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# FORMULATION AND EVALUATION OF KAMPILLAKA (MALLOTUS PHILIPPINENSIS) HERBAL OINTMENT

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#### ABSTRACT

All the medicinal plant has several benefits, the Kampillaka is the medicinal plant which has anti-inflammatory, antimicrobial and wound healing property. Kampillaka, scientifically known as Mallotus philippinensis, holds a significant place in traditional Ayurvedic medicine. The aim is to study the compatibility of Kampillaka with other ingredients and prepare the ointment which has large number of uses and least side-effects. Ointment was prepared as per the modern pharmaceutical principle using fine powder of Kampillaka along with paraffin wax, coconut oil, bhemseni camphor, neem oil and turmeric powder. Brown-colored, non-gritty, shiny Kampillaka ointment was prepared. Spreadability was 5.2g/cm/s. The ointment was not rancid. Hence, Kampillaka ointment is the very suitable and best ointment preparation with more benefits and it has least side effects.

#### **KEYWORDS**

Kampillaka, Ointment and Mallotus philippinensis.

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#### **INTRODUCTION**

India has rich in diverse history of traditional medicine, these system are not only an integral part of India's cultural heritage but also play a significant role in providing healthcare to it's population<sup>1</sup>. Kampillaka, scientifically known as Mallotus philippinensis, which holds a significant place in traditional Ayurvedic medicine. Mallotus philippinensis plant, locally known as Kamala or Red Kamala, is a woody multipurpose tree belongs to family Euphorbiaceae native to India, Nepal and Shri Lanka. Kampillaka has been used in Ayurveda for centuries for it's potential health benefits. The Kampillaka has some skin benefits like wound

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healing, dermatitis, skin infections, antimicrobial activity, etc<sup>2</sup>. The kampillaka is used for many purpose such as antiseptic, astringents, antiinflammatory<sup>3</sup>. The bark of kampillaka has been used for typhoid and Meningitis<sup>4</sup>. The gland and the hairs of the fruits are used in the treatment of intestinal Worms and also as a purgative. Its oil is used in dermal problems and non-healing wounds<sup>5</sup>. The leaves are used externally for different types of skin infections and infected wounds<sup>6</sup>. The fruit powder of kampillaka is mixed with coconut oil is used to dress wounds and burns and the oil of Mallotus philippensis cleanses chronic infected dermatiles especially wounds. In Mallotus philippensis is considered to be a valuable remedy $^{7}$ . The powder of Kampillaka fruit is used for wounds healing. Kampillaka is the best crude drug used for preparation of ointment. Ointment are the semisolid preparation intended for topical application to the skin or mucous membrane, It is typically formulated in such a way that the drug are made in fine power using a combination of herbal extract, oils and other natural ingredients and made into a soft paste before application. All the ingredients are made into power form by grinding. The kampillaka ointment is the ointment that is prepared in such a manner that it does not show the large number of side effects like other ointment. Therefore, the purpose of study is to modify the herbal ointment form which has a greater shelf life and has a good healing property. The main aim is to study the compatibility of Kampillaka with other ingredients and prepare the ointment which has large number of uses and least side-effects, thus the ointment is Pharmaceuticoanalytically studied.

#### MATERIAL AND METHODS

The dried powder of Kampillaka was produce by authentic Ayurvedic vender from Arni, Maharashtra, India. Ointment base, that is paraffin wax were produced from Washim, Maharashtra. Other ingredients like coconut oil, neem oil, turmeric powder and bhemseni camphor was purchased from local market of Washim. To

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establish pharmaceutical standardization, the ointment were prepared.

#### Methods

## The pharmaceutical process was split into following steps

Firstly wash all the glassware's /equipment and clean properly. Weight all the ingredients in quantitative manner. 25gm of Kampillaka powder was first triturated alone in a Mortar and Pestle to make it finer. Kampillaka was then sieved from a 100 no. mesh, and then used for mixing with ointment base. Then weight accurately 20gm of paraffin wax. Melt paraffin wax at the suitable temperature between 46 to 68°C. (115 and 154 F) and then add coconut oil. During melting of paraffin wax, weight 10gm of Bhemseni Camphor which is in crystalline form then triturate the crystals in Mortar and Pestle to make fine powder. After melting, the mixture was taken off form the water bath and allowed to congeal. Now, this prepared base was mix with fine Kampillaka power in beaker. Now, add a powdered Bhemseni Camphor, Turmeric powder, Neem oil in the beaker. Stir in clockwise direction with a uniform speed and direction was performed till the mixture achieved the Ointment consistency. The prepared Ointment was stored in container. Completion of Ointment preparation was followed by performing the entire analytical tests applicable for Ointment as per standard.

#### **RESULTS AND DISCUSSION**

All the prepared ointments were characterized for the parameters such as appearance, odor, color, homogeneity, pH and Spreadability measurements. blank formulations and Drug-loaded All formulation were tested for physical appearance, homogeneity. color. and These texture characteristics were evaluated by visual observation of formulation. Homogeneity and texture were tested by pressing a small quantity of the formulated ointment between the thumb and index finger. To evaluate the texture and homogeneity of the formulation the consistency of the formulations and the presence of coarse particles were used.

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Immediate skin feel, was also evaluated<sup>8</sup>. The below table shows the result of the ointment.

#### Analytical test value

Analytical test of ointment are essential for ensuring the quality, safety, and efficacy of these topical medications. This test involves the consistency, PH, Spreadability, thermal stability and rancidity.

#### Consistency

Consistency is the appearance of the ointment and the Kampillaka ointment is semi-solid in nature.

#### PH

About 2.5g of all formulations were taken in dry beaker and 50ml of water was added. Beaker was heated on water bath at 60-70°C. The pH of ointments was determined using a pH meter. Normal skin pH ranges from 4.5 to 6.5.

#### Spreadability

To check spreadability, place 0.5-1g of ointment between two clean glass slides and ensure the ointment is at room temperature. Place a specific weight on upper glass for 1-5 min to allow the ointment to spread under pressure. Then remove the weight carefully and measure the diameter of ointment on the glass slide<sup>9</sup>. Spreadability was calculated using the following formula:  $S = M \times L/T$ Where, S = Spreadability

> M = weight applied (g) L = Length of ointment spread (cm) T = Time (sec)

#### Thermal stability

Thermal stability is assessed through stability studies which is conducted under a specific temperature. This is important for ensuring the product remains safe, effective and of high quality throughout its shelf life.

#### Rancidity

Rancidity, the process of lipid degradation, is a significant concern for ointments due to their high fat content. To ensure product quality and safety, rancidity testing is essential. Kampillaka ointment passed the test for rancidity. This infers that the formulation will be acceptable to the patients and will also extend the shelf life acceptable to the patients and will also extend the shelf life<sup>10</sup>.

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S.No	Ingredients	Quantity	Pictures		
1	Kampillaka Powder	25gm			
2	Paraffin wax	20gm	No.		
3	Coconut oil	20ml			
4	Bhemseni camphor	10gm	~		
5	Neem oil	15ml	0 1 200 100		
6	Turmeric powder	10gm			

#### **Table No.1: Formulation**

#### **Table No.2: Organoleptic Characters of Ointment**

S.No	Parameters	Results
1	Color	Brown
2	Odor	Characteristics
3	Taste	NA
4	Physical appearance	Opaque
5	Homogeneity	Homogeneous
6	Texture	Smooth
7	Skin feel	No grittiness, slightly greasy, nonirritant

S.No	Parameters	Results
1	Consistency	Semi-solid
2	PH	5.7
3	Spreadability	5.2g/cm/s
4	Thermal stability	Good
5	Rancidity	Absent

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Figure No.1: Melting of paraffin wax



Figure No.2: Trituration of bhemseni champhor



Figure No.3: Mixing of all ingredients



 Figure No.4: Prepared Kampillaka Ointment

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#### CONCLUSION

Kampillaka ointment is a traditional Ayurvedic preparation derived from the Mallotus philippinensis plant. Kampillaka ointment has been traditionally used to treat a variety of skin conditions, including: Eczema, Psoriasis, Acne, Fungal infections, Wounds and ulcers. The Kampillaka ointment has several benefits like it has a anti-inflammatory, antimicrobial, and wound healing property. The Kampillaka ointment has a wide range of benefits but it has least side-effects. Kampillaka ointment has a several benefits like it must be used for the many skin problem like acne, eczema, scars and burn marks etc. It has only side effect it may be slightly irritate the skin depending on skin conditions.

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#### **CONFLICT OF INTEREST**

We declare that we have no conflict of interest.

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