

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

1. Nilai SPF (Sun Protection Factor) untuk parameter %TE, dan %TP yang dimiliki oleh ekstrak kering bunga rosela pada konsentrasi 2,5%, 5%, dan 7,5% telah memenuhi persyaratan suatu tabir surya.
2. Konsentrasi ekstrak kering bunga rosela (*Hibiscus sabdariffa* L.) berpengaruh terhadap mutu fisik dan uji efektivitas dari sediaan gel tabir surya.

5.2 Saran

Berdasarkan dari penelitian yang telah dilakukan menggunakan ekstrak kering bunga rosela, disarankan untuk penelitian selanjutnya menggunakan ekstrak bunga rosela diekstraksi sendiri sehingga hasilnya lebih tepat.

DAFTAR PUSTAKA

- Adzani, A., Darusman, F., dan Aryani, R. 2022, Kajian Efek Radiasi Ultraviolet Terhadap Kulit, *Bandung Conference Series: Pharmacy* **2(2)**: 106-112.
- Alim, N., Simarmata, M.MT., Gunawan, B., Purba, T., Juit, N., Herawati, J., Figriyanto, R., Junairiah., Inayah, A.N. 2022, *Pengelolaan Lahan Kering*, Yayasan Kita Menulis.
- Andari, P., Sari, B, L., dan Noorlaela, E. 2020, Penentuan Aktivitas Antioksidan dan Nilai SPF Formula Lotion Ekstrak Kelopak Bunga Rosela (*Hibiscus sabdariffa* L.).
- Anonim. 1996. *Sediaan Tabir Surya*, SNI 16-4399-1996, Badan Standardisasi Nasional, Jakarta.
- Anonim. 2017, *Farmakope Herbal Indonesia, Edisi II*, Kementerian Kesehatan Republik Indonesia, Jakarta.
- Ansel, H.C. 1989, *Introduction to Pharmaceutical Dosage Form*, Edisi 4, Diterjemahkan oleh Farida Ibrahim, UI Press, Jakarta.
- Astuti, R., dan Fadilla, A.R. 2020, *Hibiscus sabdariffa* (Rosela) sebagai Alternatif Minum Teh Berkafein Rendah, *Jurnal Cendekia Sambat*, **1(2)**: 69-77.
- Baki, G., and Alexander, K. 2015, *Introduction to Cosmetic Formulation and Technology*, Wiley. Canada.
- Barel, A, O., Paye, M., and Maibach, H, I. 2009, *Handbook of Cosmetic Science and Technology Third Edition*, Informa Healthcare, New York.
- Baumann, L. 2009, *Cosmetic Dermatology Principles and Practice*, The McGraw-Hill Companies Inc. New York.
- Bhattacharjee, D., Preethi S., Patil A.P., and Jain, V. 2021, A Comparison of Natural And Synthetic Tabir surya Agents: A Riview, *International Journal of Pharmaceutical Research*, **13(1)**.
- Chauhan, A., Yadav, A., Chauhan, A., Chauhan, A., Mishra, S., Rai, J.K., Jena, J. 2023. A Riview: Sun Protecting Factor, *Pharmacy College Azamgarh*, **22(6)**: 1160-1172
- Departemen Kesehatan Republik Indonesia. 1993, *Kodeks Komestika Indonesia*, Direktorat Jendral Pengawasan Obat dan Makanan, Jakarta.

- Direktorat Jenderal Pengawasan Obat dan Makanan Republik Indonesia, 2000, *Parameter Standar Umum Ekstrak Tumbuhan Obat*, Departemen Kesehatan Republik Indonesia, Jakarta.
- Dewi, B.A.A.S.K., and Kartika, K. 2023, System optimization and validation to improve thin layer chromatography of roselle calyces (*Hibiscus sabdariffa* L.) required by the Indonesian Herbal Pharmacopoeia Edition II, *J Pharm Pharmacogn Res*, **11(2)**: 243-254
- Egabaram, O, P., Pillai, S, K., Ray, S, S. 2020, Materials Science Challenges in Skin UV Protection: A Review, *Photochemistry and Photobiology*, **96**: 779–797.
- Fahrezi, M.A., Nopiyanti, V., Priyanto, W. 2021, Formulasi dan Uji Aktivitas Tabir Surya Gel Kitosan Menggunakan Karbopol 940 dan HPMC K100 sebagai Gelling Agent, *Journal of Pharmacy*, **10(1)**: 17-23.
- Garg, A., Aggarwal, D., Garg, S. and Sigla, A.K. 2002, Spreading of semisolid formulation: An update, *Pharmaceutical Technology North America*, **26**: 84–105.
- Gonzales-Bravo, A., Montero-Vilchez, T., and Buendia-Eisman, A. 2022, The Effect of Tabir surya on the Skin Barrier, *Life* 2022, **12**: 1-14.
- Gupta, A., Sahu, S., Gond, S.P., Singh, B., Rajediran, A., and Singh, A. 2022, Pharmacological Review of Chemical Agents Used in Tabir surya Preparations, *Journal of Pharmaceutical Negative Result*, **13(5)**: 2692-2702.
- Hamrita, B., Emira, N., Papetti, A., Badraoui, R., Bouslama, L., Tekfa, M.I. B., Hamdi, A., Patel, M., Elsbali, A.M., Adnan, M., Ashraf, S.A., Snoussi, M. 2022, Research Article: Phytochemical Analysis, Antioxidant, Antimicrobial, and Anti-Swarming Properties of *Hibiscus sabdariffa* L. Calyx Extracts: In Vitro and In Silico Modelling Approaches, *Hindawi*: 1-14.
- Hapasari, B.W., Manikharda., and Setyaningsih W. 2021, Riview: Methodologies in the Analysis of Phenolic Compounds in Roselle (*Hibiscus sabdariffa* L.): Composition, Biological Activity, and Beneficial Effects on Human Health. *Horticulturae*, **7(35)**: 1-41.
- Jones, D.S. 2010, *Statistik farmasi*, Diterjemahkan dari Bahasa Inggris oleh Hesty Utami Ramadaniati dan H. Hairrizul Rivai, Penerbit Buku Kedokteran EGC, Jakarta.

- Kurniawan, D. W., dan Sulaiman, T. N. S. 2009, *Teknologi Sediaan Farmasi*, Graha Ilmu. Yogyakarta
- Lachman, L., Lieberman H.A. dan Kanig, J.L. 1994, *Teori dan Praktek Farmasi Industri Edisi 2*. UI Press, Jakarta.
- Li, B., Wang, L., Bai, W., Chen, W., Chen, F., and Shu, C. 2021, *Anthocyanins: Chemistry, Processing & Bioactivity*, Springer Nature Singapore, Singapore.
- Lowe, N. J. and Shaath, N. A, Pathak, M. A, 1997, *Sunscreen. Development, Evaluation and Regulatory Aspects*, Marcel Dekker, New York.
- Mansur R.S., Patricia P.A., Deborah, L.D. and Edward M. 1980, Tabir surya testing methods: in vitro predictions of effectiveness, *J.soc.*
- Mathur, N. K. 2012, *Industrial galactomannan polysaccharides*, CRC Press, Boca Raton.
- Mitsui, T. 1997, *New Cosmetics Science.*, Elsevier Science B.V, Amsterdam.
- Munaeni, W., Mainassy, M.C., Puspitasari, D., Susanti, L., Endriyanto, N.C., Yuniastuti, A., Wiradnyani, N.K., Fauziah, P.N., Adriani., Achmad, A.F., Rohmah, M.K., Rahman, I.F., Yulianti, R., Cesa, F.Y., Hendra, G.A., Rollando. 2022, *Perkembangan dan Manfaat Obat Herbal Sebagai Fisioterapi*. CV Tohar Media, Makassar.
- Nassour, R., Ayash, A., and Al-Tameemi, K. 2020, Anthocyanin pigments: Structure and biological importance, *Journal of Chemical and Pharmaceutical Sciences*, **13(4)**: 45-57.
- Novitasari, M., Amboro, W. 2021, Formulasi Gel Tabir Surya Ekstrak Daun Teh Hijau (*Camelia sinensis*) Dan Penentuan Nilai Sun Protection Factor (SPF), *Avicenna: Journal of Health Research*, **4(2)**: 107-115.
- Plischka, C. E. 2014, *Tabir surya products - drug or cosmetics? A comparison of the legal requirements for Tabir surya products in Europe, Australia and United State*
- Purba, H., Simantuntak, H.A., and Situmorang, S. 2020, Phytochemical screening of bunga rosela (*Hibiscus sabdariffa* L) and antimicrobial activity test, *Jurnal Pendidikan Kimia*, **20 (2)**: 70-78.
- Putri, S.Z., 2021, *Khasiat dan Manfaat Kelopak Bunga Rosela*, CV Pena Persada, Banyumas Jawa.

- Reis-Mansur, M.C.P.P., Luz, B.G., and Santos EP. 2023. Consumer Behavior, Skin Phototype, Tabir suryas, and Tools for Photoprotection: A Review, *Cosmetis*, **10 (39)**: 1-13.
- Riaz, G., Naik, S.N., Garg, M., Chopra, R. 2021, Phytochemical Composition of an Underutilized Plant Sorrel/ Roselle (*Hibiscus sabdariffa* L.) Cultivated in India, **10(2)**.
- Rieger, M.M. 2000, *Harry's Cosmeticology, 8th edition*, Chemical Publishing Company, New York.
- Rijar, G.Y., Sari, N., dan Aliah, A.I. 2022, Perbandingan Nilai persen Transmisi Eritema dan Pigmentasi dengan Metode Maserasi dan Infusa Kopi Robusta (*Coffea Canephpora* Pierre A. Frohner) yang berasal dari kabupaten tanah toraja, *Jurnal Multidisiplin Mandani (MUDIMA)*, **2(6)**: 2729-2742
- Sheskey, P.J., Cook, W.G. and Cable, C.G. 2017, *Handbook of Pharmaceutical Excipients 8th Edition*, Pharmaceuical Press and The American Pharmacist Association, London.
- Tranggono, R. I., dan Latifah, F. 2007, *Buku Pegangan Ilmu Pengetahuan Kosmetik*, Gramedia, Jakarta.
- Voigt, R. 1994, *Buku Pelajaran Teknologi Farmasi*, Gadjah Mada University Press, Yogyakarta.
- Wallace, T.C. and Giusti, M.M (eds). 2014, *Anthocyanins in Health and Disease*, CRC Press, New York.
- Wardina, H., dan Sukawati, Y.2016, Formulasi Ekstrak daun Kokang (*Lepisanthes amoena* (Hassk.) Leenh.) dalam Bentuk Gel Anti Acne, *Indonesian Journal On Medical Science*, **3(2)**: 75-79.
- Wilkinson, J. B. and R.J. Moore. 1982. *Harry's Cosmeticology 7th edition*, George Godwin, London: 226.
- Zhang, Y and Naebe, M. 2021, Lignin: A Riview on Sturcture, Properties, and Application as a Light-Colored UV Absorber, *ACS Sustainable Chem. Eng.*, **9**: 1427-1442