



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

“Formulation & Characterization Of Anti-Inflammatory Characteristics Of Balm By Using Different Herbs”

PHOKE S. V.², HATKAR A. D.¹, DHOOT S. R.³, DHUT SAURABH R.^{1*}, JAYBHAYE S. S.¹, MULEY Y. P.¹.

1. Department of Pharmaceutics, Institute of Pharmacy, Badnapur, Jalna- 431203 (MS), India.
2. Department of Pharmaceutical Science, Sunrise University Bagad Rajput Alwar Rajasthan.
3. Department of forensic Medicine, Gov Ayurvedic medical college Dharashiv

Abstract:

There has been an increasing focus on progress of new routes of drug administration to provide tailored treatments for patients, without declining efficacy of analgesia, in proportion to the progression of the knowledge of pain mechanisms. The present research study is about to formulate the topical herbal balm for analgesic and antiinflammatory activity. This present research showed a good effect of herbal balm as compare with marketed preparation. In this pain balm we used all ingredients are herbs which is very potent and effective and there is no any side effect. The herbs used such that Eucalyptus oil, cinnamon oil, clove oil & Amrutdhara

Key word: Herbal balm, antiinflammatory activity, Eucalyptus oil, cinnamon oil, clove oil, Amrutdhara

I. INTRODUCTION [1,2]:

In common region common cold it seen the symptoms of nose getting block with mucous. For the common cold is arising to exposure to the environmental factor such as cold, dryness, dampness. By this our body affected by joint pain, headache, toothache etc. Many Scientists discovered many drugs but the present invention shows a different category herbal based balm which is used for the reduction of pain in in-vitro model.

What is Pain?

Pain is an unpleasant feeling often caused by intense or damaging stimuli, such as stubbing a toe, burning a finger, putting alcohol on a cut, and bumping the “funny bone.” The International Association for the Study of Pain’s widely used definition states, “Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”. Pain motivates the individual to withdraw from damaging situations, to protect a damaged body part while it heals, and to avoid similar experiences in the future. Most pain resolves promptly once the painful stimulus is removed and the body has healed, but sometimes pain persists despite removal of the stimulus and apparent healing of the body; and sometimes pain arises in the absence of any detectable stimulus, damage or disease.

Nonverbal Indicators of Pain

Tense body language, Restlessness, Strained facial expressions, Sad facialexpressions, Tearfulness, Increased resistance/agitation with movement, Increased breathing, Shortness of breath.

Types of Pain:

Pain is usually transitory, lasting only until the noxious stimulus is removed or the underlying damage or pathology has healed, but some painful conditions, such as rheumatoid arthritis, peripheral neuropathy, cancer and idiopathic pain, may persist for years. Psychogenic pain is pain caused, increased, or prolonged by mental, emotional, or behavioral factors. Headache, back pain, and stomach pain are sometimes diagnosed as psychogenic. Sufferers are often stigmatized, because both medical professionals and the general public tend to think that pain from a psychological source is not “real”. Pain is part of the body’s defense system, producing a reflexive retraction from the painful stimulus, and tendencies to 83 Apr ‘12/ May ‘12 protect the affected body part while it heals, and avoid that harmful situation in the future. Acute pain is usually managed with medications such as analgesics and anesthetics. Management of chronic pain, however, is much more difficult and may require the coordinated efforts of a pain management team.

- Acute Pain.
- Chronic Pain.
- Neuropathic Pain.
- Nociceptive Pain.

How does the pain relief balm work?

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 contains 3 components namely Amrutdhara, Cinnamon oil, clove oil 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 these balms comprise cold balm, lip balm, body balm and foot balm etc.

Collection- The all samples are collected by me

II. MATERIALS AND METHODS ^{[3, 4]:}

Composition:

Tale No.1: Formulation of Pain Reliever Herbal Balm

Sr. No.	Name of Excipients	Uses	Concentration /Quantity
1.	Petroleum jelly	Moisturizer, Relieves dry skin, healing	300gm
2.	Bees Wax	Base	30gm
3.	Amrutdhara	Anti-inflammatory	135ml
4.	Cinnamon Oil	Antibacterial	25ml
5.	Clove Oil	Anti-inflammatory	15ml
6.	Eucalyptus oil	Antioxidants, Pain reliever	q.s
7.	Colour	---	q.s

Plant Profile:

1. Petroleum jelly:

Petroleum jelly is a thick, waxy paste that many people use as a skin care product and treatment for minor cuts and burns. Other names for petroleum jelly include petrolatum and Vaseline, a common brand name People use petroleum jelly for diaper rash, as a moisturizer, to treat skin conditions such as eczema, and as a lubricant.



Figure1: Petroleum jelly

2. BEES WAX ;

Bees wax obtained from the honey comb of the bees *Apis mellifera* and other species of *Apis* belonging to the family *Apidae*. Order *Hymenoptera*. It is also known as yellow wax, *cera Alba*. It is yellow to yellowish – brown in colour. Insoluble in water and soluble in alcohol, ether, chloroform, carbon etc.

Uses;

- In preparation of ointments, plasters and polishes.
- Also used in the manufacturing of candles, moulds in dental and electronic industries, cosmetics, lip sticks.
- Is an ingredient of paraffin ointment



Figure2: Bees wax

3. AMRUTDHARA: भीमसेन कपूर + अस्मान्तारा + ओवा फुल

Camphor + Menthol + Ova Ful

Camphor:

Camphor has decongestant properties, making it a helpful ingredient for clearing chest congestion. The combination of beeswax and camphor makes beeswax camphor balm a great remedy for clearing chest congestions and moisturizing the skin also relieve skin irritation and itchiness and may help to improve the overall appearance of skin.



Figure 3: Camphor

Menthol:

Menthol provides a cooling sensation when applied to the skin, which helps relieve pain in the tissues underneath the skin. Menthol topical (for use on the skin) is used to provide temporary relief of minor arthritis pain, backache, muscles or joint pain, or painful bruises. Menthol improves blood flow to the skin wherever it is applied, bringing life back to dull and tired complexions. Additionally, it reduces the production of inflammatory cytokines and prostaglandins to help improve red and inflamed skin.



Figure 4: Menthol

Ova Ful:

The herbal extracts of Ova seed possess antibacterial and anti-inflammatory properties, and thus they are effective in treating peptic ulcers, reducing blood pressure and cholesterol levels.

4. CINNAMON OIL:

SCIENTIFIC NAME: *Cinnamomum zeylanicum*

KINGDOM: Plantae – Plants

Sub Kingdom: Tracheobionta

FAMILY: Lauraceae

GENUS: *Cinnamomum*

SPECIES: *Cinnamomum cassia* Presl

- Cinnamon Oil is known to benefit the respiratory system by reducing the symptoms of colds and the flu, such as a sore throat, nasal congestion, and headaches. Its carminative properties make it ideal for use in alleviating digestive discomforts such as gas.
- Its ability to enhance circulation helps reduce the pain associated with headaches and makes it beneficial for enhancing the function of the digestive system.

- Cinnamon oil extracted from the bark of cinnamon is an aromatic vegetable oil that contains cinnamic, aldehyde, and eugenol. Cinnamon oil, which has the ability to kill microbes, has many therapeutic aspects. Cinnamon oil has a very nice smell. It works to balance the sugar level in the body and increases the attention span of humans.



Figure 5: Cinnamon

5. Clove Oil:

SCIENTIFIC NAME: *Syzygium aromaticum*

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Myrtales

Family: Myrtaceae

Genus: *Syzygium*

Species: *S. aromaticum*

Pain management: Clove essential oil is well-known for its use in musculoskeletal system pain relief blends. Clove bud oil can be used in a massage oil blend or as a balm to help relieve symptoms of arthritis, sprains, strains, and muscle pain, as well as rheumatism.

Oil of cloves is best known for its anesthetic properties. It is widely reported to be effective and prior to the availability of safe, approved topical anesthetic drugs, and was used by some dentists. Clove oil often is used to relieve pain caused by dry socket, a possible complication of tooth extraction.

The antimicrobial and anti-fungal properties of clove oil allow its use for acne, warts, scars and parasites. The essential oil is used in aromatherapy when stimulation and warming is needed, especially for digestive problems. Topical application over the stomach or abdomen is said to warm the digestive tract.

6. Eucalyptus oil:

SCIENTIFIC NAME: *eucalyptus globulus labill*

KINGDOM : plantae

ORDER: myrtales

FAMILY: myrtaceae

SUB-FAMILY: Myrtoideae

GENUS: *eucalyptus* L her

SPECIES: *eucalyptus obliqua* L'her

[Description]

Eucalyptus globulus labill. Is an aromatic tree in the myrtle family which commonly attains a height of 150-180 feet and a diameter of height 4-7 feet? It has a straight trunk up to two-third of its total height and a well-developed crown. The central trunk and tap root are fringed with many lateral stems and roots. The tap root rarely exceeds a length of 10 feet. The light, yellow brown bark is deciduous. The leaves of the older branches are narrowly lanceolate, often curved, and alternate and hung vertically. They are glossy, dark green, thick and leathery.

They average in length from 1.5-2 dm. the leaves of the young shoots are ovate, opposite, sessile, and horizontal. They are covered with a gray waxy bloom which is much thicker on the bottom surface of the leaf. Young stems are squared or winged. The white flowers are solitary in the axil on flattened stalks. They approximately 4-5.5 cm wide. The fruit is 2-2.5 cm across. The numerous seeds are approximately 2×1 mm.

seeds are dark brown with brownish red chaff.



Figure 6: Eucalyptus oil

7. Color:

- To enhance aesthetic appearance hence sometimes referred to as cosmetics for pharmaceutical preparations.
- to impart distinct appearance for easy identification of a particular formulation thereby decreasing

IV. FORMULATION OF HERBAL PAIN RELIEF BALM ^[5, 6]:

- Take one container in that weigh and add 300gm of petroleum jelly, place the container in a water bath and boil it until all the amount of petroleum jelly completely dissolved.
- In the dissolved petroleum jelly solution weigh and add 30gm of bees wax stir it and boil until the bees wax added completely dissolve in the petroleum jelly.
- after that, measure and add all oils in the above mixture up to the homogeneous mixture form
- Measure and add Amrutdhara in above mixture & lastly add the sufficient quantity of coloring agents. Maintain the temperature throughout the process.

- When all the added ingredients were completely dissolved and turn in to the liquid form then take the solution out of the hot plate and keep the herbal balm solution for cooling. Finally the prepared solution cools down and turns into a semi solid herbal balm.



Figure 7: Formulation Of Herbal Pain Reliever balm

V. EVALUATION OF PREPARED HERBAL FORMULATION; PHYSICAL PARAMETERS ^[7, 8];

Clarity and color was checked by naked eyes against white background, the odour was smelled.

1. PH;

The PH of the prepared formulation was determined by using digital PH meter by preparing 10% solution & dipping the glass electrode completely in to the Solution system to cover the electrode. The measurement was carried out in triplicate and the average of the three readings was recorded.

2. Viscosity:

Viscosity of balm was determined using brook filled viscometer (S-62, model LV DV-E) at 25°C with a spindle speed of the viscometer rotated at 12rpm ^[9].

3. PHASE SEPARATION:

The prepared balm was transferred in a suitable wide mouth container. Set aside for storage, the oil phase and aqueous phase separation were visualizing after 24h.

4. SPREDABILITY;

Two sets of glass slides of standard dimensions were taken. The herbal balm formulation was placed over one of the slides. The other slides were placed on the top of the gel, such that the gel was sandwiched between the two slides in an area occupied by a distance of 7.5cm along the slides. Hundred g weight of gel was placed on the upper slides so that the gel was between the two slides was pressed uniformly to form a thin layer. The weight was removed and the excess of gel adhering to the slides was scrapped off. The two slides in position were fixed to a stand without slightest trouble and in such a way that only upper slides to slip off freely by the force of weight tied on it. A20 g weight was tied to the upper slide carefully. The time taken for the upper slide to travel the distance of 7.5 cm and separated away from the lower slide under the influence of the weighed was noted. The experiment was repeated for three times and the mean time was taken for calculation ^[10].

5. PATCH TEST:

Apply the product to a small patch of skin where a person is improbable to fortuitously wash or rub it away. Good areas may include the inside of the arm or bend of the elbow. Apply the product to a quarter-sized patch of skin. A person should apply the product as thickly as they would when using it regularly. Leave the product on the patch of skin for as long as it would normally be on the skin. If a person is testing a product that they would usually wash off, such as a cleanser, they should keep the patch on for 5min or long as the instructions advice. Repeat the patch test twice a day for between 7-10 days. A reaction may not happen immediately, so it is important to continue applying the product for this length of time. If a person's skin reacts to the product, they should wash it off as soon as possible and stop using it. a person can use a cool compress or petroleum jelly to relieve the skin if needed.

VI. RESULTS AND DISCUSSION ^[11, 12,13]:

The physicochemical parameters of the prepared balm were determined parameters such as color; odour, appearance and PH were tested. The formulations exhibited good in appearance quality as well as PH was found in the range 7.0 which is the desired PH of the skin.

Table 2: Physical Parameters of Herbal Pain Balm

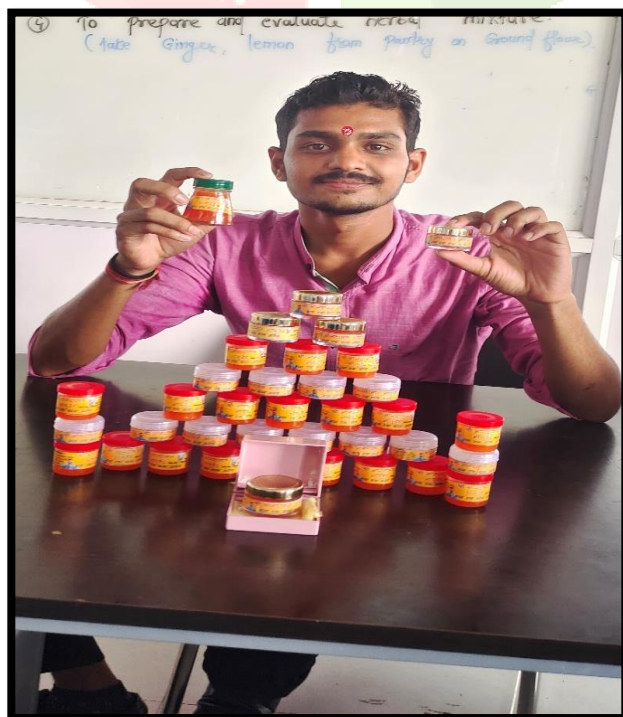
Sr. No.	Organoleptic Characters	Herbal balm	Marketed Balm
01	Category	Pain balm	Pain balm
02	Color	Orange	white
03	Odour	Strong Aromatic	Fragrant
04	Appearance	Smooth	Good
05	State	Semi solid	Semi solid

Table 3: Evaluation Result of Herbal Pain Balm

Sr. No.	Parameters	Result
01	PH	6.2
02	Spreadability	7.2g. cm/sec
03	Phase separation	No Phase Separation
04	Viscosity	32561cps
05	Irritation	No Irritation



Formulation of Anti-inflammatory Herbal Balm



VII. CONCLUSION ^[14, 15]:

Herbal balm was prepared by using Hot Melt Processing Technique and was found to be without particles transparent components which are used in formulation are having good compatibility without any significant changes. The Eucalyptus oil have relieving pain property, Amrutdhara extracts used to relieve Arthritic pain, cures high fever and alleviates menstrual cramps. The prepared formulation showing good physical characteristics. Further evaluated by various evaluation parameters such as PH, Extrudability, Spreadability, Viscosity, Patch test and gives good result. Based on the study research it can be concluded that herbal components can be effectively formulated as in the form of balm by using Hot melt Processing Technique which having excellent pain-relieving property.

VIII. REFERENCE:

1. Ehrlich EW, Dallob A, De Lepeleire I, Van Hecken A, Riendeau D, Yuan W, et al. Characterization of rofecoxib as a cyclooxygenase- 2 isoform inhibitor and demonstration of analgesia in the dental pain model. *Clin Pharmacol Ther.* 1999; 65:336–47.
2. Topical Analgesics: Critical Issues Related to Formulation and Concentration Hesselink JM - *Journal of Pain & Relief* – 2016
3. Curtis CL, Hughes CE, Flannery CR, Little CB, Harwood JL, Caterson B. N-3 fatty acids specifically modulate catabolic factors involved in articular cartilage degradation. *J Bio Chem.* 2000; 275:721–4
4. Acebo E, Raton JA, Sautua S, Eizaguirre X, Trébol I, Pérez JL. Allergic contact dermatitis from *Boswellia serrata* extract in a naturopathic cream. *Am J Contact Dermat.* 2004;51:91
5. Almekinders LC, Gilbert JA. Healing of experimental muscle strains and the effects of nonsteroidal anti-inflammatory medication. *Am J Sports Med.* 1986; 14:303.
6. Andersohn F, Suissa S, Garbe E. Use of first- and second-generation cyclooxygenase-2- selective nonsteroidal antiinflammatory drugs and risk of acute myocardial infarction. *Circulation.* 2006; 113:1950–7.
7. *Boswellia serrata*. *Altern Med Rev.* 1998; 3:306–7.
8. Araujo CC, Leon LL. Biological activities of *Curcuma longa* L. *Mem Inst Oswaldo Cruz.* 2001; 96:723–8.
9. Badria FA, El-Farahaty T, Shabana AA, Hawas SA, El-Batoty MF. *Boswellia-curcumin* preparation for treating knee osteoarthritis: A clinical evaluation. *Alt Complement Ther.* 2002;8:341–8.

10. BABU, K.C.V.; KRISHNAKUMARI, S. *Cardiospermum halicacabum* suppresses the production of TNF- α and NO by human peripheral blood mononuclear cells. *Afr. J. Biomed. Res.*, v.9, p.95-99, 2006.
11. KIM, J.Y.; SONG, J.Y.; LEE, E.J.; PARK, S.K. Rheological properties and microstructures of carbopol gel network system. *Colloid Polym. Sci.*, v.281, n.7, p.614-623, 2003.
12. KUMAR, E.; MASTAN, S.K.; AMRANDER REDDY, G.; RAGUNANDAN, N.; SREEKANTH, N.; CHAITANYA, G. Anti-arthritic property of the ethanolic leaf extracts of *Cardiospermum halicacabum* Linn. *Biomed. Pharmacol. J.*, v.1, p.2, 2008.
13. KUMARAN, A.; KARUNAKARAN, R.J. Antioxidant activities of the methanol extract of *Cardiospermum halicacabum*. *Pharm. Biol.*, v.44, n.2, p.146-151, 2006.
14. LAIRD, J.M.A.; CARTER, A.J.; GRAUERT, M.; CERVERO F. Analgesic activity of novel use-dependent sodium channel blocker, crobenetine, immuno-arthritic rats, *Br. J. Pharmacol.*, v.134, n.8, p.1742-1748, 2001.
15. LOGANATHAN, V.; MANIMARAN, S.; JASWANTH, A.; SULAIMAN, A.; SHIVAPRASADHA, R.M.V.; SENTHIL KUMAR, B.; RAJASEKARAN, A. The effects of polymers and permeation enhancers on releases of flurbiprofen from gel formulations. *Indian J. Pharm. Sci.*, v.63 n.3, p.200-204, 2001.
16. MARTIN, A. *Physical pharmacy, kinetics*. First Indian reprint. New Delhi: B.I Waverly, 1994.
17. MIZUSHIMA, Y.; TSUKADA, W.; AKIMOTO, T. A Modification of rat adjuvant arthritis for testing anti-rheumatic drugs. *J. Pharm. Pharmacol.*, v.24, n.10, p.781-785, 1972.