

Formulation and evaluation of Anti microbial activity of Averrhoa carambola Ointment

Ms. Wagh Vedika¹, Ms. Varma Darshana^{2*}, Ms. Patil Prajakta^{3*}

Student¹ SMT Institute of Diploma in Pharmacy affiliated to MSBTE

Lecturer² SMT Institute of Diploma in Pharmacy affiliated to MSBTE

Lecturer³ SMT Institute of Diploma in Pharmacy affiliated to MSBTE

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ABSTRACT:

The skin is an external organ that covers the entire body surface. It is responsible for communication between internal and external environment of the body and also works as a barrier. The carambola fruit is also known as star fruit, which obtained from a woody plant of Averrhoa carambola belonging to the family Oxalidaceae. The carambola fruit has many potent activities like antioxidant, anti-inflammatory, anti-microbial, and anti-fungal. Since a number of activities are shown by carambola, we aim to formulate carambola fruit ointment for the treatment of bacterial infection, mostly skin disorders.

Extracts of star fruit by using the extraction method and by using the spatula method. I have developed three batches of our ointment. All three formulations were evaluated for different parameters like pH, spread ability, washability, color, odor, and texture were observed. The formulation shows no redness, no irritation, and they are easily washable. Carambola is also known as star fruit. It is native to South East Asia and now grown in various regions. The star fruit is rich in vitamin C, fiber, and antioxidant. The taste of star fruit is sweet and tart. Averrhoa carambola fruit is good for health.

Keywords: Averrhoa carambola, Anti-microbial, oxalidaceae, Antioxidant

I. INTRODUCTION

[1]. Averrhoa carambola fruit is also known as star fruit. The carambola fruit has many potent activities like anti-oxidant, anti-inflammatory, anti-fungal, and anti-bacterial. The family of star fruit is oxalidaceae. It originated in South East Asia and is cultivated in Brazil, Guyana, and Ghana. It is used

to treat headaches, vomiting, coughing, or many other ailments. Star fruit is considered suitable for diabetes. Star fruit is a nutritious tropical fruit that is low in calories and sugar. Star fruit is rich in magnesium, iron, zinc, potassium, and phosphorus. Star fruit has an effective role in reducing blood pressure in hypertensive patients.

[4]. The main aim of our work is to develop an herbal ointment which can give a multipurpose effect. We have used one herbal ingredient in our preparation, which is star fruit (Averrhoa carambola), and the ointment was prepared by using the ointment base that is hard paraffin, soft paraffin, cetostearyl alcohol, wool fat, and the extraction process. I used ethanol.

The skin is the largest organ of the human body, serving as a protective barrier between the internal and external environment, comprising of tissue. It plays a role in regulating body sensory of layer and has a crucial role in regulating body temperature, detecting sensory stimuli. The skin is complex, which includes the epidermis, dermis, and subcutaneous tissue. Each contributes to its various functions.

[5]. The skin possesses a remarkable connection with antimicrobial defense. The outermost layer, the epidermis, serves as a barrier against pathogens. It is formidable. It contains specialized cells that act as the first line of defense, preventing the entry of microbes.

[6]. One key player is keratin, a protein that forms a protective layer on the skin surface. Sebaceous glands produce sebum, an oily substance that contains antimicrobial properties, helping to inhibit the growth of harmful microorganisms.

Nutrition facts	
Starfruit	
Sources include: USDA	
Amount Per 100 grams ▾	
Calories 31	
	% Daily Value*
Total Fat 0.3 g	0%
Saturated fat 0 g	0%
Cholesterol 0 mg	0%
Sodium 2 mg	0%
Potassium 133 mg	3%
Total Carbohydrate 7 g	2%
Dietary fiber 2.8 g	11%
Granulated Sugar 4 g	
Protein 1 g	2%
Vitamin C 57%	Calcium 0%
Iron 0%	Vitamin D 0%
Vitamin B6 0%	Cobalamin 0%
Magnesium 2%	

1. The skin harbors immune cells like Langerhans Cells and T cell which actively participate in recognizing and neutralizing potential threats. When the skin is compromised, these defense mechanisms Can be triggered, leading to inflammatory responses that Importance of maintaining healthy skin through proper hygiene and skincare practices

The main Aim of our work is to develop a herbal ointment which multipurpose effect reduce inflammation, skin irritation and reduce skin

disease we have used one herbal ingredient which is star fruit.

II. MATERIAL AND METHODS

Collection of Material

Averrhoa carambola fruit collected in Nasik local area and cetosteryl alcohol, soft paraffin, hard paraffin, bees wax, was collected from SMBT College of diploma pharmacy. From pharmaceutical lab(SMBT IODP Dhamangaon.



FIG NO-1 HERBAL DRUG

[8]. Extraction process

Extraction of Averrhoa carambola fruit. Take a fresh star fruit and washed with purified water and cut into small pieces and dry at room temperature

after proper drying of star fruit pieces blend with the help of the blender. A soxhlet apparatus is used for extraction



FIG NO 2- EXTRACTION PROCESS OF HERBAL DRUGS

Table No1- Drug and their uses

Sr.no	Ingredient	Roles
1	Star fruit	It is used for inflammatory skin disease, headache pain.
2	Wool fat	Emollient
3	Cetosteryl alcohol	Emulsion stabilizer
4	Hard paraffin	Emulsifying agent
5	Soft paraffin	Base of ointment

Formulation of ointment

Table No2- Formulation table

Sr.no	Ingredient	F1	F2	F3
1	Star fruit extraction	2ml	2.5ml	3 ml
2	Wool fat	0.5gm	2.5gm	1.5gm
3	Cetosteryl alcohol	0.5gm	3gm	3.5gm
4	Hard paraffin	0.5gm	2gm	2.5gm
5	Soft paraffin	0.85gm	4.5gm	6gm

Table No3 -Evaluation table

Sr. No	Evaluation test	Observation	Observation	Observation
1.	Physical evaluation	F1	F2	F3
2.	Colour	Light brown	Dark brown	Light brown
3.	Texture	Smooth	Smooth	Smooth
4.	Wash ability	Easily wash	Easily wash	Easily wash
5.	PH	5.8	6	5.5
6.	Spread ability	Easily spread	Easily spread	Easily spread

Evaluation of ointment

[12].Physical evaluation

Formulated herbal ointment was further evaluated by using the following physical parameters physical parameters colour, odour, texture and state of the formulation

- 1. Colour:** The colour of the ointment was observed by visual examination
- 2. Odour:** The odour of ointment was found to be pleasant
- 3. PH: pH** is prepared ointment was measured by using digital pH meter. The solution of ointment was prepared by using 100ml of distilled water and set aside 2h.ph determine in three times for solution and the average value was calculated.
- 4. Spread ability:** spread ability of formulated ointment was measured by placing sample in between two slides than compressed to uniform thickness by placing a definite weight

for defined time. The specified time required to separate the two slides was measured as spread ability .Lesser the time taken for separation of two slides results showed better spread ability

- 5. Wash ability:** formulation was applied on the skin and then ease extends of washing with water and checked.

III. RESULT AND DISCUSSION:

I was prepared three formulation F1,F2,F3 from which 3rd formulation shows good colour PH and consistency as compared to other formulation also all formulation shows no itching no redness and no irritation to the skin and they are easily washable the formulation were stable at room temperature.

The extract of star fruit promote the inflammation, Relieve skin dryness, itching and redness.



FIG NO 3- ANTIMICROBIAL TEST

IV. CONCLUSION:

By using star fruit ointment showed a multipurpose effect and this herbal ingredient showed significant different activities. Based on result and discussion.The formulation were stable

at room temperature and can be safely used on the skin.it promote inflammation, Relieve skin dryness, itching and dryness. The extract of star fruit has antimicrobial activity.

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