

Anadara Skin Ointment

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Abstract. Lime from *Anadara spp.* (Arc shells) Together with the decoction of *Cassia alata* (Ringworm Bush), *Psidium guajava* (Guava), *Gliricidia sepium* (Mother of Cacao), *Moringa oleifera* (Moringa), *Tinospora rumphii* (Heavenly elixir) and *Tabernaemontana pandacagiu* (Windmill bush) were utilized in the preparation of skin ointment. It was mixed with *Virgin Coconut Oil* (VCO). The finished product was compared with commercially available ones (fungal, viral and bacterial) regarding effectivity, quality (viscosity, density, and storage stability), and general consumer preference. Data analysis (One-Way ANOVA – at 0.05 level of significance) showed that the mean preference scores for the four ointments are equal. No significant distinction can be observed with regards to the effectiveness of good skin ointment. Density measurements among the treatments were also similar (One-way ANOVA – at 0.05 level of significance). Also, all procedures passed the viscosity test. Anadara skin ointment was also able to stand a storage period of 21 days without observable physical or chemical change. This study, therefore, shows that Anadara ointment is the same as the commercially available ones. The difference is primarily on the use of recycling materials such as lime from animal shells and leaves of local plants.

I. Introduction

In today's very modern lifestyle, everything seems to be very available at our fingertips. What we want is always an instant access to all. With the way we live and eat we became very prone to diseases affecting our health. With the lower immune system of our body, we became sick. And one of the many issues is our vulnerability to skin infections.

In the locality of Concepcion, Iloilo, located on the north-eastern part of Panay Island and the Visayan sea, (Latoza, Jigger S. (2009), where 11 island- barangays of 25, have a lot of cases that are related to skin problems. This type of infections usually does not require the help of the experts since simple home remedies can be applied such home-made skin-ointment[1].

Many different useful indigenous herbs can be used in the ointment and with the use of recycled materials with the same quality as those sold by the pharmacist (commercial) at a significantly low cost. The essential ingredients can also be varied together with other additives. Just as about any material can be recycled, Arc shells can be utilized in the preparation of skin ointment. Different kind of herbs has an anti-viral, bacterial and fungal effect. Thus, this herbal skin ointment is very easy to prepare, and most especially they don't contain any of those harmful chemicals one would typically find in the store-bought creams and lotions. And the use of Anadara shells at the same time minimizes pollution since they are being recycled and not thrown away[2].

II. Literature Review

Our ancestors have used herbs as a therapy for skin disorder. Specific herbs are being used, but most of the time the available locality ones are preferred. They are free from any side effects and also practical and less effective.

The following local plants are used to cure skin infections: (1) Ringworm bush (Acapulco) contain chrysophanic acid, a fungicide that is used to treat fungal infections, like ringworms, scabies, and eczema; (2) Psidium Guajava (Guava) is used to cure dermatophyte. Fungi, anti-viral and anti-bacterial.; (3) Moringa Oleifera (malunggay) (Horseradish) is used to cure inflammations, heals the ulcer and has an anti-inflammatory potency.; (4) Tinospora Rumphii is a cure for scabies and wounds; (5) Tabernaemontana Pandacahui (Pandacahui is said to be an effective treatment for swellings, bruises, and injuries, and ringworms; (6) Virgin Coconut Oil (VCO) is good for skin acne, dry skin, eczema, psoriasis, dermatitis and other skin disorders. It is also believed to have antibacterial and anti-fungal properties[3].

Ancient to this, the exact formula for each brand of skin ointment is proprietary, most skin ointments contain the same essential ingredient. These ointments are used to treat skin infection. However, different skin infections need to be explicitly addressed by a commercial skin ointment (disease can be fungal or microbial)[4].

On the other hand, mollusks can be used as a binding agent. They have a hard calcareous skeleton or shell. This shell, secreted by sheet or tissue called the mantle, is complicated in mollusks, being made up of calcium carbonate (CaCO_3) and other minerals in an organic matrix produced in layer by the coat at the shell and under it. When "burned" or calcined (raised to a high temperature), it yields lime. This, together with other polishing agents such as dicalcium phosphate, calcium pyrophosphate, and insoluble sodium metaphosphate are commonly used as abrasive in commercial toothpaste (Microsoft Encarta Encyclopedia 99, 2000) [5].

III. Objectives

This study aimed to utilize Anadara (Arc Shells), in the preparation of skin ointment. Specifically, it sought to:

- a. extract lime from Arc shells and use it as a binding agent for herbal skin ointment.
- b. Subject the finished product to a preference test to assess consumer acceptability.
- c. Compare the finished product with the commercially available ones namely, tetracycline, Sulphur, and Benzoic acid ointment regarding quality and its effectiveness[6].

IV. Methodology

A. Extraction

Extraction of Lime from Arc Shells

Generous quantities of Arc shells were burned in a mini furnace until a significant amount of a white powdery substance (lime) was produced. The process was then repeated thrice to ensure a high degree of purity. The lime was then kept in storage for use as an ingredient in the preparation of skin ointment.

Extraction of Juices from Herbs

Each kind of herbs was put in a blender and squeezed. The process was repeated thrice to ensure a high degree of purity. They are all mixed in equal amount (by mass) and kept in a storage container for use as an ingredient in the preparation of skin ointment[7].

B. Skin Ointment Preparation

Materials: 1) 30% herbal decoction; 2) 50% calcium oxide; 3) 20% virgin coconut oil (VCO);
4) clean beaker

The ingredients were thoroughly mixed in a clean beaker and stirred well forming a paste. The product was then transferred into a clean container for subsequent testing and analysis.

C. Experiment Proper

The finished product now called Anadara Skin Ointment was compared to commercially available ones (tetracycline, sulphur, and Benzoic Acid) in terms of effectiveness, quality (viscosity, density, and storage stability), and general consumer preference for samples of skin ointment (3 commercial lotions and Anadara) were evaluated for choice by a 10 member panel. The treatments were simultaneously randomly applied to the panelists to minimize order effects. A hedonic scale ranging from 1- "dislike extremely" to 7- "like extremely" was used for the evaluation. Density comparison was made using the analytical balance. Viscosity was evaluated by passing the skin ointments in a 10ml syringe (needles removed) to determine the degree of aggregation or sticking among the

constituent particles as they move out of the opening. Storage stability was evaluated after exposure to high and low-temperature conditions for a given period (2 days). The fact that the commercial skin ointments contain more effective ingredients is accepted, thus the relative effectivity of Anadara Skin Ointment was analyzed through the kind and nature of its constituents[8]

D. Data Analysis

Mean was used to determine the preference to assess consumer acceptability. Also, One-Way Analysis of Variance at 0.05 level of significance was used to determine significant differences between treatment means[9].

V. Results and Discussion

Table 1 shows the preference scores for the four brands of skin ointment. Tetracycline has the highest mean preference score of 5.80. Anadara follows with a mean preference score of 5.70, while sulfur has a preference score of 5.60. Benzoic Acid has the least mean preference score of 5.10.

Table 1. Preference Scores for the Four Brands of Skin Ointment

Treatment	Standard Deviation	Average
Tetracycline	0.40	5.80
Sulfur	0.27	5.60
Benzoic Acid	0.54	5.10
Anadara	0.23	5.70

Note: Scale: 7- remarkably like, 1- immensely dislike

However, One-Way Analysis of Variance in table 2 showed no significant differences between treatment means, $F(3, 36)=2.68$, $p=0.62$. This indicates that the treatment means a preference of the four brands of skin ointment is comparable.

Table 2. One-way Analysis of Variance for Treatment Means

Source of Variation	SS	df	MS	F	p-value
Between-Group	2.9	3	0.966667	2.67923	0.616184
Within Group	13	36	0.361111		
Total	15.9	39			

Note: p-value>0.05, Not Significant

Also, qualitative test through direct observation for viscosity shows no significant differences between the four skin ointments retained a relative longer column as they were squeezed out of the tube.

VI. Conclusion

Based on the findings of the study, *Anadara lime* being the second choice as a skin ointment preference can be utilized as a binding agent and at the same time a dehydrating agent for skin ointment.

VII. Recommendation

Further study for other uses of *Anadara lime* aside from skin ointment is recommended. Also, interested researchers in the field look into the other factors such as the effectiveness of *Anadara lime* as a skin ointment and what specific skin disorders this ointment can cure.

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