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Formulation and Evaluation of Peel-Off Gel Mask and Face Mist from Noni Fruit Extract (*Morinda citrifolia* Linn.) Sub-Material Utilization of Cosmetic Plant-Based Biodiversity

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ABSTRACT

Noni plants (*Morinda citrifolia* L.) can be found in the territory of Indonesia. The utilization of noni plants is not widely known by the Indonesian people. This plant has active compounds in the form of vitamin C, vitamin E, flavonoids, saponins, steroids, and alkaloids. The purpose of this study was to formulate and evaluate the preparation of peel-off gel mask and face mist produced. The diverse local potential of Indonesian plants needs to be integrated as a learning resource into the biology learning process. The goal is for students to realize the potential of their respective regions. Local potential can be explored through various biology teaching materials, one of which is teaching materials on the utilization of biodiversity. This type of research is experimental research. This study was conducted with the aim of making and evaluating a product, namely the preparation of peel-off gel mask and face mist from noni fruit extract. This research was conducted at the Biology Laboratory of Ali Maksum Krapyak High School, Yogyakarta and at Ahmad Dahlan University Pharmacy LAMDA (Analysis Laboratory). Noni fruit samples were taken from the Sleman area, Yogyakarta. The stages of this research were formulating noni fruit extract, preparation and physical evaluation of various organoleptic tests, pH tests, dry time tests, and spreadability and stickiness tests. The organoleptic test observation results of the peel-off gel mask are clear yellowish white, typical noni odor with jasmine perfume essence, thick and homogeneous shape. The pH value is 6. The dry time test is 20 minutes. The spreadability test is 5-7 cm and the stickiness test is 08.56 seconds. Organoleptical observation of face mist is clear white, typical odor of noni with essence jasmine, liquid form. The pH value is 5.5. The conclusion from these results is that the manufacture and evaluation of peel-off gel mask preparations and face mist from noni fruit extract (*Morinda citrifolia* Linn.) is safe to use and can be used as a learning resource for cosmetic plant-based biodiversity utilization sub-materials.

Introduction

Indonesia is a tropical country that is rich in biodiversity, this is indicated by the many types of plants that can grow on the land of this country. In general, plants have often been used since the time of our ancestors and from generation to generation as a source of traditional medicines. Plants that are often used as traditional medicinal ingredients are noni (Alfiah, et al., 2015).

Noni (*Morinda citrifolia* L.) is a medicinal plant that has been utilized since ancient times. In 100 years BC, Southeast Asians have utilized noni plants as medicine in China (Kandi 2009). Noni (*Morinda citrifolia* L.) is a plant of the coffee-copian family (Rubiaceae) that is widely found in the tropics. Noni is widely found in Indonesia and is known by various names, namely mengkudu, pace, kemudu, kudu (Java), cangkudu (Sunda), kodhuk (Madura), and wengkudu (Bali). Noni production in Indonesia increases every year. Based on statistical data on horticultural production in 2014 in Indonesia, the harvest area of noni reached 739,906 trees with a production of 8,577,347 Kg (Central Bureau of Statistics, 2014).

Noni fruit has many benefits. Noni fruit can be utilized into functional beverage products in various forms such as juice (juice), noni herbal tea (teabag), and fast dissolving beverage powder (instant powder). Noni leaves can be used as flour and fish preservatives. Besides fruit and leaves, noni roots and seeds also have the potential to be developed. Noni roots can be used as medicinal and coloring materials because they contain morindon and morindin compounds that can provide red and yellow colors, and are commonly used as batik cloth dyes (Lemmens and Buyapraphatsara, 2003). According to John and Wadsworth (2002), it is said that noni seeds contain oil that can be utilized as raw material for cosmetics, liniment, and candle making materials.

Noni fruit, also known as "Noni", is traditionally used for therapy against arthritis, headaches, diabetes, and hypertension, and several infectious diseases (Ari., et al 2016). Currently, many beauty products are made from natural ingredients, namely fruits. However, it is rarely known by the public that noni fruit also has benefits for facial beauty.

Noni fruit has beneficial content for the face, namely: carbohydrates, protein, sugar, vitamin E, vitamin C, botin, folate, magnesium, potassium, and calcium. The benefits of noni fruit content for skin beauty are able to overcome acne, inhibit premature aging, relax facial muscles, and the content of antrakunion in noni fruit can overcome the symptoms of dry skin and wrinkles. According to Wijayakusuma (1998), besides the fruit, the leaves of this plant can also be used for health and beauty, which can function as acne medication, natural slimming, cough medicine, increase bone strength, antiseptic and blood cleanser.

Noni leaf (*Morinda citrifolia* L) is one type of herbal plant or phytopharmaca that can have potential as an antioxidant. The results of phytopharmaca screening of noni leaves contain flavonoid compounds, saponins, steroids, alkaloids. Flavonoid compounds can function as antioxidants, antibacterial, immunomudolators, and anti-inflammatory (Herlina, 2017). The composition of noni fruit that will antioxidants include vitamin C, beta carotene, and flavonoid glycosides, scopoletin (Rasal et al., 2008), tannin (Nayak, et al., 2009).

Beauty is something that is always desired by every woman. Women in Indonesia have a distinctive beauty that is different from women in other countries. This is because Indonesia has

many tribes and races that produce very diverse skin colors and facial features.

The diverse local potential of Indonesian plants needs to be integrated as a learning resource into the biology learning process (Sriyati, Ivana, & Pryandoko, 2021). The goal is for students to realize the potential of their respective regions. Local potential can be explored through various biology teaching materials, one of which is teaching materials on the utilization of biodiversity (Mumpuni, 2013).

Plants remain popular as traditional cosmetics for human use due to their low risk of harm to the human body (Oktovina, 2009). In addition, it is safer to use natural ingredients as ingredients for cosmetic products (Dipahayu & Arifiyana, 2019).

In order for learning material about the utilization of biodiversity to be fun and add insight to students, learning medicinal plants needs to be integrated into the learning process through interesting learning media such as making facial beauty products from noni fruit.

This research was made to provide information about the utilization of noni fruit content for facial beauty that is not yet known by many people and the making of peel-off gel masks from noni extract that are beneficial to the face. Based on the results of the questionnaire distributed at Ali Maksum High School, especially class XII IPA 2, on average 85% of students still do not know the benefits of noni fruit for facial beauty and its utilization can be used as an additional source to introduce the use of cosmetic plant-based biodiversity found in the surrounding environment.

Based on the background of the problems described above, the researcher found that the formulation of the problem is whether there is a content of noni fruit that is beneficial for facial beauty, whether noni fruit can be used as an ingredient for facial beauty, and whether peel-off gel masks from noni fruit extract can be used as the main ingredient for facial beauty. This research also aims to tell how the process of making peel-off gel masks from noni fruit extracts whose products can be used as the utilization of cosmetic plant-based biodiversity. Therefore, researchers want to conduct further research related to the manufacture and evaluation of peel-off gel mask preparations and face mist from noni fruit as the main ingredient of facial beauty in utilizing biodiversity in the surrounding environment.

Method

Type of Research

This type of research is experimental research. This research was conducted with the aim of making and evaluating a product, namely a preparation of peel-off gel mask and face mist from noni fruit extract.

Place and Time of Research

This research was conducted at the Biology Laboratory of Ali Maksum Krapyak High School, Yogyakarta and at Ahmad Dahlan University Pharmacy LAMDA (Analysis Laboratory). This research was conducted from January-February 2024.

Research Sample

Noni fruit samples were taken from Sleman, Yogyakarta as much as 1 kg. Samples taken in the form of fresh noni fruit taken from one area in Mlati, Sleman are the same in order to obtain valid data in one study. The samples used were old and ripe noni fruit, because the ripe noni fruit showed a good level of antioxidant capacity.

Tools

The tools used in this research are beakers, analytical scales, stirring spoons, spatulas, electric/portable stoves, mortars, alues, stampers, stirring rods, stopwatches, ovens, temperature,

measuring cups, mask containers, and porcelain.

Materials

The materials needed in this research are universal PH, noni fruit, PVA (Polyvinyl Alcohol Polymer), glycerin, TEA (Triethanolamine), parfume essence, distilled water, methyl Hydroxybenzoate, honey, and activated carbon.

Research Steps

Processing of Noni Fruit Extract

Fresh noni fruit is cleaned from dirt, then washed thoroughly. After that, a beaker and sieve were prepared. Cut the noni fruit in half to make it easy to squeeze the noni fruit. Squeeze the noni using a strainer to get water from the noni fruit only. If so, filter with filter paper so that the dregs and impurities of the noni fruit do not enter. Then store it in a safe place.

Face Mist Making Stage

The process of making noni fruit extract face mist. Prepare tools and materials. First, put 10 grams of noni fruit extract into a glass jar, then mix glycerin as much as 20 ml and stir until homogeneous, add essence parfume 1 drop, filter using filter paper, put it in a 100 ml spray bottle, and add distilled water to 100 ml.

Peel-off Gel Mask Manufacturing Stage

The process of making noni fruit extract peel-off gel face mask. Prepare tools and materials. First heat 100 ml of distilled water to a temperature of 80°C, then add 13 grams of PVA and stir until fluffy and clear, the temperature is maintained in the range of 55-60°C. The next step, dissolve 11 ml of glycerin, 0.10 grams of Methyl Hydroxybenzoate, and 0.5 grams of TEA in PVA, then stir the solution until homogeneous. If so, add the noni fruit extract little by little while stirring until homogeneous. To add variety, divide the mask preparation into three, namely, 1) P1 = using methyl Hydroxybenzoate + activated carbon (charcoal), P2 = not using methyl Hydroxybenzoate and using activated carbon (charcoal), P3 = not using methyl Hydroxybenzoate + activated carbon (charcoal) / original. Each mask is put into a place that has been prepared and labeled. Wait for the mask to cool, then conduct organoleptical test, adhesion test, and dry time test.

Collecting Data from Questionnaires

The data collection technique is done by distributing questionnaires in the form of questions about the efficacy and benefits of noni fruit. The sample distributed was the XII IPA 2 female class totaling 25 students. Questionnaires were conducted twice, namely preliminary questionnaires and product preparation questionnaires.

The Respondents' Preliminary Questionnaire Instrument for the Usability of cosmetic plants

Questionnaires in the form of simple questions as many as 8 items with answers "YES and NO" and short description questions as many as 4 items to ask about what the respondent knows regarding the efficacy and utilization of noni.

Questionnaire Instrument for Product Formulations

Questionnaire in the form of short description questions as many as 8 items to ask the product to the respondent regarding the organoleptic test of peel-off gel mask and face mist of noni fruit extract.

Data Analysis

Evaluation of Mask Formulation

Organoleptical Test

Organoleptical tests were carried out using the five senses including observation of shape, color, odor, and homogeneity of peel off gel mask preparations and face mist.

pH Test

Measurement of the pH of the preparation using a pH strip, the pH of the preparation is seen from the color

change produced on the pH paper. pH range 4.5-6.5.

Spreadability and adhesion test

500 mg of gel was weighed and placed in the center of a round glass with a scale, previously weighed the glass before and after the mask. Then left for 1 minute. Then measured how much the diameter of the gel spreads and adheres by taking the average length of the diameter from several sides.

Dry Time Test

Testing the drying time of the peel-off gel mask is carried out at room temperature by applying the peel-off gel mask to the face area with a thickness of approximately 1 mm and calculating the time it takes for the mask to dry using a stopwatch tool, which is the time from when the peel-off gel mask has been applied to the face evenly until the mask is in the form of a dry layer that is easy to peel off. A good dry time range is 15-30 minutes.

The results and Discussion

Based on the results of the preliminary questionnaire distributed to the students in SMA Ali Maksum, especially class XII IPA 2 as the first sample, the following results were obtained.

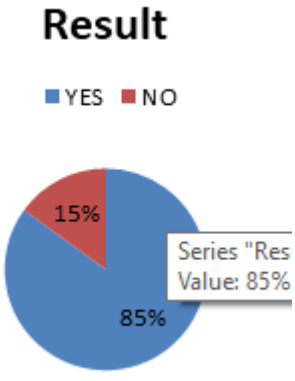

Image 1. Diagram of respondents' questionnaire results

Based on the diagram above, it can be concluded that as many as 15% of students know the properties and benefits of noni and as many as 85% of students do not know the properties and benefits of noni from 8 items of questions "Yes" and "No", and for short description questions with 3 items, the average student of class XII IPA 2 does not know the use of noni as a beauty ingredient.

The physical evaluation of mask preparations carried out included organoleptical tests, pH, preparation dry time, adhesion and spreadability tests.

Organoleptical Test

The preparation of peel-off gel mask from noni fruit extract produces a yellowish white preparation, smells typical of noni and a mixture of jasmine essence parfume, is thick and homogeneous.

Image 2. Peel-off gel mask results

Organoleptical testing of noni fruit extract peel-off mask showed that the mask had a thick texture, clear white and yellowish color, distinctive smell of noni and a mixture of jasmine essence parfume.

Table 1. Organoleptical Test Results of Face Mist

	Warna	Bau	Bentuk	Homogen
Uji Organoleptis *Face Mist*	Putih bening	Khas mengkudu + *essence parfume* jasmine	Cair	Homogen

Table 2. Organoleptical Test Results of Peel-Off Gel Mask

Uji Organo-leptis Masker Gel *peel-off*	Sampel	Warna	Bau	Bentuk	Homogen
	P1	Hitam	Khas mengkudu + *essence parfume* jasmine	Kental	Homogen
	P2	Hitam			
	P3	Putih bening			

pH test

The pH value of the noni extract peel-off gel mask is 6 and the pH value of the noni extract face mist is 5.5. The results can be seen from the pH value, it is stated that the peel-off gel mask preparation and face mist of noni extract are still in the normal skin pH range of 4.5-6.5. If the pH value is too acidic, it can cause irritation and if the pH value is too alkaline, the skin will be dry.

Table 3. pH Test Result

	Sample	pH	
		Peel-off Gel Mask	Face Mist
pH test	P1	8-9	5,5
	P2		
	P3	6	

Dry Time Test

The dry time test of the noni extract peel-off gel mask preparation is 20 minutes. These results are still within the range of a good peel-off gel mask dry time of 15-30 minutes.

Table 4. Dry Time Test Result

	Time
Dry Time Test	20 minutes

Spreadability Test

In the spreadability and stickiness test of noni extract peel-off gel mask preparations, the results of the spreadability test were (5.6-6.5 cm) that the area of spread of the gel in all formulas was in good gel parameters of 5-7 cm, this spreadability test was carried out to ensure even distribution of the gel and to determine the speed of spread of the peel-off gel mask when applied to the skin which was carried out after the gel was made. The result of the attachment time speed of the gel mask formula to the face is 08.56 seconds.

Image 3. Spreadability and Adhesion Test Result

The results of organoleptical testing and adhesion at Ahmad Dahlan University Pharmacy LAMDA (Analysis Laboratory), Yogyakarta are obtained.

Table 5. Organoleptical and Adhesion Test Results LAMDA

IV. Hasil Uji :

4.1. Hasil Uji Daya Lekat

No.	Nama Sampel	Uji Daya Lekat (detik)
1.	P1 (+Methyl Paraben)	11,67 ± 1,53
2.	P2 (tanpa Methyl Paraben)	16,00 ± 1,00
3.	P3 (Ori Mengkudu)	8 ± 1,00

4.2. Hasil Uji organoleptis

No.	Nama Sampel	Uji Organoleptis			
		Bentuk	Warna	Bau	Tekstur
1.	P1 (+Methyl Paraben)	semipadat	Hitam	Lembut	Bau khas mengkudu (tipis)
2.	P2 (tanpa Methyl Paraben)	semipadat	Hitam	Lembut	Bau khas mengkudu (menyengat)
3.	P3 (Ori Mengkudu)	semipadat	Bening	Lembut	Bau khas mengkudu (menyengat)

Based on the results of the Organoleptical Test and simple adhesion and Organoleptical Test and adhesion from LAMDA (Laboratory Analysis) Ahmad Dahlan University Yogyakarta, it shows that almost the same results were obtained as the simple test conducted at the Biology Laboratory of Ali Maksum High School and simple testing by several respondents. The results obtained can prove that the feel-off mask can be used by anyone with normal skin.

Discussion

Peel-off gel mask is one type of face mask that has the advantage of being easily removed or lifted like an elastic membrane. The use of peel-off gel masks is effective enough to remove dead skin cells, clean facial pores, and can moisturize and soften facial skin. Face mist is a skincare product that contains liquid that is sprayed onto the skin. The main use of face mist is to refresh the skin and provide moisture to the facial skin. Based on the results of the product preparation questionnaire that has been distributed to respondents, it can be concluded that the average student is interested in peel-off gel mask products and face mist from noni fruit extract.

Organolepstis testing includes color, shape, and odor parameters. Organoleptic testing is done by looking at the shape or texture, color, and smell of the peel-off gel mask preparation and face mist from noni fruit extract made. The results obtained showed that the shape, color, and odor parameters were not significantly different between the formulas. The peel-off gel mask obtained is yellowish translucent white and the face mist produced is clear white. The yellowish translucent white color and smell of noni resulted from the addition of noni fruit extract and the smell of jasmine resulted from the addition of jasmine essence parfume. The resulting peel-off gel mask dosage form is thick and homogeneous. While the resulting face mist dosage form is liquid.

pH testing is intended to state the level of acidity or basicity possessed by a preparation with the aim of seeing its safety. pH that is too acidic can irritate the skin, while pH that is too basic can cause scaly skin. According to SNI number 16-4399-1996, the appropriate value for the skin ranges from 4.5-8 (BSN, 1996). The pH measurement result for peel-off gel mask preparation is 6 and for face mist preparation is 5.5.

The result of the drying time test for the peel-off gel mask preparation was 20 minutes. The dry time test was carried out by applying the peel-off gel mask to the back of the hand and observing the time required for the preparation to dry, namely the time from when the gel mask was applied until a dry and elastic layer was formed which could be peeled off from the skin surface without leaving the gel mass. Provided that the drying time of the preparation is not more than 30 minutes (Slavtcheff, 2000).

The spreadability and stickiness tests were conducted to determine the spread of the gel and the level of stickiness when applied to the facial skin. The results of the spreadability test were (5.6-6.5 cm). The evaluation results of a good spreadability test are in the range of 5-7 cm. The value of spreadability obtained shows an increase after the addition of noni fruit extract but remains within the desired standard parameter range. The spreadability value of a preparation is inversely proportional to its consistency, where the greater the spreadability, the lower the consistency. This is consistent with the consistency of the peel-off gel mask preparation which decreased after the addition of noni fruit extract. The adhesion test obtained was 08.56 seconds. The adhesion of a good preparation is not less than 4 seconds (Nevi, 2006). This shows that the resulting noni fruit extract peel-off gel mask preparation is able to adhere well to the skin. Based on the research results in learning resources, the availability of research objects is a product preparation of peel-off gel mask and face mist. The application of the results of this research is realized in the manufacture of Teaching Modules.

Conclusion

Based on research on the manufacture and physical evaluation of peel-off gel mask preparations and face mist of noni fruit extract (*Morinda citrifolia* Linn), a yellowish white peel-off gel mask preparation and a clear white face mist with a distinctive aroma of noni odor plus jasmine parfume essence and from the results of the evaluation of the preparation, the pH value of the peel-off gel mask preparation is 6 and the pH value of the face mist is 5.5, the dry time test result is 20 minutes, the spreadability test results still meet the standard spreadability range of 5-7 cm, and the adhesion test results are 08. 56 seconds of peel-off gel mask preparation. 3. The results of this study in the form of products can be used as a learning resource for Class X high school biology related to the utilization of cosmetic plant-based biodiversity.

Suggestion

Based on the research that has been conducted, there are suggestions for the development of this research as follows: 1) further research on the content of noni; 2) further research on the variety of samples and doses of other additives in the manufacture of masks and face mist; and 3) conduct more varied sample tests, 4) can be used as a product as a more diverse biology learning resource.

References

A.P. Bangun., B. Sarwono. (2002). Khasiat dan Manfaat Mengkudu. Jakarta: Agro Media Pustaka. Diakses pada 17 februari pukul 15.09.

Alfiah, R.R., Khotimah, S., & Turnip, M. (2015). Efektivitas Ekstrak Metanol Daun Sembung Rambat (*Mikania micrantha Kunth*) terhadap pertumbuhan jamur *Candida albicans*. *Jurnal Probiotint*, 4 (1) : 52-57. https://jurnal.untan.ac.id/index.php/jprb/article/view/8735 Diakses pada 14 Februari 2024 pukul 14.10

Ariyanto, W., Sadimin. dan Sariyem. (2016). Daya hambat ekstrak biji mengkudu terhadap pertumbuhan bakteri Streptococcus mutans. *Jurnal Kesehatan Gigi*. 3(1): 34-41. Diakses pada 10 Februaari 2024 pukul 12.15. https://ejournal.poltekkes-smg.ac.id/ojs/index.php/jkg/article/viewFile/986/380

Ayanblu F, Wang MY, Peng L, Nowicki J, Anderson G, Nowiciki D. (2011). Anti thrombotic effect of *Morinda*

citrifolia (noni) fruit juice on the jugular vein thrombosis induced by ferric chloride in male adult sd rats. *Functional Foods in Health and Disease,*1(9), 297-309. https://doi.org/10.31989/ffhd.v1i9.122

Badan Standardisai Nasional. (1996). *Sediaan Tabir Surya.* SNI 16- 4399-1996, Jakarta.

Badan Pusat Statistik. (2014). *Luas Tanaman Perkebunan Menurut Propinsi dan Jenis Tanaman, Indonesia*, 2012-2014. Diakses pada 13 Februari pukul 14.12

Departemen Pendidikan Indonesia (2008). Kamus Besar Bahasa Indonesia. Edisi Keempat. Jakarta: Balai Pustaka..

Herlina, S. (2017). Efektivitas Ekstrak Daun Mengkudu (Morinda citrifolia) untuk Meniungkatkan Respon Imun Non Spesifik dan Kelangsungan Hidup Ikan Mas (Cyprinus carpio). *Jurnal Ilmu Hewani Tropika*, 6(1). https://unkripjournal.com/index.php/JIHT/article/view/99/98 Diakses pada 22 Januari 2024 pukul 09.55.

Hidayat, F., Komarudin, D., Ekadipta & Lestari, YP. (2022). Formulasi masker gel *peel-off* dari ekstrak bunga turi (*Sesbania grandiflora* (L.) Pers. *Jurnal ISTA*, 1-9. http://iontech.ista.ac.id/index.php/iontech. Diakses pada 14 Februari 2024 pukul 14.12.

Istiana, NY., Fitriani, N & Prasetya, F. (2021). Optimasi Basis Masker Gel Peel-Off dan Uji Stabilitas Fisik Sediaan Masker Gel Peel-Off dari Ekstrak Daun Sirih Hitam (Piper betle L.). Jurnal Proc. Mul. Pharm.Conf. 1-8. https://prosiding.farmasi.unmul.ac.id/index.php/mpc. Diakses pada 17 Februari 2024 pukul 09.50

John, J., & Wadsworth. (2002). *Morinda citrifolia oil. United States Patent*. Diakses pada 13 Februari 2024. http://www.patft.uspto.gov/netacgi/nph-parsen

Kahkonen, M.P., Hopia, A.I., Vuorela, H.J., Rauha, J.P., Pihlaja, K., Kujala, T.S., dan Heinonen, M., (1999). *Antioxidant activity of extracts containing phenolic compounds*, J. Agric. Food Chem, 47: 3954-3962. Diakses pada 20 Februari 2024 pukul 12.13. https://pubs.acs.org/doi/10.1021/jf990146l

L, Ayu Saraswati. (2013). P*utih : Warna Kulit , Ras, dan Kecantikan di Indonesia transnasional*. Tangerang Selatan : CV. Marjin Kiri.

Lemmens, R.H.M.J., Bunyapraphatsara, N., (2003). Morinda L. dalam: Lemmens, R.H.J., Bunyapraphatsara, N. *Plant Resources of South-East Asia No. 12 (3) Medicinal and poisonous Plants 3,* 302-305. Bogor: Prosea foundation. Diakses pada 17 Februari 2024 pukul 12.20.

Melliana, S,. Annastasia. (2006). *Menjelajah Tubuh Perempuan dan Mitos kecantikan.* Yogyakarta : LkiS. Diakses pada 16 Februari 2024 pukul 10.06.

Nayak, B.S., Sandiford, S. and Maxwell, A. (2009). Evaluation of The Woundhealing Activity of Ethanolic Extract of *Morinda citrifolia* L. Leaf. *Evid Based Complement Alternative Medicine*, 6 (3), 351-356. https://doi.org/10.1093/ecam/nem12

7 Diakses pada 14 Februari 2024 pukul 15.00.

Ningrum, Wulan Agustin. (2018). Pembuatan Dan Evaluasi Fisik Sediaan Masker Gel *Peel-off* Ekstrak Etanol Daun Teh (*Camellia sinensis* L.). *Jurnal Farmasi Sains dan Praktis*, Vol.IV, No. 2 Oktober Hal. 1-5. https://journal.unimma.ac.id/index.php/pharmacy/article/view/2323. Diakses pada 11 Februari 2024 pukul 13.50.

Nevi S. (2006). *Formulasi sabun transparan minyak nilam sebagai obat jerawat.* Jakarta: UHAMKA. https://lemlit.uhamka.ac.id/ Diakses pada 22 Februari 2024.

Rasal, V.P., Sinnathambi, A., Ashok, P., et al. (2008). Wound Healing and Antioxidant Activities of *Morinda citrifolia* Leaf Extract in Rats, *Iranian Journal of Pharmacology & Therapeutics,* 7(1), 49-52. https://ijpt.iums.ac.ir/article-1-158-en.html diakses pada 10 Februari 2024 pukul 12.11.

Rosyahira. 2021. *Uji Aktivitas Antioksidan Dan Pengaruh Gliserin Terhadap Sifak Fisik Sediaan Face Mist Ekstrak Etanol Daun Belimbing (Averrhoa bilimbi L.).* (Skripsi, Fakultas Farmasi, Universitas Muhammadiyah Purwekerto: Purwekerto) https://repository.ump.ac.id/11655/.

Siti, MM dan Molivicia, WM. 2018. *Pembuatan Masker Wajah Dengan Karbon Aktif Dari Sekam Padi*. (Skripsi, Fakultas Teknik Kimia Industri, Institut Teknologi Sepuluh Nopember: Surabaya). https://repository.its.ac.id/56949/.

Diakses pada 4 Februari 2024 pukul 14.25.

Slavtcheff, C. S. (2000). *Komposisi kosmetik untuk masker kulit muka.* Indonesia Patent 2000 / 0004913.

Syamsuhidayat, S.S and Hutapea, J.R. (1991). *Inventaris Tanaman Obat Indonesia,* edisi kedua, Departemen Kesehatan RI, Jakarta.

Voigt R. (1994). *Buku Pelajaran Teknologi Farmasi. Terjemahan: Soendani Noerono*. Universitas Gajah Mada Press. Yogyakarta. Hlm 116-188.

Wiharsari, Julinar Cherish. (2019). Konsep Kecantikan Dan Pemanfaatan Produk Kosmetik Wajah Pada Mahasiswi Surabaya. *Jurnal UNAIR*, 2-3. https://e-journal.unair.ac.id/. Diakses pada 15 Januari 2024 pukul 14.06