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Utilization of Citronella Oil as an Anti-dandruff (Candida Albicans) Shampoo Formulation

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Abstract

Shampoo is a liquid that increases tension on the surface of the scalp so that it can clean dirt from the hair and scalp. Each shampoo should have its own formula to clean dirt from the scalp because each formula contains different ingredients. It is not uncommon to find shampoos that use natural ingredients in their formula. The natural ingredient used in this study is lemongrass oil. Lemongrass oil is one of Indonesia's commercial essential oils obtained through distillation. Lemongrass oil has many benefits for the hair and scalp. The purpose of this study was to determine how to make anti-dandruff shampoo using a lemongrass oil formula. The method used in this research is the experimental method. The subjects of this study were 10 students and 1 teacher of MTsN 1 Model Banda Aceh. Therefore, this shampoo is proven to strongly inhibit the growth of the *Candida albicans* fungus, also known as dandruff. In addition, the panelists also explained that using this shampoo felt comfortable because of its soft and foamy texture.

Keyword: Shampoo; Dandruff; Lemongrass oil; Natural materials

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Received 24 January 2024; Received in revised form 23 February 2024; Accepted 1 April 2024; Available online 04 May 2024

<https://doi.org/10.63924/jsid.v5i2.61>

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INTRODUCTION

Indonesia has two seasons: the dry season and the rainy season. In the dry season, the very hot weather naturally causes the body to sweat more. Sweat also comes out through the scalp layer, causing damp hair and dandruff.

Dandruff is one of the causes of loss of self-confidence that can affect comfort during activities. In Indonesia, hair problems are higher than in other countries due to the influence of the tropical climate, pollution, living habits, and the use of head coverings such as hijab that can affect hair problems.

The problem of dandruff in hair starts with the scalp. To overcome it, shampoo is the main solution. Shampoo is a cosmetic preparation used to clean hair, helping the hair and scalp to be clean, soft, easy to comb, and shiny. Regular shampoo can be used to clean the hair and scalp. The purpose of this shampoo is to wash the hair and clean the scalp. (Munidar, 2024; Paull, 2024; Rahmadani, 2024; Johan, 2024; Ibrahi, 2024).

The ingredients of shampoo include two main ingredients: main ingredients and additional ingredients. The main ingredients are the basic ingredients of shampoo, which often have the effect of producing foam and function as detergents (surfactants). Surfactants are key to hair cleansing because their molecular structure contains hydrophilic and lipophilic substances that can reduce the surface tension between water and dirt so that dirt is suspended in the water phase (Misbah, 2019; Zikrullah, 2023; Rudi, 2021; Shadiqin, 2021; Aida, 2020).

The use of alternative natural ingredients to improve and overcome scalp problems with shampoo that does not cause chemical side effects, including the addition of traditional ingredients obtained from the natural environment, is said to have the ability to overcome scalp dandruff, one of which is lemongrass oil. Citronella oil is used because it contains citronellal, which has antifungal activity against *Candida albicans* (Almawadah, 2019). Lemongrass, or *Cymbopogon citratus*, is a plant in the grass family that is used as a spice to add flavor to dishes. Lemongrass in English is called lemongrass. At first glance, lemongrass looks like chives.

Lemongrass essential oil is known for its skin-tightening effect, including on the skin around hair follicles. This can help the hair follicles attach to the hair, reducing hair loss throughout the day. In addition, lemongrass oil can also inhibit bacterial activity.

The reason the author uses lemongrass oil in making this anti-dandruff shampoo is because lemongrass oil contains essential oils that give a cool impression on the scalp so that dandruff will not grow again. The purpose of this research is to find out how to make anti-dandruff shampoo with a citronella oil formulation, and the benefit of this research is that it will serve as an additional reference for future authors.

METHOD

This The research methods to be used are quantitative and experimental. An experiment is a set of actions and observations that are carried out to check or disprove hypotheses or recognize causal relationships between symptoms. In this study, the cause of a symptom will be tested to find out if the cause affects the effect.

Tools and materials:

a. Tools

- Measuring cup

- Stirring rod
 - Drip pipette
 - Closed container
- b. Materials
- Shampoo base
 - Fragrant lemongrass oil
 - Fragrance

The method of making anti-dandruff shampoo with a citronella oil formulation is as follows: First, pour the shampoo base into a measuring cup until it reaches 20 ml. Then add 10 drops of citronella oil to the shampoo base that has been measured earlier and stir until homogeneous. After that, add 4 drops of fragrance to the mixture of shampoo base and lemongrass oil and stir again until homogeneous. When finished, transfer the shampoo into a container, and the anti-dandruff shampoo with a fragrant lemongrass oil formulation is ready to use. This anti-dandruff shampoo can be stored at room temperature for a short period of time because it uses natural ingredients.

Population and Sample

The population of this study will be tested on 1 teacher and 10 students. The sample of this study will be tested on 7th and 8th grade students of MTsN 1 Banda Aceh.

Data Collection Techniques and Tools

Data collection techniques and tools in this study are based on observation. Observation is an activity towards a process or object with the intention of feeling and then understanding the knowledge of a phenomenon based on previously known knowledge and ideas to obtain the information needed to continue a study. After that, researchers will also conduct organoleptic tests, and the results will be documented.

Data Analysis

To determine the quality of anti-dandruff shampoo with citronella oil formulation, organoleptic testing was conducted with respondents' assessments of the quality of color, aroma, texture, and comfort when used.

FINDING AND DISCUSSION

Shampoo with a lemongrass oil formulation serves to eliminate dandruff that grows on the hair. In this study, there are several elements that will be tested, such as color, aroma, texture, and comfort when used. There are 11 people who will be tested. The following is the percentage result of color on the antiketombe shampoo with the lemongrass oil formulation presented in the table below.

Table 1. Color organoleptic tests

COLOR			
Answer	Number of answers	Answer score	Percentage
SS	10	30	100%
S	0	0	0
TS	0	0	0

Based on the table above, it can be explained that the color of lemongrass oil shampoo is very much liked and has a percentage of SS = 100%. Furthermore, the percentage results of aroma in lemongrass oil shampoo are presented in the table below.

Table 2. Aroma organoleptic test

AROMA			
Answer	Number of answer	Answer score	Percentage
SS	10	30	100%
S	0	0	0
TS	0	0	0

Based on the table above, it can be explained that the aroma of lemongrass oil shampoo is much liked and has a percentage of SS = 100%. Furthermore, the percentage results of texture on lemongrass oil shampoo are presented in the table below.

Table 3. Texture organoleptic test

TEXTURE			
Answer	Number of answer	Answer score	Percentage
SS	10	30	100%
S	0	0	0
TS	0	0	0

Based on the table above, it can be explained that the texture of lemongrass oil shampoo is much liked and has a percentage of SS = 100%. And finally, the percentage results of comfort when used on lemongrass oil shampoo are presented in the table below.

Table 4. Organoleptic test for comfort of use

COMFORTABLE FEEL WHEN USED			
Answer	Number of answer	Answer score	Percentage
SS	10	30	100%
S	0	0	0
TS	0	0	0

Based on the table above, it can be explained that the sense of comfort when used in lemongrass oil shampoo is much liked and has a percentage of SS = 100%.

CONCLUSION

This anti-dandruff shampoo contains natural ingredients specially formulated for dandruff hair, namely fragrant lemongrass oil. If you often use anti-dandruff shampoo with this lemongrass oil formulation, then your dandruff hair will be clean and will not grow again. This shampoo has a pale white color because the reaction of the shampoo base when mixed with lemongrass oil changes from yellow to pale white. The texture of this shampoo is thick and foamy. The texture of the base shampoo will change when mixed with lemongrass oil; the more lemongrass oil content in it, the thicker the texture of this shampoo. The aroma of this shampoo is very neutral because the researcher did not use a large amount of fragrance. And not a few panelists

said that they really liked this shampoo with lemongrass oil formulation because there was a sense of comfort when used. Shampoo with a lemongrass oil formulation is proven effective in inhibiting the growth of dandruff on the scalp and making hair healthier.

BIBLIOGRAPHY

- Aida, N., Mauliyana, S., & Daud, M. (2020). The Effect of Guided Discovery Models on Students' Understanding of Concepts on Straight Motion Material. *Journal of Society Innovation and Development (JSID)*, 1(2), 001-423.
- Albicans Ekstrak Daun Gelinggang (*Casia alata* L.) Dibandingkan Dengan Sediaan Daun Sirih Yang Beredar Di Pasaran Secara In Vitro. *Jurnal Kimia Riset*, 108-115.
- Alioes, Y., Kartika, A., Zain, E. A., & Azzura, V. (2018). Uji Potensi Anti Jamur Candida
- Almawadah. (2019). *Pengaruh Konsentrasi Minyak Sereh Wangi (Cymbopogon nardus (L.) Rendle) terhadap Kualitas Sampo dan Uji Aktivitas Antijamur Candida albicans*. Repository Universitas Jember, 1-68.
- Arianto, A., Sitorus, P., & Ma'rufah, R. (2018). Formulasi Dan Evaluasi Aktifitas Antijamur Gel Sampo Anti ketombe Minyak Sereh Dapur. *Talenta Conference Series*, 7-13.
- Frawita, H., & Jufri, M. (2014). *Formulasi Dan Uji Stabilisas Sampo Mengandung Minyak Sereh Wangi (Cymbopogon winterianus J)*. Fakultas Farmasi Universitas indonesia, 1-60.
- Ibrahi, A. (2024). The Teumatok Culture in Aceh Singkil. *JOURNAL OF ACEH STUDIES (JOAS)*, 1(1), 1-8.
- Johan, D. (2024). The Keuneunong Dating and Acehnese Society. *JOURNAL OF ACEH STUDIES (JOAS)*, 1(1), 21-30.
- Ma'rufah, & Rodiah. (2017). *Formulasi Gel Sampo Antiketombe dari Minyak Atsiri Sereh Dapur (Cymbopogon citratus) Terhadap Jamur Penyebab Ketombe (Pityrosporum ovale)*. Repositori Institusi Universitas Sumatra Utara, 1-2.
- Misbah, T. L. (2019). Intercultural Communication: Acculturation, Assimilation and Problems. *Journal of Society Innovation and Development (JSID)*, 1(1), 16-20.
- Molanda, T. C., Yamlean, P. V., & Citraningtyas, G. (2017). Formulasi Sediaan Sampo Antiketombe Ekstrak Daun Pacar Air (*Impatiens balsamina* L.) Dan Uji Aktivitasnya Terhadap Jamur Candida albicans Atcc 10231 Secara In Vitro. *Jurnal Ilmiah Farmasi*, 97-109.
- Munidar, F. (2024). The Acehese Literature and Social Behavior. *JOURNAL OF ACEH STUDIES (JOAS)*, 1(1), 31-40.

- Nurhikma, E., Antari, D., & Tee, S. A. (2018). Formulasi Shampo Antiketombe (Brissica oleracea Var. Capitata L.) Kombinasi Ekstrak Daun Pandan Wangi (Pandanus amaryllifolius Roxb). *Jurnal Mandala Pharmacon Indonesia*, 61-27.
- Nuryanti, Pratiwi, H., Sunarto, W., RU, V. V., & S, N. K. (2017). Formulasi Sediaan Sampo Gel Minyak Serai Wangi (Citronella oil) Sebagai Antiketombe. *Prosiding Semnas LPPM Unsoed*, 1-2.
- Pamudji, J. S., Wibowo, M. S., & Angelia. (2014). Formulasi Shampk Anti Ketombe Yang Mengandung Tea Tree Oil Dan Pengujian Aktivitas Sediaan Terhadap Malassezia furfur. *Acta Pharmaceutica Indonesia*, 7-14.
- Paull, J. (2024). The Impact of Coffee Shops on Aceh's Economic Sustainability. *JOURNAL OF ACEH STUDIES (JOAS)*, 1(1), 41-50.
- Rahmadani, A. (2024). The Writing Culture of Scholars of The Aceh kingdom. *JOURNAL OF ACEH STUDIES (JOAS)*, 1(1), 9-20.
- Rudi, D. A., Wijaya, T. S. I., & Murdani, T. (2021). Socio-Economic Correlation of Scavenger Community in Religious Life. *Journal of Society Innovation and Development (JSID)*, 3(1), 16-20.
- Shadiqin, S. I., & Th, H. A. (2021). Ngengkun Method for Children of Farming Families in Gayo Lues Culture. *Journal of Society Innovation and Development (JSID)*, 3(1), 1-5.
- Surani, F., & Putriana, N. A. (2022). Evaluasi Berbagai Sediaan Shampo Herbal Antiketomba Dan Antikutu: Review Artikel. *Farmaka*, 218-232.
- Zikrullah, M. (2023). GIS Implementation to Create a Map for Waste Container Sites in Banda Aceh, Indonesia. *Journal of Society Innovation and Development (JSID)*, 4(2), 0011-00144.