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Variations in the type of abrasive material used in the formulation of body scrub preparations on the evaluation of the preparation

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ABSTRACT

Cosmetics are products that are used to clean and beautify the skin. Body scrubs or what is commonly known as bath scrubs are scrubs that are used when the skin is wet. How to use it is by applying it evenly to the skin of the body and then rubbing it slowly. Body scrub components, which consist of fat components, can increase skin moisture. The water phase can increase hydration for fresh-looking skin. Surfactants in body scrubs can also replace the role of soap. One form of body scrub dosage form that is widely available on the market is the cream dosage form (Paradila et al., 2022). The caffeine content in coffee can make the skin moist so it feels smoother and firmer. Arabica coffee beans contain antioxidants which can provide benefits, one of which is preventing cell damage due to exposure to free radicals. Arabica coffee with a concentration of 2% shows a good exfoliating agent that does not irritate the skin and improves the appearance of the skin without side effects (Putri et al., 2021). This study aims to formulate and evaluate the physical quality results of coffee powder body scrub cream with emulgator concentrations of 15%, 14% and 13% stearic acid, and 1%, 2% and 3% triethanolamine. Experimental research method to determine variations in the concentration of stearic acid and triethanolamine emulsifiers. Observation of the results of evaluating the physical quality of the preparation includes organoleptic tests, homogeneity, pH, stickiness tests, spreadability tests and emulsion type. The results of this research indicate that there is an influence of differences in the concentration of stearic acid and triethanolamine in that F1 has a denser form than F2 and F3, after storage for 3 weeks F2 and F3 experienced a color change to light brown. This shows that the formulation has the best properties for body scrub cream preparations, is stable and meets the requirements based on organoleptic tests, homogeneity tests, pH tests in accordance with the standard facial skin pH in general, namely 4.5-7, while for the emulsion type test, and the stability test that was carried out on day 12 did not experience any changes or phase separation, namely F1 with a stearic acid concentration of 15% and triethanolamine 1%.

Keywords : body scrub, coffe, physical test

INTRODUCTION

Cosmetics are products that are used to clean and beautify the skin. (Putri et al., 2021) Body scrubs or what is commonly known as bath scrubs are scrubs that are used when the skin is wet. How to use it is by applying it evenly to the skin of the body and then rubbing it slowly. Body scrub components, which consist of fat components, can increase skin moisture. The water phase can increase hydration for fresh-looking skin. Surfactants in body scrubs can also replace the role of soap. One form of body scrub dosage form that is widely available on the market is the cream dosage form. (Paradila et al., 2022)

The caffeine content in coffee can make the skin moist so it feels smoother and firmer. Arabica coffee beans contain antioxidants which can provide benefits, one of which is preventing cell damage due to exposure to free radicals. Arabica coffee with a concentration of 2% shows a good exfoliating agent that does not irritate the skin and improves the appearance of the skin without side effects (Putri et al., 2021).

One way to use coffee grounds in the beauty sector is to make a body scrub. Body scrub is a beauty product that can make the skin cleaner, brighter, remove dead skin cells and soften the skin. Daily

outdoor activities often expose the skin to sunlight, making the skin dark and dull. Therefore, treatment with a body scrub can be done once every two weeks or depending on needs. Body scrubs are generally made from rice flour and granulated sugar, but can use coffee grounds instead. (Fitriani Puspitasari).

The development of coffee grounds in the form of a body scrub is aimed at increasing the economic value of coffee drink waste in society. So far, waste is only waste that results from a production process, whether industrial or natural, whose appearance is undesirable to the environment because it has no economic value, in fact the presence of waste is always considered to have a negative impact on the environment. Starting with the increasing number of people consuming coffee, the amount of coffee grounds which are worthless because they are considered waste will increase. Drinking coffee generally leaves dregs which are simply thrown away after use. Based on the previous statement, it turns out that waste does not always harm the environment. On the other hand, coffee grounds have many benefits, especially on human skin, namely they can whiten dull skin, overcome dry skin, and overcome premature aging which is needed by many people so that their skin always looks healthy, clean and beautiful. (Fitriani Puspitasari).

METHODS

The way to make this scrub is that first the base is made by melting the oil phase (olive oil, stearic acid and cetyl alcohol) by heating it over a water bath at a temperature of 80°C until it melts. Using a temperature of 80°C is expected to be able to melt all the ingredients. Apart from the oil phase, the water phase (triethanolamine, distilled water, propyl paraben, methyl paraben) is also heated at a temperature of 70°C. The purpose of this heating is to increase the solubility of the oil phase into the water phase during emulsion formation.

After the fat phase has completely melted, the water phase is added to the oil phase while stirring until a homogeneous scrub base is formed. The base formed is white. Then add the active substance, namely coffee powder, into the base while continuing to stir until homogeneous. After adding coffee grounds, the color of the scrub preparation changes to brown. The scrub that has been prepared is then put into a container and given a sticker and put into packaging and the remaining preparation is used to evaluate the preparation.

RESULTS

Making coffee body scrub cosmetics because coffee contains flavonoids which increase skin elasticity and prevent skin aging. Apart from that, coffee also contains quite high levels of antioxidants (hydrocinnamic acid and polyphenols). These high levels of antioxidants are able to protect the skin from attacks by free radicals from ultraviolet light.

From the results of the organoleptic evaluation, our preparation meets the criteria, namely brown in color, a distinctive coffee odor and a soft, slightly rough texture influenced by the abrasive material. For the pH test, our preparation did not meet the requirements because our average pH was 8.57, which is above the skin pH range, where skin pH ranges from 4.5-7. For the test, the spreadability of our preparation was too wide, namely without a load, 7.74 cm and with a load, 8.64 cm, which should be 5-7 cm, so it can be concluded that it does not meet the requirements. For the adhesion test, our preparation was absorbed very quickly, namely within 00.42 milliseconds, so it did not meet the requirements. In the microscopic test at a magnification of 10x0.25 and a magnification of 40x0.65, bubbles appear.

DISCUSSION

Stability testing was carried out by storing our preparations for 1 week/7 days. This test is intended to determine whether the preparation is stable or not during storage. Obtained from the results of the stability test, namely that in the organoleptic test there was no change or was stable, the pH test of our preparation experienced a decrease in pH, where the initial pH was 8.57 to 8.17, this could be caused by unstable temperature and interaction with oxygen (H2O) which can disrupt pH stability

The spreading power test after 7 days of storage experienced an increase, where the spreading power on the first day without load was 7.74 cm, with a load of 8.64, while on the 7th day it increased to 13.45 without load and with a load of 17.79 the spreading power increased. This can be caused by olive oil which tends to oxidize over time, especially if exposed to air and light, which can affect the stability of the physical properties and concentration of the preparation.

The adhesive power on the first day had an average of 00.42, while on the 7th day it increased to 00.82. This could be caused by olive oil which tends to oxidize over time, especially if exposed to air and light, which can affect the stability of the physical properties and concentration of the preparation. According to Kiralan M in 2013, this is because the monounsaturated fatty acids contained in olive oil are susceptible to oxidation, which can result in changes in aroma and a decrease in product quality. Therefore, it is necessary to handle and store it properly so that it remains in a stable condition (Arline Rahmadianti Kusumawardhani, 2013).

CONCLUSION

Observation of the results of evaluating the physical quality of the preparation includes organoleptic tests, homogeneity, pH, stickiness tests, spreadability tests and emulsion type. The results of this research indicate that there is an influence of differences in the concentration of stearic acid and triethanolamine in that F1 has a denser form than F2 and F3, after storage for 3 weeks F2 and F3 experienced a color change to light brown. This shows that the formulation has the best properties for body scrub cream preparations, is stable and meets the requirements based on organoleptic tests, homogeneity tests, pH tests in accordance with the standard facial skin pH in general, namely 4.5-7, while for the emulsion type test, and the stability test that was carried out on day 12 did not experience any changes or phase separation, namely F1 with a stearic acid concentration of 15% and triethanolamine 1%.

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