

Optimization and Effectivity Test of Avocado Oil Nanoemulsion for Topical Use (Cambria, Size 16, Left alignment, maximum 20 Words)

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Affiliation must be written in the following order: department or faculty, university, city, province and country. University shall not be translated. The number written next to the author's name does not indicate the number of authors but indicates the affiliation. If all authors are from the same affiliation then the number does not need to be written. (Cambria, font 9, single space, left align)

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ABSTRACT: Abstract must be written in 1 paragraph with the following order: introduction, goals, method, analysis, result, discussion and conclusion. Maximum words written in the abstract section are 200-250. Abstract is written in Cambria, 10, single space and justified.

Keywords: avocado oil; effectivity test; nanoemulsion; optimization; topical use
maximum keywords are 5 separated by semicolon (;) all lowercase, based on alphabetical

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INTRODUCTION

Introduction must state the problem or the urgency of the research. This part must contain a gap analysis of the research. Introduction written in [Cambria, 11, single space and justified](#). All articles cited in the format of American Psychological Association (APA). Text example:

Skin damage happened due to skin aging, scars or wounds, photo-damage and lack of antioxidants. Skin aging is a component of the natural process of human aging, which becomes apparent and takes distinct paths in various organs, tissues, and cells over time ([Guerraiche, 2022; Moldovan et al., 2021; Shabrina & Khansa, 2022](#)). Although the aging indications of internal organs are not easily visible, the skin is the first and most noticeable indicator of the passage of time. Skin aging is a multifaceted biological phenomenon that is affected by a mix of internal variables (such as heredity, cellular metabolism, hormones, and metabolic processes) and external factors (such as prolonged exposure to UV light, pollution, ionizing radiation, chemicals, and toxins) ([Liu, 2022; Shabrina et al., 2022](#)). These elements collectively contribute to the gradual modifications in the structure and function of each layer of the skin, as well as changes in the look of the skin, particularly in areas exposed to the sun (Bissett, 2009). Unlike thin and atrophic intrinsically aged skin, premature photo aged skin is characterized by a thicker epidermis, mottled discoloration, deep wrinkles, laxity, dullness, and roughness. The sparsity and reduction in collagen content in photo aged skin may result in skin damage such as inflammation, scars and erythema ([Raymond & Marian, 2009](#)).

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METHODS

Authors must state the type of the research in this paragraph. Procedure of the research must follow books, regulation or Pharmacopeia. Research that includes animal or humans must attach ethical clearance. ([Written in Cambria, 11, Justified](#))

Distillation of Avocado Oil ([Sub topic written in Cambria, 11, Left, Bold](#))

The optimization process of the avocado oil nanoemulsion was carried out using Central Composite Design (CCD). There were 3 factors including oil, surfactant and cosurfactant. The responses were droplet size, zeta potential and polydispersity index

Formulation of Avocado Oil Nanoemulsion

Optimization of the formula ([Sub of the sub-topic written in Cambria, 11, Left, Italic](#))

The optimization process of the avocado oil nanoemulsion was carried out using Central Composite Design (CCD). There were 3 factors including oil, surfactant and cosurfactant. The responses were droplet size, zeta potential and polydispersity index. ([Cambria, 11, Justified](#))

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RESULT AND DISCUSSION

Authors must write the result and discussion of the research in this section (table 1). The results and discussion are written clearly by comparing the results of the study to previous studies or discussing the phenomena that occurred in the study. The results and discussion are written by NOT rewriting the working method. The results and discussion do not rewrite the data in table 1 or figure 1.

Table

The table must be written in a different sheet from the manuscript. Caption of the table is written above the table. Table written in Cambria, font 10, single space, left alignment

Table 1. The result of irritation test of avocado oil nanoemulsion (Caption written in Cambria, font 11, single space, left alignment, not capital each word)

Formula	Viscosity (cps)
F1	120.55 ± 0.55 ^{b,c}
F2	171.75 ± 0.65 ^{a,c}
F3	222.85 ± 0.75 ^{a,b}

*Mean±SD, n=3. SD: Standard deviation (Cambria, 10, left)

^a: significantly different to F1

^b: significantly different to F2

^c: significantly different to F3

Figure

Figure must be placed on a different sheet from the manuscript. Figure legends must be written below the figure with the font of Cambria, size 10, center alignment and single space. All of the figures should be in high definition (HD) or minimum of 300 dpi (300 pixel) with the size of 2 MB or below. If the figure is a column or line graphic, it must show the standard error or standard deviation. The minimum size of the figure is 6 cm x 7 cm. The note of the figure must be grouped along with the image. The label and figure legend should be clear if 1 figure displays more than 1 image. For example:

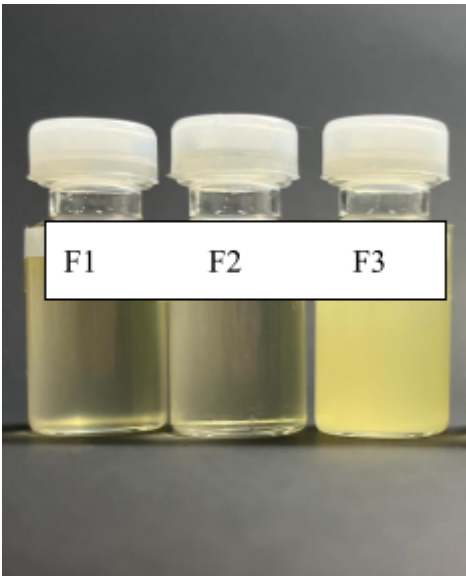


Figure 1. The result of the organoleptic test of avocado oil nanoemulsion

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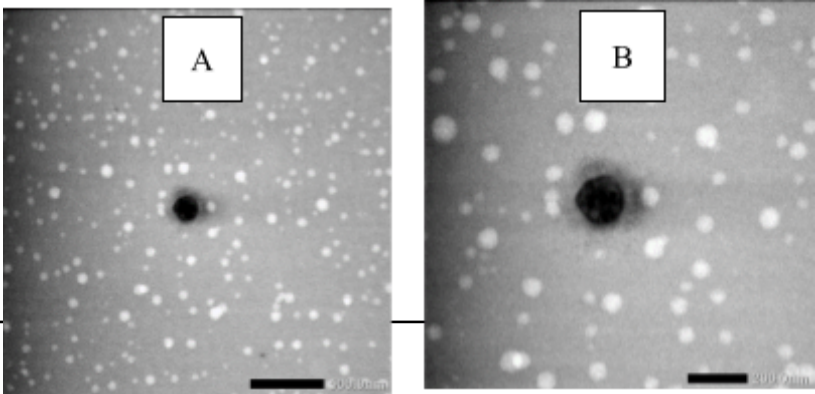


Figure 2. Microscopy images of avocado oil nanoemulsion with the droplet size of 500 nm (a) and 200 nm (b)

Avocado oil is also effective for sunscreen. Oil-based vehicles are superior at creating a consistent and durable layer of sunscreen on the skin, and their moisturizing characteristics shield the skin from the dehydrating impact of wind and sunlight (Ahmad & Ahsan, 2020). The presence of unsaturated fatty acids in avocado oil can aid in the reduction of erythema caused by extended exposure to UV-B radiation (Larijani et al., 2014).

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CONCLUSION

A central composite design was utilized to generate and optimize an avocado oil nanoemulsion, incorporating surfactant, cosurfactant and oil as independent variables, thereby enhancing the skin rejuvenation.

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ACKNOWLEDGMENT

The author may express gratitude to any person, organization, or agency that may have provided assistance or funding during the research.

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AUTHOR CONTRIBUTION

Author Initial: Contribution.

For example:

AS: Concepts or ideas; design; definition of intellectual content; literature search; experimental studies; data analysis; manuscript preparation.

MP: definition of intellectual content; literature search; experimental studies; data analysis.

DAKM: Manuscript editing; manuscript review.

AQA: Definition of intellectual content; literature search.

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ETHICS APPROVAL

The in vivo test had been approved by the ethics commission of Faculty of Medicine Universitas Wahid Hasyim with number of 019/FK-UWH/EC/V/2024.

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CONFLICT OF INTEREST (If any)

"None to declare" if there is no conflict of interest

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REFERENCES

The author can write the references in this section (Cambria, 10, justified, single space). Authors should cite and write the references using reference managers such as Mendeley or Zotero. References must follow the American Psychological Association (APA) style. Minimum references are 20 sources from the last 10 years.

Here are some references cited by Mendeley:

Ahmad, A., & Ahsan, H. (2020). Lipid-based formulations in cosmeceuticals and biopharmaceuticals. *Biomedical Dermatology*, 4(1).

<https://doi.org/10.1186/s41702-020-00062-9>

Bissett, D. L. (2009). Common cosmetics. *Clinics in Dermatology*, 27(5), 435–445.

<https://doi.org/10.1016/j.clindermatol.2009.05.006>

Ganceviciene, R., Liakou, A. I., Theodoridis, A., Makrantonaki, E., & Zouboulis, C. C. (2012). Skin

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BOOK

Single Author:

Shabrina, Ayu. (2023). *Cosmetology*. Universitas Wahid Hasyim.

Two or three authors:

Shabrina, Ayu. Dewi Andini Kunti Mulangsri and Malinda Prihantini. (2023). *Natural Cosmetics*. Universitas Wahid Hasyim.

More than 3 authors:

Shabrina, A., Hapsari, R.T., Yulianto, B., Prihantini, M. (2022). *Natural Cosmetics from Essential Oil*. Universitas Wahid Hasyim

Book from Institution:

Faculty of Pharmacy Universitas Wahid Hasyim. (2018). *Natural Dye Extraction from Several Indonesian Plants*. Universitas Wahid Hasyim

ARTICLES

Two or three authors:

Shabrina, A., & Khansa, I. S. M. (2022). Physical Stability of Sea Buckthorn Oil Nanoemulsion with Tween 80 Variations. *Indonesian Journal of Pharmaceutical Science and Technology, Supplement*(1), 14–21.

More than 3 authors:

Shabrina, A., Safitri, E. I., Fithria, R. F., Munir, M., & Sumantri, S. (2022). Chemical qualitative analysis and spf value stability of nutmeg seed oil in microemulsions with tween 80 and PEG 400 as surfactants and cosurfactants. *Pharmaciana*, 12(1), 106. <https://doi.org/10.12928/pharmaciana.v12i1.21997>

THESIS

Yulianto, Bagas. (2022). *Sunscreen Activity Test of Avocado Oil Nanoemulsion*. (Bachelor Thesis, Universitas Wahid Hasyim).
