

# “A REVIEW ON FORMULATION AND EVALUATION OF HERBAL PAIN RELIVING BALM”

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## **ABSTRACT:**

The pain balm works on the counter irritancy principal the where the instead of relieving the pain, the pain sensation is suppressed by causing the irritation to the point where formulation has been applied. the balm in common sense is defined as semisolid formulation (generally having medicament) and which is to be applied externally. Pain balm is such formulation that is intended to be used for the relief of mild to moderate rate pain.

Tension headaches are very common, affecting up to 78% of people. Unfortunately, there also among the most neglected and difficult types of head- ache to treat. Menthol is a natural compound of plant origin known to produce cool sensation. Menthol is the cooling natural product and peppermint is widely used preparations for pain relief in sport injuries, arthritis and other painful conditions.

## **1. INTRODUCTION:**

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common sense is defined as semisolid formulation (generally having medicament) and which is to be applied externally. Pain balm is such formulation that is intended to be used for the relief of mild to moderate rate pain.<sup>[1]</sup>

Tension headaches are very common, affecting up to 78% of people. Unfortunately, there also among the most neglected and difficult types of head- ache to treat.<sup>[2]</sup> Menthol is a natural compound of plant origin known to produce cool sensation. Menthol is the cooling natural product and peppermint is widely used preparations for pain relief in sport injuries, arthritis and other painful conditions.<sup>[3]</sup>

Camphor is a natural product derived from the wood of the tree *Cinnamomum camphora*, has a long history of use antiseptic, analgesic, antipruritic counter irritant and rubefacient.<sup>[4]</sup> Nowadays it is importance of drug administration via the skin for therapeutic effects has increased. <sup>[ 5]</sup> Camphor is highly volatile and readily absorbed through the skin. It acts as a rubefacient, (a substance which when rubbed causes redness due to dilation of blood vessels) produces a cool sensation and also acts as a mild local anesthetic.

In diagnostic test such as colonoscopies, it is essential to have bowel preparation before performing the procedure. Castor oil may be used in these types of procedures as it is effective in bowel evacuation. However, in these procedures patients typically have better results and satisfaction with other laxative such as sennosides, polyethylene glycol and other Bisacodyl. <sup>[6]</sup> Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage<sup>[7]</sup>

Menthol is very soluble in alcohol, chloroform, ether and hexane and slightly soluble in water. Menthol is an alcohol that is found in mint oils and similar to peppermint, has a refreshing odour, white crystalline structure and cooling properties. Chemical formula of menthol  $C_{10}H_{20}O$  and molecular weight is 156.37g/mol. Menthol is found in many topical pain relief medications due to its counter irritant and local anaesthetic properties. The mechanism by which menthol is able to impart a cooling sensation when applied topically to the skin is well understood. Menthol in over the concentration has an excellence safety profile. <sup>[8-11]</sup> For the pharmaceutical purpose beeswax are used in drugs, pills, capsules, salve and ointments as consistency, binding agent, time release mechanism and carrier of drug.<sup>[12]</sup>

## **2. DRUG PROFILE:**

### **1. Menthol:**

1.1. Scientific Name: Hexahydrothymol.

1.2. Synonym: Peppermint camphor.

1.3. Family: Lamiaceae.

1.4. Chemical constituents: Menthol (40.7%), Menthone (23.4%), menthyl acetate, 1,8

1.5. cineole limonine, beta pinene, a beta-caryophllene.

2.1.1.5. Uses:

1. Reduces spasm and pain caused by endoscopy.
2. In migraine headache.
3. To treat nausea.

To reduce inflammation

## **2. Castor oil:**

- 2.1. Scientific name: Ricinuscommunis.
- 2.2. Synonym: Ricinus oil.
- 2.3. Family: Euphorbiacea.
- 2.4. Chemical constituents: Triglyceride of ricinoleic acid 80%.
- 2.5. Uses:

1. Castor oil is commonly used as the laxative.
2. Castor oil promote the wound healing.
3. Castor oil is a cathartic.
4. Castor oil used in arthritis and joint pains.
5. Castor oil helps to improve blood circulation.

## **3. Camphor:**

- 3.1. Scientific name: Cinnamomum camphora.
- 3.2. Synonym: Alcanfor.
- 3.3. Family: Lauraceae.
- 3.4. Chemical constituents: D-camphor (51.3%), 1,8-cineole (4.3%), and alpha-terpineol.
- 3.5. Uses:

1. Provide relief from cold cough, chest congestion, bronchitis and asthma.
2. Improves blood circulation and help to curb muscular and joint aches.
3. Powerful analgesic oil that produces a cooling sensation to numb pain and a warming sensation to increase circulation.

4. Verastile anti-inflammatory and antifungal compounds that reduces pain and irritation while preventing the spread of fungal infection.
5. Promote better sleep.

**4. Rosemary oil:**

- 4.1. Scientific name: Rosmarinus officinalis.
- 4.2. Synonym: Rosmarinus angustifolius Mill.
- 4.3. Family: Lamiaceae.
- 4.4. Chemical constituents: 1,8-cineol (38.5%), Camphor (17.1%), limonene (6.23%), camphene (6.00%) and linalool (5.70%)
- 4.5. Uses:
  1. Reduce pain and Inflammation.
  2. Relieve Stress and Anxiety.
  3. Treat respiratory problems.
  4. Heal your skin.
  5. Combat Gastrointestinal stress.

**5. MATERIALS AND METHODS:**

Sr. No.	Ingredient's
1.	Menthol
2.	Beeswax
3.	Castor oil
4.	Rosemary oil
5.	Camphor
6.	Betanin (from beetroot)

Table No. 2

### **1. Preparation of base:**

The menthol was dissolved in eucalyptus oil. The base for the balm prepared by fusion method was made suitable for incorporation of oils and drugs then cooled the hot melt stirring continuously.

### **2. Formulation of balm:**

At the temperature 400 c the menthol and eucalyptus oil mixture were dissolved in it with stirring. The drug was incorporated slowly with constant stirring till the uniform mass is obtained.

### **3. Container and Storage:**

Store in well closed mouth bottle at room temperature.

### **4. Direction for use:**

1. To be rubbed externally.
2. Rub gently on the skin with the help of finger.
3. Do not applied for dry skin.

### **5. Uses:**

1. It is used as Arthritis.

It is used as Backches

3. It is used as Sore muscle.
4. It is used as Joint pain.
5. It is used as Leg cramps.

### **Procedure for pain relieving balm application:**

In the first step the take pain relieving balm as per the requirement and in second step apply gently on the affected area. It helps to reduce headache, pains and sprains

**Formula:**

Sr. No.	Ingredients	Quantity Given	Quantity Taken	Uses
1.	Menthol	2.5gm	5.0gm	Counter irritant
2.	Beeswax	3.3gm	6.6gm	Base
3.	Castor oil	2.7ml	5.4ml	Anti-inflammatory
4.	Rosemary oil	0.4 ml	0.8ml	It reduces pain and inflammation
5.	Camphor	0.6gm	1.2gm	Antiseptic
6.	Beetroot	0.5gm	1.0gm	It reduces the inflammation by removing harmful compounds from your blood stream It it also used as colorant

Table No. 1

**Formulation:**

Raw material was gathered from home and market. The natural ingredient was shed dried, powered and sieved, weighed accurately and mixed. For the evaluation of various parameters, the formulated pain -relieving balm was stored in air tight container.



Fig No 1

## 6. EVALUATION:

Following evaluation parameters were preferred to ensure superiority of prepared pain-relieving balm.

### 1. Colour and odour:

Colour and odour were examined by visual inspection.

### 2. Consistency:

Smooth and no greening is observed.

### 3. Spreadability:

The test for spread ability was performed by applying the product on glass slide at room temperature repeatedly to observe uniformity in the formulation of protective layer and whether the stick fragmental deformed or broke during application for appropriate result.

### Washability:

This test is also used to check quality of balm. In this first of all we have to add small amount of balm which was applied on the hand. After that we have to washed with tap water.

### 1. No – irritancy:

This is used to check the quality of materials as well as chemicals and whether it is harmful to skin / mucosal or not. First of all, we have to mark area on left hand (dorsal surface). After that we have to applied formulation of balm to that area and time was noted.

Then we have to leav

### 4. Melting point:

To determine the melting point, the balm was melted and molten preparation was filled into the capillaries and was allowed to cool to regain its original nature. Then capillary was coupled with the thermometer and this

coupled system was immersed in water at controlled temperature. The temperature at which the balm was observed as fully molten that temperature points was noted as its melting point.

1. through the skin.

## 7. *RESULT:*

In the presence of study, the pain balm of menthol was formulated by using various excipients. The balm was then evaluated for the following physical parameters and was found to be satisfactory in terms of appearance and texture. It was easily spreadable with fingers without any roughness felt to touch. The smell of the balm was found to be characteristics. Only thing was the colour was faded as the natural colorant with origin of beetroot was incorporated.

The balm was dense with the optimized melting point. In general, oral or topical antibiotic formulation is used for the treatment of skin diseases. Traditional medicinal and aromatic plants are interesting and explore its various bioactive natural organic compounds for various treatments. In the last two decades, more research has been carried out towards the identification of the bioactive compound from medicinal plants and developing into drug for the various treatments

## 8. *CONCLUSION:*

Frequency of intake the allopathic drugs for the treatment of acne vulgaris results to produce adverse side effects. Recently, herbal remedies are considered as safe as the synthetic one and herbal formulations are having growing demand in the global market.

Overall to conclude with, as the main objective of the study was to formulate and evaluate the basic physical parameter and stability check for pain balm containing menthol. We have attempted the same and the evaluation parameter results showed that, if the menthol formulated in the balm, remains stable. (The in- vitro studies are pending). The basic parameters were found to be within normal range except the color variation. again, that can be improved by using the approved colorant. During this stability study of six months, the balm was found to be physically stable with all the basic characteristics. It had smooth and good consistency.

Still to perform the diffusion study, the drug release study, animal study also the preformulation study since the menthol is the bcs class iv study our next motive would be to incorporate the suitable permeation enhancer, suitable and to check whether the release of drug can be increased, and the same study is being recommended further so as to know the effectiveness of the drug in balm formulation.

That is further research which is carried out so as to find the in vitro as well as in vivo characterisation hence the pain reducing activity can be notified

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