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## Research Article

# Phytopharmaceutical Development of a Pain-Relieving Herbal Roll-On

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## ABSTRACT

This study involves the formulation and evaluation of a herbal roll-on aimed at providing relief from migraine pain. "Migraine is a neurological condition that causes repeated, severe headaches, often interfering with an individual's daily routine and quality of life.". In search of a natural, side-effect-free solution, a herbal roll-on was developed using essential oils known for their analgesic, anti-inflammatory, and soothing properties. The selected essential oils—Tulsi, Lavender, and Mint—were blended with a suitable carrier oil to ensure proper absorption and skin compatibility. The oils were extracted through oil distillation to preserve their natural potency and purity. The final formulation was assessed based on parameters such as physical appearance, spreadability, stability, and user acceptability. The roll-on showed smooth texture, appealing aroma, and was easy to apply. Upon application to the forehead and temples, it provided a cooling sensation and noticeable relief from migraine symptoms, attributed to the synergistic action of the herbal components. This formulation presents a convenient, natural alternative to conventional migraine treatments, promoting the use of plant-based therapies in pain management. The study supports further research into herbal solutions for effective and safe therapeutic applications.

## INTRODUCTION

Herbal roll-ons are the natural liquid preparation containing volatile oils used to relieve pain and stress.

**Tulsi**-Tulsi has a sacred and highly valued herb in Hinduism and ayurveda. Tulsi has a wide range of traditional uses in Ayurveda, from treating

respiratory ailments and digestive problems to promoting long variety and spiritual well-being. It is known for its various therapeutic properties including anti-inflammatory, anti-microbial, and antioxidant properties..

**Peppermint**- *Mentha piperita* L. is an important medicinal herb worldwide, apart from its potent Uses as flavouring agent in cosmetics,

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pharmaceutical products amongst others. Quality of *M. piperita* L. and efficacy are reported to be best. It's widely cultivated for its essential oil, which is used in various products, including culinary, medicinal and cosmetic applications. Peppermint is known for its potential benefits in relieving digestive issues and headaches.

**Lavender oil-** Inhalation of lavender oil is also reported to be of benefit in pain relief. Lavender oil has been shown to be an effective short-term treatment for lower back pain.

**Coconut oil-** It has a moisturizing effect when applied to the skin. People commonly use coconut oil for eczema and growth in premature infants. It's also used for psoriasis, obesity, breast cancer, heart disease, MS and many conditions.

### MATERIALS AND REQUIREMENT-

Peppermint oil [20ml], Lavender oil [20ml], Tulsi oil [20 ml], Coconut oil [40ml]

**GLASSWARES-** Beakers, Glass rod, Conical flask, Volumetric flask.

**Table no 1: List of ingredients used in the preparations of Herbal Roll-on**

s.no.	Name of the essential oil	Biological source	Purpose/ uses	References
1.	Lavender oil	Flowers of <i>Lavandula angustifolia</i> belongs to the family Lamiaceae	lavender can help treat headaches, migraine and is used in aromatherapy.	[6]
2.	Tulsi oil	Tulsi plant biological name is <i>ocimum tenuiflorum</i> and belongs to the family Laminaceae	Respiratory and digestive support, as well as its potential to boost the immune system and reduce stress.	[1]
3.	Peppermint oil	Peppermint plant belongs to <i>Mentha piperita</i> L. and belongs to family Laminaceae	To aid digestion, relieve symptoms of IBS, and reduce headaches, also used for muscle and nerve pain.	[3]
4.	Coconut oil	The scientific name for coconut oil is <i>cocos nucifera</i> belongs to family Areaceae	Moisturizing, Anti-inflammatory and antimicrobial properties.	[7]

**METHOD OF PREPARATION-** the technique used to prepare herbal roll-on is a simple blending process. It involves the simple mixing of all the ingredients based on the formulation mentioned in table no.2.

**Table no 2: Formulation for Herbal Roll-on:**

Ingredients	Quantity required
Lavender oil	20 ml
Tulsi oil	20 ml
Peppermint oil	20 ml
Coconut oil	40 ml

## Evaluation tests of herbal roll on:

**Organoleptic Evaluation:** the herbal roll-on was evaluated for its organoleptic properties such as color, odor, and texture.

**Removal:** Roll-on is applied on the skin and removed by washing with tap water.

**Irritancy test:** Roll on is applied on the skin and checked for redness, edema, inflammation, and irritation.

**Test for microbial growth:** The Formulated roll-on was inoculated on the agar media plates by streak plate method and control was prepared by excluding the cream. The plates were placed into the incubator and incubated at 37°C for 24 hours. After the incubation period, plates were taken out and checked for microbial growth by comparing them with the control.

**pH Evaluation:** The pH of the 1% roll-on solution was measured using a digital pH meter (Beckman, Germany).

**After feel:** emolliency, slipperiness and residue left after roll-on application is observed.

**Stability test:** Stability testing of the prepared roll-on was performed to keep the samples at accelerated temperature conditions. Different roll-on containers were kept at an accelerated temperature of 4°C, Room temperature and 47°C, respectively.

## RESULTS AND DISCUSSION

After formulating the herbal roll-on, evaluation tests were done and compared with the marketed preparation (amrutanjan roll-on). The results are tabulated in a table no.3. Based on the results of evaluation studies, the herbal roll-on shows similar reports as per marketed preparation.

**Table no 3: Comparison of formulated Herbal Roll-on with marketed roll-on**

S.no.	Evaluation parameters	Observed values	Marketed prep. (amrutanjan roll-on)
1.	Organoleptic Evaluation	Strongly aromatic	Strongly aromatic
2.	After feel	Cooling effect with counter-irritant effect	Cooling effect with more counter-irritant effect
3.	Removal	Easily removed	Easily removed
4.	Irritancy test	No any irritation	No any irritation
5.	Test for microbial growth	No microbial growth	No microbial growth
6.	pH Evaluation	6	6-7
7.	Stability test	More stable at room temperature	More stable at room temperature

## CONCLUSION:

The main aim of formulated herbal roll-on was to relieve headache, joint pains, and neck pain and to treat cold and nasal congestion. it offers a tropical and potentially effective approach to acute

migraine pain relief , it contain essential oils that may help alleviate nausea, anxiety, and other migraine related symptoms.



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