Formulation and Evaluation of a Cleansing Balm Stick Containing Grape Seed Oil as a Candidate Facial Cleanser

Vica Aspadiah[1*], Astrid Indalifiany[1], Rahmat Muliadi[1], Asniar Pascayantri[1], Elvania Dwiyanti Poea[1]
[1]Department of Pharmacy, Faculty of Pharmacy, Universitas Halu Oleo, Kendari, Indonesia

*Corresponding Author: vicaaspadiah@uho.ac.id

ABSTRACT

Cosmetic cleansers function to remove dirt and residual makeup from the skin surface. Cleansing balm is an oil-based cleansing formulation that works through the dissolution of lipophilic compounds on the skin. Grape seed oil (*Vitis vinifera* L.), which is rich in fatty acids, has the potential to enhance cleansing effectiveness and can therefore be formulated into a cleansing balm stick. This study aimed to evaluate the physical characteristics and cleansing efficacy of a cleansing balm stick containing grape seed oil. The formulations were prepared with varying concentrations of grape seed oil: 0% (F0), 10% (F1), 20% (F2), and 30% (F3). Evaluation of physical characteristics included organoleptic properties, homogeneity, pH, spreadability, and melting point. The cleansing efficacy test was conducted using the NIKKOL method and verified with an oil control film. The results showed that all formulations exhibited good physical characteristics, were homogeneous, and met the required standards for pH, spreadability, and melting point for topical preparations. Formula F2, containing 20% grape seed oil, demonstrated the most optimal cleansing effectiveness, as indicated by the absence of stains or oil residue after rinsing. Based on these findings, it can be concluded that cleansing balm sticks containing 10–30% grape seed oil possess good physical characteristics, with the optimal formulation at 20% concentration showing the best cleansing effectiveness.

Keywords: cleansing balm stick, cosmetic cleanser, grape seed oil, cleansing efficacy, NIKKOL method

INTRODUCTION

The skin is an organ that covers the entire surface of the body and functions as a barrier separating the body from the constantly changing external environment. As the organ most frequently exposed to environmental factors, the skin becomes the primary target of various external stressors, including air pollution and free radicals (Tyas et al., 2024). One of the most vulnerable areas to external factors and prone to various disorders is the facial skin.

Facial skin problems can be caused by several factors, one of which is the use of makeup that leaves residues, which, if not properly removed, may lead to dryness, lack of nutrients, acne, premature aging, and a dull appearance (Sarah et al., 2024). Based on data from the ZAP Beauty Index 2024, approximately 53.8% of Indonesian women report concerns about dull skin and acne (Markplus, 2024). Therefore, facial cleansing is an essential step in addressing these issues. Skin cleansing aims to remove unwanted substances such as dirt, contaminated oils, desquamated epidermal keratin cells, and residual cosmetics adhering to the skin surface (Qomah et al., 2024).

However, cleansing the face with water alone is often insufficient, as water is unable to dissolve oils and certain impurities. Thus, a facial cleanser capable of effectively removing dirt, excess sebum, and dead skin cells is required (Rohmani et al., 2022). Water-based cleansers also have limited ability to penetrate skin folds and pores, reducing their effectiveness in removing adhered impurities. In contrast, waterproof makeup can be effectively removed using oil-based cleansers, which dissolve makeup and other particles on the skin (Wibowo et al., 2024). Oil-based cleansers are considered superior to water-based cleansers because they can cleanse the skin without disrupting its natural lipid balance (Rachmadani et al., 2022). One such oil-based cleanser that has been developed is the cleansing balm.

Cleansing balm is typically formulated as a water-in-oil emulsion designed to gently remove makeup, sunscreen, and dirt particles from the skin without stripping its natural moisture (Tasyakuriah et al., 2024). This product provides moisturizing

properties, does not cause tightness, and is suitable for all skin types, especially dry and dehydrated skin (Draelos, 2024). According to Suryani and Cahyaningsih (2025), cleansing balm has become a popular choice due to its gentle cleansing ability and effectiveness in removing stubborn makeup. As an innovation, cleansing balm has been developed into a stick form, offering more practical and hygienic application.

Balm stick represents an innovative dosage form of traditional balm preparations. A common issue with conventional balms is the discomfort during application, as the hands used for application may come into contact with the product, potentially causing contamination (Wiyana et al., 2023). Balm sticks are generally packaged in twist-up tubes and can be directly applied to the skin, providing a gentle massaging effect during use (Vallimanalan et al., 2024). This stick packaging is considered more practical, elegant, and convenient for daily use (Wulandari et al., 2024).

One of the key components in cleansing balm stick formulations is oil. Currently, the use of natural oils in facial cleansing products is more recommended than synthetic oils due to their additional benefits and lower risk of causing allergic reactions or acne (Rachmadani et al., 2022). One natural oil with potential application in oil-based cleansers is grape seed oil.

Grape seed oil is a natural oil extracted from the seeds of grapes (*Vitis vinifera* L.) and is known to contain high levels of unsaturated fatty acids, particularly linoleic acid (58–78%), as well as oleic acid and alpha-linolenic acid. It also contains significant amounts of vitamin E, ranging from 1 to 53 mg per 100 g of oil, with α-tocopherol equivalents (148–358) higher than those found in soybean and olive oils (Aqillah et al., 2022). The linoleic acid content in grape seed oil can help regulate sebum production, thereby preventing pore clogging (Puspadewi et al., 2025). Studies have shown that topical application of linoleic acid can reduce follicular casts by up to 25% after one month. Follicular casts are small blockages formed from sebum and dead skin cells within hair follicles and are considered early indicators of microcomedone formation. This suggests that linoleic acid helps prevent and dissolve pore blockages while maintaining sebum balance (Letawe et al., 1998).

Previous studies by (Wibowo et al., 2024) demonstrated that oil-based cleansing balms can be formulated using natural oils such as castor oil and coconut oil, which are effective in cleansing facial skin. Meanwhile, (Permatananda et al., 2021) reported that grape seed oil can be successfully formulated into stable and safe lip balm preparations. The novelty of this study lies in the development of grape seed oil as the main component in a cleansing balm stick formulation, combining the benefits of natural oils with an oil-based cleansing system, while also introducing a more practical and hygienic stick packaging format. To ensure the quality and effectiveness of the formulated product, a series of evaluations must be conducted, including organoleptic testing, homogeneity, spreadability, pH, melting point, and cleansing efficacy (Wibowo et al., 2024).

Based on the above background, this study aims to formulate and evaluate a cleansing balm stick containing grape seed oil (*Vitis vinifera* L.) as a natural facial cleanser. The objective is to determine the physical characteristics of the formulation, including organoleptic properties, homogeneity, spreadability, pH, and melting point, as well as to evaluate its effectiveness as a facial cleanser through cleansing efficacy testing. It is expected that this study will produce an optimal cleansing balm stick formulation with desirable physical characteristics and effective cleansing performance.

METHODS

Materials

The equipment used in this study included an analytical balance (Fujitsu FS-AR®), porcelain dish (Haldenwanger®), 50 mL beaker (Pyrex®), 100 mL beaker (Pyrex®), 150 mL beaker (Pyrex®), magnetic stirrer (Thermo Scientific®), dropper pipette (Pyrex®), glass stirring rod (Pyrex®), petri dish (Pyrex®), spatula (Pyrex®),

heating mantle (Thermo Scientific®), thermometer (GEA®), test tubes (Pyrex®), hot plate (Thermo Scientific®), microscope slides, a semi-solid pH meter, and cleansing balm stick containers. The materials used in this study included grape seed oil (Alfa Kimia®), PEG 400 (Quadrant®), cetyl alcohol (Quadrant®), Cera flava (Quadrant®), shea butter (Quadrant®), BHT (Quadrant®), phenoxyethanol (Quadrant®), and lavender essential oil (Quadrant®).

Formulation of Cleansing Balm Stick

Cleansing balm stick formulations containing grape seed oil were prepared at concentrations of 10%, 20%, and 30%. Each formulation was produced with a total weight of 30 g. The formulation design is presented in Table 1.

Table 1. Formulation Design of Cleansing Balm Stick

Ingredients	Konsentrasi (% b/b)			
	F0	F1	F2	F3
Grapeseed oil	0	10	20	30
PEG 400	10	10	10	10
Cera Flava	10	10	10	10
Cetyl Alcohol	5	5	5	5
BHT	0.02	0.02	0.02	0.02
Phenoxyethanol	0.5	0.5	0.5	0.5
Lavender essential oil	0.5	0.5	0.5	0.5
Shea butter	ad 100	ad 100	ad 100	ad 100

The formulation process began with the preparation of all required equipment and materials. Each ingredient was weighed according to the predetermined concentrations for each formula (F0, F1, F2, and F3). Cera flava and cetyl alcohol were melted separately using a hot plate at approximately 70°C until completely liquefied, then combined and homogenized at a stirring speed of 300 rpm to form the first phase.

Separately, shea butter was melted using a double boiler method at approximately 45°C to form the second phase. Once the temperature of the first phase was reduced to around 45°C, the second phase was added and mixed at the same stirring speed until homogeneous. Subsequently, grape seed oil and PEG 400 were added and stirred at a constant speed of 300 rpm until evenly distributed. Phenoxyethanol, BHT, and lavender essential oil were then added sequentially, followed by continuous stirring until a homogeneous mixture was obtained. The final mixture was poured into stick containers and allowed to solidify at room temperature, resulting in a ready-to-use cleansing balm stick (Wibowo et al., 2024).

Evaluation of Physical Characteristics of Cleansing Balm Stick

Organoleptic

Organoleptic evaluation was conducted to observe differences among the four formulations, including texture, color, and odor of the cleansing balm stick (Wibowo et al., 2024).

Homogeneity

Approximately 0.5 g of the sample was placed on a glass slide and evenly spread, then covered with another slide. A good preparation should be homogeneous and free from agglomerated particles (Rachmadani et al., 2022).

pH

The pH was measured using a pH meter inserted into the cleansing balm sample. The acceptable pH range for cleansing balm is 4.5–6.5, in accordance with normal skin pH (Wibowo et al., 2024).

Spreadability

A total of 1 g of cleansing balm was placed on a petri dish, covered with another petri dish, and left for 1 minute before measuring the diameter. Additional loads of 50, 100, 200, and 250 g were then applied, and the resulting diameters were measured (Wibowo et al., 2024). Semisolid semistiff preparations typically exhibit a spreadability diameter of 3–5 cm (Midika et al., 2023).

Melting Point

The melting point was determined using the drop point method. Approximately 0.5 g of melted sample was placed on the tip of a thermometer pre-cooled to around 4°C. The sample was immersed in cold water (16°C) for 1 minute, then transferred into a test tube placed in a water bath. The time was recorded when the sample melted and dripped. The acceptable melting point range is 35–37°C, corresponding to skin temperature (Wibowo et al., 2024).

Effectiveness Test of Cleansing Balm Stick

The effectiveness test evaluated the cleansing ability of the formulation using the NIKKOL method. Lipstick was applied onto a petri dish (2

× 2 cm²), and liquid foundation onto another (4 × 3 cm²), then left for 5 minutes. Each sample was treated with 0.5 g of cleansing balm stick and gently massaged in circular motions 25 times using fingertips. Subsequently, 1 mL of water was added, followed by another 25 gentle massages. The petri dishes were then rinsed in clean water and immediately removed. Residual oil was assessed using oil control film. The appearance of oil spots on the film indicated the presence of residual oil after cleansing (Wibowo et al., 2024).

Data Analysis

Data from physical evaluations were analyzed descriptively and quantitatively. Descriptive analysis included organoleptic observations (color, odor, consistency) and homogeneity, while quantitative analysis was performed on pH, spreadability, and melting point data. The cleansing effectiveness test results using oil control film were also analyzed descriptively to assess the ability of the grape seed oil-based cleansing balm stick in cleaning facial skin. All data were compared with established criteria to evaluate the quality and stability of the formulation.

RESULTS AND DISCUSSION

Formulation of Cleansing Balm Stick

Cleansing balm is a facial cleansing product used to remove makeup, including waterproof makeup, as well as impurities adhering to the skin surface gently without stripping the skin's natural moisture. Physically, cleansing balm has a semi-solid consistency resembling a balm, typically white in color, with a characteristic oily odor, and a soft texture similar to petroleum jelly at room temperature. It melts upon contact with the skin, with a melting point ranging from 35–37°C (Hidayah et al., 2020).

In this study, the cleansing balm formulation utilized grape seed oil as the primary oil component, combined with additional excipients including cera flava, cetyl alcohol, shea butter, PEG 400, phenoxyethanol, BHT, and lavender essential oil. The preparation was formulated in stick form with four variations: F0 (without grape seed oil), F1 (10%), F2 (20%), and F3 (30%). The variation in grape seed oil concentration was intended to evaluate its effect on the physical characteristics of the formulation. The resulting cleansing balm stick preparations are shown in Figure 1.

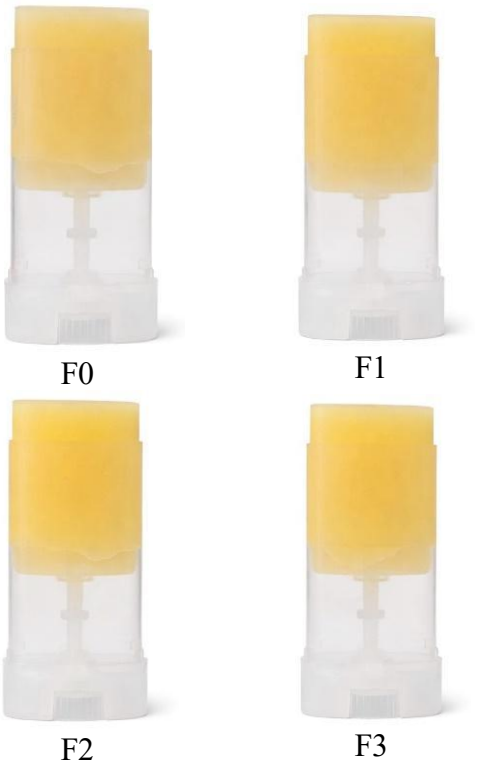

Figure 1. Cleansing Balm Stick Preparations; F0 = 0% grape seed oil; F1 = 10% grape seed oil; F2 = 20% grape seed oil; F3 = 30% grape seed oil

Evaluation of the physical characteristics of the grape seed oil cleansing balm stick was conducted through a series of tests to ensure its safety, stability, and suitability as a topical facial cleanser. These evaluations aimed to confirm that the formulation met established quality standards and included organoleptic, homogeneity, pH, spreadability, and melting point tests.

Organoleptic

The organoleptic test is a method used to evaluate the physical characteristics of cleansing balm formulations through direct observation of color, aroma, and texture using sensory perception (Pramesty et al., 2025). The results showed that all formulations (F0, F1, F2, and F3) exhibited relatively similar physical characteristics. All formulas presented a yellowish-white color with varying intensity, where F3 appeared the brightest and F0 the palest. This variation is influenced by the natural yellow color of grape seed oil, where higher concentrations result in a more intense color.

All formulations exhibited a consistent lavender aroma regardless of grape seed oil concentration. This aroma originated from the addition of

lavender essential oil, which functions as a calming fragrance. The absence of aroma differences indicates that grape seed oil is nearly odorless and does not affect the overall scent profile. This finding is consistent with literature stating that cold-pressed grape seed oil is pale yellow and nearly odorless (Bakhmet et al., 2019).

In terms of texture and consistency, all formulations demonstrated a semi-solid consistency at room temperature with a soft texture. This characteristic is influenced by the combination of cera flava, cetyl alcohol, shea butter, and grape seed oil. Cera flava and cetyl alcohol act as stiffening agents, forming a stable structure, while shea butter and grape seed oil function as emollients, providing smoothness and ease of application. No significant differences in texture were observed, indicating that grape seed oil up to 30% can be incorporated without causing excessive softening or melting at room temperature.

Homogeneity

The homogeneity test was conducted to ensure uniform distribution of all components within the formulation (Pramesty et al., 2025). The test was performed visually by observing the presence or absence of coarse particles when the sample was spread on a glass slide.

The results indicated that all formulations (F0, F1, F2, and F3) met the homogeneity requirements, as no coarse particles or agglomerates were observed. Homogeneity is a crucial parameter affecting physical stability, cleansing effectiveness, and user comfort. The homogeneity of the preparation is influenced by mixing conditions, including temperature and stirring speed (Zulfa & Mufrod, 2018). In this study, a stirring speed of 300 rpm and a double boiler method were applied. The double boiler technique ensures stable and uniform heating, allowing wax-based materials to melt completely without degradation ((Sultan et al., 2025). These conditions support optimal mixing and uniform particle distribution, consistent with previous findings ((Pramesty et al., 2025).

pH

The pH test was conducted to determine whether the formulation falls within the physiological pH range of facial skin (Rachmadani et al., 2022). The pH measurement was performed directly using a calibrated pH meter. The results of the pH testing are presented in Table 2.

Table 2. pH Test Results

Formula	pH
F0	5,31 ± 0,015
F1	5,46 ± 0,026
F2	5,58 ± 0,038
F3	5,75 ± 0,049

Based on the results shown in Table 2, all formulations (F0, F1, F2, and F3) exhibited pH values in the range of 5.29–5.78. This range falls within the physiological pH of the skin (4.5–6.5), indicating that the cleansing balm formulations are safe for facial application. An increasing trend in pH values was observed across the formulations.

This increase is influenced by the rising concentration of grape seed oil, where higher concentrations result in higher pH values. This is associated with the characteristics of grape seed oil, which has a relatively neutral to slightly basic pH (approximately 6–7). The use of BHT as an antioxidant also contributes to maintaining pH stability by preventing oxidation and hydrolysis processes that may degrade linolenic acid into shorter-chain fatty acids (Agusta et al., 2025). This is supported by the low standard deviation values (<0.05), indicating minimal variation between replicates and good pH stability.

Although an increase in pH was observed, all formulations remained within a safe range for topical application. This is consistent with previous studies stating that a pH around 5 is ideal for cosmetic products applied to the skin, as it aligns with the natural skin pH and minimizes the risk of irritation ((Tasyakuriah et al., 2024). Excessively acidic formulations may cause irritation, while overly alkaline formulations may lead to dryness and scaling.

Spreadability

The spreadability test was conducted to evaluate the softness of the cleansing balm mass, which affects the ease of application on the skin surface. Good spreadability indicates that the formulation can be evenly applied, thereby enhancing user comfort (Tasyakuriah et al., 2024).

In this study, the test was performed using varying loads of 50, 100, 200, and 250 g, and the spread diameter was measured using a ruler in

centimeters. The results are presented based on the 250 g load. The spreadability results at 250 g are shown in Table 3.

Table 3. Spreadability Test Results

Formula	Spreadability (cm)
F0	3,63 ± 0,058
F1	3,97 ± 0, 058
F2	4,27 ± 0, 058
F3	4,73 ± 0, 058

Based on the results in Table 3, all formulations (F0, F1, F2, and F3) showed varying spreadability values under a 250 g load. This load was selected because it provides a clearer and more stable representation of spreading behavior, simulating real application conditions on the skin.

The results showed an increasing trend in spreadability from F0 to F3. F0 (without grape seed oil) exhibited the lowest spreadability, while F3 (30% grape seed oil) showed the highest. This indicates that increasing grape seed oil concentration enhances spreadability. This effect is attributed to the liquid and lightweight nature of grape seed oil, which reduces the hardness of the formulation and produces a softer texture. This is consistent with literature stating that most vegetable and seed oils remain liquid at room temperature due to their high unsaturated fatty acid content, thereby improving the spreadability of semisolid formulations (Suherman et al., 2024).

On the other hand, solid base components such as shea butter contribute to the structural integrity and hardness of the formulation. Higher concentrations of shea butter result in a firmer texture, reducing spreadability, whereas lower concentrations produce a softer semisolid texture and increase spreadability (Ambari et al., 2020). All formulations exhibited spreadability values within the acceptable range of 3–5 cm, meeting the requirements for semisolid–semistiff cleansing balm preparations (Midika et al., 2023). Formulations F2 and F3 showed higher spreadability values, indicating better application performance and enhanced user comfort.

Melting Point

The melting point test was conducted to evaluate the physical stability of the cleansing balm stick during storage and its ability to melt upon contact with skin temperature, indicated by the temperature at which the formulation begins to melt and completely liquefy (Tasyakuriah et al., 2024). The results are presented in Table 4.

Table 4. Melting Point Test Results

Formula	Melting Point (˚C)
F0	37,0
F1	36,3
F2	36,0
F3	36,0

Based on Table 4, all formulations showed melting points within the range of 36–37°C, which is consistent with human skin temperature (Wibowo et al., 2024). F0 exhibited the highest melting point, while formulations containing grape seed oil showed a decrease in melting point with increasing oil concentration.

This difference is influenced by the composition of the formulation. F0 is dominated by solid base components such as shea butter, cera flava, and cetyl alcohol, resulting in a more rigid structure. In contrast, F1, F2, and F3 contain grape seed oil, which softens the formulation and lowers the melting point. This is consistent with literature stating that shea butter has a melting point of approximately 37.8°C and is solid at room temperature but melts at body temperature (Foni et al., 2021), while grape seed oil has a relatively low melting point of around 10°C ((Pramod et al., 2023).

Overall, all formulations demonstrated good physical stability and met the requirements for topical preparations. The melting point values are within a range close to skin temperature, allowing the cleansing balm stick to melt effectively upon application.

Effectiveness Test of Cleansing Balm Stick

The cleansing effectiveness test was conducted to evaluate the ability of the cleansing balm to remove makeup and impurities from the skin surface (Tasyakuriah et al., 2024). The test was performed using the NIKKOL method with the assistance of oil control film, where effectiveness was determined based on the presence or absence of oil spots after rinsing.

Two types of waterproof cosmetics were used: foundation (LT Pro®) and lipstick (Make Over®), which differ in texture and removal difficulty. Lipstick is more viscous and strongly adherent, while foundation has a lighter texture

and is easier to remove. The results are presented in Tables 5 and 6.

Table 5. Cleansing Effectiveness Against Lipstick

Formula	Result After Rinsing	Interpretation
F0	Stains and oily residue present	Low cleansing ability, difficult to rinse
F1	No stains, slightly oily	Good cleansing ability, easy to rinse
F2	No stains, no oil residue	Best cleansing ability, easy to rinse
F3	No stains, slightly oily	Good cleansing ability, reduced rinsability

Based on Table 5, F0 showed the lowest cleansing performance, indicated by the presence of stains and oily residue after rinsing. This is due to the absence of grape seed oil, limiting its ability to dissolve lipstick, which is dense and waterproof. F1 and F3 showed improved cleansing ability, although slight oil residues remained. F2 demonstrated the optimal result, with no stains or oil residues detected.

Table 6. Cleansing Effectiveness Against Foundation

Formula	Result After Rinsing	Interpretation
F0	No stains, oily residue present	Good cleansing ability, difficult to rinse
F1	No stains, slightly oily	Good cleansing ability, easy to rinse
F2	No stains, no oil residue	Best cleansing ability, easy to rinse
F3	No stains, slightly oily	Good cleansing ability, reduced rinsability

The cleansing performance observed among the formulations suggests that the effectiveness of the cleansing balm was determined not only by the amount of grape seed oil but also by the balance between the oil phase and the emulsification system. Grape seed oil is rich in linoleic acid and other unsaturated fatty acids that exhibit excellent affinity toward lipophilic substances, enabling efficient dissolution of waterproof makeup through the principle of "like dissolves like" (Sabir et al., 2012). Increasing the oil concentration generally enhances the solvent capacity of the formulation; however, beyond a certain level, additional oil may exceed the emulsification capacity of the surfactant system, resulting in incomplete oil removal during rinsing.

F1, containing 10% grape seed oil, showed satisfactory cleansing ability but left slight oily residues, indicating that the amount of oil was sufficient to dissolve makeup but still not optimal for complete removal of highly hydrophobic cosmetic ingredients. In contrast, F2 (20% grape seed oil) demonstrated the best overall performance, effectively removing both lipstick and foundation without leaving visible stains or oily residues after rinsing. This finding suggests that the ratio between grape seed oil and PEG 400 in F2 reached an optimal balance, allowing efficient solubilization of makeup while maintaining effective self-emulsification upon contact with water. During rinsing, PEG 400 reduces the interfacial tension between the oil phase and water, promoting the formation of fine oil-in-water emulsions that can be easily washed away. Fine emulsion droplets are more readily dispersed and removed than larger droplets, thereby minimizing residual oil on the skin (Chen et al., 2016; Eccleston, 2013).

Although F3 contained the highest concentration of grape seed oil (30%), its cleansing performance was not superior to that of F2 because the increased oil content likely exceeded the emulsifying capacity of PEG 400. As a result, a larger proportion of oil remained on the skin surface after rinsing, producing a slight oily residue despite excellent makeup dissolution. Similar observations have been reported for oil-based cleansers, where excessive oil loading without a proportional increase in emulsifier concentration reduces rinsability by producing larger oil droplets and less efficient self-emulsification (Draelos, 2018). Therefore, cleansing efficiency depends not only on the solvent capacity of the oil but also on the efficiency of the emulsification process during rinsing.

These findings indicate that F2 achieved the most appropriate balance between cleansing efficacy and rinsability. Rather than maximizing the oil concentration, the formulation optimized the interaction between grape seed oil and PEG 400, allowing efficient dissolution of waterproof makeup while ensuring rapid emulsification and complete removal with water. This balance is considered an essential characteristic of an effective cleansing balm, as excessive oil content

may improve solubilization but compromise user acceptability by leaving an undesirable greasy after-feel.

CONCLUSION

The conclusion of this study indicates that cleansing balm stick formulations containing grape seed oil at concentrations of 0% (F0), 10% (F1), 20% (F2), and 30% (F3) exhibited good physical characteristics. Based on the evaluation results, all formulations met the requirements for organoleptic properties, homogeneity, pH, spreadability, and melting point, and were proven effective in removing waterproof cosmetics as demonstrated by the NIKKOL method. The formulation containing 20% grape seed oil (F2) showed the most optimal cleansing effectiveness, as indicated by the absence of stains and oil residue after the rinsing process.

ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to the Faculty of Pharmacy, Halu Oleo University, for the support and facilities provided in conducting this research.

REFERENCES

Agusta, W., Luktesi, W. P., Santosa, K. M., Kholis, M. N., Herman, M. R. T., Nurrochman, A. F., Hartono, L. K., Kurniasari, I., & Alfa, M. N. (2025). Penambahan bht pada produk desiccated coconut medium grade subkultivar kelapa dalam watulimo. *Agrointek : Jurnal Teknologi Industri Pertanian*, *19*(2).

Ambari, Y., Hapsari, F. N. D., Ningsih, A. W., Nurrosyidah, I. H., & Sinaga, B. (2020). Studi Formulasi Sediaan Lip Balm Ekstrak Kayu Secang (Caesalpinia sappan L.) dengan Variasi Beeswax. *Journal of Islamic Pharmacy*, *5*(2).

Aqillah, Z., Yuniarsih, N., & Ridwanullah, D. (2022). Formulasi dan Evaluasi Stabilitas Fisik Serum Wajah Ekstrak Minyak Biji Anggur (Vitis vinifera L). *Jurnal Buana Farma*, *2*(1), 33–37.

Bakhmet, M. P., Ivanova, E. E., Kasianov, G. I., Kosenko, O. V, Magzumova, N. V, Nazarko, M. D., & Iaralieva, Z. A. (2019). Environmental and Technological Problems of Rational Use of Secondary Resources for Processing Grapes. *KnE Life Sciences*.

Chen, X., Fuchs, H., & Tadros, T. F. (2016). *Emulsion Formation and Stability*. Wiley Online Library.

Draelos, Z. D. (2018). The science behind skin care: Cleansers. *Journal of Cosmetic Dermatology*, *17*(1), 8–14.

Draelos, Z. D. (2024). *Cosmeceuticals E-Book: Procedures in Cosmetic Dermatology* (Fourth). Elsevier Health Sciences.

Eccleston, G. M. (2013). Emulsions and creams. *Aulton's Pharmaceutics. The Design and Manufacture of Medicines,* 470–472.

Foni, Anastasia, D. S., & Desnita, R. (2021). Potensi Penggunaan Shea Butter Dalam Produk Lip Care. *Jurnal Mahasiswa Farmasi Fakultas Kedokteran UNTAN*, *5*(1).

Hidayah, S. N. H., Aryani, R., & Darusman, F. (2020). Studi Literatur Mengenal Kosmetik Pembersih Wajah Cleansing Balm dan Perkembangannya. *Prosiding Farmasi*, *6*(2).

Letawe, C., Boone, M., & Piérard, G. E. (1998). Digital image analysis of the effect of topically applied linoleic acid on acne microcomedones. *Clinical and Experimental Dermatology*, *23*, 56–58.

Markplus. (2024). ZAP Beauty Index. *Zap Clinic*. Midika, L. S., Dewi, M. L., & Aryani, R. (2023). Formulasi Sediaan Cleansing Balm Mengandung Allantoin (Aluminum dihydroxy allantoinate) Sebagai Eksfoliator. *Bandung Conference Series: Pharmacy*, 477–482.

Permatananda, P. A. N. K., Udiyani, D. P. C., & Pandit, I. G. S. (2021). Lip Balm Formulation Based on Balinese Grape seed Oil (Vitis vinifera l. Var Alphonso Lavallee). *International Journal of Current Science Research and Review*, *04*(07), 633–639.

Pramesty, S. A., Hasriyani, & Sukoharjanti, B. T. (2025). Formulation and Physical Quality Testing of Cleansing Balm from Centella Asiatica (L .) URB . Extract with Castor Oil (Ricinus Communis L .) as a Makeup Remover. *Advances in Healthcare Research*, *3*(2), 466–480.

Pramod, M., Chikkodi, B., Pratiksha, M., Narute, D., Aishwarya, M., & Koli, S. (2023). Formulation and Evaluation of Anti-Aging Cream using Grapes Seed Extract Oil. *International Journal of Advanced Research*

in Science, Communication and Technology, *3*(9).

Puspadewi, R., Anggreani, W., & Faradilla, A. V. (2025). Aktivitas Antibakteri Minyak Biji Anggur terhadap Staphylococcus epidermidis dalam Sediaan Krim. *Jurnal Farmasi Indonesia*, *17*(1), 36–44.

Qomah, I., Rejeki, D. S., & Listina, O. (2024). Efektivitas Antibakteri Sediaan Susu Pembersih Ekstrak Ranting Tanaman Patah Tulang (Euphorbia tirucalli) terhadap Propionibacterium acne. *KUNIR: Jurnal Farmasi Indonesia*, *2*(1), 17–29.

Rachmadani, A. D., Nurlaila, S. R., & Harismah, K. (2022). Formulasi Dan Uji Stabilitas Sediaan Pembersih Wajah (Cleansing Oil) Berbahan Dasar Minyak Jarak (Ricinus communis). *Journal Farmasi Klinik Dan Sains*, *2*(1), 104–113.

Rohmani, S., Ningrum, S. K., Wardhani, W. D., Ermawati, D. E., & Kundarto, W. (2022). Pengaruh Variasi Konsentrasi Surfaktan Iselux Ultra Mild pada Formulasi Hydrating Facial Wash Potassium Azeloyl Diglycinate. *Jurnal Kefarmasian Indonesia*, *12*(1), 58–68.

Sabir, A., Unver, A., & Kara, Z. (2012). The fatty acid and tocopherol constituents of the seed oil extracted from 21 grape varieties (Vitis spp.). *Journal of the Science of Food and Agriculture*, *92*(9), 1982–1987.

Sarah, S., Budi, S., Darsono, P. V., & Noval. (2024). Formulasi Dan Uji Stabilitas Sediaan Cleansing Balm Ekstrak Biji Buah Alpukat (Persea americana Mill.). *Journal of Pharmaceutical Care and Sciences*, *5*(1), 40–46.

Suherman, Maliza, R., Syahbanu, F., Supardan, A. D., Rita, R. S., Arisanty, D., Minarsih, T., & Yerizel, E. (2024). Analisis Zat Gizi Pangan (Teori dan Praktik). In *Eureka Media Aksara*.

Sultan, S., Yadnya, M. S., Wiryajati, I. K., Adnyani, I. A. S., Citarsa, I. B. F., Satiawan, I. N. W., & Suksmadana, I. M. B. (2025). Program Residu Minyak Jelantah Sebagai Aroma Terapi. *Jurnal Pepadu*, *6*(2).

Tasyakuriah, S., Sapri, & Umar, R. N. (2024). Formulasi Sediaan Cleansing Balm Mengandung Ekstrak Terpurifikasi Kulit Bawang Merah (Allium cepa L.). *Prosiding Seminar SAFANA*, *1*(1), 52–58.

Tyas, S. C., Oktavia, A. W., Asyrofany, F. Z., Azzahra, D. D., Kanzaffa, F. A. T., Yuliani, S. S., Ramadhanti, K. L., Nurhaliza, S. E. I., Prameswari, A. N., Hafizha, S., Wardani, S. A. I., & Nugraheni, G. (2024). Profil Pengetahuan, Sikap, dan Perilaku mengenai Penggunaan Cleanser sebagai Upaya Pencegahan Acne Vulgaris. *Jurnal Farmasi Komunitas*, *11*(1), 8–15.

Vallimanalan, Safeera K, A., Athira V, K., Anika, K., Aswathy P, N., & Mol, F. (2024). Formulation And Evaluation of Facial Cleansing Stick. *International Journal of Creative Research Thoughts*, *12*(7), 766–771.

Wibowo, S. P. S., Zahra, A. A., & Sholih, M. G. (2024). Formulasi dan Evaluasi Sediaan Cleansing Balm Berbahan Dasar Minyak Jarak (Ricinus communis L.) dan Minyak Kelapa Murni (Cocos nucifera L.). *Jurnal Integrasi Kesehatan Dan Sains*, *6*(2), 126–133.

Wiyana, N., Budi, S., & Rohama. (2023). Formulasi Balm Stick Minyak Atsiri Cengkeh (Syzygium aromaticum) dan Uji Aktivitas Anti Radang dengan Metode Granuloma Pouch Method. *Jurnal Sains Medisina*, *1*(5), 240–245.

Wulandari, J., Fahrulsyah, Agasi, T. N., & Zahrotinufus J, D. A. (2024). Karakteristik Sediaan Balsem Stick dengan Variasi Formulasi Penambahan Minyak Daun Eucalyptus Globulus. *Jurnal Pengembangan Agroindustri Terapan*, *3*(1).

Zulfa, E., & Mufrod, M. (2018). Evaluasi Karakteristik Fisika-Kimia Sediaan Krim Dan Lotion Ekstrak Kulit Buah Nanas (Ananas comosus L.Merr). *JIFFK : Jurnal Ilmu Farmasi Dan Farmasi Klinik*, *15*(2).