

## **BAB 5**

### **KESIMPULAN DAN SARAN**

#### **5.1 Simpulan**

Berdasarkan hasil pengamatan dapat disimpulkan bahwa penambahan HPMC sebagai pengental akan berpengaruh terhadap mutu fisik sediaan dari segi viskositas, dan kestabilan viskositas sediaan serta efektifitas sediaan dari segi kemampuan dan stabilitas busa sediaan. Perbedaan konsentrasi HPMC mempengaruhi peningkatan viskositas sediaan sampo. Penambahan HPMC pada konsentrasi 1% pada formula 3 menghasilkan sediaan dengan mutu fisik, efektifitas, keamanan dan aseptabilitas sediaan yang terbaik dari segi viskositas dibandingkan dengan formula yang lainnya.

#### **5.2 Saran**

Pada penelitian selanjutnya disarankan untuk melakukan penentuan terhadap efektifitas sediaan sampo sebagai anti ketombe.

## DAFTAR PUSTAKA

- Anonim 2005, Menthocel Cellulose Ethers. diakses pada 12 oktober 2015, <http://msdssearch.dow.com/>
- Anonim 2013, High-Purity, Water-Soluble, NonIonic Cellulose Ethers. diakses pada tanggal 24 oktober 2015, <http://www.ashland.com/>
- Anonim 2015, diakses pada 1 September 2015, <http://www.reach-serv.com/>
- Astawan, M. dan A. Leomitro. 2008. *Khasiat Warna-Warni Makanan*. Jakarta: Gramedia Pustaka Utama.
- Cassano, A., Figoli, A., Tagarelli, A., Sindona, G. and Droli, E. 2006, Integrated membrane process for the production of highly nutritional kiwifruit juice, *Desalination*, **189**:21-30.
- Chandran, S., Vipin, K. V., Augusthy, A. R., Lindumol, K. V. and Shirwaikar, A. 2013, Development and Evaluation of Antidandruff Shampoo Based On Natural Sources, *Journal of Pharmacy and Phytotherapeutics*, **1(4)**: 2321-5895
- Clark, J. 2007. Thin Layer Chromatography. Diakses pada tanggal 3 September 2015 <http://www.chemguide.co.uk/>
- Clasen, C. and Kulicke, W. M., 2001, Determination of Viscoelastic and Rheo-Optical Material Functions of Water Soluble Cellulose Derivatives, *Prog. Polym. Sci.*, **26**:1839-1919.
- Deaville, E.R., D.I. Givens., I.H. Mueler, 2010. Chesnut and Mimosa Tannin Silages: Effect In Sheep Differ for Apparent Digestibility, Nitrogen Utilitation and Losses. *Anim. Feed Sci. Technol.* **157**:129-138.
- Degree H., Jacobs P.H., Rosenberg E.W. and Shuster. (eds). 1989, *Aetiopatogenesis of seborrheic dermatitis and dandruff*. In : *Ketokonazol in seborrheic dermatitis and dandruff, a review*, AIDS press international, Manchester. Page 1-11.

- Departemen Kesehatan RI. 1977, *Materia Medika Indonesia*, jilid I, Jakarta: Departemen Kesehatan Republik Indonesia, 130-135.
- Departemen Kesehatan RI. 1985, *Formularium Kosmetika Indonesia*, Jakarta: Departemen Kesehatan Republik Indonesia
- Departemen Kesehatan RI. 1995, *Farmakope Indonesia*, ed. IV, Jakarta: Departemen Kesehatan Republik Indonesia, 7.
- Direktorat Jenderal POM, 2000, Parameter Standar Umum Ekstrak Tumbuhan Obat, Jakarta: Departemen Kesehatan Republik Indonesia, 2-5, 9-11.
- Deshmukh, S., Kaushal, B. and Ghode, S. 2012, Formulations and evaluation of herbal shampoo and comparative studies with herbal marketed shampoo, *Int J Pharm Bio Sci*; **Vol 3(3)**, pp no: 638 - 645.
- Djuanda, A. 2007, Ilmu Penyakit Kulit dan Kelamin, 5. FKUI, Jakarta.
- Douromis, D. and Fahr, A. 2013, Drug Delivery Strategies for Poorly Water-Soluble Drugs, John Wiley & Sons, Chicester
- Evren, S., Gedik, G., Colbourn, E., Turkoglu, M. 2007, Artificial Neural Network Modeling and Optimazion of Shampoo Formulations, *Marmara University*, Istanbul.
- Faizatun, Kartiningsih dan Liliyana. 2008, Formulasi Sediaan Sampo Ekstrak Chamomile dengan Hidroksi Propil Metil Selulosa sebagai Pengental. Fakultas Farmasi, Universitas Pancasila. Jakarta. Vol 6. Hal 15-22.
- Ferguson, A.R. 1990, Botanical nomenclature : *Actinidia chinensis*, *Actinidia deliciosa* and *Actinidia Setosa*, In Warrington, I. J., and Weston, G. C. (eds), *kiwifruit: Science and Management*, page 36-57.
- Ferguson, A.R. 1999, 'New temperate fruits : *Actinidia chinensis* and *Actinidia deliciosa*', in Janick,J.(eds), *Perspectives on New Crops and New Utes*, ASHS Pers, Alexandria. VA, page 342-347.

- Fessenden, J. R. and Fessenden, S. J. 1982, *Kimia Organik*, Erlangga, Jakarta, hal:102-107.
- Figueras, M.J., Guarro, J., Gene, J. and de Hoog, G.S. 2000, *Atlas of Clinical Fungi*, 2<sup>nd</sup> ed, vol.1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.
- Fiume, M. M. *et al.* 2013, Safety Assessment of Diethanolamides as Use in Cosmetic. *International Journal of Toxicology*. **32(supplememnt I)**: 365-585
- Gritter, R. J., Bobbit, J. M. and Scawarting, A. E. 1987, *Introduction to Chromatography (pengantar kromatografi)*, edisi ke-2 (Padmawinata, K., Penerjemah). ITB Press, Bandung.
- Gennaro, A. R., Marderasian, A. H. D., Hanson, G. R., Medwick, T. 2006, *Remington : The Science and Practice of Pharmacy*, 21<sup>st</sup> (eds), Lippincott Williams & Wilkins, USA, page 828.
- Gennaro, A. R. 1990, *Remington : Pharma Ceutikal Science*, 18<sup>th</sup> ed, Mack Printing Company, Easton, Pennsylvania, USA, page 207.
- Hagerman, A. E. 1992, Tannin-Protein Interraction. *Phenolic Compounds In Food and Their Effects on Health I*. American Chemical Society, Washington D.C.
- Hagerman, A. E. 2002, *Tannin Handbook*. Oxford: Departement of Chemistry and Biochemistry. USA: Miami University.
- Hayati, E. K., Fasyah, A. G. dan Sa'adah, L., 2010, Fraksinasi dan Identifikasi Senyawa Tanin pada Daun Belimbing Wuluh (*Averrhoa bilimbi* L.), *Jurnal Kimia*, Jurusan Kimia Fakultas Sains dan Teknologi, Universitas Islam Negeri Maulana Malik Ibrahim, Malang, **4(2)**:193-200.
- Harahap, M. 1990, *Penyakit kulit*. Jakarta: Gramedia.
- Harborne, J.B., 1987, *Metode Fitokimia*, ed. 2, ITB, Bandung, 53, 57.
- Heinrich, M., Barnes, J., Gibbons, S., Williamson, E.M., 2010, *Farmakognosi dan Fitoterapi*, EGC, Jakarta.

- Hlinak dan Clark, 2007, *Drying and Dryers* dalam Swarbrick, J., *Encyclopedia of Pharmaceutical Technology*, ed. 3, vol. I, PharmaceuTech, Inc., Pinehurst, 1443.
- Hunting, A.L.L. 1983, *Encyclopedia of Shampo Ingredients*. Micelle Press.Cranford, New Jersey and London. Page 250-1, 341-2, 362-3.
- Hunting, A.L.L. 2000, *Poucher's Perfumed, Cosmetic and Soaps*, 10<sup>th</sup> ed., Kluwer Academic Publishers. USA.
- Ide, P. 2010, *Health Secreet of Kiwifruit*, PT Elex Media Komputindo, Jakarta.
- 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, 763.
- Jones, D. S. 2010, *Statistik Farmasi*, terjemahan Hesty U. R., EGC Penerbit Buku Kedokteran, Jakarta. Hal. 55.
- Kartika, B., Hatuti, P., Supartono, W. 1988, *Pedoman Uji Inderawi Bahan Pangan*, Proyek Pengembangan Pusat Fasilitas Bersama Antar Universitas (Bank Dunia XVII), Universitas Gajah Mada, Yogyakarta, 25-27.
- Kibbe, A. H. 2004, *Handbook of Pharmaceutical Excipient 3<sup>th</sup>*, Pharmaceutical Press, London.
- Kumar, A.and Mali, R.R. 2010, *Evaluation of Prepared Shampoo Formulation and to Compare Formulated Shampoo with Marketed Shampoo. International of Pharmaceutical Sciences Review an Research, vol. III*
- Kokate, C.K., Purohit A.P., Gokhale S.B. 2008, *Pharmacognosy*, ed. 42, Nirali Prakashan, Bank of Baroda Lane, 324.
- Korteiner, U., Venzmer, J., Howe, A., Gruning, B. and Herrwerth, S. 2010, *Thickening Agent for Surfactan system*, Intenasional Journal for Applied Science.

- Latocha, P., Krupa, T., Wolosiak, R., Worobiej, E. and Wilczak, J. 2010, Antioxidant activity and chemical difference in fruit of different *Actinidia sp.*, *International Journal of Food Sciences and Nutrition*, **61(4)**: 381-394.
- Liebert, M. A. 1983, Final Report on the Safety Assessment of Sodium Laureth Sulfate and Ammonium Laureth Sulfate, *Journal of The American College of Toxicology*, **2(5)**.
- Liebert, M. A. 1983, Final Report on the Safety Assessment of Diethanolamides, *Journal of The American College of Toxicology*, **3(1)**.
- Mainkar, A.R. and Jolly, C.I. 2001, Formulation of Natural Shampoo. *International of Cosmetical Science*. **Vol 23, p.59-62**
- Maldovan, M. and Parauan, S. 2012, Cosmetic Evaluation of Some Commercial Shampoo. Departement of Dermopharmacy and Cosmetic, Faculty of Pharmacy, University of Medicine and Pharmacy. **Vol. 85**. P. 378-383
- Mita, S., Rusmiati, D., Kusuma, A. 2009, 'Pengembangan ekstrak etanol kubis (*Brassica oleraceae var. Capitata l.*) asal kabupaten Bandung barat dalam bentuk sampo antiketombe terhadap jamur *Malassezia furfur*' Laporan Akhir, Sarjana Farmasi, Universitas Padjadjaran, Bandung.
- Mitsui, T. 1997, *New Cosmetic Science*, Elsevier, New York. Page 407.
- Mottram, F. J. and Lees, C. E. 2000, *Poucher's Perfumed, Cosmetic and Soaps*, 10<sup>th</sup> ed., Kluwer Academic Publishers. USA
- Namita and Nimisha. 2013, Formulation and evaluation of Herbal Shampoo Having Antimicrobial Potential, *International of Pharmacy and Pharmaceutical*. **Vol. V**, p.710.
- Osborne, D. W. and Amann, A. H. 1990, Topical Drug Delivery Formulations, *Drug and the Pharmaceutical Sciences.*, **Vol. XLII**, Marcel Dekker, Inc., New York.
- Parker, R., 2003, Introduction to Food Science, Delmar, Albany, 119.

- Parwata, O. A. dan Dewi, P. S. 2008, 'Isolasi dan Uji Aktivitas Antibakteri Minyak Atsiri dari Rimpang Lengkuas (*Alpinia galangal L.*)', Jurnal. Fakultas Kimia Universitas Udayana, Bukit Jimbaran.
- Poeloengan, M. dan Pratiwi. Antibacterial activity test of mangos teen (*Garcinia mangostana linn*). Media Litbang Kesehatan. 2010. XX(2) : 65-9
- Potluri, A., Harish, G., Kumar, B. P., and Durraivel. 2013, Formulation and Evaluation of Herbal Anti-dendruuff Shampoo. *Indian Journal of Research in Pharmacy and Biotechnology*. P. 835-839
- Preethi, J. P., Padmini, K., Srikanth, J., Lohita, M., Sweta, K. and Rao, V. P. 2013, " A review on Herbal Shampoo and Its Evaluation". Edisi 10, Chapman and Hall, London p.289-306
- Prokesch, M.E., FFE Minerals Inc., Graber, G., AMEC, 2002, 'Selection and Sizing of Concentrate Drying, Handling, and Storage Equipment'
- Rieger, M. M. (eds). 2000, *Harry's Cosmeticology: Surfactants*. 8<sup>th</sup> edition, Chemical Publishing, London.
- Risnasari, 2001, Pemanfaatan Tanin sebagai Bahan Pengawet Kayu, *Skripsi*, Universitas Sumatra Utara, Medan.
- Rohman, A. 2009. Kromatografi untuk Analisis Obat. Graha Ilmu, Yogyakarta.
- Rostamailis, dkk. 2009. Tata Kecantikan Rambut Jilid 1. PT Gramedia Pustaka.
- Rowe, R.C., Sheskey, P.J. and Quinn, M.E. 2009, *Handbook of Pharmaceutical Excipient 6<sup>th</sup>*, Pharmaceutical Press, USA.
- Saad, A. H. and Kadhim, R. B. 2011, Formulation and Evaluation of Herbal Shampoo from *Ziziphus spina* Leaves Ekstrack, *International Journal Of Research in Ayurveda and Pharmacy*. **2(6)**:1802-1806
- Saputro. 2015, Proses pembuatan susu bubuk, Diakses pada 10 September 2015, <http://bbppbatu.bppsdp.deptan.go.id/>

- Sastrohamidjojo, H., 1991, *Spektroskopi*, Liberty, Yogyakarta.
- Schramm, L. L. 2005, Emulsion, Foam, and Suspensions, Wiley-VCH Verlag GmbH&Co. KGaA, Weinheim. Page 47-49.
- Sinde, P. R., Tatiya, A. U. and Surana., S. J. 2013, Formulation Development and Evaluation of Herbal Antidandruff Shampoo, *International Journal Of Research in Cosmetic Sciences, India*. p. 25-33.
- Sharma A., Patel V. K. and Ramteke P. 2008, *Shigellocidal* activity of some medicinal plants used in folklore remedies by tribals of Mahakoshal region of Central India. *Research paper.Natural Product Radiance*, **7(5)**:426-436.
- Sharma A., Patel V. K ., Rawat S., Ramteke P. and Verma R. 2010, Identification of the antibacterial component of some Indian medicinal plants against *Klebsiella Pneumoniae*. *International J ournal Pharmacy Pharmaceutical Sciences*, **2(3)**:123-127.
- Sharma, R.M., Shaha, K and Patel, J. 2011, Evaluation of prepared herbal shampoo formulations and to compare formulated shampoo with marketed shampoos, *Int J Pharm Sci*, **Vol 3**,pp no: 402-405
- Shastri, K.V., Bhatia, V., Parikh, P.R. and Chaphekar, V.N. 2012, *Actinidia deliciosa*: A Review. *International Journal of Pharmpaceutical Sciences and Research*. **3(10)**: 3543-3549.
- Sukanto, Heri., 1995, *Efek Samping Penggunaan Kosmetika*. Lap/UPH. Ilmu Penyakit Kulit dan Kelamin. Fakultas Kedokteran Universitas Airlangga/RSUD Dr. Soetomo Surabaya.
- Sumarno, 2001, *Kromatografi Teori Dasar*, Bagian Kimia Farmasi, Universitas Gadjah Mada Yogyakarta, Yogyakarta.
- Sumono A & Wulan A. The use of bay leaf (*Eugenia polyantha* Wight) in dentistry. *Dental Jurnal*. 2008; 41(3).
- Swarbrick, J. and Boylan, J. C. 1992, *Encyclopedia of Pharmaceutical Tecnology*. Volume VI. Marcel Dekker, Inc., New York, USA, page 404-407.



- Tadros, T. F. 2005, *Applied Surfactants: Principles and Applications*. Wiley-VCH Verlag GmbH&Co. KGaA, Weinheim. Page 259-263.
- Tranggono, R.I.S dan Latifah, F. (2007). *Buku Pegangan Ilmu Pengetahuan Kosmetik*. Jakarta: Gramedia Pustaka Utama. Hal. 7-8, 93-96.
- Toruan, T., 1989. *Ketombe dan Penanggulangannya*. Jakarta : Pustaka.
- Voigt, 1984, Buku Pelajaran Teknologi Farmasi, ed. 5, Diterjemahkan dari Bahasa Inggris oleh Noerono, S., UGM Press, Yogyakarta.
- Wenninger, J.A. and McEwen, G. N. Jr. (eds). 1992, *Cosmetic Ingredient Handbook*, 2<sup>nd</sup> ed, CTFA, Washington DC, pp 78.
- Wenninger, J.A. and McEwen, G. N. Jr. (eds). 2002, *International Cosmetic Ingredient Dictionary and Handbook*, 9<sup>th</sup> ed., Vol. 1-4, CTFA, Washington DC, pp101, 1569.
- Widyasari, R., 2007, “Aplikasi Penambahan Flokulan Terhadap Pengolahan Sari Buah Jambu Mete (*Anacardium occidentale*, L)”. Fakultas Pertanian. IPB. Bogor.
- Wilkinson, J. B. and Moore, R., 1982, *Harry's Cosmeticology: The Principles of Modern Cosmetic*, 7<sup>th</sup>ed., editor George Godwin, London.
- Winarti, C. dan Sembiring B.S. 1998. Pengaruh cara dan lama ekstraksi terhadap kadar tanin ekstrak kayu secang (*Caesalpinia sappan* L). Balitro Bogor. *Warta Tumbuhan Obat Indonesia* 1998. 4: 17-18.
- Wolfram, L. J. 2001, ‘Hair Cosmetic’ in Barel, A. O., Paye, M. and Maibach, H. I., *Handbook of Cosmetic Science and Technology*, Marcel Dekker, Inc., New York, pp 586-587.
- Zawawy, N.A.E. 2015, Antioxidant, Antitumor, Antimicrobial Studies and Quantitative Phytochemical Estimation of Ethanolic Extracts of Selected Fruit Peels, *International Journal of Current Microbiology and Applied Sciences*. **4(5)**: 298-309.

Zhang, D., dan Hamazu, Y., 2004, Phenolic Compounds and Theirs Antioxidant Properties in Different Tissues of Carrots (*Daucus carota* L.), *Food, Agriculture, and Environment*, **2(1)**:95-100.