

BAB 5

SIMPULAN DAN SARAN

5.1 Simpulan

Berdasarkan hasil penelitian dapat dinyatakan bahwa peningkatan konsentrasi ekstrak kental buah semangka dalam sediaan berpengaruh secara signifikan ($P<0,05$) terhadap hasil evaluasi sediaan yaitu uji organoleptis, nilai pH, nilai viskositas, daya sebar, daya lekat, daya tercucikan air, daya melembabkan, aktivitas antioksidan dan kesukaan.

Sediaan yang memiliki organoleptis, nilai pH, nilai viskositas, daya sebar, daya lekat, daya tercucikan air, daya melembabkan, aktivitas antioksidan dan aseptabilitas terbaik adalah sediaan dengan konsentrasi ekstrak 30% (Formula 3).

5.2 Saran

Pada penelitian selanjutnya disarankan untuk melakukan uji zat berkhasiat secara kuantitatif dan melakukan pengujian efektivitas sediaan secara *in vivo*

DAFTAR PUSTAKA

- Anggraini, D., Malik, M., dan Susiladewi, M. 2011, Formulasi Krim Serbuk Getah Buah Pepaya (*Carica papaya* L) Sebagai Anti Jerawat, *Jurnal Fakultas Farmasi Universitas Andalas*, Riau.
- Ansel, H.C., Popovich and Allen, L.V., 1989, *Pharmaceutical Dosage Forms and Drug Delivery System 6 th Edition, A Lea &Febiger Book*, Williams & Wilkins, A Warverly Company, USA.
- Antolovich, M., Prenzler, P.D., Patsalides, E., McDonald, S., and Robards, K. 2001, Methods for Testing Antioxidant Activity, *Analyst* 127, p. 183–198.
- Aswal, A., Kalra, M., and Rout, A. 2013, *Preparation and evaluation of polyherbal cosmetic cream*, *Der Pharmacia Lettre*, 5(1):83-88.
- Balch, 2006, *Prescription for Nutritional Healing: A Practical A-to-Z Reference to Drug-Free Remedies Using Vitamins, Minerals, Herbs, and Food Supplements*, 40th ed., Penguin Group, New York, p 381.
- Barel. A. O., Paye, M., Maibach H.I. 2009, *Handbook of Cosmetic Science and Technology*, 3rd ed., Informa Healthcare USA Inc, New York, USA.
- Baumann, L. 2002, *Cosmetic Dermatology Principles and Practice*, The McGraw-Hill Companies Inc, New York, USA.
- Bernatoniene, J., Masteikova, R., Davalgiene, J., Peciura, R., 2011, Topical Application of *Calendula officinalis* (L.): Formulation and Evaluation of Hydrophilic Cream with Antioxidant Activity, *Journal of Medicinal Plants Research*, 5(6): 868-877.
- Betageri, G and Prabhu, S. 2002, Semisolid preparations. In Swarbrick, J., Boylan, J.C. (eds.)*Encyclopedia of Pharmaceutical Technology*, 2nd ed., vol. 3, Marcel Dekker Inc., New York.
- Buhse, L. 2003, ‘Presented at the Advisory Committee for Pharmaceutical Science Meeting On March 12’, Diakses pada 10 Desember 2015,http://www.fda.gov/ohrms/dockets/ac/03/slides/3926S1_11_Buhse.ppt.
- Cahyani, D. 2015, ‘Formulasi Sediaan Pelembab Ekstrak Kering Kulit Buah Manggis (*GarciniaMangostana* L.) dalam Bentuk Sediaan

- Krim',*Skripsi*, Sarjana Farmasi, Universitas Katolik Widya Mandala Surabaya, Surabaya.
- Cánovas, V.B. and Mercado, H.V. 1996, *Dehydration of Foods*, Chapman & Hall, New York.
- Cecilia, M. 2008, *Colour Atlas of Postharvest Quality of Fruits and Vegetables*, Blackwall Publishing, USA.
- Choundhary, B.R., Haldhar, S.M., Maheshwari, S.K., Bhargava, R., Sharma, S.K. 2015, *Phytochemicals and antioxidants in watermelon (Citrullus lanatus) genotypes under hot aired region*, Indian journals of Agricultural Sciences, 85(3):414-7
- Cristin, N., 2015, "Skrining Fitokimia dan Uji Aktivitas Antioksidan Sari Daging Buah Semangka (*Citrullus lanatus* (Thunb.) Matsum.& Nakai) dengan Metode DPPH (1,1diphenyl-2-picrylhydrazil)", *Skripsi*, Sarjana Farmasi, Fakultas Farmasi Universitas Sumatera Utara Medan.
- Departemen Kesehatan RI, 1985, *Formularium Kosmetika Indonesia* cetakan I, Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI, 1995^a, *Farmakope Indonesia* edisi IV, Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI, 1995^b, *Materia Medika Indonesia* Jilid VI, Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI, 2014, *Farmakope Indonesia* edisi V, Jakarta: Departemen Kesehatan Republik Indonesia.
- Dirjen POM, 2000, *Parameter Standar Umum Ekstrak Tumbuhan Obat* Cetakan Pertama, Jakarta: Departemen Kesehatan Republik Indonesia.
- Djajadisastra, J., 2004, *Cosmetic Stability*, Departemen Farmasi Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Indonesia Depok: Seminar SetengahHari HIKI.
- Erhirhie and Ekene, 2013, 'Medicinal Values on *Citrullus lanatus* (Watermelon): Pharmacological Review', *International Journal of Research in Pharmaceutical and Biomedical Sciences*, 4(4):1305-1312, Diakses pada 10 Desember 2015, <http://www.ijrpbsonline.com/files/37-4448.pdf>.

- Feldman, S. R., and Strowd, L. 2010, 'Psoriasis Regimens', in Draclos, Z.D., *Cosmetics Dermatology*, Blackwell Publishing, Singapore, p 504.
- Filkova, I., Huang, L.X. and Mujumdar, A.S. 2006, 'Industrial Spray Drying Systems', in Mujumdar, A.S. (ed.) *Handbook of Industrial Drying*, Marcel Dekker Inc, New York, pp 235-236.
- Fluhr, J.W., Bornkessel, A., Berardesca, E. 2006, 'Glycerol just Moisturizer? Biological and Biophysical Effects', in Loden, M., and Mailbach, H.I., *Dry Skin and Moisturizer*, ed. 2, CRC Press, New York, pp 230-240.
- Flynn, T.C., Petros, J., Clark, R.E. 2004, 'Dry skin and moisturizer'. *Clinics in Dermatology*, **19(4)**: 387, Diaksespada 20 Desember 2015, <http://www.ScienceDirect.com>.
- Garg, A., Aggarwal, D., Garg, S., and Sigal, A. K. 2002, *Spreading of Semisolid Formulation: An Update*, Pharmaceutical Technology.
- Gennaro, A.R., Marderanian, A.H.D., Hanson, G.R., Medwick, T. 2006, *Remington: The Science and Practice of Pharmacy*, 21st ed., Lippincott Williams & Wilkins, USA, p 828.
- Guinard, J., Marse, C., Mory, L., Panyam, D., and Kilara, A. 1996. Effect of Sugar and fat on the Acceptability of Vanilla Ice Cream, *Journal of Dairy Science*, **79**:1922-1927.
- Heldman, D., Singh R. 1981, *Food Processing Engineering*, AVI Publishing Company, USA.
- Herawati, R. 2006, 'Pengaruh Gliserin Terhadap Stabilitas Fisik dan Efektivitas Ekstrak Kering *Aloe vera* Sebagai Pelembab dalam Basis Vanishing Cream', Skripsi, Sarjana Farmasi, Universitas Airlangga, Surabaya.
- Ikhsanudin, A., 2012, Formulasi vanishing cream minyak atsiri rimpang jahe (*Zingiber officinale Roxb*) dan uji aktivitas repelan terhadap nyamuk *Aedes aegypti* betina, *Jurnal ilmiah kefarmasian*, 2 (2). 175- 186.
- Inuwa, H.M., Aina, V.O., Gabi, B., Aimola, I., and Thompson, V. 2011, *Determination of differences in nutrient composition of Citrullus vulgaris (water melon) fruits after plucking*, *British Journal of Diary Sciences*, **2(2)**:27-30.

- Jameel, F. and Searles, J. 2010, Development and Optimization of the Freeze-Drying Processes in Jameel, F., Iershenson, S.I., *Formulation and Process Development Strategies for Manufacturing Biopharmaceuticals*, John Wiley and Sons, Inc., New Jersey, p 763.
- Jones, D. S. 2010, *Statistik Farmasi*, Diterjemahkan dari Bahasa Inggris oleh Ramadaniati, H.U. dan Rivai, H. H., Penerbit Buku Kedokteran EGC, Jakarta.
- Joueux, M., Lobstein, A., Anton, R., and Morties, F. 1995, ‘Comparative antiperioxidant, antinecrotic EC and scavenging properties of terpenes and bioflavones from ginkgo and some flavonoids’, *Plant Med.*, (61):126-129.
- Kilcast, D. 1996, Sensory evaluation of taints and off-flavours dalam M.J. Saxby, *Food Taints and Off-flavours* 2nd ed., Blackie Academic & Professional, Great Britain, 19.
- Kitts, D. 2010, ‘Sucrose: From Field to Table’, *Carbohydrate News*, Department of Food Science, University of British Columbia
- Kokane, C.K., Purohit, A.P., Gokhale, S.B. 2008, *Pharmacognosy*, ed. 42, Nirali Prakashan, Bank of Baroda Lane, p 324.
- Kumbasari, A., 2015, ‘Analisis Kualitatif Kandungan Sakarida Dalam Tepung Dan Pati Umbi Ganyong (*Canna Edulis Ker.*)’, *Pharmaçiana*, Vol. 5, No. 1, 2015: 35-42.
- Kurniawan, D.W., Sulaiman S. T. N. 2009, *Teknologi Sediaan Farmasi*, GrahaIlmu, Yogyakarta.
- Lachman, L., Lieberman, A.H., Kanig, J.L., 1994, *Teoridan Praktek Farmasi Industri*, 3rd ed., Diterjemahkan dari Bahasa Inggris oleh Suyatmi, S., Universitas Indonesia Press, Jakarta.
- Larmond, E. 1975, *Method for Sensory Evaluation of Food*, Canada Department of Agriculture, Ottawa.
- Levin J, Miller,R. 2011, “A Guide to the Ingredients and Potential Benefits of Over-the-Counter Cleansers and Moisturizers for Rosacea Patients”, *J Clin Aesthet Dermatol*, 4(8):31-49.
- Leyden, J.J., dan Rawlings, A.V. 2002, *Skin Moisturization*, Marcel Dekker, New York, pp 10-13.

- Liu, J., Guo, S., He, H., Zhang, H., Gong, G., Ren, Y., and Xu, Y., 2013, Dynamic characteristics of sugar accumulation and related enzyme activities in sweet and non-sweet watermelon fruits, *ActaPhysiol Plant*,**(35)**:3213–3222.
- Lubis, E.S., Lubis, L.S., danReveny, J. 2012, Pelembab Kulit Alami Dari Sari Buah Jeruk Bali [Citrus maxima (Burm.) Osbeck], *Journal of Pharmaceutics and Pharmacology*, **1(2)**:104–111.
- Lynde, C.W. 2012, ‘Moisturizers: what they are and how they work’, Diaksespada 11 Januari 2016, <http://www.skintherapyletter.com/2001/6.13/2.html>.
- Marinova, G., dan Batchvarov,V. 2011, Evaluation of the Methods for Determination of the Free Radical Scavenging Activity by DPPH, *Bulgarian Journal of Agricultural Series*, **17 (1)**: pp. 11-13.
- Martin, A.N., Swarbrick, J., and Cammarata, A., 1969, *Physical Pharmacy.2 nd edition*, Lea & Febiger Publisher, London.
- Mathlouthia, M., and Genotelleb, J. 1998, *Role of water in sucrose crystallization*, **1(37)**:335–342.
- McClements D.J., 2005, *Food emulsions: principles, practice and techniques*, CRC Press, Washington
- Miswar, Bambang S., Tri, H., Sri, A.M. 2007, *Peranan Sucrose Phosphate Synthase (SPS) dan Acid Invertase (AI) InternodaTebu (Saccharum officinarum L.) dalam Akumulasi Sukrosa*., **26(4)**.
- Mitsui, T. 1997, *New Cosmetic Science*, Elsevier Science B.V., Amsterdam.
- Mohr, H.C. 1986, Watermelon breeding, InBassett, M.J. (ed), *Breeding Vegetable Crops*, Avi Publishing Company, Inc. Westport, Connecticut, Amerika.
- Molyneux, P. 2004, The use of the stable free radical diphenylpicrylhydrazyl (DPPH) for estimating antioxidant Capacity, *Songklanakarin J. Sci. Technol*,**26(2)**: 211-219.
- Olabinri, B.M., Olaleye, M.T., Ajani, R.A., Akinmayowa, S., Busayo, O.O., and Funmilola, A. 2013, In Vitro Discovery of Watermelon (*CitrullusLanatus*) Extract with Moderate Chelating Ability, and Survey of other in Vitro Bioactivities, *American International Journal of Contemporary Research*, **3 (4)**.

- Paithankar, V.V. 2010, Formulation and Evaluation of Herbal Cosmetic Preparation using Safed Musli, *International Journal of Phamtech Research*, **2** (4): 2261-2264.
- Panda, H. 2000, *Herbal Cosmetics Handbook*, Asia Pacific Business Press, Delhi, India.
- Parker, R., 2003, *Introduction to Food Science*, Delmar, Albany, p 119.
- Paryanto, I., Fachruddin, A., dan Sumaryono, W. 1999, *Diversifikasi Sukrosa Menjadi roduk Lain*, P3GI, Pasuruan.
- Pertiwi, E.D. 2015, 'Formulasi Sediaan Pelembab Perasan Buah Jeruk Bali (*Citrus maxima*) dalam Bentuk Sediaan Krim', Skripsi, Sarjana Farmasi, Universitas Katolik Widya Mandala Surabaya, Surabaya.
- Prakash, A. 2001, 'Antioxidant activity', *Med Lab Anal Prog*, **19**(2):1–6.
- Prokesch, M.E., and Graber, G. 2002, 'Selection and Sizing of Concentrate Drying, Handling, and Storage Equipment', *Mineral processing Plant Design, and Control: Proceedings, Colorado*, p 1463.
- Proserpio G., 1981, *L'ape cosmetic*, Erboristeria Domani Libri, Milano, Italia, p 139.
- Quek, S.Y., Chok, N.G., Swedlund, P. 2006, 'The physicochemical properties of spray-dried watermelon powders', *Chemical Engineering and Processing*, **(46)**:386-392.
- Rawlings, A.V., Harding, C.R., Watkinson, A., and Scott, I.R., 2000, *Dry and Skin Condition, Skin Moisturization*, Marcel Dekker Inc, New York, p 120.
- Rowe, R.C., Sheskey, P.J., and Quinn, M.E. 2009, *Handbook of Pharmaceutical Excipient* 6th ed., Pharmaceutical Press and American Pharmacist Association.
- Rukmana, R. 1994, *Budidaya Semangka Hibrida*, Kanisius, Yogyakarta, Hal 13.
- Safitri,N.A., Puspita, O.E., dan Yurina,V. 2014, "Optimasi Formula Sediaan Krim Ekstrak Stroberi (*Fragaria x ananassa*) sebagai Krim Anti Penuaan", *Majalah kesehatan FKUB*, **1**(4): 235-246.

- Sahu, A.N., Jha, S., and Dubey, S.D. 2011, Formulation and Evaluation of Curcuminoid Based Herbal Face Cream, *Indo-Global Journal of Pharmaceutical Sciences*, pp 77-84.
- Sharma, 1993, *Plant Taxonomi*, McGraw-Hill Publishing, Company limited.
- Simion, F.A., Abrutyn, E.S., Draelos, Z.D. 2005, Ability of moisturizers to reduce dry skin and irritation and to prevent their return, *J.Cosmet.Sci.*, (56):427-444.
- Singh, M., Sharma, S., Khokra, S. L., Sahu, R. K., and Jangde, R. 2011, *Preparation and Evaluation of Herbal Cosmetic Cream*, India, pp 1258-1264.
- SNI. 16. 4399., 1996, *Sediaan Tabir Surya*, Jakarta:Dewan Standarisasi Nasional.
- Syukur, M. 2009, Semangka (*Citrullus lanatus* (Thunberg) Matsum & Nakai), Diakses 10 Desember 2015, <http://www.ina.or.id/knoma-hpssp/fruit/HPSP-09-YUMKMI-Semangka.pdf>.
- Tortora, G.J., dan Derrickson, B.H. 2009. *Principles of Anatomy and Physiology* 11thEd., Wiley, Asia.
- Tranggono, R.I., danLatifah, R. 2007, *Buku Pegangan Ilmu Pengetahuan Kosmetik*, PT Gramedia Pustaka Utama, Jakarta.
- Turkington, C., and Dover, J.S. 2007, *The Encyclopedia of Skin and Skin Disorders*, 3th ed., Facts On File Inc., New York, p 242, 340.
- Ulaen, Selfie, P.J., Banne, Yos Suatan dan Ririn, A. 2012, Pembuatan Salep Anti Jerawat dari Ekstrak Rimpang Temulawak (Curcuma xanthorrhiza Roxb.), *Jurnal Ilmiah Farmasi*, 3(2): 45-49.
- United States Department of Agriculture, 2003, *National Nutrient Database for Standard Reference Release 28*, Diakses pada 30 Januari 2016, <http://www.ars.usda.gov/bhnrc/ndl>.
- Visscher, M.O., 2009, Update on the Use of Topical Agents in Neonates, *Newborn and Infant Nursing Reviews*, 9(1): 31-47
- Voegeli, D. 2007, The role of emollient in the care of patient with dry skin, *Nursing Standard*, pp 62-68.

- Voigt, R. 1994, *Buku Pelajaran Teknologi Farmasi* edisi 5.Terjemahan Soewandhi, S.N., Penerbit Gadjah Mada University Press, Yogyakarta.
- Washington, N., Washington, C., and Wilson, C.G. 2003, *Physiological Pharmaceutics: Barriers to Drug Absorption*, 2nd ed., New York.
- Wasitaatmadja, S.M. 1997, *Penuntun Ilmu Kosmetik Medik*, Universitas Indonesia Press, Jakarta.
- Wathoni, N., Soebagio, B., Rachim, A.M. 2009, Formulasi gel antioksidan kitosandengan menggunakan basis aqupec 505 HV, *Farmaka*, 7(3): 9-26
- Wedana, J.S., Leliqia, N.P.E., dan Arisanti, C.I.S. 2013, ‘Optimasikomposisi span 60 dan tween 80 sebagai emulgator terhadap stabilitas fisik dalam formulasi cold cream ekstrak kulit buah manggis (*Garcinia mangostana L.*)’, *Skripsi*, Sarjana Farmasi, Universitas Udayana, Bali.
- Wijaya, A. 1996, Radikal Bebas dan Parameter Status Antioksidan, *Forum Diagnosticum I*, pp 1-4.
- Winarsi, W. 2007, *Antioksidan Alami dan Radikal Bebas*, Yogyakarta, Kanisius.
- World Health Organization, 2006, *The International Pharmacopeia*, 4th ed., vol. 1, Singapore, pp 969-971.
- Zulkarnain, A.K. dan Shovyana, H.H. 2013, Stabilitas fisik dan aktivitas krim w/o ekstrak etanolik buah mahkotadewa (*phaleria macrocarpha* (scheff.) Boerl,) sebagai tabir surya, *Traditional Medicine Journal*, 18(2), pp109-117.