



Feasibility of Traditional Red Dragon Fruit Skin Mask (*Hylocereus polyrhizus*) for Dry Facial Skin Care

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Abstrak

Kulit kering merupakan salah satu kulit bermasalah yang menyebabkan kurang percaya diri, kulit kering disebabkan oleh paparan sinar matahari langsung dan rendahnya kadar air pada kulit. Kulit kering dapat dicegah dengan perawatan dari luar dan dari dalam. Masker tradisional merupakan salah satu kosmetik yang berfungsi untuk meningkatkan peredaran darah pada kulit dan memberikan kelembapan pada kulit. Kulit buah naga merah memiliki manfaat dalam memberikan kelembapan dan mengandung antioksidan yang baik untuk kulit dan belum banyak diketahui masyarakat. Penelitian ini bertujuan menganalisis kelayakan masker tradisional kulit buah naga merah untuk perawatan kulit wajah kering ditinjau dari kandungan kimia, tekstur, aroma, daya lekat, dan kesukaan panelis. Penelitian ini merupakan penelitian eksperimen dengan desain deskriptif kuantitatif. Instrumen penelitian berupa uji laboratorium, uji organoleptik, dan uji kesukaan. Pengumpulan data menggunakan metode dokumentasi dan kuesioner yang disusun dengan skala Likert. Analisis data deskriptif persentase untuk mengetahui kelayakan masker tradisional kulit buah naga merah dilihat dari tekstur, aroma, kelengketan dan kesukaan panelis. Hasil uji laboratorium menunjukkan kandungan vitamin A 1,95 gr/100 gr dan Vitamin C 0,66 gr/100 gr. Hasil uji organoleptik 71,42% bertekstur halus, 42,85% aroma kulit buah naga merah sangat khas, 42,85% lengket dan 57,14% disukai panelis.

Kata kunci: Masker, Kulit Buah Naga, Kulit Wajah Kering

Abstract

Dry skin is one of the problematic skins that causes a lack of self-confidence, dry skin is caused by exposure to direct sunlight and low water content in the skin. Dry skin can be prevented with care from the outside and from the inside. Traditional masks are cosmetics that function to increase blood circulation to the skin and provide moisture to the skin. Red dragon fruit peel has benefits in providing moisture and contains antioxidants that are good for the skin and are not widely known to the public. This study aims to analyze the feasibility of traditional red dragon fruit peel masks for dry facial skin care in terms of chemical content, texture, aroma, adhesion, and panellist preferences. This research is experimental research with a quantitative description design. The research instruments are laboratory tests, organoleptic tests, and hedonic tests. Collecting data using the method of documentation and questionnaires compiled with a Likert scale. Descriptive data analysis percentage to determine the feasibility of traditional red dragon fruit peel masks seen from the texture, aroma, stickiness, and preference of the panellists. The results of the laboratory test showed that the content of vitamin A was 1.95 gr/100 gr and Vitamin C was 0.66 gr/100 gr. The results of the organoleptic test were 71,42% fine textured, 42.85% had a very distinctive aroma of red dragon fruit peel, 42.85% was sticky, and 57.14% was favoured by the panellists.

Keywords: Mask, Dragon Fruit Skin, Dry Facial Skin

1. INTRODUCTION

Dry facial skin is skin with less or low moisture content. Dry facial skin is caused by a lack of oil production from the sebaceous glands (oil), resulting in premature aging and wrinkle proneness (Draelos, 2018; Fauzi, 2013; Khansa, 2019). Healthy facial skin has criteria namely elastic or supple, soft, radiant skin tone, and normal skin type (Nilforoushzhadeh et al., 2018; Sari & Setyowati, 2014).

Everyone has a different skin type, different skin types are due to moisture content and oil production in the skin and are also caused by environmental factors (Ariede et al., 2017; Krutmann et al., 2017). Dry facial skin is one type of facial skin that interferes. Dry

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skin is very disturbing to the appearance of women, many women complain about their dry skin because their skin looks dull, and not radiant, and sometimes dark spots often appear (Araújo et al., 2018; Lin et al., 2017; Tobin, 2017). To get healthy facial skin it is necessary to do treatment using cosmetics. Cosmetics are ingredients that can be applied, sprayed, sprinkled, eaten, or injected to change the pathological state (physical changes) to normal (Becker et al., 2019; Mishra & Rahi, 2022; Sulastri & Chaerunisaa, 2016).

Currently, the cosmetics industry in Indonesia is very developed. A large amount of public interest in cosmetics makes cosmetic factories continue to issue the latest cosmetics. In addition to modern cosmetics, traditional cosmetics are also in demand by the public, with several forms of cosmetics that can be made from natural ingredients, one of which is masks. Masks are one of the traditional cosmetics that ban yak and are in demand by the public (Laia, 2019; Rahmi & Minerva, 2022). Dry facial skin care can use a wide variety of technologies and cosmetics.

One of the cosmetics that can be used for dry facial skin care is to use a mask. Similar research suggests that the use of masks can be done 2x a week or 1x a week (Couteau & Coiffard, 2016). Various natural ingredients can be used as the basic material for making masks, one of which is the skin of the red dragon fruit. The advantage of dragon fruit skin is that it is rich in polyphenols and is an antioxidant, dragon fruit skin also contains vitamin C and vitamin A. Antioxidant activity on dragon fruit skin is greater than antioxidant activity on fruit flesh (Nguyen et al., 2019; Niah & Baharsyah, 2018; Niah & Helda, 2016).

Previous research mentioned that dragon fruit contains flavonoid compounds that can function as antioxidants on facial skin (Z. Chen et al., 2021; Taliana, 2020). With the presence of 000 vitamins C, and A, in dragon fruit skin has the potential to healthy dry facial skin, which can be used as a facial treatment. With this, researchers also use dragon fruit skins to reduce dragon fruit skin waste. Based on the above, the author is interested in researching the feasibility of traditional dragon fruit skin masks for dry facial skin care. With the title "Eligibility of Traditional Red Dragon Fruit Skin Mask (Hylocereus Polyrzeus) For Dry Face Skin Care".

2. METHODS

This research is an experiment and the research design used is quantitative descriptive research. The experimental research in this study aims to determine the content of vitamin A and Vitamin C in traditional red dragon fruit skin masks and to determine the feasibility of traditional red dragon fruit skin masks in terms of texture, aroma, adhesion, and liking of panelists. The object in this study is the skin of the red dragon fruit made into a traditional mask. The research variables consist of Free variables (X) traditional masks of red dragon fruit skin Bound variables (Y) namely the content in traditional masks of red dragon fruit skin and organoleptic and hedonic tests.

Research instruments are laboratory labor tests, organoleptic tests, and hedonic tests. Organoleptic Test is a test based on the sensing process. Organoleptic tests were conducted to see the quality of traditional masks through aroma, texture, adhesion, and hedonic tests for the assessment of panelists' liking for traditional masks of red dragon fruit skin. The data analysis technique used is a Descriptive Analysis technique to explain the content contained in the traditional mask of red dragon fruit skin and the feasibility of traditional red dragon fruit skin masks in terms of the texture, aroma, adhesion, and preferences of the panelists.

3. RESULTS AND DISCUSSION

Result

Making Traditional Red Dragon Fruit Skin Masks

Before conducting research, a sample identification test was first carried out at the laboratory herbarium of Andalas University. The study samples identified as samples are known to be family cactaceus of the species *Selenicereus costaricensis*. The process of making a traditional mask of red dragon fruit skin is carried out by means of fresh red dragon fruit skin of as much as 3 kg and produced red dragon fruit skin of as much as 381 grams washed and cut into small pieces, aerated for 24 hours, after that the skin of the red dragon fruit is dried in the oven at a temperature of 400C for 4-8 hours, then blender the skin of the red dragon fruit until smooth into powder, After that, sift the red dragon fruit skin powder using a sieve to separate the coarse grains with the fine grains. Based on experiments that have been carried out, out of 381 grams, 86 grams of red dragon fruit skin powder were produced.

Laboratory Test Result on Traditional Red Dragon Fruit Skin Masks

The results of laboratory tests conducted at the Chemistry laboratory of FMIPA UNP found that the content of vitamin A and vitamin C was tested using the Tirta Iodometric method and the Uv-Vis Spectrophotometer obtained the results as shown in [Table 1](#).

Table 1. Laboratory Test Result

| No | Parameters | Analysis Results | Unit | Method |
|----|------------|------------------|------|--------------------------|
| 1. | Vitamin C | 0,66 gr/100 gr | gr | Titra Iodometri |
| 2. | Vitamin A | 1,95 gr/100 gr | gr | Spektrofotometer Uv- Vis |

Based on [Table 1](#), you can see the vitamin C and vitamin A content from the traditional red dragon fruit skin mask. Vitamin C found in the traditional mask of red dragon fruit skin is 0.66 gr and vitamin A found in the traditional mask of red dragon fruit skin is 1.95 gr.

Texture Organoleptic Test Result

Table 2. Texture Organoleptic Test Result

| Score | Category | F | Account | Percentage |
|-------|--------------------|---|---------|------------|
| 4 | Very Smooth | 1 | 1/7*100 | 14,28% |
| 3 | Smooth | 5 | 5/7*100 | 71,42% |
| 2 | Less Smooth | 1 | 1/7*100 | 14,28% |
| 1 | Not Smooth / Rough | 0 | 0/7*100 | 0,0% |

Based on [Table 2](#), it can be shown that 71.42% of panellists stated that the texture of the traditional mask of red dragon fruit skin is smooth and 14.28% of panellists stated that the texture of traditional masks of red dragon fruit skin is very smooth whereas 14.28% of panelists stated that the texture of traditional masks of red dragon fruit skin is less smooth.

Scent Organoleptic Test

In the research on traditional masks of red dragon fruit skin, it was assessed by 7 panelists consisting of 2 Cosmetology and Beauty lecturers, 1 person from the beauty industry, and 4 students from the Cosmetology and Beauty Department. From the 7 panelists, the results were obtained is presented in [Table 3](#).

Table 3. Fragrance Organoleptic Test Result

| Score | Category | F | Account | Percentage |
|-------|---|---|---------|------------|
| 4 | Very Scented typical of dragon fruit skin | 3 | 3/7*100 | 42,85% |
| 3 | Typical scented dragon fruit skin | 2 | 2/7*100 | 28,57% |
| 2 | Less Scented typical of dragon fruit skin | 2 | 2/7*100 | 28,57% |
| 1 | Not the characteristic scent of dragon fruit skin | 0 | 0/7*100 | 0,0% |

Based on Table 3, it can be concluded that 42.85% of panelists stated that the aroma of the traditional mask of red dragon fruit skin is very scented typical of red dragon fruit skin while 28.57% of panelists stated that the aroma of traditional masks of red dragon fruit skin is typical of red dragon fruit skin and 28.57% less scent is typical of red dragon fruit skin.

Stickiness Organoleptic Test Result

Table 4. Stickiness Test Result

| Score | Category | F | Account | Percentage |
|-------|--------------------|---|---------|------------|
| 4 | Very Sticky | 2 | 2/7*100 | 28,57% |
| 3 | Sticky | 3 | 3/7*100 | 42,85% |
| 2 | Lack of stickiness | 2 | 2/7*100 | 28,57% |
| 1 | Not sticky | 0 | 0/7*100 | 0,0% |

Based on Table 4, it can be concluded that 42.85% of panelists stated that the adhesion of traditional masks of red dragon fruit skin is sticky while 28.57% of panelists stated that the adhesion of traditional masks of red dragon fruit skin is very sticky and 28.57% of panelists stated that the adhesion of traditional masks of red dragon fruit skin is less sticky.

Hedonic Test (Panelists' Favorites)

Table 5. Hedonic Test Result (Panelists' Favorites)

| Score | Category | F | Account | Percentage |
|-------|-----------|---|---------|------------|
| 4 | Very Like | 3 | 3/7*100 | 42,85% |
| 3 | Like | 4 | 4/7*100 | 57,14% |
| 2 | Less Like | 0 | 0/7*100 | 0,0% |
| 1 | Dislike | 0 | 0/7*100 | 0,0% |

Based on Table 5, it can be concluded that 57.14% of panelists expressed liking traditional red dragon fruit skin masks and 42.85% of panelists stated that they really like red dragon fruit skin traditional masks.

Discussion

The process of making traditional masks of red dragon fruit skin means of, first, the process of selecting fresh red dragon fruit skin to be used as powder, then the red dragon fruit skin is weighed using a fresh balance sheet (scale) of 3 kg and produced a red dragon fruit skin of 381grams, then continued with washing the skin of the red dragon fruit that has been weighed using clean running water, then the washed skin of the red dragon fruit is placed on a tray or aerated baking sheet for 24 hours, then the skin of the red dragon fruit is dried in the oven for 4-8 hours at a temperature of 400C. After the skin of the red dragon fruit is dry, it is continued blending until it becomes powder, and the resulting powder is sifted using a sieve to separate the coarse and fine grains from the skin of the red dragon fruit.

The feasibility of traditional masks of red dragon fruit skin can be known from laboratory tests conducted at the FMIPA UNP Chemistry laboratory, organoleptic tests, physical properties, and hedonic tests of red dragon fruit skin, laboratory test results can be known that the content of Vitamin C is 0.66 gr, vitamin C acts as an antioxidant because it is able to protect the skin and prevent it from damage due to exposure to direct sunlight and vitamin C also plays a role in maintaining facial skin moisture so that facial skin does not dry easily (Ambarwati, 2021; J. Chen et al., 2014; Saygi, 2022). Furthermore, based on laboratory tests, it is known that the traditional mask of red dragon fruit skin contains as much as 1.95gr of vitamin A, vitamin A is an antioxidant that can maintain skin health (Herranz-López & Barrajon-Catalán, 2020; Perwita, 2019; Pullar et al., 2017). Vitamin A plays a role in increasing hydration in skin cells so that the skin does not dry easily and experiences wrinkles (Jani et al., 2020; Setiawati & Sukmawati, 2019; Syakri et al., 2021).

The results of the organoleptic test obtained from 7 panelists obtained results on the texture indicator 71.42% of panelists stated that the texture of the traditional mask of red dragon fruit skin was smooth and 14.28% of panelists stated that the texture of the traditional mask of red dragon fruit skin was very smooth while 14.28% of panelists stated that the texture of traditional masks of red dragon fruit skin was less smooth. In the organoleptic test results, 42.85% of panelists stated that the aroma of the traditional mask of red dragon fruit skin is very scented typical of red dragon fruit skin while 28.57% of panelists stated that the aroma of traditional masks of red dragon fruit skin is typical of red dragon fruit skin and 28.57% less scented typical of red dragon fruit skin.

In the results of the organoleptic test, 42.85% of panelists stated that the adhesion of traditional masks of red dragon fruit skin was sticky while 28.57% of panelists stated that the adhesion of traditional masks of red dragon fruit skin was very sticky and 28.57% of panelists stated that the adhesion of traditional masks of red dragon fruit skin was less fixed. The results of the hedonic test showed that 57.14% of the panelists expressed liking for the traditional mask of the red dragon fruit skin and 42.85% of the panelists stated that they really liked the traditional mask of the red dragon fruit skin.

4. CONCLUSION

The process of making a traditional mask of red dragon fruit skin by choosing a fresh red dragon fruit skin of as much as 3 kg and producing a red dragon fruit skin of as much as 381grams, then washing the red dragon fruit skin using running water, the red dragon fruit skin is placed on an aerated tray for 24 hours, then dried in the oven for 4-8 hours at a temperature of 400C. After the skin of the red dragon fruit is dry, it is continued by smoothing the skin of the red dragon fruit until it becomes powder and sifted using a sieve. The traditional red dragon fruit skin mask contains vitamin C of 0.66 gr / 100 gr and vitamin A content of 1.95 gr / 100 gr. Organoleptic and hedonic test results obtained a mask texture of 71.42% smooth category, the aroma of the mask obtained a value of 42.85% very scented typical of red dragon fruit skin, the adhesion of the mask 42.85% of the sticky category and 57.14% of panellists really like the red dragon fruit skin mask. The results of organoleptic and hedonic tests showed that the traditional red dragon fruit skin mask is worthy of being a mask for dry facial skin because it was liked by the panellists with an assessment of a mask that smells of red dragon fruit skin, smooth texture and good adhesion of the mask.

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