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Acceptance of Politeknik Merlimau Melaka Citizen Towards Facial Mask Produce from Extract of *Phyllanthus Amblica* and *Fragaria X Ananassa*

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Abstract

The demand of cosmetic product is rapidly growing. Every woman and man used cosmetic for their skincare aggressively. However, they even do not know that the product in the marketplace are not good and may harm to their skin. It is because it has a lot of chemicals substances that are not suggested to health skin. However, nowadays, there are some alternatives that may help to prevent the use of chemical in cosmetic product. For example fruit contains their own nutrient. There are some fruits that contains high in vitamins and also good for skin. *Phyllanthus amblica* or known as Melaka fruit contains more than 30 times vitamin C compared to other fruit. Due to unpleasant odor and sour taste, Melaka fruit is not popular consumed by people in Malaysia. This Melaka tree also using for landscaping purpose and to enhance the visual effect toward the site. Therefore, looking at potential and benefits, a research has been conducted to produce a facial mask (Amla Facial Mask) from *Phyllanthus amblica* and *Fragaria X Ananassa*. Analyze has been done to determine the perception level of respondents towards Amla Facial Mask. Likert Scale was used as the quantitative instrument. A number of 30 respondents were selected based on their locality. Descriptive analysis was used to analyses collected using SPSS version 25.0. Resulting confirming that is Amla Facial Mask shows the perception level of respondents towards Amla Facial Mask is highly positive that is 3.65 in mean. As conclusion, Amla Facial Mask accepted respectively.

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Key-word: - *Phyllanthus amblica* , *Fragaria X Ananassa*, Vitamin C

1. Introduction

Malaysia enjoys tropical weather whereby it has hot and humid throughout the year, it called Equatorial Climate. Temperature are not too high and not too humid. This situation will effect to the skin diseases for the human. For example roughness, rashness, skin cancer, inflammation and acne when exposed with the high temperature. Therefore, it can be recovered through various treatment through many kinds of means including facial mask with the right and suitable product. Therefore, with these problems, it also can be treated with facial mask. Facial mask is one of the easiest ways to get healthy and supply skin within a few minutes. Face masks are a great way to complement daily skincare routine. It will reflect skin to pamper and relax while keeping the skin looking and feeling its best. In addition, facial mask is a fastest way to make the skin firm, to refine the skin pores and also to give even skin tone (Peggy Lee, 2016)

There are some fruits in Malaysia that contains very high in vitamin C that are very good for skin. Based on research, Melaka fruit contains more than 30 times vitamin C compared to oranges. Therefore, Melaka fruit also can be innovated into facial mask (Moyad, 2017). In Malaysia, Melaka tree is planted for landscaping purposes. The Melaka tree is planted for landscape element at the local cultural & heritage waterfront due to solve the issue and also to enhance the visual effect toward the site. Melaka tree also very important to providers of shade, particular in high temperature places seem like in Malaysia (Hussain et. al, 2015).

This happens because the locals did not know that *Phyllanthus amblica* (Melaka fruit) contains a lot of vitamin C and has benefits to health (Singh et.al, 2011). This fruit contains 720mg vitamin C in every 100g fresh Melaka fruit (Singh et.al, 2011) and has antioxidant value. Vitamin C content in fruits as Table 1.

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Table I: Vitamin C Content in Fruits

Fruit	Vitamin C (mg/100g)
Melaka fruit	700
Guava	100
Kiwi	90
Lychee	70
Starberry	60
Papaya	60
Orange	50
Lemon	40
Mango	28
Honeydew	20
Grape	10
Apricot	10
Banana	9
Avocado	8
Apple	6
Pear	4

(Ehrlich, 2011 and Gloryfrench, 2006)

Looking to its potential and benefit, a research has been conducted to produce a facial mask named Amla Facial Mask produced from extract of *Phyllanthus amblica* (Melaka fruit) and *Fragaria X Ananassa* (strawberry fruit). Other than that, researcher want to know the level of acceptance of Amla Facial Mask towards citizens in Politeknik Merlimau, Melaka.

2. Literature Review

Phyllanthus amblica (Melaka fruit) or other its name is Indian gooseberry tree is very rich in vitamin C, and contains many minerals and vitamins like Calcium, Phosphorus, Iron, Carotene and Vitamin B Complex. Many health problems are caused by oxidative damage (when body cells use oxygen, they produce by-products called free radicals that can cause damage). Antioxidant agents prevent and repair these damages. Vitamin C is a good antioxidant agent, which makes gooseberries a powerful tool against a variety of conditions, including various types of cancer. (Harshanjit Singh, 2002). According to (P. Scartezzini a et al 2005), *Phyllanthus amblica* (Melaka fruit) is one of the most important plants of Ayurved, the Indian Traditional Medicine. It is regarded as “the best among rejuvenative herbs”, “useful in relieving cough and skin disease”, and “the best among the sour fruits”. As stated that, it confirmed that this fruits contain high in vitamin C and it can use many purpose for skin treatment.

**Picture 1:** *Phyllanthus amblica* (Melaka fruit)

Fragaria X ananassa (strawberry fruit), commonly known as strawberry or garden strawberry, is a hybrid species that is cultivated worldwide for its fruit is widely appreciated for its characteristic aroma, bright red color, juicy texture, and sweetness. It is consumed in large quantities, either fresh or in prepared foods such as preserves, fruit juice, pies, ice creams, milkshakes, and chocolates. Artificial strawberry aroma is also widely used in many industrialized food products. In the late 18th century, the first garden strawberry was cultivated in France. The fruit strawberry was observed in reference to its medicinal use in ancient Roman literature. (Healthbenefittime.com).

Table 2: Vitamin C Content in *Fragaria X ananassa* (Strawberries fruit)

Fruit	Vitamin C (%)
Vitamin C	108.44

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Manganese	27.87
Vitamin B9	10.00
Carbohydrate	9.81
Copper	8.89

(Healthbenefitme.com)

Strawberries provide 129% of daily value of Vitamin C which is known to counteract infections. Additionally, it contains anti-aging, neurological disease fighting and anti-cancer properties. Strawberries have high content of antioxidant and polyphenolic compounds which make it beneficial to improve immune health and prevent various types of cancer and also lower the signs of premature aging. (Healthbenefitme.com, 2018).



Picture 2: *Fragaria X ananassa* (Strawberry fruit)

Glycerine is a humectant. It absorbs water from the air and thus attracts moisture to the skin. Glycerin is found in many moisturizing skin care products and soaps. Glycerin is well-loved as a lotion and soap ingredient because it's a humectant. A humectant is a substance that pulls water from the second layer of the skin and brings it to the top layer of the skin. If the humidity is high, humectants also draw moisture from the air. As a result, glyceride hydrates skin, helps you shed dead skin cells and gives your skin a smooth, youthful glow (Glycerinforskinicare, 2019).



Picture 3: Glycerin

3.

Methodology

Producing Amla Facial Mask

There are three main ingredients required in the production of Amla Facial Mask. They are extraction of Melaka fruit and strawberries, glycerin and mask sheet. These then put it into a mask sheet with room temperature to become a facial mask. The process flow of producing the Amla Facial Mask is illustrated as in Figure 1.

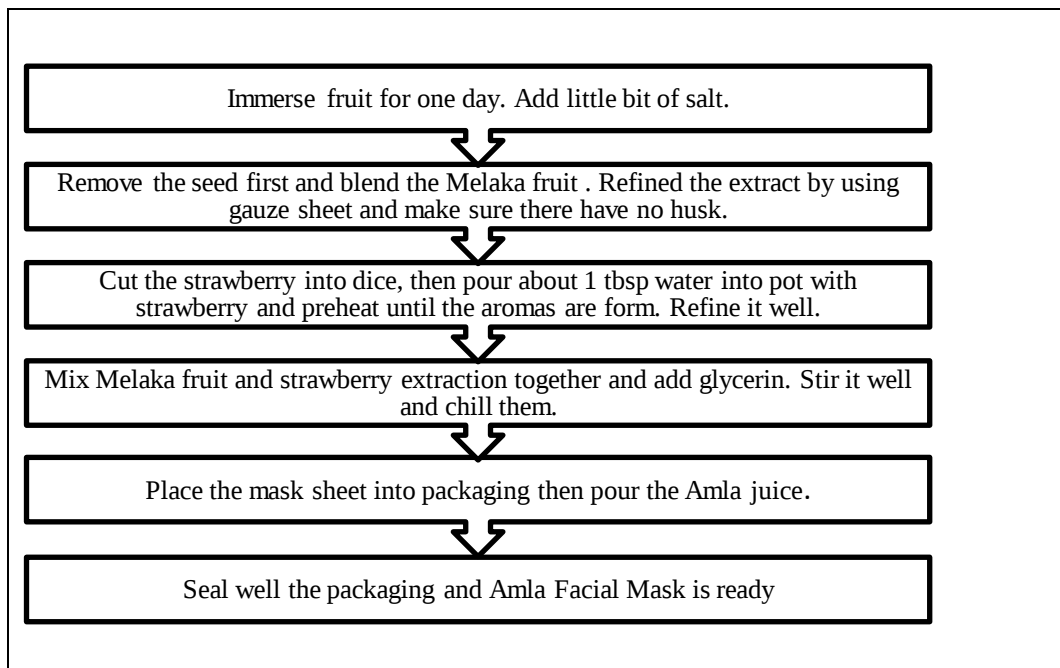


Figure 1: Process of Making Amla Facial Mask

Research Design

Researchers has used quantitative research design. A set of questionnaire using Likert Scale was used to determine the acceptance level of respondents towards Amla Facial Mask as in Figure 2.

Item Evaluated	Very Dislike (1)	Dislike (2)	Not Sure (3)	Like (4)	Really Like (5)
I like the this mask thickness					
I like the this mask colour					
I like the this mask smell					
I like the mask packaging					

Figure 2: Questionnaire to Determine Respondent Acceptance Level towards Amla Facial Mask

Research was done to determine respondent acceptance level towards Amla Facial Mask Soap which are its thickness, color, smell and packaging of this product after application.

Research Respondent

Respondent from ages from 19 to 28 years old were selected. This is because aging problem is common with the increase in age. Skin starts to show sign of aging at an early age. These early signs of aging are due to unhealthy diet, pollution, stress and much more (Harshanjitsingh, 2002). 30 respondents were given Amla Facial Mask sample. They applied the sample onto the skin prior answering the questionnaires.

Data Analysis Method

Data collected from the questionnaires were analyzed using Statistical Package for Social Science (SPSS) version 25.0 and interpreted using mean score. The mean value range interpretation are in Table 3.

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Table 3: Interpretations of the Range Of Value Mean

Score Mean	Interpretation	Level
1.00 to 2.33	Low	Weak
2.34 to 3.66	Middle	Middle
3.67 to 5.00	High	Good

(Mohd Najib Abd Ghafar, 2003)

4. Data Analysis

Producing a Facial Mask by Using Extract from *Phyllanthus amblica* (Melaka fruit) and *Fragaria X ananassa* (Strawberry fruit)

Analysis showed that the respondents highly accepted the Amla Fask Mask after application with mean value 3.65. Table 4 indicates the mean score for attribute evaluated.

Table 4: Interpretations of Mean Score of Amla Facial Mask

Item Evaluated	Score Mean	Interpretation	Level
Acceptance	3.65	High	Good

Acceptance Level of Respondents towards Amla Facial Mask

Respondents strongly agree that the color of Amla Facial Mask with mean value 4.00, the pleasurable thickness and refreshing smell is accepted with mean value 3.17 and 3.77 respectively. They also strongly agree that Amla Facial Mask possess good packaging giving mean score 3.67. Table 5 indicates the mean score for each attribute evaluated.

Table 5: Interpretations of perception Level of Amla Facial Mask

Item Evaluated	Score Mean	Interpretation	Level
Color	4.00	High	Good
Thickness	3.17	Middle	Middle
Smell	3.77	High	Good
Packaging	3.67	High	Good

5. Results and Discussion

Overall, respondent's acceptance of this product is high. The majority of citizen in Politeknik Merlimau, Melaka who consumed Amla Facial Mask like the mask very much and smells fragrant and fresh. They strongly like the color very much. They have to know about the goodness of natural ingredients such as Melaka fruits and strawberry extraction to be one natural the facial mask to be consumed. Malacca fruit is very rich in vitamin C, and contains many minerals and vitamins like Calcium, Phosphorus, Iron, Carotene and Vitamin B Complex. Antioxidant agents prevent and repair these damages. Vitamin C is a good antioxidant agent, which makes gooseberries a powerful tool against a variety of conditions, including various types of cancer. (Harshanjit singh, 2002). It is also stated that by The Melaka Fruit is rich in Vitamin C (Lim T.K, 2012).

Glycerin is an organic compound composed of carbon, oxygen and hydrogen (Axe, 2017). This thick, colourless and odourless liquid is used extensively in the beauty industry for making soap, anti-aging gels and moisturizers. It was first discovered in 1779 by Swedish chemist, *Karl Wilhelm Scheele*, who named it "sweet principle of fat" in 1811, *Michel Chevreul's*, a Frenchman, named it glycerine, which comes from the Greek word *glyks* meaning sweet. Glycerine was mainly utilized for medical used and personal care until the late 1800's. As a humectant, this ingredient is often found as an ingredient in cosmetic products such as face washes, skin cream and lotion, soap and mouth washes. (chagrinvallysoapandsalve, 2017). In conclusion, The Amla Facial Mask is highly accepted by the citizens in Politeknik Merlimau, Melaka respectively.

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