

COMPREHENSIVE REVIEW ON THE FORMULATION AND EVALUATION OF NATURAL NASAL BALM

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Abstract

Natural nasal balms offer a holistic and eco-friendly solution for addressing nasal dryness, irritation, and discomfort caused by environmental factors, allergies, or respiratory conditions. This study aims to develop and evaluate a nasal balm formulated with natural ingredients such as beeswax, essential oils, and herbal extracts, chosen for their moisturizing, anti-inflammatory, and soothing properties. The formulation is designed to hydrate and protect the nasal mucosa while ensuring safety and minimizing the risk of side effects. The balm underwent rigorous testing to assess its efficacy, stability, and user acceptability. Clinical evaluations demonstrated significant improvements in nasal hydration and reduction of irritation after regular application, particularly in individuals exposed to dry air or allergens. The product also showed good tolerability, with no adverse reactions reported during the study period. Additionally, the use of sustainably sourced natural ingredients aligns with the growing consumer demand for environmentally responsible and health-conscious products. This research highlights the potential of natural nasal balms as an effective alternative to synthetic nasal care products, addressing both functional and consumer preferences. Future studies could explore the balm's therapeutic applications in managing chronic nasal conditions, such as rhinitis or sinusitis, as well as its role in post-operative nasal care. The findings underscore the importance of incorporating safe, natural ingredients in healthcare formulations to enhance user comfort and satisfaction while promoting sustainable practices.

KEY WORDS: Petroleum jelly, Eucalyptus oil, Camphor oil, Coconut oil

INTRODUCTION

Natural Nasal Balm: A Petroleum Jelly-Based Solution for Nasal Comfort

Dry nasal passages can be uncomfortable and lead to irritation, especially in harsh weather conditions or during allergy seasons. A natural nasal balm, crafted with the versatility of petroleum jelly, offers a simple yet effective solution. Renowned for its moisturizing and protective properties, petroleum jelly serves as an excellent base for creating a soothing balm that locks in hydration and shields the sensitive skin inside the nostrils.

Enriched with natural ingredients like essential oils and herbal extracts, this balm goes beyond hydration, offering relief from dryness and helping to restore comfort. In this article, we explore how a petroleum jelly-based natural nasal balm combines effectiveness with simplicity, making it an essential addition to your daily wellness routine.

HOW DOES THE BALM WORKS:

Pain relief balm works on the principle of counter irritant instead of actually relieving the pain they work on the principle of suppressing the pain by causing irritation on the point where the pain relief balm is applied. Pain balms generally contain 3 components namely clove oil, eucalyptus oil, and camphor all these are easily absorbed through the skin. A combination of these three active ingredients is useful in case of head ache and rheumatic pains. The other ingredients in the pain the pain relief balm are eucalyptus oil, petroleum jelly, bees wax. Although these pain relief balms have a special pharmacological effect in relieving pain, it is actually the amount of pressure applied and the movement that plays a significant role. Role of the balm includes a local anesthetic effect and finally provides a comfortable stage. These products do not have any side effect or allergic reactions such as irritation or darkening of the skin or cause inflammation on the point of application. Hence the consumer develops a liking for the chosen product. Petroleum jelly or petrolatum is the semi solid mixture of hydrocarbons and has become house hold preparation for various medical purposes. Petrolatum has associated with some of negative effects due to improper use including lipid pneumonia when inhaled from the nose. Petrolatum is not a material from renewable sources and not biodegradable which may be a cause of concern for environmental pollution etc...

Non organic essential oils are processed from herbal materials cultivated using pesticides and chemical fertilizers. Non organic essential oils are processed by chemical extraction and therefore all chances of presence of solvent residue and pesticides in normal oils. In the recent years, the old is moving towards natural that are free from chemical substances which may be safe and save the planet from the pollution. organic forming is a step forward in this direction to grow herbal materials without using any pesticides and chemical fertilizers to produce crops that are safe and natural without any side effects. Herbal balm composition comprising extracts of organically certified herbs, organic essential oils and organic bees wax which are mixed to form a medicated topical application. This application is used for quick relieve from pain. Such as head ache, back ache. The preparation of balms which can be certified organic balms as per organic certification standards using organic essential oils and organic bee's wax.

METHOD OF PREPARATION:

Weighing the all the ingredients for natural nasal balm preparation were accurately weighed by using digital balance

Weigh all the ingredients and blend/mix petroleum jelly, bees wax melts the both ingredients on hot plate at 20-30⁰c for 3-5 mins. Then add coconut oil into it mix it till homogenous. After wards add the essential oils and mix it well. Then keep a side for the cool at room temperature. The mixture was warm add the preservatives mix the mixture and transfer into the container.

From the below table represents the quantities of the excipients used in the formulation process.

TABLE:1 formulation of natural nasal balm

INGREDIENTS	F1	F2	F3	F4
Petroleum jelly	25gm	25gm	25gm	25gm
Bees wax	-	-	2gm	-
Coconut oil	5ml	5ml	5ml	5ml
Camphor	3gm	3gm	3gm	3gm
Eucalyptus oil	1.5ml	1.5ml	1.5ml	1.5ml
Peppermint oil	2ml	2ml	2ml	2ml
Clove oil	-	2ml	-	-
Almond oil	-	-	1.5ml	-
Sodium benzoate	-	-	-	0.5gm

EVALUATION TEST:

PH Test: Take the 10mg of nasal balm melt it. Measure the PH using a calibrated PH meter. The PH meter should be with standard 6.20.

Spread ability test:

Place the 10mg of the balm between two glass slides (20cm -20cm). Apply a 500 gm of weight on the top of the glass slides for 5 minutes. After wards, measure the circumference of the spread balm using a scale or ruler.

DISCUSSION:

Physical analysis reveals that the manufactured natural nasal balm formulation(F1) are homogenous, smooth, white. The physicochemical characteristics and melting point matched the specification. Solubility test showed that balm was generally soluble in oils, alcohols and organic solvents but not soluble in water. The below table indicates the physical appearance of optimised of formulation.

TABLE:2 Physical appearance of optimised formulation (F1)

S.NO	CHARACTERISTICS	APPERANCE
1	Colour	White
2	Odor	Mild, light strong
3	Consistency	Semi-solid
4	Texture	Smooth



Figure:1 nasal balm

SPREAD ABILITY: the spread ability values demonstrate that a little makes the balm easily spreadable. The formulation(F1) demonstrated a spread ability of 2.4 cm at room temperature. which is better composed when compare to the marketed balm. The test of spread ability consisted of applying product at room temperature of 2.0 ± 3.0 the C^0

TABLE NO:3 spread ability of optimised formulation

Formulation code	Diameter(cm)	Time
F1	2.4 cm	45 sec
F2	2.5 cm	30 sec
F3	2.0 cm	60 sec
F4	2.7 cm	55 sec



Figure no:2 formulation(F1)

PH TEST:

The pH values of every formulation that was created range from 5.7 to 6.10, which is avoiding from suitable skin irritation as the normal pH adult skin is around 5.5 to 6.5, and in rhinitis to 7.2 to 8.3. The below table indicates the pH studies resulted from prepared formulations.

TABLE NO :4 pH studies for formulations

Formulation table	pH
F1	6.18±0.25
F2	6.20±0.27
F3	5.38±0.12
F4	5.78±0.45

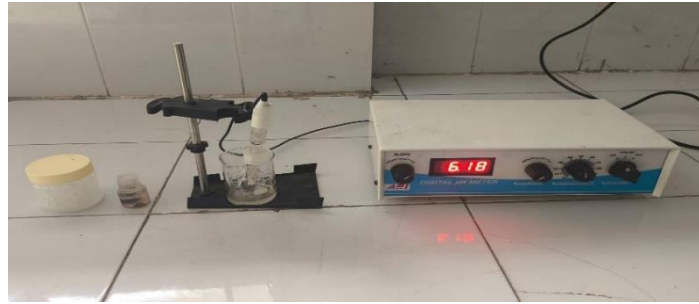


Figure no: 3 Ph of optimised formulation (F1)

SKIN IRRITATION:

After applying the natural nasal balm skin for few hours, there are no signs of skin irritation it present the cooling sensation on skin were observed. The primary irritation test that the nasal balm formulation caused no irritation.



Figure no:4 skin irritation (F1)

RESULT:

The physicochemical parameters of the prepared balm were determined such as colour, odour, appearance and pH were tested. The formulation exhibited good appearance characteristic as well as pH found in the range 6.2 which is skin tested.

SUMMARY:

A natural nasal balm is typically made by various essential oils known for their analgesic properties into a base such as petrolatum jelly, bees wax and coconut oil.

Herbal ingredients work together to provide relief from nasal decongestant, cold, and blockage of nose, applied topically.

CONCLUSION:

Natural nasal balm can be a gentle and effective solution for soothing dry, irritated nasal passages caused by colds, allergies, or environmental factors. Formulated with plant-based ingredients such as beeswax, coconut oil, and some essential oils. It provides hydration, protection, and pain relief while avoiding synthetic chemicals. Its natural composition makes it suitable for sensitive skin.

However, users should ensure the balm is free of allergens or irritants and use it as directed. A natural nasal balm offers a safe, sustainable, and nourishing alternative for maintaining nasal comfort and health.

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