

Understanding of Hydrating Skin: Development of a Body Wash Serum Enriched with Moringa Oil

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ABSTRACT

Moringa oleifera Lam. is known as drumstick or horseradish and it is a perennial tree that belongs to the Moringaceae family. The demand for natural and sustainable personal care products has led to increased interest in plant-based ingredients with potential benefits for skin health. Moringa oil is rich in antioxidants and essential fatty acids, has been shown to have anti-inflammatory, antimicrobial, and moisturizing properties, making it an attractive ingredient for skin care products. The formulation consisted of Moringa seed oil, castor oil, avocado oil, and vanilla essential oil, blended with a surfactant system derived from natural sources and a sodium lauryl ether sulphate. The study shows improvements in skin hydration, elasticity, and firmness, reduction in skin irritation and dryness. This study suggests that the formulated body wash serum enriched with Moringa oil is a safe and effective natural and sustainable alternative to other body wash products. This contributes to the development of natural and sustainable personal care products that promote skin health and well-being such as hydrating, soothing, healing, moisturising and has an anti-aging effect while also cleansing the skin thoroughly. The main objective of this, is to bring down the maintenance of the face to the whole body.

Keywords: Moringa oil, body wash serum, natural and sustainable, skin care, skin hydration, skin elasticity, skin firmness.

INTRODUCTION

Maintaining optimal skin hydration is crucial for overall skin health and appearance. The stratum corneum the outermost layer of the epidermis acts as a barrier preventing excessive water loss and protecting the underlying tissues. However daily cleansing practices while essential for hygiene can disrupt this outer layer leading to dryness, irritation, and damage the skin. Traditional body washes often rely on surfactants while effective at removing dirt and oil. This study investigates the efficacy of body wash serums as a means of enhancing skin hydration during the cleansing process. By incorporating humectants, emollients, and occlusive agents within a mild surfactant system, these formulations aim to keep the skin's natural moisture barrier. This study delves into the formulation and characterization of body wash serums, exploring their ability to improve skin hydration level as to enhance the skin and provide an exceptional experience compared to other body washes. However exposure to harsh environmental conditions, poor skin care practices and the use of synthetic personal care products can affect the skin health leading to dryness, irritation, and other skin-related issues. Conventional body

wash products often contain harsh surfactants, artificial fragrances, and dyes that can affect the skin leading to dryness and irritation. As a result the formulation of these product can have negative environmental impacts. This study focuses on the development of a hydrating body wash serum utilizing the properties of Moringa oil. This body wash serum provides hydration, anti-aging, anti inflammatory, moisturizing, body acne treatment, protects the skin from environment damage mostly caused by UV-rays, scar reduction, soothing and healing.

Understanding Skin Hydration

Maintaining skin hydration is crucial for its health and appearance. The stratum corneum plays a vital role in regulating moisture loss. Factors such as **environmental conditions, age, and certain skin conditions** can compromise this barrier function, leading to dryness and discomfort. Humectants like those found in Moringa oil, draw moisture from the environment to the skin while emollients help to soften and smooth the skin by preventing water loss .

CHEMICAL COMPOSITION OF MORINGA

Moringa oleifera is known for its remarkable nutritional and medicinal properties. Furthermore, Moringa is an abundant source of essential vitamins and minerals, such as potassium, calcium, iron, magnesium, zinc, phosphorus, and manganese, which play a huge roles in maintaining optimal **physiological functions**. The plant consist of all essential amino acids that are vital for **human health**. In addition Moringa contains a wide range of phytochemicals, including flavonoids, phenolic acids, glucosinolates, and isothiocyanates, which contribute to its **antioxidant, anti-inflammatory, and other beneficial properties**.

MATERIALS AND METHODS

In this section, we will discuss more about the materials and processes used in the development of a hydrating body wash serum which is specifically developed to address the needs of those with dry and flaky skin, it is also good for its deep cleansing effect . The main goal of this study was to develop an effective body wash serum enriched with moringa oil as it is more advantageous to our skin compared to the basic body washes. To achieve this, a systematic approach was followed, including the selection and procurement of necessary materials and the formulation of a body wash serum. Additionally, the study involves conducting experiments to assess the body wash's effectiveness in providing hydration and moisturization on the skin. The active in ingredient (moringa oil) is purchased from Ayurveda store. The description of the raw material used in the study is discussed below.

Methodology of Moringa Oil Extraction

Moringa oil is primarily extracted from the seeds of the Moringa oleifera.

Cold Pressing

Process: This method is known to producing high-quality of Moringa oil. It involves mechanically pressing Moringa seeds at low temperatures (typically below 49°C or 120°F).

Steps:

- Seed Preparation: Moringa seeds are cleaned, shelled (if necessary), and sometimes slightly crushed to enhance oil release.
- Pressing: The prepared seeds are fed into a cold press machine, which applies high pressure to extract the oil.
- Filtration: The extracted oil is then filtered to remove any solid particles or impurities.

- Storage: The filtered oil is stored in dark glass bottles to prevent oxidation and maintain its quality.



Fig 1 moringa oil

Preparation:

Formulation of a body wash serum

SR. No	ingredients	Role of ingredients	Quantity Percentage%
1	Sorbitol	Humactant	4-5%
2	Glycerine	Humactant	7-7.5%
3	Carbopol	Thickening	1-1.5%
4	Aqua	Solvent,hydration	40-42.8%
5	Sodium Benzoate	preservative	Q.s
6	Citric acid	Ph adjuster	Q.s
7	Castor oil	Skin soothing	4-5%
8	Avacado oil/coconut oil	nourishing , moisturization and hydrating	Q.s
9	Vanilla essential oil	Aroma and antioxidant	4-5%
10	Moringa oil(active)	active	11-12.5%
11	Cocodiethanolamide	Surfactant	9-10%
12	Sodium lauryl ether sulphate	Surfactant (foaming agent)	8-10%
13	Cocamidopropyle Betaine	surfactant	14-15%

Table 1 formulation

PROCEDURE

1. Weigh all ingredients accurately.
2. In a clean beaker, add warm water and soak carbopol, let it swell for about an hour.
3. In another clean beaker, add all oily phases which is moringa oil, castor oil, avocado oil and vanilla essential oil then heat on an hot plate
4. Take another beaker and add water phase, preservative, and the PH adjuster (water, sorbitol, glycerine, sodium benzoate, citric acid) and heat up to 75 degrees.
5. After heating, mix water phase to the carbopol and stir with the help of a stirrer machine.
6. Slowly add the oily phase on it and continue stirring.
7. Once it has completely combined, add all the surfactants and stir gently with a glass-rod to avoid lathering.
8. Lastly transfer the prepared product to a suitable container.



Fig 2 weighing all ingredients



Fig 3 heating



Fig 4 stiring



Fig 5 incorporating the surfactants



Fig 5 finished product

Application for use:

Best for use twice a day for effectiveness and outstanding results.

It is suitable for all skin types and best for people from the age of 12 and above

CONCLUSION

The study demonstrated that Moringa oil when incorporated into a body wash serum, contributes to skin

hydration, moisturization, soothing, healing and some skin issues . The formulation is combined with other beneficial ingredients, such as humectant, emollients,soothing and nourishing agents, creating an absolute effect that enhanced the serum's hydrating capabilities. Furthermore, the inclusion of vanilla essential oil provided additional benefits, such as antioxidant properties, soothing effects and aromatic benefits.This study highlights the potential of Moringa oil as a valuable ingredient in hydrating body wash serums. As a result, this study successfully formulated a hydrating body wash serum demonstrating its potential to provide effective cleansing and proper hydration.

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