

## BAB V

### KESIMPULAN DAN SARAN

#### 5.1 Kesimpulan

1. Berdasarkan hasil pada jurnal penelitian tanaman *Tridax procumbens* memiliki hubungan kekerabatan dengan Asteraceae memiliki kesamaan karakteristik secara morfologi. Famili Asteraceae merupakan takson tumbuhan dengan keanekaragaman jenis yang cukup tinggi. Spesies dari suku Asteraceae dapat ditandai dari adanya mahkota bunga tabung dan atau mahkota bunga pita. Tumbuhan famili Asteraceae atau sembung-sembugan merupakan kelompok kelompok tumbuhan yang terdiri dari 1.911 genus yang meliputi 32.205 spesies, salah satunya adalah Songgolangit (*Tridax procumbens* L.). Morfologi tanaman yaitu tumbuhan melengkung atau tegak dengan batang berbunga setinggi 15 hingga 35 cm; tangkai daun pendek; permukaan daun kasar dan berbulu; batang daun berwarna hijau, berkayu, silindris dan tingginya mencapai 40 cm dengan banyak cabang dan ketebalan 3 sampai 6 mm.
2. Berdasarkan hasil pada jurnal penelitian menunjukkan adanya kesamaan kandungan kimia pada Songgolangit (*Tridax procumbens* L.) dan beberapa spesies dari famili Asteracea meliputi alkaloid, flavonoid, fenol, saponin, steroid, tanin, triterpenoid. Kandungan kimia yang paling banyak ditemukan dalam penelitian adalah flavonoid. Flavonoid pada tanaman Songgolangit (*Tridax procumbens* L.) dapat disebut flavonoid procumbenetin.

## **5.2      Saran**

Terdapat beberapa hal yang belum diteliti lebih dalam terkait judul skripsi ini, sehingga diberikan saran untuk penelitian selanjutnya yaitu perlu dilakukan standarisasi tentang tanaman Songgolangit (*Tridax procumbens* L.) karena tanaman ini memiliki kandungan kimia yang berpotensi digunakan untuk pengobatan.

## DAFTAR PUSTAKA

- Achmad, S.A. 1986, *Kimia Organik Bahan Alam Materi 4: Ilmu Kimia Flavonoid*, Karunika Universitas Terbuka, Jakarta.
- Achmadi, S.S. dan Sulistiyani, 2002, *Uji in vivo Saponin Tanaman Akar Kuning (Arcangelisia flava (L.) Merr) sebagai Hepatoprotektor*, Jurnal Nature Indonesia, **8(1)**: 1-7.
- Adelowo, F. and Oladeji, O. 2016, A review on *Tridax procumbens*: a weed with immense phytochemical and pharmacological activities: *Communications In Plant Sciences*.
- Andriana, Y., Xuan, T.D., Quy, T.N., Minh, T.N., Van, T.M. and Viet, T.D. 2019, Antihyperuricemia, Antioxidant, and Antibacterial Activities of *Tridax procumbens* L.
- Aung, A.A., Nu, K.S. and Lwin, H.H. 2019, Morphological, Histological Characters and Preliminary Phytochemical Investigation of *Tridax procumbens* L. (Hmwezok-Ne-Gya), *3rd Myanmar Korea Conference Research Journal*, **3(1)**.
- Asif, A. and Saeed, M.A. 2020, *Exploring Irritant Activity of Some of the Phytochemical Components from Wild Sonchus arvensis (L.) ssp arvensis (D.C.) Kirp herb*, Acta Pharmaceutica Scientia, **58(3)**.
- Bhaga, V.C. and Kondawar, M.S. 2019, A comprehensive review on phytochemistry and pharmacological use of *Tridax procumbens* Linn.: *Journal of Pharmacognosy and Phytochemistry*, **8(4)**: 01-10.
- Bhat, S.V., Nagasampagi, B.A. and Meenakshi S. 2009, *Natural Products: Chemistry and Application*, Narosa Publishing House, New Delhi, India.
- Bhattacharyya, B. 2004, *Botani Sistematis 2*, Penerbit Buku Kedokteran, Jakarta.
- Cui, H.X., Zhang, L.S., Yan, H.G., Yuan, K. and Jin, S.H. 2020, Constituents of Flavonoids from *Tridax procumbens* L. and Antioxidant Activity, *Journal In The Field of Pharmacognosy and Natural Products*, **16(67)**.

- Chaudhary, P. and Dhande, S. 2020, Evaluation of Anti-Parkinson's Activity of Ethanolic Extract of *Tridax procumbens* (Asteraceae), *Indian Journal of Natural Products and Resources*, **11** (1).
- Chauhan, B.S. and Johnson, D.E. 2008. Germination ecology of two troublesome Asteraceae species of rainfed rice: *Siam weed* (*Chromolaena odorata*) and *Coat buttons* (*Tridax procumbens*). *Weed Science*, **56**(4): 567-573.
- Christudas, S., TM, Kulathivel. and P, Agastian. 2012, Phytochemical and antibacterial studies of leaves of *Tridax procumbens* L. *Journal of Tropical Biomedicine*, S159-S161.
- Departemen Kesehatan RI. 2007, *Kebijakan Obat Tradisional Nasional*, Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI. 2009, *Farmakope Herbal Indonesia Jilid I*, Jakarta: Keputusan Menteri Kesehatan Republik Indonesia.
- Dorland, W.A. Newman, 2002, *Kamus Kedokteran Dorland edisi 29*, Diterjemahkan dari Bahasa Inggris oleh Huriwati Hartanto, Kedokteran ECG, Jakarta.
- Evizal, R., Endah, R., Ardian., Agung, W. dan Deddy, A. 2013, *Keragaman Tumbuhan dan Ramuan Etnomidisin Lampung Timur*, Prosiding Semirata FMIPA Universitas Lampung, Lampung.
- Fessenden, R.J. and Fessenden, J.S. 1999, *Kimia Organik Jilid I Edisi Ketiga*, Penerbit Erlangga, Jakarta.
- Fong, H.S. 1978, *Phytochemical Screening*, Departement Of Pharmacognosy And Pharmacology, Collage of Pharmacy, University Of Illinois, Chicago.
- Foster, Adriance S., Ernest M. and Gifford. 1974, *Comperative Morphology and Evolution of Vascular Plant*, W. H. Freeman and Company San Fransisco.
- Ghosh, P., Biswas, M., Biswas, S., Dutta, A., Sil, S. and Chatterjee, S. 2019, Morphological, ethno biological and phytopharmacological attributes

of *Tridax procumbens* Linn. (Asteraceae): a review, *Journal of Scientific Research in Biological Sciences*, **6(2)**: 182-191.

Harborne, J.B. 1987, *Metode Fitokimia: Penentu Cara Modern Menganalisis Tumbuhan*, ITB Press, Bandung.

Haryati, N.A. dan C.S. Erwin. 2015, Uji Toksisitas dan Aktivitas Antibakteri Ekstrak Daun Merah (*Syzygium mytifolium* Walp) terhadap Bakteri *Staphylococcus aureus* dan *Escherichia coli*. *J. Kimia Mulawarman*, **13(1)** : 35-39.

Hasanuddin dan Fitriana. 2014, *Hubungan Kekerbatan Fenetik 12 Spesies Anggota Familia Asteraceae*, *Jurnal EduBio Tropika*, **2(2)** : 187-250.

Holm, L., Doll, J., Holm, E., Pancho, J., and Herberger, J. 1997. *World Weeds: Natural Histories and Distribution*. John Wiley and Sons, Inc. New York.

Hu, J.W., Wu, J., Zhang, Y., Huang, B.H., Fu, J.P., Wu, L. and Xu, G. 2019, Chemical Constituents Of The Stems Of *Gynura procumbens*, *Chemistry of Natural Compounds*, **55(3)**.

Jaafar, F.M., Osman, C.P., Ismail, N.H. and Awang, K. 2007, Analysis of essential oils of leaves, stems, flowers and rhizomes of *Etlingera elatior* Jack, R.M.S. Smith. *The Malaysian Journal Of Analytical Sciences*, **11(1)** : 269-273.

Jachak, S.M., Gautman, R., Selvam, C., Madhan, H., Srivastava, A. and Khan, T. 2011, Antiinflammatory, cyclooxygenase inhibitory and antioxidant activities of standardized extracts of *Tridax procumbens* L.: *National Institute of Pharmaceutical Education and Research (NIPER), Fitoterapia*, **82**: 173–177.

Jain, A., Rao, D.V., Sirisha, V.L. and Jain, A. 2015, Preliminary Secondary, Metabolites Screening and GC-MS Analysis of Plant Extract of *Tridax procumbens* (L.), *International Journal Of Research In Applied, Natural And Social Sciences*, **3(1)** : 9-26.

Jhariya, S., Rai, G., Yadav, A. K., Jain, A. P., and Lodhi, S. 2015, *Protective effects of Tridax procumbens* Linn. *Leaves on*

*experimentally induced gastric ulcers in rats*, Journal of Herbs, Spices & Medicinal Plants, **21(3)** : 308-320.

Jones, S.B. and Luchsinger, A.E. 1979, *Plant Systematics*, New York: Mc. Graw-Hill Book Company, **44**: 60-77.

Kakodkar, S.A., Kshirsagar, S.N., Kelkar, A.S., Nair, A.M., Dhawal, P.P., Satardekar, K.V. and Barve , S.S. 2019, *Evaluation Of Phytochemical Constituents, Antioxidant Property, Dna Damage Inhibition Activity And Cytotoxicity Of Aster (Callistephus chinensis) Flower Waste*, World Journal of Pharmaceutical Research, **8(5)** : 977-991.

Kavitha, R. and Prasanna, G. 2018, *Phytochemical Screening and in vitro Anti inflammatory Activity of Aerial Parts of Tridax procumbens L.: Journal of Pharmaceutical Sciences Review and Research*, 115-120.

Kelly. 2009, *Theory and Practice*. The Curriculum: Elsevier.

Kushwaha, P., Yadav, S.S., Singh, V. and Dwivedi, L.K. 2019, *Phytochemical Screening and GC-MS Studies of The Methanolic Extract of Tridax Procumbens, International Journal of Pharmaceutical Sciences and Research*, **10(5)**.

Khaing, Y.Y., Moe, M.M. and Oo, S.S., 2019, *Morphological, Microscopical Characters and Phytochemical tests of Tithonia diversifolia (Hemsl.) A. Grays*, 3rd Myanmar Korea Conference Research Journal, **3(3)**.

Khan, S.K., Rahman, A.H.M.M., Alam, M.S., Ferdous, A., Rafiul Islam A.K.M, and Rahman, M.M. 2008. *Taxonomic Studies on the Family Asteraceae (Compositae) of the Rajshahi Division*. Research Journal of Agriculture and Biological Sciences, **4(2)** : 134-140.

Lawrence. 1965, *Taxonomi of Vascular Plants*, Edisi Ke-3. New York: The Macmillan Company.

Ma, S., Zhou, J.M., Wei, H.S. and Wu, H.B. 2020, *Flavones From The Flowers Of Tridax Procumbens and Their Antioxidant Activity, Chemistry of Natural Compounds*, **56(2)**.

- Markham, K.R. 1988, *Cara Mengidentifikasi Flavonoid*, ITB, Bandung.
- Marliana, S.D., Suryanti, V. dan Suyono. 2005, *Skrining Fitiokimia dan Analisis Kromatografi Lapis Tipis Komponen Kimia Buah Labu Siam (Sechium edule jacq. Swartz.) dalam Ekstrak Etanol*, FMIPA, Universitas Sebelas Maret (UNS), Surakarta.
- Heinrich, M., Robles, M., West, J.E., Montellano, B.R.O.D. and Rodriguez, E. 1998, Ethnopharmacology Of Mexican Asteraceae (Compositae) Ethnopharmacology Of Mexican Asteraceae (Compositae). *Annu. Rev. Pharmacol. Toxicol.* **38**: 539–565.
- Mir, S.W., Jan, Z., Mir, S., Dar, A.M. and Chitale, G. 2017, A concise review on biological activity of *Tridax procumbens* Linn : *Organic Chem Curr Res*, **6(1)**: 177.
- Njangiru, I.K., Njagi, E.M.N. and Ngeranwa J.J.N. 2019, Bioscreening for Hypoglycemic Potential of Aqueous Extract of *Tridax Procumbens* in Mice Model, *Journal of Medical Research and Health Sciences*, **2 (10)**.
- Olson, Jim. 2003, *Clinical Pharmacology*, Seattel: University of Washington.
- Onoja, S.O., Onyebuchi, G.C., Ijeh, I.I. and Ezeja , M.I. 2019, *Anti-inflammatory and analgesic activities of methanol extract of Helianthus annuus Linn. (Asteraceae) leaf*, The Euro Biotech Journal, Pharmaceutical Biotechnology, **3(2)**.
- Panda, S.K. and Luyten, W. 2018, *Antiparasitic activity in Asteraceae with special attention to ethnobotanical use by the tribes of Odisha, India*.
- Pande, J., Padalia, H., Donga, S. and Chanda, S. 2018, Pharmacognostic, physicochemical and phytochemical studies of *Andrographis echinoides* Nees. and *Tridax procumbens* L. leaf and stem : *The Pharma Innovation Journal*, **7(6)**: 303-315.
- Pawar, S.G. and Patil, A.M. 2020, Studies on quantitative estimation and antioxidant activity of *Tridax procumbens* L., *International Journal of Innovative Knowledge Concepts*, **7(1)**.

- Pertiwi, R.H., Hendra, M. dan Syafrizal, 2015, Studi Palinologi Famili Asteraceae Di Kebun Raya Universitas Mulawarman Samarinda (Krus), Prosiding Seminar Tugas Akhir FMIPA Universitas Mulawarman, Samarinda, **1(1)**.
- Rao, P.S., Satelli, A., Moridani, M., Jenkins, M. and Rao, U.S. 2012, *Luteolin induces apoptosis in multidrug resistant cancer cells without affecting the drug transporter function: involvement of cell line-specific apoptotic mechanisms*, Int. Journal Cancer, **130(11)**: 2703-2714.
- Rizki, 2011, *Sistematika Tumbuhan*, Rios Multicipta, Padang.
- Rizki, R., Fernando, O. dan Nursyahra, 2019, *Etnofarmakologi Tumbuhan Familia Asteraceae Di Kabupaten Pasaman Barat*, Politeknik Pertanian Negeri Payakumbuh, STKIP PGRI Sumatera Barat.
- Robinson, T. 1995, *Kandungan Organik Tumbuhan Tinggi*, Diterjemahkan dari Bahasa Inggris Padmawinata, K., ITB Press, Bandung.
- Sedjati, S., Suryono, Santosa, A., Supriyantini, E. dan Ridlo, A. 2017, *Aktivitas Antioksidan dan Kandungan Senyawa Fenolik Makroalga Coklat Sargassum sp.*, Jurnal Kelautan Tropis November, **20(2)** :117–123.
- Silalahi, M. 2013, *Taksonomi Tumbuhan Tinggi*, Universitas Kristen Indonesia, Jakarta.
- Simanjuntak, H.A. 2017, *Potensi Famili Asteraceae Sebagai Obat Tradisional di Masyarakat Etnis Simalungun Kabupaten Simalungun Provinsi Sumatera Utara*, Jurnal Biologi Lingkungan, Industri, Kesehatan, **4(1)**.
- Simpson, M.G., 2006, *Plant Systematics*, Elsevier Academic Press Publivation, London.
- Singh, G. 2010, *Plant Systematics 3th Edition, an integrated approach*, Science Publisher, University of Delhi.

- Shao, Y., Sun, Y., Li, D. and Chen, Y. 2020, *Chrysanthemum indicum L.: A Comprehensive Review of its Botany, Phytochemistry and Pharmacology*, The American Journal of Chinese Medicine, **48(4)**.
- Shrivastav, A., Mishra, A.K., Abid, M., Ahmad, A., Fabuzinadah, M. and Khan, N.A. 2020, Extracts of *Tridax Procumbens* Linn Leaves Causes Wound Healing In Diabetic and Non-Diabetic Laboratory Animals.
- Soepomo, 1987, *Morfologi Tumbuhan*, Universitas Gajah Mada Press, Yogyakarta
- Sytar, O., Hemmerich, I., Zivcak, M., Rauh, C. and Brestic, M. 2016, *Comparative Analysis of Bioactive Phenolic Compounds Composition From 26 Medicinal Plants*, Saudi Journal of Biological Sciences.
- Thenmozhi M. and Jayanthi M. 2019, *Phytochemical Screening And Antioxidant Activity Of Eclipta Alba L.*, Asian J Pharm Clin Res, **12(2)** : 215-218.
- Thorat, S.S. and Shirote, P.J. 2019, *Isolation, Phytochemical Screening and Pharmacological Evaluation of Tagetes erecta Leaves Extract*, International Research Journal of Pharmacy and Medical Sciences, **2(3)** : 57-59.
- Tjitrosoepomo, G. 2005, *Morfologi Tumbuhan*, UGM Press, Yogyakarta.
- Tjitrosoepomo, G. 2010, *Taksonomi Tumbuhan Obat-obatan*, UGM Press. Yogyakarta.
- Tjitrosoepomo, S.S. dan Said, H. 1983, *Botani Umum*, Angkasa Press, Bandung.
- Tjitrosoepomo. 2007. *Morfologi Tumbuhan I*. Universitas Gajah Mada Press, Yogyakarta.
- Uzbek, U.H. and Shahidan, W.N.S. 2019, *Tasty Herb that Heals: A Review of Cosmos caudatus (Ulam Raja) and its Potential Uses in Dentistry*, World Journal of Dentistry, **10(4)**.

- Wahua, C., and Pepple, I.I. 2020, Macro- and Micro-Morphological, Anatomical, Cytological and Phytochemical Properties of *Tridax procumbens* Linn. (Asteraceae), *Journal of Applied Sciences and Environmental Management*, **24(4)**: 601- 606.
- Waji, R.A. dan Sugrani, A. 2009, Flavonoid (Quercetin), *Makalah Kimia Organik Bahan Alam*, Universitas Hasanuddin, Makassar.
- Wegiera, M., Helena, D.S., Marcin, J.D., Magdalena. K. and Kamila, K. 2012, *Cytotoxic Effect of Some Medicinal Plants From Asteraceae Family*, Chair and Departement Of Pharmaceutical Botany, Medical University, **69(2)**.
- Widianto, J. 2009, *Anatomi Tumbuhan*, Kanisius, Surabaya.
- Yadav, N., Ganie, S.A., Singh, B., Chhillar, A.K. and Yadav, S.S. 2019, *Phytochemical constituents and ethnopharmacological properties of Ageratum conyzoides L.*, *Phytotherapy Research*.
- Yadav, P., Singh, D. and Nayak, S. 2011, Microscopic Studies Of *Tridax procumbens* Linn.. *International Journal of Biomedical Research*, **2(9)**: 508-517.