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Formulation and Evaluation of Herbal Wound Healing Paste From Babool Tree Gum

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Abstract: Herbal medicines Have been the basis of treatment and cure for various diseases and physiological conditions in traditional Methods of practice such as Unani, Ayurveda and Siddha. A large fraction of the world population, especially in The developing and underdeveloped countries still depends mainly on the traditional system of medicine. The use of plants and plant products in medicines is getting Popularized because the herbal medicines are cheap, easily available and have natural origin with higher safety Margins and lesser or no side effects. In Unani system of medicine Babool (Acacia Arabica) is considered as Plant having medicinal properties on various system of human body. Different parts of the plant including Bark, Root, gum, leaves, pod and seeds have medicinal properties. The present review is an attempt to highlight the Various ethnobotanical and Unani traditional uses as well as phytochemical and pharmacological reports on Acacia arabica to which commonly known as Babool.

I. INTRODUCTION

Use of herbal medicines in Asia represents a Long history of human interactions with the environment. The Medicinal value of plants lies in some chemical substances that Produce a definite physiological action on the human body.Acacia is the most significant genus of family: Leguminosae, first of All described by Linnaeus in 1773.

IS estimated that there are Roughly 1380 species of Acacia worldwide.2 Acacia species—Commonly known as Babool (or babul), Egyptian mimosa, Egyptian Thorn, kikar, Indian gum, and red thorn—have long been used for The treatment of various ailments Dioscorides, the Greek physician Considered to be the father of botany, named it akacia, and it is From this word that the modern name, acacia, is derived. The origin Of the word, acacia, is ―spiny,‖ which is a typical feature of the Species.

A. Advantages Of Paste

1) Paste can absorb water solutions.
2) Paste can be easily removed from skin and are water washable.
3) Paste are less greasy.
4) pastes are easily applied on the skin.
5) Paste is a suspension in a solid in liquid.

B. Disadvantages of Past

1) The major disadvantage of semi solid dosage form it has no dose accuracy.
2) The drug delivery with such as relatively poor patients compliance.
3) A physiological effects osmosis occurs dissolving in the mucous secretion of the rectum, producing a laxative effect.
4) Unpredictable solution time.

C. Ideal Characteristics Of Paste

It consists of fatty base like petroleum jelly, at least 25% solid substance.

1) Pharmaceutical paste are typically intended for external application to the skin.
2) They are usually thick and do not melt at physiologic temperature.

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II. HISTORY OF PLANT

Known as Vachellia Nilotica, the Babul Tree is in the Fabaceae or Leguminosae family, which basically means that the tree belongs to the legume, bean or pea family.

A. Taxonomical Classification

1) Kingdom: Plantae
2) Subkingdom: Tracheobionta
3) Division: Spermatophyta
4) Division: Magnoliophyta
5) Class: Magnoliopsida
6) Subclass: Rosidae
7) Order: Fabales
8) Family: Fabaceae
9) Genus: Acacia
10) Species: nnilotica

B. Morphology

It is a moderate-sized, almost evergreen tree with a short trunk, and a spreading crown. The bark is dark brown to almost black, longitudinally fissured or deeply cracked. Leaves are 2-pinnate and the main rachis has glands. Stipular spines are variable.
Leaflet are subsessile and glabrous. Flowers golden-yellow, fragrant, crowded in long-stalked globose heads, forming auxiliary clusters of 2-5 heads. Pods are stalked, flat, compressed 7.5-15.0 cm in length and contracted between the circular seeds. Three subspecies are recognized in India.

C. Phytochemical

1) Bark: The bark is prosperous in phenolics, condensed tannin and Phlobatannin, gallic acid, protocatechuic acid pyrocatechol.



2) *Gum:* Gum contains galactose, L-rhamnose, L-arabinose and four Aldobiouronic acids.



3) *Fruit:* It contains a high percentage of phenolic constituents Consisting of m-digallic acid, gallic acid, its methyl and ethyl esters.



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4) *Flower: It contains if stearic acids.*



D. Pharmacological Activitie

1) *Bark:* The bark is a powerful astringent and bark is Used in leucorrhoea, haemorrhages, wounds, ulcers and decoction In diarrhoea and vaginal secretion.



2) *Leaves:* Infusion of tender leaves used as an astringent and Remedy for diarrhoea and dysentery. 18, 19, 20, 28, 32 Also it is used in Headaches, eczema, abscess, ophthalmic disorders, 20, 23 in throat Infection, urinary problems gonorrhoea.



3) *Flowers:* Flowers are useful in reducing the body Temperature, ear ache and as a tonic, antidiarrheal, antidysenteric.
4) *Roots:* Used for wound healing and burning sensation.



5) *Extract:* It is an astringent and injected to allay irritation in Acute gonorrhoea and leucorrhoea.

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III. REQUIREMENTS

Extracted gums, Water, Mineral oils like liquid paraffin,, Waxes and foaming Agent Like Coco glucoside, perfuming agent like ethyl alcohol and glycerine base solution etc.

INGREDIENTS	QUANTITY TAKEN
Extracted gums	12 gram
Water	5ml
Liquid paraffin	3ml
Coco glucoside	3ml
Glycerine base solution	5ml
Ethyl alcohol	3ml

A. Wound & Wound healing Process

1) Wound healing is a process of cell contraction movement , re-adhesion after injury.
2) Wound healing involves platelet aggregation, blood clotting formation.
3) Wound may be produced by physical, chemical and microbial activity on the surface of skin
4) Wound can be classified mainly on the basis of mode:-
a) Closed Wound: Closed fracture.
b) Open Wound: Crash wound , bite wound and burn wound.

B. Paste

1) Paste are topical preparation can be applied surface on the skin
2) Paste are defined as a viscous liquid or semi-solid.

C. Methods of Preparation

They are divided into two types:
1) Oil in Water (o/w): Which are composed of small droplets of oil dispersed in a continuous Phase.
2) Water in Oil (w/o): Which are composed of small droplets of water dispersed in acontinuous oily phase.
First step oil in water (o/w) this method is used to in this procedure.

IV. PROCEDURE

1) The gum of babool is also a potent emollients, expectorant, dextrofier and anti – Pyretic in nature.
2) Babool gum is excellent wound healer.
3) Babool gum is extracted from babool tree.
4) The extracted babool gum is taking the sufficient time of stay in sun rays or drying nature.
5) The dried babool gum is make the granules or powder
6) The granullation of babool gum add the sufficient quantity of mineral oils.
7) Because, mineral oils is colourless or odourless and it acts as a lubricant and moisturizer.
8) Add some content of water and waxes , waxes acts as a thickner and perfuming agent.
9) Then, in this mixture add sufficient quantity of glycerine base solution and ethyl alcohol for performing agent semi solid form.
10) Now is ready to use packing property.

A. Dosage Form

1) Take the 1-2 teaspoon of babool gum paste .
2) Apply on the wound area
3) Wash throughly with tap water after 2-3 hours .
4) Use once time a day or three times a week for faster relief.

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B. Formulation Formula

Name of the preparation	Active Ingredients	Quantity Taken	Use
Preparation of babool gum paste.	Glycerine base solution	5ml	Wound healing , skin disease and burn injury etc.
	Ethyl alcohol	3ml	
	Liquid paraffin	3ml	
	Water	5ml	
	Extracted gums	12 gms	
	Coco glucoside	3ml	

C. Evaluation Parameters of Paste

To establish the quality of preparation we are perform following physico-chemical parameters.

1) *Determination of pH:* The pH of the cream can be measured on a standard digital pH meter at room temperature by taking adequate amount of theformulation diluted with a suitable solvent in a suitable beaker.
2) *Physical Appearance:* The physical appearance of the cream can be observed by its colour, roughness and graded.
3) *Spreadability:* Adequate amount of sample is taken between two glass slides and a weight of 100gm is applied on the slides for 5 minutes. Spreadability can be expressed as,

S= m*l/t

Where, m = weight applied to upper slide.

L = length moved on the glass slide.

T = time taken.

4) *Saponification Value:* 2gm of substance refluxed with 25ml of 0.5 N alcoholic KOH for 30min, to this 1ml of phenolphthalein added and titrated immediately, with 0.5N HCl, note the reading as ‘a’. Repeat the operation omitting the substance being examined. Note the reading as ‘b’. Saponification value = (b-a)*28.05/w

Where, w = weight of substance in gram.

5) *Acid Value:* 10gm of substance is dissolved in accurately weighed 50ml mixture of equal volume of alcohol and solvent ether, the flask was connected to reflux condenser and slowly heated, until sample was Dissolved completely, to this 1ml of phenolphthalein added and titrated with 0.1N NaOH, until faintly pink colour appears after shaking for 30 seconds. Acid

Value = n*5.61/w

Where,

N = the no. of ml of 0.1 N KOH solution.

W = the weight of substance in gram.

6) *Viscosity:* Viscosity of formulated creams can be determined by using Brookfield Viscometer.
7) *Homogeneity:* The formulation was tested for the homogeneity by visual appearance and by touch.
8) *Removal:* Ease of removal of the creams applied was examined by washing the applied part with tap water.
9) *Dye Test:* Scarlet dye is mixed with the cream. Place a drop of cream in a slide and cover with a cover slip and examine it under a microscope. If the disperse globule appears red and the ground colourless then it is o/w type and the reverse condition appears in w/o type of creams.

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V. CONCLUSION

As the pharmacologists are looking forward to develop new drugs From natural sources, development of modern drugs from Acacia Arabica can be emphasized for the control of various diseases. It Contains a number of phytoconstituents, which are the key factors In the medicinal value of this plant. It is quite evident from this Review that Acacia arabica is an important medicinal herb and Extensively all types of medicinal systems.

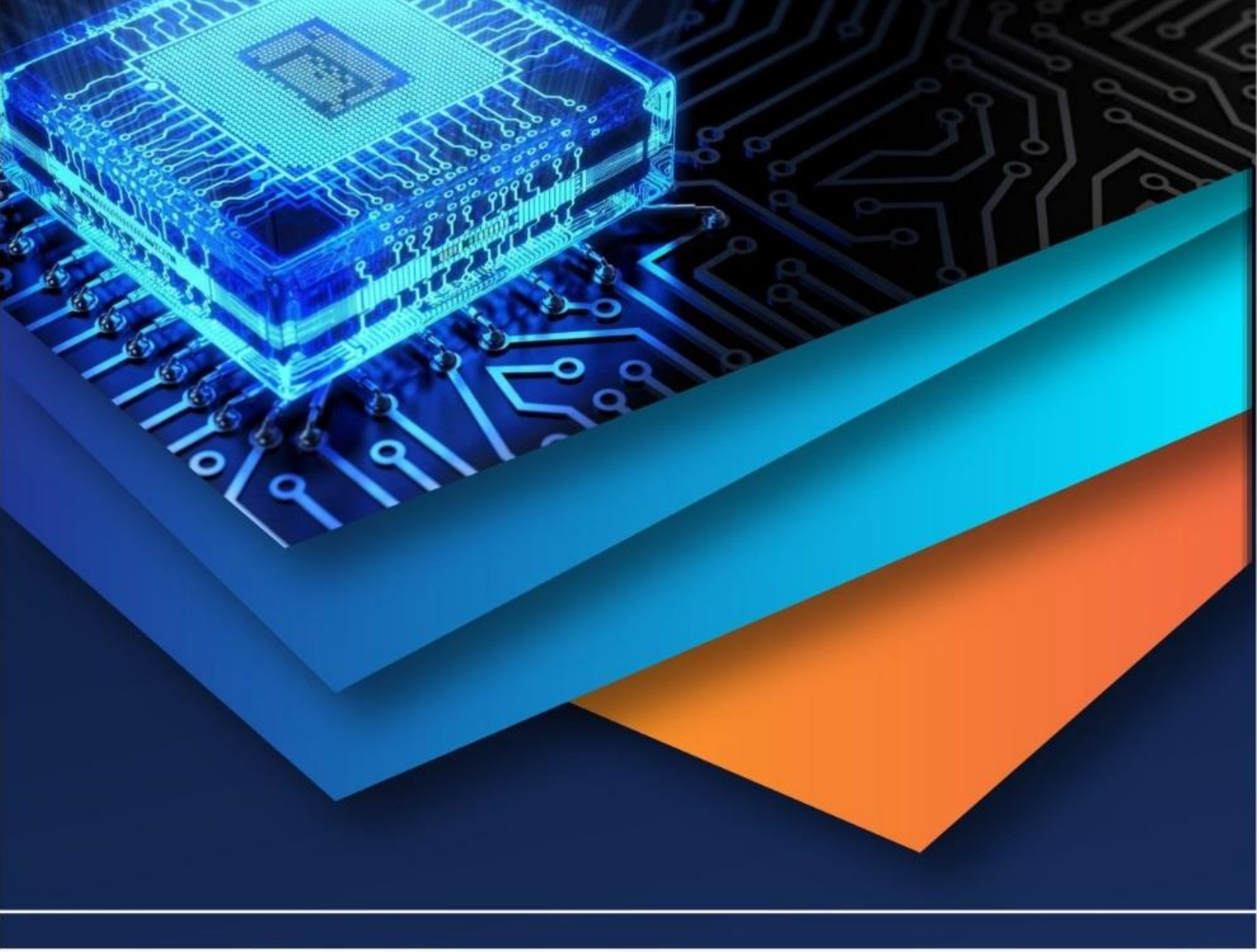
VI. RESULT

Formulation of Herbal wound healing paste from babool tree was prepared successful.

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