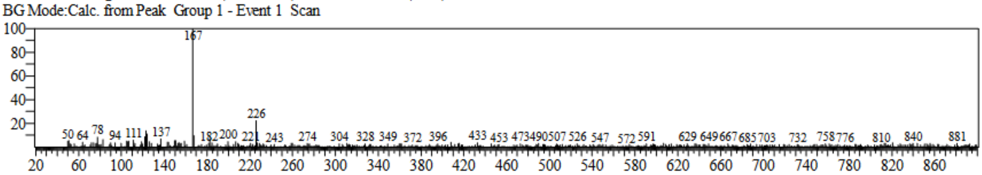
<< Target >>
Line#:34 R.Time:19.433(Scan#:1973) MassPeaks:438
RawMode:Averaged 19.425-19.442(1972-1974) BasePeak:87.90(3406)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



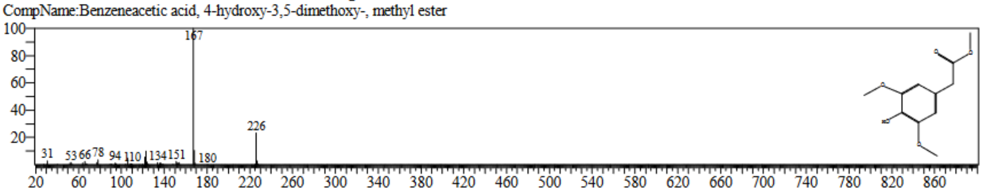
Hit#:1 Entry:159536 Library:NIST17.lib
SI:90 Formula:C18H36O2 CAS:628-97-7 MolWeight:284 RetIndex:1978
CompName:Hexadecanoic acid, ethyl ester



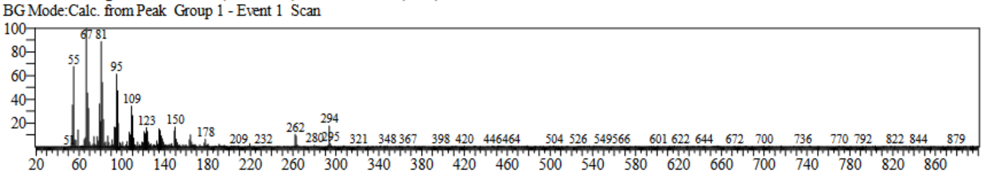
<< Target >>
Line#:35 R.Time:19.750(Scan#:2011) MassPeaks:615
RawMode:Averaged 19.742-19.758(2010-2012) BasePeak:166.80(1152)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



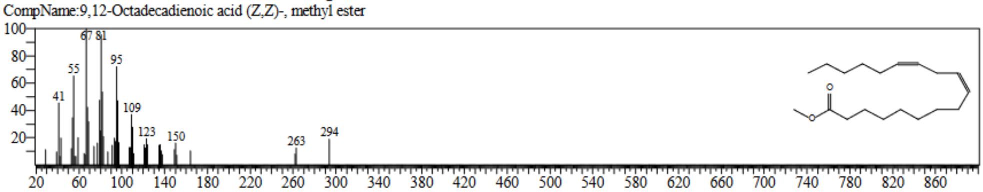
Hit#:1 Entry:97600 Library:NIST17.lib
SI:66 Formula:C11H14O5 CAS:151292-83-0 MolWeight:226 RetIndex:1759
CompName:Benzeneacetic acid, 4-hydroxy-3,5-dimethoxy-, methyl ester



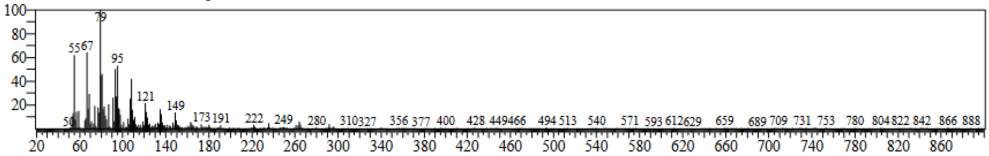
<< Target >>
Line#:36 R.Time:21.850(Scan#:2263) MassPeaks:468
RawMode:Averaged 21.842-21.858(2262-2264) BasePeak:66.95(3610)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



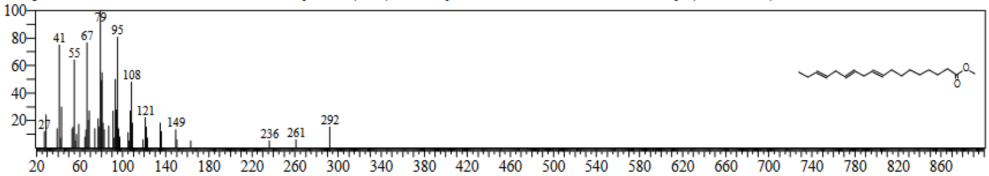
Hit#:1 Entry:170247 Library:NIST17.lib
SI:96 Formula:C19H34O2 CAS:112-63-0 MolWeight:294 RetIndex:2093
CompName:9,12-Octadecadienoic acid (Z,Z)-, methyl ester



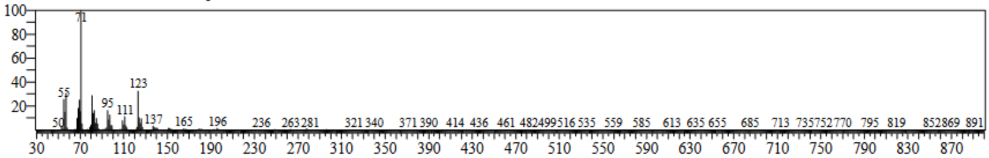
<< Target >>
Line#:37 R.Time:22.000(Scan#:2281) MassPeaks:581
RawMode:Averaged 21.992-22.008(2280-2282) BasePeak:78.95(8439)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



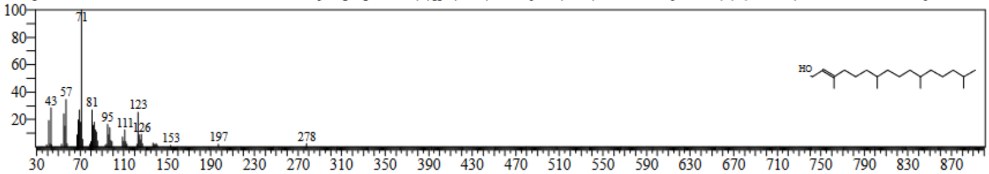
Hit#:1 Entry:357264 Library:Wiley9.lib
SI:91 Formula:C19H32O2 CAS:7361-80-0 MolWeight:292 RetIndex:0
CompName:9,12,15-Octadecatrienoic acid, methyl ester (CAS) $$ Methyl 9,12,15-octadecatrienoate $$ Methyl (9E,12E,15E)-9,12,15-octadecatrienoate $$ 9,12



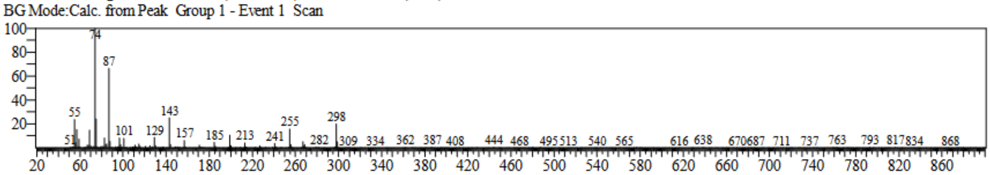
<< Target >>
Line#:38 R.Time:22.317(Scan#:2319) MassPeaks:625
RawMode:Averaged 22.308-22.325(2318-2320) BasePeak:70.95(1106410)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



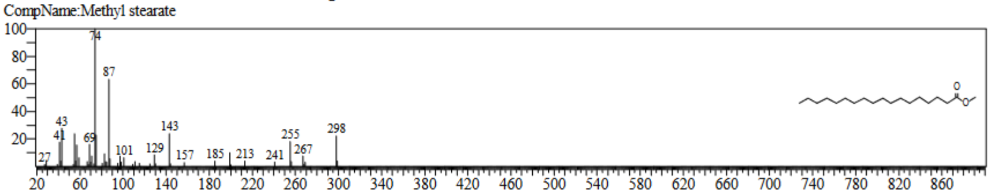
Hit#:1 Entry:366598 Library:Wiley9.lib
SI:97 Formula:C20H40O CAS:150-86-7 MolWeight:296 RetIndex:0
CompName:2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R-[R*,R*-(E)]]- (CAS) $$ Phytol (CAS) $$ trans-Phytol $$ (E)-(7R,11R)-3,7,11,15-tetramethyl-2-hexa



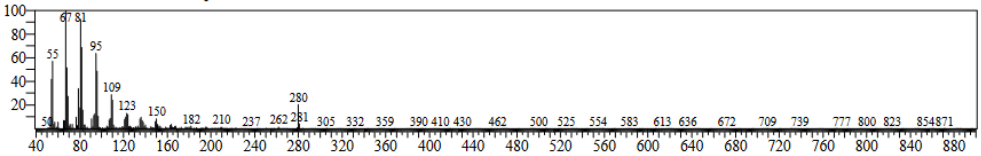
<< Target >>
Line#:39 R.Time:22.617(Scan#:2355) MassPeaks:418
RawMode:Averaged 22.608-22.625(2354-2356) BasePeak:73.95(9990)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



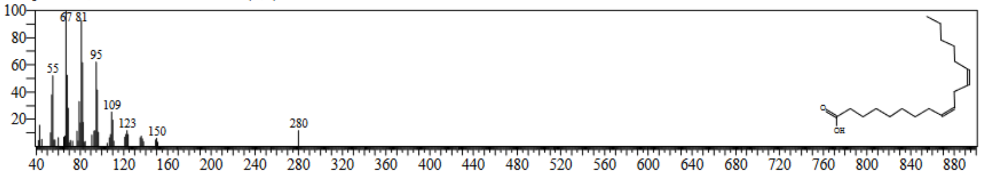
Hit#:1 Entry:174888 Library:NIST17.lib
SI:96 Formula:C19H38O2 CAS:112-61-8 MolWeight:298 RetIndex:2077
CompName:Methyl stearate



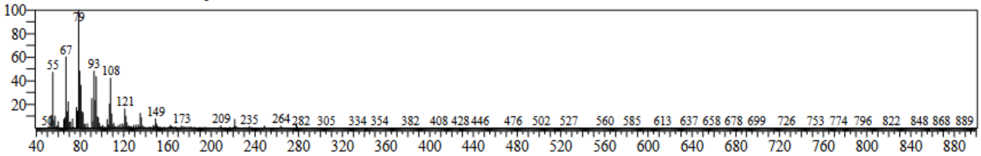
<< Target >>
Line#:40 R.Time:22.933(Scan#:2393) MassPeaks:415
RawMode:Averaged 22.925-22.942(2392-2394) BasePeak:67.00(18788)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



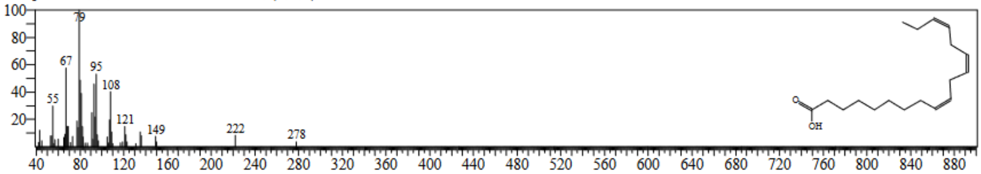
Hit#:1 Entry:154772 Library:NIST17.lib
SI:97 Formula:C18H32O2 CAS:60-33-3 MolWeight:280 RetIndex:2183
CompName:9,12-Octadecadienoic acid (Z,Z)-



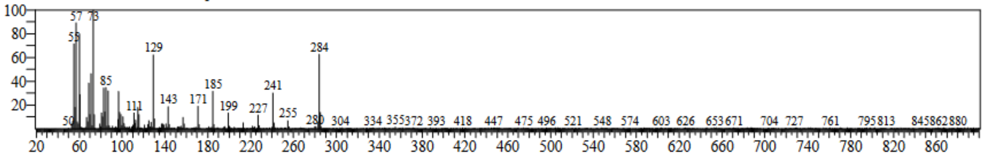
<< Target >>
Line#:41 R.Time:23.092(Scan#:2412) MassPeaks:469
RawMode:Averaged 23.083-23.100(2411-2413) BasePeak:78.95(49867)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



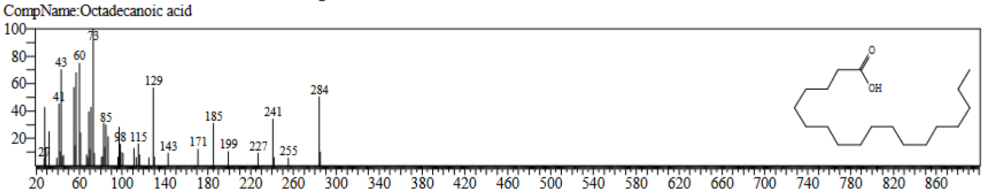
Hit#:1 Entry:152863 Library:NIST17.lib
SI:96 Formula:C18H30O2 CAS:463-40-1 MolWeight:278 RetIndex:2191
CompName:9,12,15-Octadecatrienoic acid, (Z,Z,Z)-



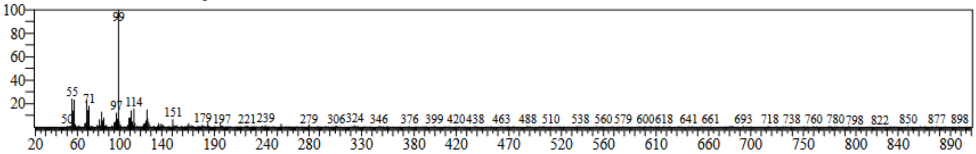
<< Target >>
Line#:42 R.Time:23.617(Scan#:2475) MassPeaks:674
RawMode:Averaged 23.608-23.625(2474-2476) BasePeak:72.95(3785)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



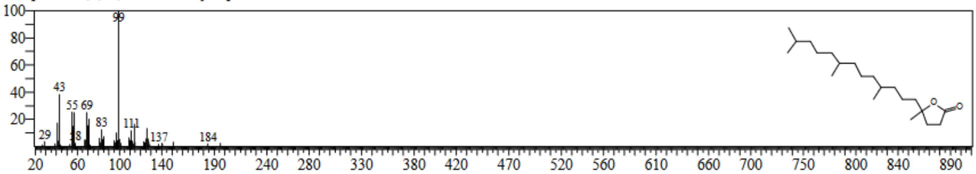
Hit#:1 Entry:159524 Library:NIST17.lib
SI:93 Formula:C18H36O2 CAS:57-11-4 MolWeight:284 RetIndex:2167
CompName:Octadecanoic acid



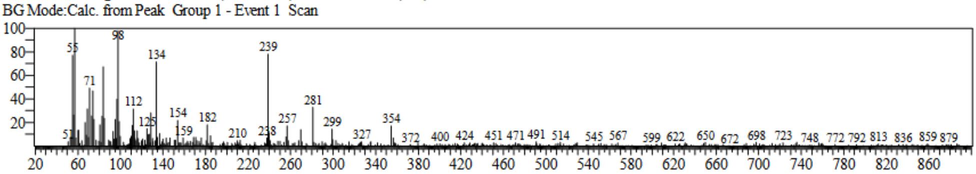
<< Target >>
Line#:43 R.Time:27.400(Scan#:2929) MassPeaks:438
RawMode:Averaged 27.392-27.408(2928-2930) BasePeak:98.90(5529)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



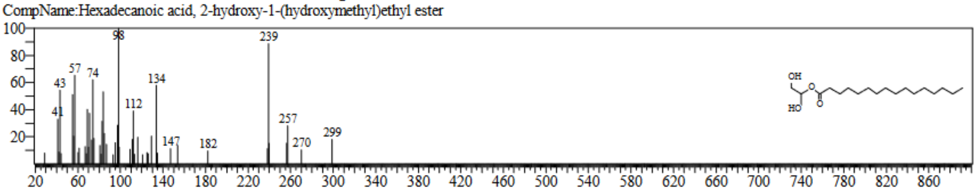
Hit#:1 Entry:202664 Library:NIST17.lib
SI:95 Formula:C21H40O2 CAS:96168-15-9 MolWeight:324 RetIndex:2258
CompName:4,8,12,16-Tetramethylheptadecan-4-olide



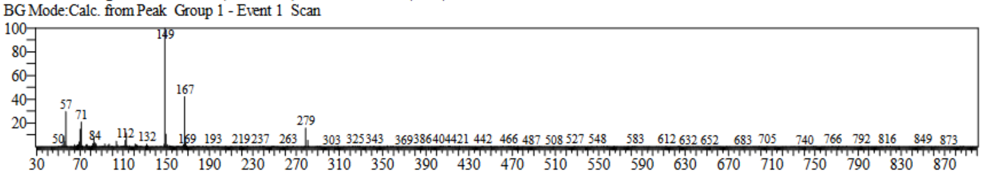
<< Target >>
Line#:44 R.Time:30.600(Scan#:3313) MassPeaks:473
RawMode:Averaged 30.592-30.608(3312-3314) BasePeak:56.95(809)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



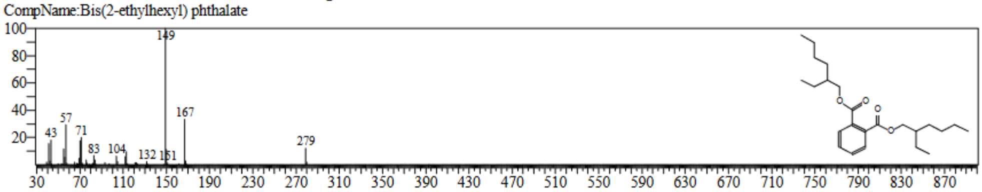
Hit#:1 Entry:209013 Library:NIST17.lib
SI:86 Formula:C19H38O4 CAS:23470-00-0 MolWeight:330 RetIndex:2498
CompName:Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester



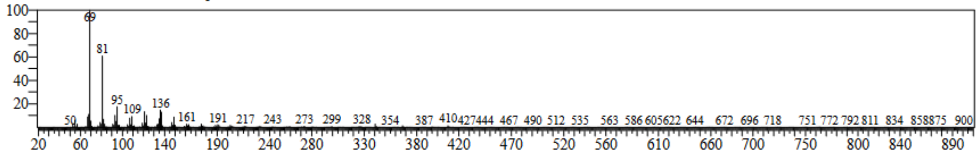
<< Target >>
Line#:45 R.Time:30.775(Scan#:3334) MassPeaks:459
RawMode:Averaged 30.767-30.783(3333-3335) BasePeak:148.80(9239)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



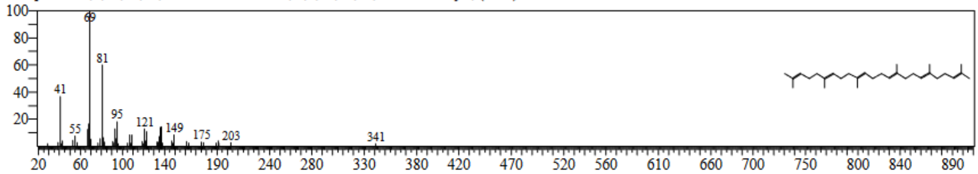
Hit#:1 Entry:259670 Library:NIST17.lib
SI:94 Formula:C24H38O4 CAS:117-81-7 MolWeight:390 RetIndex:2704
CompName:Bis(2-ethylhexyl) phthalate



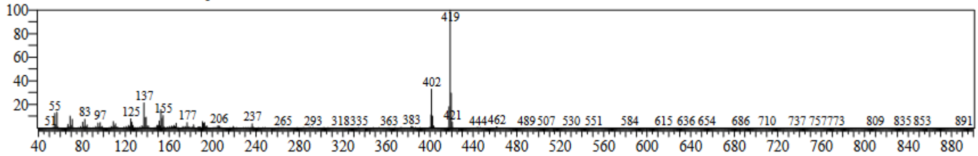
<< Target >>
Line#:46 R.Time:35.267(Scan#:3873) MassPeaks:538
RawMode:Averaged 35.258-35.275(3872-3874) BasePeak:69.00(68834)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



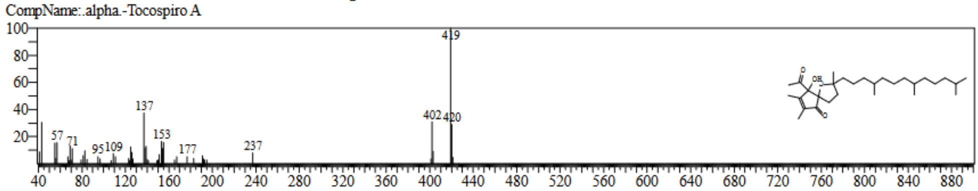
Hit#:1 Entry:26741 Library:NIST27.LIB
SI:96 Formula:C30H50 CAS:111-02-4 MolWeight:410 RetIndex:0
CompName:2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl-, (all-E)-



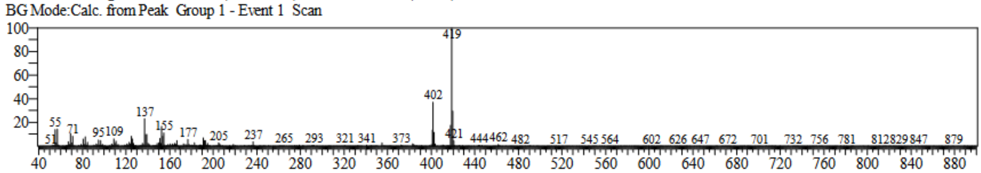
<< Target >>
Line#:47 R.Time:35.717(Scan#:3927) MassPeaks:487
RawMode:Averaged 35.708-35.725(3926-3928) BasePeak:418.75(24756)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



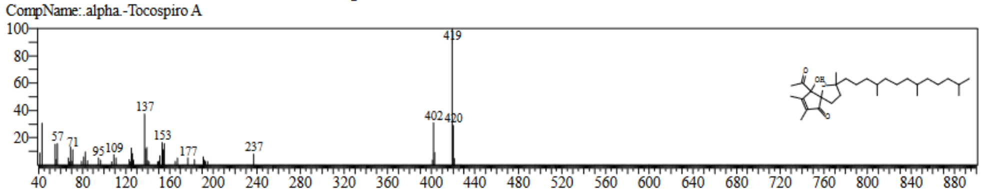
Hit#:1 Entry:288878 Library:NIST17.lib
SI:91 Formula:C29H50O4 CAS:601490-40-8 MolWeight:462 RetIndex:3195
CompName:.alpha.-Tocospiro A



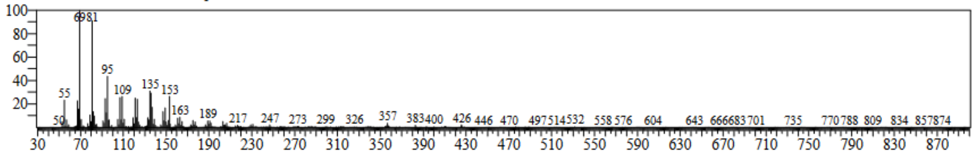
<< Target >>
Line#:48 R.Time:36.033(Scan#:3965) MassPeaks:582
RawMode:Averaged 36.025-36.042(3964-3966) BasePeak:418.70(26653)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



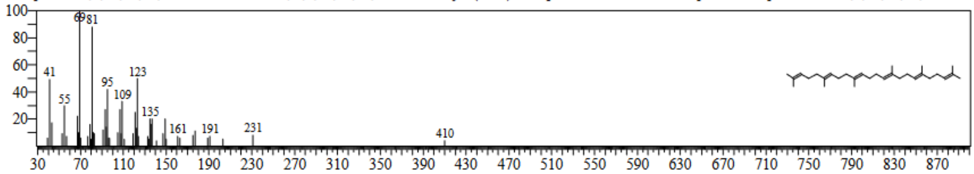
Hit#:1 Entry:288878 Library:NIST17.lib
SI:91 Formula:C29H50O4 CAS:601490-40-8 MolWeight:462 RetIndex:3195
CompName:.alpha.-Tocospiro A



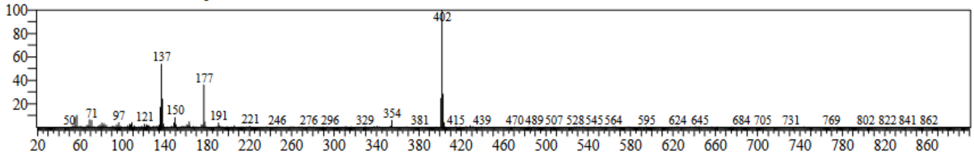
<< Target >>
Line#:49 R.Time:36.967(Scan#:4077) MassPeaks:482
RawMode:Averaged 36.958-36.975(4076-4078) BasePeak:68.95(13204)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



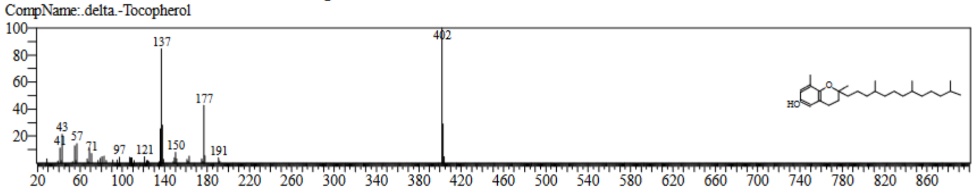
Hit#:1 Entry:554017 Library:Wiley9.lib
SI:90 Formula:C30H50 CAS:7683-64-9 MolWeight:410 RetIndex:0
CompName:2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl- (CAS) $$ Squalene $$ Skvalen $$ Supraene $$ Spinacene $$ 2,6,10,15,19,23-HEX



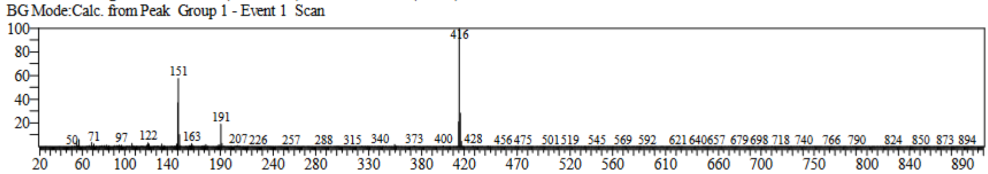
<< Target >>
Line#:50 R.Time:37.408(Scan#:4130) MassPeaks:599
RawMode:Averaged 37.400-37.417(4129-4131) BasePeak:401.80(12664)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



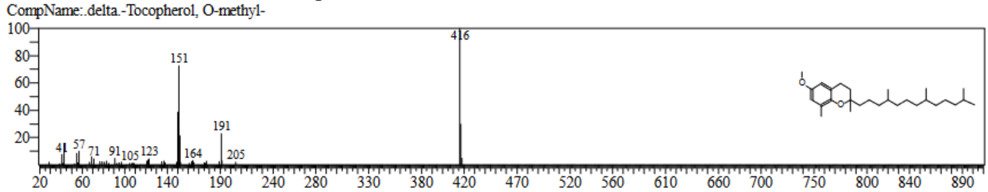
Hit#:1 Entry:266702 Library:NIST17.lib
SI:90 Formula:C27H46O2 CAS:119-13-1 MolWeight:402 RetIndex:2923
CompName:.delta.-Tocopherol



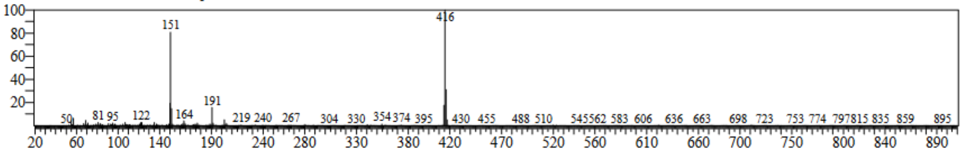
<< Target >>
Line#:51 R.Time:38.958(Scan#:4316) MassPeaks:521
RawMode:Averaged 38.950-38.967(4315-4317) BasePeak:415.75(22977)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



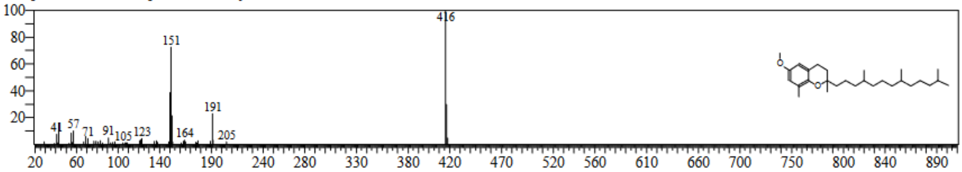
Hit#:1 Entry:273336 Library:NIST17.lib
SI:91 Formula:C28H48O2 CAS:0-00-0 MolWeight:416 RetIndex:2891
CompName:.delta.-Tocopherol, O-methyl-



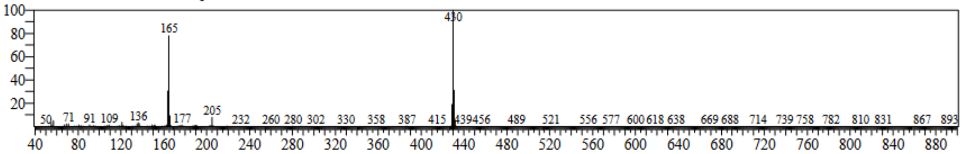
<< Target >>
Line#:52 R.Time:39.283(Scan#:4355) MassPeaks:509
RawMode:Averaged 39.275-39.292(4354-4356) BasePeak:415.70(18543)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:273336 Library:NIST17.lib
SI:91 Formula:C28H48O2 CAS:0-00-0 MolWeight:416 RetIndex:2891
CompName:.delta.-Tocopherol, O-methyl-



<< Target >>
Line#:53 R.Time:40.908(Scan#:4550) MassPeaks:623
RawMode:Averaged 40.900-40.917(4549-4551) BasePeak:429.75(289507)
BG Mode:Calc. from Peak Group 1 - Event 1 Scan



Hit#:1 Entry:279086 Library:NIST17.lib
SI:95 Formula:C29H50O2 CAS:10191-41-0 MolWeight:430 RetIndex:3149
CompName:dl-.alpha.-Tocopherol