



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

DAFTAR PUSTAKA

- Abbas, A., Naqvi, S. A. R., Rasool, M. H., Noureen, A., Mubarik, M. S., & Tareen, R. B., 2021, Phytochemical Analysis, Antioxidant and Antimicrobial Screening of Seriphidium Oliverianum Plant Extracts, *Dose-Response : a Publication of International Hormesis Society*, 19(1), 15593258211004739. <https://doi.org/10.1177/15593258211004739>.
- Adhitama, R., 2020, Pengaruh Penambahan Variasi Konsentrasi Pemanis Stevia dan Lama Fermentasi Teh Hijau (*Camellia sinensis*) Terhadap Kualitas Teh Kombucha, *Skripsi*, Lampung: Jurusan Pendidikan Biologi, Fakultas Tarbiyah dan Keguruan, Universitas Islam Negeri Raden Intan Lampung.
- Agustina, R., & Fadhil, R., 2021, Organoleptic Test using The Hedonic and Descriptive Methods to Determine the Quality of Pliek U, In *IOP Conference Series: Earth and Environmental Science*, 644(1), p. 012006, IOP Publishing, doi: <https://iopscience.iop.org/article/10.1088/1755-1315/644/1/012006>.
- Allen, L.V., 2002, *The Art, Science and Technology of Pharmaceutical Compounding*, 2 nd Ed., 233-234, American Pharmaceutical Assosiation, Washington D. C.
- Almasaudi S., 2021, The Antibacterial Activities of Honey, *Saudi journal of biological sciences*, 28(4), 2188–2196. <https://doi.org/10.1016/j.sjbs.2020.10.017>.
- Ansel, H.C ., Allen, L.V. & Popovich, N.G., 2014, *Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems*, 9 th Ed., Lippinacott Willliams & Wilkins, United States of America.
- Ansel, H.C., 2010, *Pharmaceutical Calculations*, 13 th Edition, Lippinacott Willliams & Wilkins, United States of America.
- Association of South East Asian Nations (ASEAN), 2013, *Annex V Asean Guidelines on Stability Study and Shelf-Life of Health Supplements*, Association of South East Asian Nations, Yogyakarta.
- Astuti, I.Y., Yupitawati, A., & Nurulita, N.A., 2021, Anti-aging Activity of Tetrahydrocurcumin, *Centella asiatica* Extract, and its Mixture, *Advances in Traditional Medicine*, 21, 57-63, doi: <https://doi.org/10.1007/s13596-020-00532-9>.
- Badan Standardisasi Nasional Indonesia, 2013, *SNI 01 - 3544 – 2013 Sirup*, Jakarta.
- Baiti, Q.A.N. 2023, Optimasi Formula Suplemen Antioksidan Jelly Candy Ekstrak Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasu Glukomanan



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

dan Kappa Karagenan sebagai Gelling Agent, *Skripsi*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.

Bandopadhyay, S., Mandal, S., Ghorai, M., Jha, N. K., Kumar, M., Radha, Ghosh, A., Proćkow, J., Pérez de la Lastra, J. M., & Dey, A., 2023, Therapeutic Properties and Pharmacological Activities of Asiaticoside and Madecassoside: A Review, *Journal of Cellular and Molecular Medicine*, 27(5), 593–608, doi: <https://doi.org/10.1111/jcmm.17635>.

Bolton, S., 1997, *Pharmaceutical Statistics Practical and Clinical Application*, 3rd Ed., 610-613, Marcel Dekker Inc, New York.

BPOM RI, 2010, *Acuan Sediaan Herbal*, Volume Kelima, Edisi Pertama, Badan POM RI, Jakarta.

BPOM RI., Peraturan Badan Pengawas Obat dan Makanan Nomor 32 Tahun 2019 tentang Persyaratan Keamanan dan mutu Obat Tradisional, Badan POM RI, Jakarta.

Cao, X., Xiong, X., Xu, Z., Zeng, Q., He, S., Yuan, Y., Wang, Y., Yang, X., & Su, D., 2020, Comparison of Phenolic Substances and Antioxidant Activities in Different Varieties of *Chrysanthemum* Flower Under Simulated Tea Making Conditions, *Journal of Food Measurement and Characterization*, 14, 1443–1450, doi: <https://doi.org/10.1007/s11694-020-00394-4>

Chughtai, M.F.J., Pasha, I., Butt, M.S., & Asghar, M., 2019, Biochemical and Nutritional Attributes of *Stevia rebaudiana* Grown in Pakistan, *Progress in Nutrition*, 21(Supplement 2), 210-222, doi: <http://dx.doi.org/10.23751/pn.v21i2-S.6430>.

de Menezes, B. B., Frescura, L. M., Duarte, R., Villetti, M. A., & da Rosa, M. B., 2021, A Critical Examination of The DPPH Method: Mistakes and Inconsistencies in Stoichiometry and IC₅₀ Determination by UV-Vis Spectroscopy, *Analytica Chimica Acta*, 1157, 338398, doi: <https://doi.org/10.1016/j.aca.2021.338398>.

Depkes RI, 1977, *Materi Medika Indonesia*, Jilid I, Departemen Kesehatan RI, Jakarta.

Depkes RI, 2017, *Farmakope Herbal Indonesia*, Edisi II, Departemen Kesehatan RI, Jakarta.

Depkes RI, 2020, *Farmakope Indonesia*, Edisi VI, Departemen Kesehatan RI, Jakarta.

Depkes, R.I., 2000, Parameter Standar Umum Ekstrak Tumbuhan Obat, Departemen Kesehatan Republik Indonesia, Jakarta.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Dolongtelide, J.I., Fatimawali, F., Tallei, T.E., Suoth, E.J., Simbala, H.E.I., Antasionasti, I., & Kalalo, M.J., 2023, In Vitro Antioxidant Activity of *Chrysanthemum indicum* Flowers Extract and Its Fraction. *Malacca Pharmaceutics*, 1(2), 43-47, doi: <https://doi.org/10.60084/mp.v1i2.26>.

Ermawati, D.E., Sasmito, E., Mufrod, M., Pramitha Esha, N.D., Ni Putu, U.A., Anggi, K.D., Muchammad, H. & Aini, S., 2016, Optimum Dose and Formulation of *Centella asiatica* L. Urban Extract Against IgG of Wistar Strain Male Mices which Induced by BCG Vaccine, *Journal of Food and Pharmaceutical Sciences*, 4(3), doi: <https://doi.org/10.14499/jfps>.

European Medicines Agency (EMA), 2022, *Assessment Report on Centella asiatica (L.) Urb.*, Herba, Science Medicine Health, United Kingdom.

Flieger, J., Flieger, W., Baj, J., & Maciejewski, R., 2021, Antioxidants: Classification, Natural Sources, Activity/Capacity Measurements, and Usefulness for The Synthesis of Nanoparticles, *Materials*, 14(15), 4135, doi: 10.3390/ma14154135.

González-Montemayor, Á.M., Flores-Gallegos, A.C., Serrato-Villegas, L.E., López-Pérez, M.G., Montañez-Sáenz, J.C., & Rodríguez-Herrera, R., 2019, Honey and Syrups: Healthy and Natural Sweeteners with Functional Properties. In *Natural beverages* (pp. 143-177), Academic Press, doi: <https://doi.org/10.1016/B978-0-12-816689-5.00006-7>.

Hamlaoui, I., Bencheraiet, R., Bensegueni, R., & Bencharif, M., 2018, Experimental and Theoretical Study on DPPH Radical Cavenging Mechanism of Some Chalcone Quinoline Derivatives. *Journal of Molecular Structure*, 1156, 385-389, doi: <https://doi.org/10.1016/j.molstruc.2017.11.118>.

Hanapi, N.A., Mohamad Arshad, A.S., Abdullah, J.M., Tengku Muhammad, T.S., & Yusof, S.R., 2021, Blood-Brain Barrier Permeability of Asiaticoside, Madecassoside and Asiatic Acid in Porcine Brain Endothelial Cell Model, *Journal of pharmaceutical sciences*, 110(2), 698–706, doi: <https://doi.org/10.1016/j.xphs.2020.09.015>.

Harborne, J.B., 1996, Metode Fitokimia: Penuntun Cara Modern Menganalisa Tumbuhan Diterjemahkan oleh: K. Padmawinata dan I. Soediro, Penerbit ITB, Bandung.

Harwoko, H., Pramono, S., & Nugroho, A.E., 2014, Triterpenoid-Rich Fraction of *Centella asiatica* Leaves and in Vivo Antihypertensive Activity, *International Food Research Journal*, 21(1), doi: <http://www.ifrj.upm.edu.my/>.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Hashim, P., 2011, *Centella asiatica* in Food and Beverage Applications and Its Potential Antioxidant and Neuroprotective Effect. *International Food Research Journal*, 18(4), 1215–1222.

Hodaei, M., Rahimmalek, M., & Arzani, A., 2021, Variation in Bioactive Compounds, Antioxidant and Antibacterial Activity of Iranian *Chrysanthemum morifolium* Cultivars and Determination of Major Polyphenolic Compounds Based on HPLC Analysis, *Journal of food science and technology*, 58(4), 1538–1548, doi: <https://doi.org/10.1007/s13197-020-04666-1>.

Hong, S.I., Kwon, S.H., Kim, M.J., Ma, S.X., Kwon, J.W., Choi, S.M., Choi, S.I., Kim, S.Y., Lee, S.Y., & Jang, C.G., 2012, Anxiolytic-Like Effects of *Chrysanthemum indicum* Aqueous Extract in Mice: Possible Involvement of GABA_A Receptors and 5-HT_{1A} Receptors, *Biomolecules & therapeutics*, 20(4), 413–417, doi: <https://doi.org/10.4062/biomolther.2012.20.4.413>.

Hossain, M.L., Lim, L.Y., Hammer, K., Hettiarachchi, D., & Locher, C., 2021, Honey-Based Medicinal Formulations: A Critical Review, *Applied Sciences*, 11(11): 5159, doi: <https://doi.org/10.3390/app11115159>.

Hua, S., 2019, Physiological and Pharmaceutical Considerations for Rectal Drug Formulations. *Front Pharmacol*, 10:1196, doi: 10.3389/fphar.2019.01196.

Idris, F.N., Mohd, Nadzir, M., 2021, Comparative Studies on Different Extraction Methods of *Centella asiatica* and Extracts Bioactive Compounds Effects on Antimicrobial Activities, *Antibiotics (Basel)*, 10(4):457. doi: [10.3390/antibiotics10040457](https://doi.org/10.3390/antibiotics10040457).

Integrated Taxonomic Information System (ITIS), 2009, *Taxonomic Hierarchy : Chrysanthemum*, https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=35791#null, diakses pada 9 Oktober 2022.

Integrated Taxonomic Information System (ITIS), 2023, *Taxonomic Hierarchy : Centella asiatica* (L.) Urb., https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=29612#null, diakses pada tanggal 7 September 2023.

Irianti, T.T., Nuranto, S., Sugiyanto, & Kuswandi, 2017, *Antioksidant*, Penerbit Grafika Indah, Yogyakarta.

Jadhao, A.G., Sanap, M.J., & Patil, P.A., 2021, Formulation and Evaluation of Herbal Syrup, *Asian Journal of Pharmaceutical Research and Development*, 9(3), 16-22, doi: <http://dx.doi.org/10.22270/ajprd.v9i3.955>.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- James, J., & Dubery, I. 2011, Identification and Quantification of Triterpenoid Centelloids in *Centella asiatica* (L.) Urban by Densitometric TLC, *JPC-J Planar Chromat* 24, 82–87 (2011).
<https://doi.org/10.1556/JPC.24.2011.1.16>.
- Julai, K., Sridonpai, P., Ngampeerapong, C., Tongdonpo, K., Suttisansanee, U., Kriengsinyos, W., On-Nom, N., & Tangsuphoon, N., 2023, Effects of Extraction and Evaporation Methods on Physico-Chemical, Functional, and Nutritional Properties of Syrups from Barhi Dates (*Phoenix dactylifera* L.), *Foods (Basel, Switzerland)*, 12(6), 1268, doi: <https://doi.org/10.3390/foods12061268>.
- Kandasamy, A., Aruchamy, K., Rangasamy, P., Varadhaiyan, D., Gowri, C., Oh, T. H., Ramasundaram, S., & Athinarayanan, B., 2023, Phytochemical Analysis and Antioxidant Activity of *Centella Asiatica* Extracts: An Experimental and Theoretical Investigation of Flavonoids, *Plants*, 12(20).
<https://doi.org/10.3390/plants12203547>.
- Kaya, B., Menemen, Y., & Saltan, F.Z., 2012, Flavonoid Compounds Identified in *Alchemilla* L. Species Collected in The North-eastern Black Sea Region of Turkey, *African Journal of Traditional, Complementary, and Alternative Medicines* : AJTCAM, 9(3), 418–425, doi: <https://doi.org/10.4314/ajtcam.v9i3.18>.
- Kharisma, A.D., & Upi C.N.Y., 2023, Evaluation of Antioxidant Activity and Toxicity of *Cinnamomum Burmannii* B. from Different Provinces of Indonesia, *Journal of Hunan University Natural Sciences*, 50(4), doi: <https://doi.org/10.55463/issn.1674-2974.50.4.16>.
- Khilar, S., Singh, A.P., Biagi, M., & Sharma, A., 2022, An Insight into Attributes of Stevia rebaudiana Bertoni: Recent Advances in Extraction Techniques, Phytochemistry, Food Applications and Health Benefits, *Journal of Agriculture and Food Research*, 10, 100458, doi: <https://doi.org/10.1016/j.jafr.2022.100458>.
- Kim, D.H., Park, J.S., Lee, J.K., Park, H.Y., Ahn, S.M., Kim, D.H., & Kim, H.K., 2017, U.S. Patent No. 9,700,506, Washington, DC: U.S. Patent and Trademark Office.
- Kowalska, T., & Sajewicz, M., 2022, Thin-Layer Chromatography (TLC) in the Screening of Botanicals—Its Versatile Potential and Selected Applications, *Molecules*, 27(19), 6607, doi: <https://doi.org/10.3390/molecules27196607>.
- Kristanti, A.N., Aminah, N.S., Tanjung, M., & Kurniadi, B., 2008, *Buku Ajar Fitokimia*, Airlangga University Press, Surabaya.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Krochta J.M., Elizabeth A. B. & Myran O.N.C., 1994, *Edible Coatings And Films to Improve Food Quality*, 325-326, Technomic Publishing Company, Unites State.

Lachman, L., Lieberman, H.A., & Kanig, J.L., 2008, *Teori dan Praktek Farmasi Industri II*, diterjemahkan oleh Siti Suyatmi, Edisi III, UI Press, Jakarta.

Larsen, P., & Ahmed, M., 2022, Evaluation of Antioxidant Potential of Honey Drops and Honey Lozenges, *Food Chemistry Advances*, 1, 100013, doi: <https://doi.org/10.1016/j.focha.2022.100013>.

Legiawati, L., Fadilah, F., Bramono, K., & Pratama, A.I., 2023, In Silico Study of *Centella asiatica* Derivatives as Antioxidant: Enhancer of Superoxide Dismutase and Glutathione Peroxidase Activity, *Research Journal of Pharmacy and Technology*, 16(1), 399-403. doi: 10.52711/0974-360X.2023.00068.

Liu, Y.H., Mou, X., Zhou, D.Y., Zhou, D.Y., & Shou, C.M., 2018, Extraction of Flavonoids from *Chrysanthemum morifolium* and Antitumor Activity in Vitro. *Experimental and therapeutic medicine*, 15(2), 1203–1210, doi: <https://doi.org/10.3892/etm.2017.5574>.

Markham, K.R., 1988, *Cara Mengidentifikasi Flavonoid*, diterjemahkan oleh Padmawinata. K., Penerbit ITB, Bandung.

Martemucci, G., Costagliola, C., Mariano, M., D'andrea, L., Napolitano, P., & D'Alessandro, A.G., 2022, Free Radical Properties, Source and Targets, Antioxidant Consumption and Health, *Oxygen*; 2(2):48-78, doi: <https://doi.org/10.3390/oxygen2020006>.

Martin, A.N., Sinko, P.J., & Singh, Y., 2011, *Martin's Physical Pharmacy and Pharmaceutical Science*, 6 th Ed., Lippincott Williams & Wilkins, Philadelphia.

Matthews, D.G., Caruso, M., Murchison, C.F., Zhu, J.Y., Wright, K.M., Harris, C.J., Gray, N.E., Quinn, J.F., & Soumyanath, A., 2019, *Centella asiatica* Improves Memory and Promotes Antioxidative Signaling in 5XFAD Mice. *Antioxidants*, 8(12), 630, doi: <https://doi.org/10.3390/antiox8120630>.

Mendonça, J.D.S., Guimarães, R.D.C.A., Zorgetto-Pinheiro, V.A., Fernandes, C.D.P., Marcelino, G., Bogo, D., Freitas, K.D.C., Hiane, P.A., de Pádua Melo, E.S., Vilela, M.L.B. and Nascimento, V.A.D., 2022. Natural Antioxidant Evaluation: A Review of Detection Methods. *Molecules*, 27(11), 3563, doi: <https://doi.org/10.3390%2Fmolecules27113563>.

Meulenbeld, G.J., & Wujastyk, D., 2001, *Studies on Indian Medical History*, Motilal Banarsidas, New Delhi, India.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A., 2019, Descriptive Statistics and Normality Tests for Statistical Data, *Annals of Cardiac Anaesthesia*, 22(1), 67–72, doi: https://doi.org/10.4103/aca.ACA_157_18.
- Mohammed, K., Fatima, B., Abdennour, B., & Lakhdar, A., 2017, The Fit between Strategic Choice and Organizational Structure and Their Impact on The Effectiveness of The Organization: Study of a Set of Medium and Large Institutions in Algeria, *International Journal of Business and Social Science*, 8(1), 1-9.
- Montgomery, D.C., 2017, *Design and Analysis of Experiments*, 8th Edition, John Wiley & Sons Inc., United States.
- Monton, C., Settharaksa, S., Luprasong, C., & Songsak, T., 2019, An Optimization Approach of Dynamic Maceration of *Centella asiatica* to Obtain The Highest Content of Four Centelloids by Response Surface Methodology. *Braz. J. Pharmacogn.* 29:254–261, doi: <https://doi.org/10.1016/j.bjp.2019.01.001>.
- Moreira, J., Machado, M., Dias-Teixeira, M., Ferraz, R., Delerue-Matos, C., & Grossi, C., 2023, The Neuroprotective Effect of Traditional Chinese Medicinal Plants—A Critical Review, *Acta Pharmaceutica Sinica B*, doi: <https://doi.org/10.1016/j.apsb.2023.06.009>.
- Munteanu, I.G., & Apetrei, C., 2021, Analytical Methods Used in Determining Antioxidant Activity: A Review, *International Journal of Molecular Sciences*, 22(7), 3380, doi: <https://doi.org/10.3390/ijms22073380>.
- Neha, K., Haider, M.R., Pathak, A., & Yar, M.S., 2019, Medicinal Prospects of Antioxidants: A Review, *European Journal of Medicinal Chemistry*, 178, 687–704, doi: <https://doi.org/10.1016/j.ejmech.2019.06.010>.
- Novianty, H., & Herandarudewi, S.M.C., 2018, The Effect of Sea-Water and Fresh-Water Soaking on The Hedonic Test of *Eucheuma* sp. Syrup and Pudding. In *IOP Conference Series: Earth and Environmental Science*, 137(1), p. 012090, IOP Publishing, doi: <http://dx.doi.org/10.1088/1755-1315/137/1/012090>.
- Olas, B., 2020, Honey and its Phenolic Compounds as an Effective Natural Medicine for Cardiovascular Diseases in Humans?, *Nutrients*, 12(2), 283, doi: <https://doi.org/10.3390/nu12020283>.
- Olayemi, O.J., John-Africa, L.B., Chikwendu, C.B., & Isimi, C.Y., 2020, Preliminary Evaluation of The Physicochemical and Antiplasmodial Properties of Syrup Formulations Containing The Aqueous Root Extract of



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Nauclea latifolia (Rubiaceae), *Saudi Journal of Medical and Pharmaceutical Sciences*, 6, 541-547, doi: <https://doi.org/10.36348/sjmps.2020.v06i08.005>.

Oppedisano, F., Maiuolo, J., Gliozi, M., Musolino, V., Carresi, C., Nucera, S., Scicchitano, M., Scarano, F., Bosco, F., Macrì, R., Ruga, S., Zito, M. C., Palma, E., Muscoli, C., & Mollace, V., 2020, The Potential for Natural Antioxidant Supplementation in the Early Stages of Neurodegenerative Disorders, *International Journal of Molecular Sciences*, 21(7), 2618, doi: <https://doi.org/10.3390/ijms21072618>.

Oroian, M., & Escriche, I., 2015, Antioxidants: Characterization, Natural Sources, Extraction and Analysis, *Food Research International*, 74, 10-36, doi: <https://doi.org/10.1016/j.foodres.2015.04.018>.

Oxtoby, D.W., Gillis, H.P. & Nachtrieb, N.H., 2001, *Prinsip – Prinsip Kimia Modern*, diterjemahkan oleh Suminar Setiati, Jilid I, Erlangga, Jakarta.

Ozuna, C., Trueba-Vázquez, E., Moraga, G., Llorca, E., & Hernando, I., 2020, Agave Syrup as an Alternative to Sucrose in Muffins: Impacts on Rheological, Microstructural, Physical, and Sensorial Properties, *Foods*, 9(7), 895, doi: <https://doi.org/10.1016/j.lwt.2022.113434>.

Patil, A.G., Mirajakar, K.J., Savekar, P.L., Bugadikattikar, C.V., & Shintre, S.S., 2020, Formulation and Evaluation of Ginger Macerated Honey Base Herbal Cough Syrup, *International Journal of Innovative Science and Research Technology*, 5(6), 582-588, doi: <http://dx.doi.org/10.38124/IJISRT20JUN334>.

Patricia, V.M., & Syaputri, F.N., 2021, February, Antioxidant Activities from Two Varieties of Pear Peel Extracts using DPPH and CUPRAC Methods. In *Journal of Physics: Conference Series*, 1764(1), 012013, doi: <http://dx.doi.org/10.1088/1742-6596/1764/1/012013>.

Pertiwi, R.D., Suwaldi, M.R., & Setyowati, E.P., 2020, Radical Scavenging Activity and Quercetin Content of *Muntingia calabura* L. Leaves Extracted by Various Ethanol Concentration, *Journal of Food and Pharmaceutical Sciences*, 8(1), 174-84, doi: <https://doi.org/10.22146/jfps.581>.

Peteliuk, V., Rybchuk, L., Bayliak, M., Storey, K.B., & Lushchak, O., 2021, Natural Sweetener *Stevia rebaudiana*: Functionalities, Health Benefits and Potential Risks, *EXCLI Journal*, 20:1412-1430, doi: 10.17179/excli2021-4211.

Pittella, F., Dutra, R.C., Junior, D.D., Lopes, M.T.P., & Barbosa, N.R., 2009, Antioxidant and Cytotoxic Activities of *Centella asiatica* (L) *Int. J. Mol. Sci.*, 10:3713–3721, doi: <https://doi.org/10.3390/ijms10093713>.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Powthong, P., & Suntornthiticharoen, P., 2023, Comparative Analysis of Antioxidant, Antimicrobial, and Tyrosinase Inhibitory Activities of *Centella asiatica* (L.) Urb and *Eichhornia crassipes* (mart.) Solms., *Journal of Medical Pharmaceutical and Allied Sciences*, 12 (4), 5931 – 5938, doi: <https://doi.org/10.55522/jmpas.V12I4.5082>.
- Purnomo, H. & Syamsul, E.S., 2017, *Statistika Farmasi*, CV. Grafika Indah, Yogyakarta.
- Rahmasari, F.S., 2023, Optimasi Formula dan Uji Aktivitas Antioksidan Sediaan Gummy Candy Ekstrak Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Gelling Agent Gelatin-Pektin, Skripsi, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.
- Ramli, S., Xian, W.J., & Abd Mutualib, N.A., 2020, A Review: Antibacterial Activities, Antioxidant Properties and Toxicity Profile of *Centella asiatica*. *EDUCATUM Journal of Science, Mathematics and Technology*, 7(1), 39-47, doi: <https://doi.org/10.37134/ejsmt.vol7.1.5.2020>.
- Rashid, M.H.O., Akter, M., Uddin, J., Islam, S., Rahman, M., Jahan, K., Sarker, M.R., & Sadik, G., 2023, Antioxidant, Cytotoxic, Antibacterial and Thrombolytic Activities of *Centella asiatica* L.: Possible Role of Phenolics and Flavonoids, *Clinical Phytoscience*, 9(1), 1-9, doi: <https://doi.org/10.1186/s40816-023-00353-8>.
- Rijai, H. R., Fakhrudin, N., & Wahyuono, S., 2019, Isolation and Identification of DPPH Radical (2, 2-diphenyl-1-pikrylhidrazyl) Scavenging Active Compound in Ethyl Acetate Fraction of Piper Acre Blume, *Majalah Obat Tradisional*, 24(3), 204-209, doi: <https://doi.org/10.22146/mot.48173>.
- Riswahyuli, Y., Rohman, A., Setyabudi, F.M.C.S., & Raharjo, S., 2020, Characterization of Indonesia Wild honey and its Potential for Authentication and Origin Distinction. *Food Res*, 4(5), 1670-1680, doi: [https://doi.org/10.26656/fr.2017.4\(5\).105](https://doi.org/10.26656/fr.2017.4(5).105).
- Sambasivarao, A., Baru, C.S.R., & Reddy, M.H., 2016, Accelerated Stability Testing of Dosage Forms as per International Conference of Harmonization (ICH) Guidelines, *World J Pharm Med*, 2:99-103.
- Sánchez-Martínez, J.D., Valdés, A., Gallego, R., Suárez-Montenegro, Z.J., Alarcón, M., Ibañez, E., Alvarez-Rivera, G., & Cifuentes, A., 2022, Blood-Brain Barrier Permeability Study of Potential Neuroprotective Compounds Recovered From Plants and Agri-Food by-Products, *Frontiers in Nutrition*, 9, 924596, doi: <https://doi.org/10.3389/fnut.2022.924596>.



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Shao, Y., Sun, Y., Li, D., & Chen, Y., 2020, *Chrysanthemum indicum* L.: A Comprehensive Review of its Botany, Phytochemistry and Pharmacology. *The American journal of Chinese Medicine*, 48(4), 871–897, doi: <https://doi.org/10.1142/S0192415X20500421>.

Sharma, V., Singh, S., Dixit, A., & Saxena, A., 2020, Formulation and Evaluation of Herbal Cough Syrup from Seeds Extract of Hedge Mustard, *International Journal of Research in Pharmacy and Chemistry*, 10(1), 56-69, doi: [https://dx.doi.org/10.33289/IJRPC.10.1.2020.10\(3\)](https://dx.doi.org/10.33289/IJRPC.10.1.2020.10(3)).

Sheskey, P.J, Cook, W.G., & Cable, C.G., 2017, *Handbook of Pharmaceutical Excipient*, 8 th Ed., Pharmaceutical Press, London.

Shin, H.Y., Kim, H., Jung, S., Jeong, E.J., Lee, K.H., Bae, Y.J., Suh, H.J., Jang, K.I. & Yu, K.W., 2021, Interrelationship Between Secondary Metabolites and Antioxidant Capacities of *Centella asiatica* Using Bivariate and Multivariate Correlation Analyses. *Appl Biol Chem* 64(1), 1-10, doi: <https://doi.org/10.1186/s13765-021-00656-9>.

Sinaga, E.M., 2018, Optimasi Xanthan Gum dan Sukrosa pada Formulasi Sirup Fraksi Buah Mengkudu (*Morinda citrifolia* L.), Skripsi, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.

Solikah, W.Y., Fatmawati, A., Gunawan, A., & Defri, A.Y., 2023, Qualitative Analysis and Determination of Total Flavonoid Content of Ethanolic Extract of Gotu Kola (*Centella asiatica*) with Variation of Solvent Concentrations, *Journal of Pharmaceutical and Sciences*, 6(2), 673–680. <https://doi.org/10.36490/journal-jps.com.v6i2.89>.

Song, X., Tan, L., Wang, M., Ren, C., Guo, C., Yang, B., Ren, Y., Cao, Z., Li, Y., & Pei, J. (2021). Myricetin: A review of the most recent research. *Biomedicine & Pharmacotherapy*, 134, 111017, doi: <https://doi.org/10.1016/j.biopha.2020.111017>.

Suranto, S., Hidayati, N.R., Furqan, M., Mahadjoeno, E., & Sajidan, S., 2023, Flavonoid Compound of *Cucurbita moschata* at Three Different Altitudes, *Biodiversitas Journal of Biological Diversity*, 24(3), doi: <https://doi.org/10.13057/biodiv/d240361>.

Susanti, S., Kumoro, A.C., Suzery, M., & Oku, H., 2023, The Effect of Various Sweeteners on The Physical, Chemical, and Organoleptic Characteristics of Ginger Leaf Extract Syrup, *Food Research*, 7(2), 164-169, doi: [https://doi.org/10.26656/fr.2017.7\(2\).787](https://doi.org/10.26656/fr.2017.7(2).787).

Syaifabila, I.M., 2023, Optimasi Formula dan Uji Aktivitas Antioksidan Sediaan Gummy Candy Ekstrak Herba Pegagan (*Centella asiatica* (L.) Urban) dengan



UNIVERSITAS
GADJAH MADA

Pengembangan Sediaan Honey Base Sirup Herbal Pegagan (*Centella asiatica* (L.) Urban) dan Bunga Krisan (*Chrysanthemum indicum* L.) dengan Variasi Komposisi Madu-Stevia serta Evaluasi Stabilitas dan Daya Antioksidan
MIAS ISNINGROOM, Marlyn Dian Laksitorini, M.Sc., Apt., Ph.D.; Dr. Nunung Yuniarti, S.F., M.Si., Apt.
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Variasi Basis Gelatin Sapi dan Pektin, *Skripsi*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.

Tandhanskul, A., Yasurin, P., Chavanon, P., Watanakijcharoenman, P., Sriariyanun, M., Rattanakom, S., & Lindayani, I., 2021, Utilization of RS-3 Rice Starch into Development of Food for Elderly: A Ready-to-mix Beverage Case. In *E3S Web of Conferences* (Vol. 302, p. 02003), EDP Sciences, doi: <http://dx.doi.org/10.1051/e3sconf/202130202003>.

Taurhesia, S., Rosdiana, D.N., & Pratami, D.K., 2024, The Formulation and test of antioxidant activity from serum gel of the extract Chrysanthemum flower (*Chrysanthemum Indicum* L.), *Journal of Natural Product for Degenerative Diseases*, 1(2), 57-65.

Wagner, H., & Bladt, S., 1996, *Plant Drug Analysis: a Thin Layer Chromatography Atlas*, Springer Science & Business Media, Germany.

Waksmundzka-Hajnos, M., Sherma, J., & Kowalska, T., 2008, *Thin Layer Chromatography in Phytochemistry*, CRC Press, Boca Raton.

Wutsqa, Y.U., Suratman, S., & Sari, S.L.A., 2021, Detection of Terpenoids and Steroids in Lindsaea obtusa with Thin Layer Chromatography, *Asian Journal of Natural Product Biochemistry*, 19(2), doi: <https://doi.org/10.13057/biofar/f190204>.

Yi, X., Akatvipat, A., Mongkolrat, N., Saenubol, P., Pornnimitara, P., & Boonyayatra, S., 2023, Analgesic and Anti-Inflammatory Effects of Oral *Centella asiatica* (L.) Urban Extract in Cats Undergoing Ovariohysterectomy, *Phytomedicine Plus*, 3(1), 100403, doi: <https://doi.org/10.1016/j.phyplu.2022.100403>.

Zaid, A.N., Abualhasan, M., Al-Masri, M., Jaradat, N., Ziada, I., Ayash, N., & Daowd, A., 2016, Extemporaneous Compounding and Stability Evaluation of Paracetamol-Honey Based Syrup for Pediatric Use, *Asian Journal of Pharmaceutics (AJP)*, 10(03).