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Nature's Remedy for Radiant Skin: Investigating the Synergistic Effects of Moringa, Doob Grass and Curry Leaves on Acne and Skin Revitalization

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ABSTRACT

This research investigates the dietary and therapeutic advantages of Moringa (drumstick leaves), Cynodon dactylon (doob grass), and Murraya koenigii (curry leaves). Moringa leaves are abundant in vital nutrients, antioxidants, vitamin C, and beta-carotene, which enhance health and help prevent diseases. Cynodon dactylon is advantageous for skin health, addressing issues like acne and wounds, while also displaying antibacterial and antiviral qualities. Curry leaves have potent anti-bacterial and anti-inflammatory properties, rendering them useful for treating skin infections and offering antioxidant advantages. Collectively, these plants play a crucial role in health and wellness.

Keywords: Moringa, Doob Grass, Curry leaves, acne, skin revitalization, herbal remedies

Introduction

Moringa oleifera

Moringa or drumstick leaves are rich in nutrients and plentiful inside the crucial components required to sell properly fitness and prevent sicknesses. These leaves have carved out their position in Indian cooking in numerous methods because of their adaptability. Most frequently, drumstick leaves are sautéed and combined with different vegetables to improve the nutritional value of meals. Additionally, the moringa leaves can be included into a beverage because of the extraordinary blessings and dietary content of moringa leaves juice. There is a great concentration of antioxidants together with beta-carotene determined in MO leaves, which might be applied for patients laid low with irritation, which include asthma, cardiovascular disease, and most cancers. Antioxidants fight the unfastened radicals generated in the frame. A recent study conducted on youngsters indicated that MO leaves would possibly function a crucial source of diet C, which combats quite a few ailments, which include colds and flu; diet A, which provides safety towards eye diseases, skin situations, heart problems, diarrhoea, and several different ailments.

Kingdom	Plantae	
Subkingdom	Tracheobionta	
Superdivision	Supermatophyta	
Division	Magnoliophyta	
Class	Magnoliopsida	
Subclass	Dilleniidae	
Family	Moringaceae	
Genus	Moringa	
Species	M. oleifera	
Binomial name	Moringa oleifera Lam.	

Table no:1 Taxonomic classification of moringa oleifera



Fig.no: 1

Anti-Aging Properties

• Activity: Moringa is frequently protected in anti-growing older skin care formulations because of its increased antioxidant tiers. **Benefits:**

- Aids in preventing oxidative stress, which results in early getting older.
- Encourages collagen synthesis due to its Vitamin A and C content material, enhancing skin flexibility.

Acne Treatment

• Activity: Moringa's antibacterial and anti-inflammatory characteristics render it a likely answer for zits-susceptible pores and skin.

Benefits:

- May assist in diminishing zits-inducing microorganism on the pores and skin.
- Lowers inflammation and redness connected to acne.

Cleansing and Detoxifying

• Activity: Moringa is now and again employed in facial cleansers or exfoliants to purify the pores and skin.

Benefits:

- Eliminates impurities and surplus oil from the skin.
- Aids in clearing clogged pores, fostering clearer skin.

Cynodon dactylon

Cynodon dactylon, additionally referred to as Bermuda Grass or doob grass. This plant species is not unusual worldwide. It is used for decenttemperature conditions as well as skin issues. Help maintain the pores of the pores and skin free of sweat, dirt, and microorganism by retaining them clean. All matters considered, C. Dactylon used to enables with pores and skin problems such pimples, pimples, hyperpigmentation, oily pores and skin, open pores, and so forth.

Characterized by using wiry, thin stems (culms) that root at the nodes to create dense tufts, Cynodon dactylon spreads perennially. The leaves size is 2-10 cm x 1. 25-three mm and are narrow, linear, or lanceolate, smooth, sharp, and glaucous green. Traditional medicinal drug makes use of it for wounds and indigestion remedy. Doob grass is thought by using several names in one-of-a-kind Indian states, along with Durva (Marathi), Arukampillu (Tamil), Durba (Bengali), Dhro (Gujarati), Shataparva (Sanskrit), Garichgaddi (Telugu), and others. C. Dactylon plant has numerous biological effects which includes antiviral, antibacterial, antimicrobial and specifically wound recuperation abilties. Furthermore, it's been widely utilized in old medicinal drug to address many issues including epilepsy, headache, dropsy, cramps, dysentery, diarrhoea, cough, hysteria, measles, snakebite, sores, urogenital problems, tumours and warts (external pores and skin growths).

Kingdom	Plantae
Subkingdom	Tracheobionta
Superdivision	Spermatophyta
Division	Magneliophyta
Class	Liliosida
Subclass	Commelinidae

Order	Cyperales
Family	Poaceae
Genus	Cynodon
Species	C. dacyton
Binomial name	Cynodon dacyton (L.) Pers.

Table no:2 Taxonomic classification of cynodon dacyton



Fig no:2

Based on its traditional makes use of and pharmacological properties, Cynodon dactylon can be explored for the subsequent pores and skin care applications:

Cleansers and Face Washes: Its antimicrobial and antioxidant traits render it appropriate for formulations intended to cleanse and defend the pores and skin from infections and environmental damage.

Moisturizers: Its hydrating and calming characteristics might be high-quality for dry or sensitive pores and skin kinds.

Anti-inflammatory Creams: Its capacity to diminish infection may be beneficial in merchandise geared toward acne, eczema, or dermatitis.

Wound Healing Ointments: Its traditional software in wound treatment, subsidized by means of initial evidence, implies capability in healing balms or ointments.

Anti-getting old Products: The antioxidant results may want to help in formulations aimed at countering oxidative stress and getting old signs and symptoms.

Curry leaves

Murraya koenigii is a small spreading shrub that grows to about 2.5 meters in top, with the stem being darkish inexperienced to brownish in shade. When the bark is peeled longitudinally, the underlying white wooden will become visible. The diameter of the principle stem is approximately 16cm. The leaves are around 30 cm long, every along with 24 leaflets and showing a reticulate venation pattern. The flower is white and funnel-shaped, characterised with the aid of a sweet fragrant fragrance, and the common diameter of a completely opened flower is 1.12cm and it's miles bisexual. The end result are either spherical or rectangular, measuring 1.4 -1.6cm in period and 1 to at least one.2cm in diameter. Curry leaves possess sturdy antibacterial and anti-inflammatory homes that may heal the skin from any infection, irritation or redness. High in antioxidants, curry leaves can serve as a home remedy for treating commonplace fungal infections of the nails or any frame components which are normally hard to deal with.

Kingdom	Plantae
Sub-kingdom	Tracheobionta
Division	Magnoliophytes

Class	Magnoliopsida	
Order	Sapindales	
Family	Rutaceae	
Genus	Murraya J.koenig ex L.	
Species	Murraya Koenigii L. Spreng	

Table no. 3 Scientific classification of curry leaves Fig no: 3



Benefits

- There are lots of therapeutic and herbal advantages, few are indexed underneath for each day existence use:
- Vitamins and Minerals: The moringa or drumstick leaves are wealthy in severa crucial vitamins and minerals that support diverse important
 physical capabilities and processes. Among the severa advantages of drumstick leaves is their high content material of Vitamin A, Vitamin
 B1 (thiamine), Vitamin B2 (riboflavin), Vitamin B3 (niacin), and Vitamin C (ascorbic acid), similarly to containing minerals like
 magnesium, calcium, iron, zinc, potassium, and phosphorus.
- Amino Acids: Drumstick leaves serve as an plentiful supply of amino acids, supplying round 18 sorts of amino acids that supply more than
 one benefits for ordinary fitness from drumstick tree leaves.
- Antioxidants: Moringa leaves showcase antioxidant traits and assist combat loose radicals. By mitigating oxidative stress and harm, many
 probably harmful illnesses, along with diabetes and heart problems, can be averted.
- Reduces signs of premature getting older: As we grow older, our frame reduces collagen manufacturing, which is crucial for preserving our skin youthful and plump. Thanks to Vitamins C and K, Moringa helps keep and decorate collagen tiers, minimizing untimely aging symptoms and repairing pores and skin cells. Moreover, Moringa assists in neutralizing unfastened radicals, which additionally make contributions to reduced collagen. Proper hydration likewise allows hold the skin searching strong and youthful.
- Hydrates dry pores and skin: Moringa Powder's high omega content makes it an remarkable moisturizer. Omegas assist regulate the skin's
 natural oil production, which no longer simplest gives immediate advantages however additionally enables your skin to restore its barrier
 and sustain herbal hydration. The oil's potency and lightweight consistency allow even those with zits-susceptible skin to use it without
 worry of clogging pores or causing breakouts.
- Relieves inflammation: Inflammation may result from various reasons, along with the environment, a specific irritant or injury, or chronic conditions. When pores and skin inflammation takes place, the skin reacts to pressure by way of turning into swollen, purple, and possibly itchy or painful. Vitamin E facilitates to gradual down this response and soothe the infection, helping to repair the pores and skin's herbal look.
- Boosts recovery: Moringa Oil and Powder were applied for medicinal functions seeing that historic instances, mainly for wound
 recuperation. Minor cuts were treated with this antiseptic, promoting faster restoration. The identical principle applies to Moringa's
 effectiveness in fast addressing pimples. By lightly cleaning the affected areas and stopping in addition contamination, breakouts decrease
 much greater rapidly while Moringa is implemented.

- Fights microorganism: Beyond its antiseptic features, Moringa additionally has antibacterial houses. It is effective for treating breakouts, however it can additionally prevent their incidence by using preserving the pores and skin free from the microorganism and irritants that cause acne. By detoxifying and purifying the skin, it reduces acne and aids in strengthening the skin's herbal barrier.
- Reduces dark spots: Moringa also promotes pores and skin cell renewal, due to its very excessive stage of Vitamin C. This vitamin is the various maximum robust vitamins for repairing the pores and skin, so it now not only addresses issues like pimples and inflammation however additionally balances pores and skin tone by using decreasing the range of discolored skin cells that reason hyperpigmentation, which includes zits scars. As skin cells regenerate, people with excess melanin the darkish spots are replaced with ordinary ones, ensuing in a more uniform look.
- Restores your pores and skin's natural oils: Moringa Oil possesses emollient characteristics, which means it softens the pores and skin. The make-up of Moringa also resembles the oils naturally generated with the aid of our pores and skin. This makes it now not simplest an terrific, non-greasy topical remedy however also one that regulates the manufacturing of herbal oils. With extended use, Moringa revitalizes and sustains our pores and skin's herbal moisture.
- Shields in opposition to pollution: As an antioxidant, Moringa protects against the damage as a result of loose radicals. Free radicals get up from pollutants, attacking the skin by using infiltrating deep layers of the epidermis, oxidizing and degrading collagen (which, as we are aware, accelerates symptoms of aging). Antioxidants, like the ones determined in Moringa, counteract free radicals, safeguarding the epidermal layers and helping the skin in defending towards pollution. Furthermore, Moringa can even restore the pores and skin to opposite any existing damage.
- Collagen Enhancement: Vitamin A in moringa boosts collagen synthesis, improving skin elasticity and firmness. So, are seeking for out merchandise that include night cream for face such as moringa powder to aid in repairing your skin's herbal barrier.
- UV Protection: If you're attempting to find a natural sun protector, then moring powder can help you with that. Moring provides some degree of protection in opposition to the sun's dangerous UV rays; however, it need to no longer substitute your SPF, however it can be incorporated into your daily skin care ordinary.
- Abundant in Antioxidants to Combat Acne-Inducing Free Radicals: Moringa leaf powder is packed with antioxidants inclusive of vitamin C
 and vitamin E. These combat free radicals that damage skin cells and make a contribution to inflammation. By neutralizing these damaging
 molecules, moringa helps save you zits and fosters clear, healthy pores and skin.
- Natural Detoxification for Clear Skin: One of the main members to pimples is toxin accumulation in the body. Impurities in the bloodstream can result in pimples. Moringa's detoxifying houses purify the blood, disposing of pollutants that purpose skin outbreaks. Moringa consists of compounds like chlorophyll, which useful resource in detoxifying the liver and kidneys. A properly-functioning liver ends in clean, glowing skin.
- Anti-Inflammatory Properties to Reduce Acne: Inflammation is a considerable issue inside the development of zits. Swollen, crimson blemishes are indicators of underlying irritation. Moringa possesses herbal anti-inflammatory residences that alleviate skin inflammation, diminish redness, and soothe infection. Incorporating moringa into your weight loss program or skin care regimen can also help decrease pimples outbreaks. With regular use, it could additionally save you the formation of zits scars.
- Balances Oil Production: Excessive oiliness can hinder pores and make a contribution to acne. Moringa leaf powder aids in regulating sebum tiers for your pores and skin. It moderates oil manufacturing without causing dryness to the pores and skin.
- Nourishes the Skin with Essential Nutrients: Dry and flaky skin can exacerbate acne and make contributions to blocked pores. Moringa is abundant in vitamin E, which hydrates the skin from the inner out. It fortifies the skin barrier, keeping moisture. Moringa is loaded with skin-useful nutrients, which include vitamins A and C, iron, and magnesium. Vitamin A encourages cell renewal and reduces clogged pores. Vitamin C enhances collagen synthesis for smoother, more healthy pores and skin. Additionally, iron and magnesium foster pores and skin restoration and rejuvenation.
- Redness and pain in eye: we are able to utilize floor doob grass with the assistance of cotton and fabric on the attention.
- Maintaining the natural skin.
- Pigmentation and confirmed pores and skin.
- Lighting and difficult skin enhancing.

Methods

Preparation of Herbal Extracts:

- Clean and dry the herbal substances: Ensure that each one the natural substances, inclusive of Moringa Leaf, Doob Grass, Curry Leaf are easy and dry
- Grind the natural substances: Grind every of the natural ingredients into a first-class powder the usage of a grinder or mortar and pestle.
- Extract the herbal elements: Extract the natural substances using a solvent which include glycerin or ethanol. For example, you can mix 10g of Moringa Leaf powder with 20g of glycerin and let it steep for twenty-four hours.
- Filtration: Filter the extract to dispose of any stable debris.



Fig no: 4

Fig no: 5

Preparation of Cream Base

Melt cocoa butter and beeswax: Melt 20g of cocoa butter and 30g of beeswax in a double boiler or a heat proof glass bowl set over a pot of simmering water.

Add borax and methyl paraben, melt zero.5g of borax and zero.5g of methyl paraben in 10ml distilled water over a the water bath. Then upload them into a melted cocoa butter and beeswax combination and stir until it's completely incorporated.

Remove from heat: Remove the aggregate from the warmth and permit it cool till it reaches a temperature of round 40°C to 45°C.

Incorporating Extract

Add Extract: Once the cream base is shaped, regularly upload the Moringa, doob grass and curry leaf extract and stir until a homogenous combination is accomplished.

Optional Additives: You also can add preservatives, or fragrances at this degree.

Packaging and Storage

Transfer to Container: Transfer the cream to an airtight field.

Storage: Store the cream in a groovy, dry region.

Fig no:6





Evaluation of cream

The prepared moringa cream was visually inspected, and the data on its homogeneity, grittiness, viscosity, spreadability, pH, and balance tests were examined.

- Viscosity Test: Using a Brookfield viscometer, the viscosity of the natural cream was determined at an angular speed ranging from 0.5 to 20 rpm.
- Microbial Examination: The cream was evaluated for microbial improvement using the streak plate method on agar media plates. These plates had been incubated for 24 hours at 37°C before being compared to a control.
- Appearance: As soon as the cream's consistency within the container was established, its homogeneity was evaluated both visually and physically. The arrival was evaluated by examining the pearlescence, roughness, and hue.

- **pH Test**: The pH measurement procedure involves calibrating the pH meter with a preferred buffer answer, then taking zero. 5 g of the organized natural cream and mixing it thoroughly with 50 ml of distilled water. The pH of the cream was then measured at room temperature using the pH meter.
- Spreadability: The cream's separation time between glass slides, which is measured in seconds, shows higher spreadability for shorter intervals.
- Antioxidant test: Irawan's approach is referenced by the DPPH method. The experiment was carried out in five replicates. In a 5 mL measuring flask, 5 mg of stem bark extract was dissolved in methanol pa to create a sample solution with a concentration of 1000 mg/L. 5ml of DPPH 39 mg/L solution were added to five separate 5 mL measuring flasks, then 2ml of DPPH 39 mg/L solution were added to each of the five flasks. The mixture was then homogenized and measured using a visible light spectrophotometer at a wavelength of 515 nm (pattern concentrations of 40, 80, 160, 320, and 640 mg/L). The solution was allowed to sit at room temperature (250 °C) for 30 minutes before being analyzed for absorbance. A comparison solution of BHT with concentrations of 2, 4, and 8 mg/L was created in the same manner.



Fig no: 8

The percentage of inhibition (% inhibition) is used to express antioxidant activity using the following formula:

%Inhibition =
$$\frac{(A_{blank} - A_{sample})}{(A_{blank} - A_{sample})} \times 100\%$$

Where, $A_{blank} = Absorbance$ without sample

 $A_{sample} = Absorbance$ of the sample

The % inhibition value associated with the concentration in ppm (mg/L) will produce a linear equation (Y=bX + a). The IC₅₀ value was obtained from the calculation when the % inhibition was 50%.

Sr.no	Concentration	Absorbance (517nm)	%Inhibition
1	1	0.240	0.05
2	2	0.230	9
3	3	0.177	30
4	4	0.131	48.2
5	5	0.073	71.14

Table no 4: Antioxidant activity test results of the DPPH method



Fig no 9: Antioxidant activity curve of DPPH method

Conclusion & Results

The method of a herbal natural cream using Moringa, Doob Grass, and Curry Leaves demonstrates the capacity to address common place skin problems including acne and dullness. The product is expected to show off antimicrobial and antioxidant consequences, making it an powerful treatment for reinforcing pores and skin fitness. Further in vitro and in vivo studies can validate its efficacy and protection for regular use.

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