



“FORMULATION AND IN – VITRO EVALUATION OF WOUND HEALING ACTIVITY OF JASMINUM GRANDIFLORUM CREAM”

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Abstract: Injuries are physical injuries that result in breaking of skin. The ideal way to treat injuries very essential for the skin's dysfunctional state of function. Crack care specialists have re-examined the traditional mending ways due to the arrival of organisms with several resistances and a decline in newer antibiotics by utilizing both conventional and alternative drugs for crack care. It is really gratifying to see how traditional drugs are being perceived by the public. In this study, Creams were developed using the crack *Jasminum grandiflorum Linn.* were named. Some factory corridors are dried and used for birth alcohol. Quality evaluation of the product was assessed by using different evaluation styles not alter the physical rates were observed; the pH was in a suitable range (around pH. 6). The compositions displayed good spread capability. The crack mending performance of the herbal cream was experimentally evaluated by in vitro (scrape assay system). The results of this study indicate that it is feasible to create creams with factory excerpts that have wound-mending parcels and can be used as the provision of a hedge to protect skin.

Index Terms - *Jasminum grandiflorum Linn.*, crack cream, evaluation, condiment, scrape assay, etc.

I. INTRODUCTION

WOUND MENDING: -

Crack is defined simply as the dislocation of the cellular and anatomic durability of a towel. Physical, chemical, thermal, microbiological, or immunological injury to the body can cause a crack towel. Wound Healing is the process by which damaged skin or other biological tissue recovers. The cellular and metabolic events that result in crack mending are interconnected to reestablishment of strength along with a restoration functional and structural integrity

Strength of injured tissue.[1]

Clinically, non-healing, under-mending, and over-healing are common. Therefore, the goal of treating a crack is to either reduce the quantum of unwanted side effects or to speed up crack mending process consequences.[2] Changing a substance that will speed up wound healing whether it is happening normally or is being hindered by other factors should be a top precedence agents like corticosteroids, anti-neoplastic, or non-steroidal anti-inflammatory agents. Medical treatment of crack includes administration of drugs either locally (topical) or Systemically (oral or parenteral) in an attempt to aid crack from. [3]

Types of wounds: -

Injuries to the skin and other bodily tissues are known as injuries Cuts, scrapes, & perforated skin is among them. Injuries are commonly caused by accidents, but they can also be caused by surgery, sutures, and aches. Minor injuries are typically not dangerous, but cleaning is required. Serious & infected injuries may necessitate immediate medical attention and a trip to the doctor. If the incision is deep, you can't close it yourself, you can't stop the bleeding or to get the dust out, or it doesn't heal, you should seek medical help. [4,5]

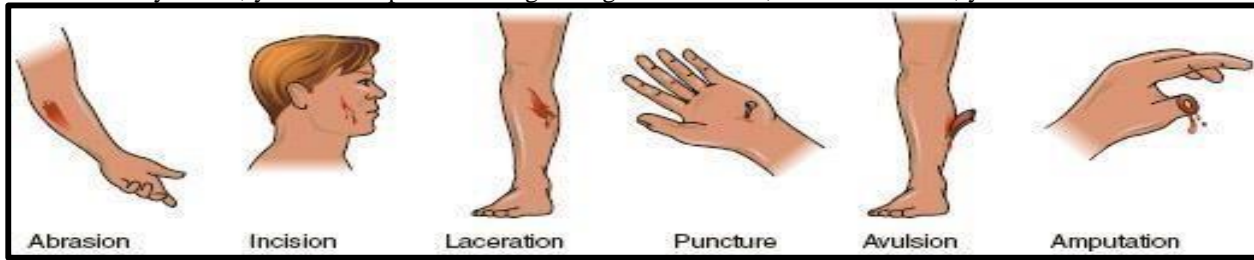


Fig.1 Types of wounds

these kinds of injuries as show in the above fig.no.1.

- I. Laceration is a term that describes uneven gash-suchlike injuries created by physical trauma.
- II. Abrasions are minor injuries whereby the top subcaste of skin is scraped away.
- III. Avulsion injuries occur when a bodily structure is yanked away from its natural insertion place.
- IV. Puncture: An instrument puncturing the skin causes a perforation crack.
- V. Penetration wound: a crack that penetrates deeply that is created by an item entering and exiting the skin, such as a cutter.
- VI. Gun shot: A pellet causes a projectile
- VII. Closed crack: When a blood roadway is injured, blood pools under the skin, leading to hematomas (blood excrescences). [4,6]

NEED OF THE STUDY

Our skin is critical to our actuality because it senses the environment, regulates our body's physicochemical and thermal balance, stores vital nutrients, offers passive and active Defense and reacts to shock and injury [1]. It takes strong and efficient systems to protect it from injury and personality as well as to replace and repair vital skin functions that are lost or injured in order to maintain these vital functions. Since ancient times, people have been caring for their injuries. *Jasminum grandiflorum*, a factory whose capability to heal injuries may play a part.

RESEARCH METHODOLOGY



fig. 2 *Jasminum grandiflorum* Linn.

table no. 1-classification

Sr. No	Scientific classification	
1]	Kingdom	Plantae
2]	Order	Lamiales
3]	Family	Oleaceae
4]	Genus	Jasminum
5]	Species	<u>J. grandiflorum</u>
6]	Binomial name	<u>Jasminum grandiflorum</u>

Leaves *Jasminum grandiflorum* Linn. Were procured from Tandulvadkar clinic Shahunagar, Povainaka Satara. And same were authenticated by Dr. Pradnya Yadav (Department of Botany, Y.C. clg Satara.) And sample instance was deposited a herbarium in the department of pharmacognosy, Y.C. Clg Satara for future reference (Flora of Maharashtra State Dicot Volume 2-page no.313)

- **Extraction:**

Twenty-five gram each, Standardized powder of leaves of *Jasminum grandiflorum* were Subjected to extraction with 300 ml Ethanol by maceration for five Days at Room Temperature.

- **Evaporation:** The Filtered Extract Was Subjected for Evaporation. The Extract Was Subjected to Vitro Study (scrape crack mending assay) and cream Formulation.

Development of Herbal Formulation:

The herbal formulation was prepared by using 6% ethanolic excerpts as bioactive component and formulated in the form of cream base. Dissolve above specified quantity of extract in 7.75 ml of water and added the remainder of the constituents in water, then heat the mixture to 70°C in a beaker. Melt the stearyl alcohol and white petrolatum on a hot plate. Heat this admixture to 70°C. Slowly incorporate the oleaginous phase into the aqueous phase with constant shifting. Remove from the heat and the admixture should be stirred until it gels. To produce the expression, the substances and their volume were employed. **Table No. 2 Formulation Chart**

S r N o .	Name of Ingredients	Quantity in Percent %			Quantity taken		
		F1	F2	F3	F1	F2	F3
1	Ethanolic extract	2%	3%	6%	0.5g	0.9g	1.5g
2	Sodium lauryl sulphate	1.2%	3.6%	1%	0.30g	0.20g	0.25g
3	Propylene Glycol	16%	16%	12%	4ml	4ml	3ml
4	Stearyl Alcohol	28%	23.07%	25%	7g	6g	6.25g
5	White Petrolatum	28%	25%	25%	6.30g	6.25g	6.25g
6	Purified Water	28%	31%	31%	7ml	7.75ml	7.75ml

- **Evaluation of Cream-**

- 1] **Colour:** It Was noted that the cream Visual Observation.
- 2] **Odour:** To taste the drug with the aid of the lingo and to descry its Odour, veritably little of it was used.
- 3] **Homogeneity:** the formulation was tested for homogeneity by visual appears & touches.
- 4] **Appearance:** The cream's appearance was assessed using its colour plum scenes, roughness and graded.
- 5] **After feel:** Emolliency, slipperiness, and the volume of leftover cream after applying a preset quantum.
- 6] **Type of smear-**After operation of cream the type of film or smear formed on the skin checked
- 7] **Ease of removal-** the ease of junking of the cream applied was examined by washing the applied part with valve water.
- 8] **Irritancy test-** make an area (1sq cm) on the left-hand dorsal face Cream was utilized on the face Time and place were noted.
- 9] **Determination of Ph;** done by using ph. Paper.

RESULTS AND DISCUSSION

In Batch F3 The colour of cream was Observed Light shade of yellow, homogeneous with no roughness, the cream shows good emolliency and smear was formed, and cream was Easy to remove from the skin And the Ph observed which was 6. **Table No. 3-Observation Table**

Sr. No	Parameters	Observations		
		Batch F1	Batch F2	Batch F3
1)	Colour	Faint yellow Green	Faint Yellow Green	Light shade of yellow
2)	Odour	Odourless	Odourless	Odourless
3)	Homogeneity	Homogeneous	Non homogeneous	Homogeneous
4)	Appearance	No roughness	No roughness	No roughness
5)	After feel	Emolliency	Emolliency	Emolliency
6)	Type of smears	Smear formed	Smear formed	Smear formed
7)	Ease of removal	Easy to remove	Easy to remove	Easy to remove
8)	Irritancy test	Less Irritation	Absent	Absent
9)	Determination of pH	5	5.6	6

In-Vitro study- Microscopical images representing the In vitro mending of injuries Nature of Sample S: Images were taken after 48 hours of incubation with L929 cells in the presence or absence of Sample JG and the reference drug Cipladine. According to images and results

Sample S showed moderate

Activity

Table no.4 Percentage (%) of cells migrated towards the crack and involved in crack check.

	0 hrs (mm)	24 hrs (mm)	48 hrs (mm)
Control	00	23	25
Standard cipladine (5 µg/mL)	00	46	51
	00	28	31

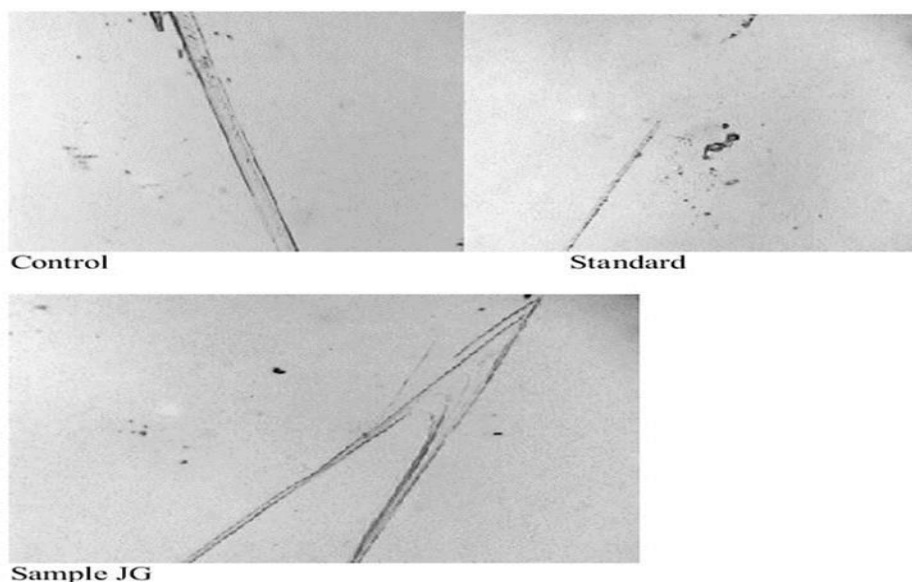


Fig. 3 Microscopical representations of the nature of in vitro wound healing

Conclusion

Successful development of an herbal skin cream formulation that complied with the necessary pharmacological requirements for wound healing. The produced formulations demonstrated excellent spreadability, no signs of phase separation, and satisfactory consistency across the research period. Evaluation qualities such as colour, smell, and uniformity, visual appeal, post-feel, and smear type, ease of removal, irritancy test, determination of Ph. showed that There was nothing observable change throughout the study period. From the current study, it may be inferred that creams containing plant extracts could be created and used to provide a barrier to shield skin. Plants are more effective healers because they encourage the body's natural healing process natural system.

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REFERENCES

- 1) https://www.physio-pedia.com/Wound_Healing.
- 2) Review of skin care cream formulation and assessment by Jamshiyashamsu for crack mending.
- 3) An overview of advancements in crack mending and crack care technologies by Ashlata*, Karthik G. Vaidy, and Pooja B.
- 4) GST, ABV, PDD, and K R (2022). An analysis of collagen's part in cark mending. 10(4), 98–101, Asian Journal of Pharmaceutical Research and Development. <https://doi.org/10.22270/ajprd.v10i4.1152>
- 5) Fungal Co-infections Associated with Global COVID-19 Pandemic: A Clinical and Diagnostic Perspective from China. Song Ge, Liang Guanzhao, Liu Weida. Mycopathologia. 2020;185(4):599–606.
- 6) Fungal Co-infections Linked to COVID-19 Worldwide A Clinical and Diagnostic View of the Epidemic from China. 2020;185(4):599–606. Song Ge, Liang Guanzhao, and Liu Weida. Mycopathologia. Six. V.V. Ranade mechanisms for delivering medicines.
- 7) Review on collagen as a crack healer. Asian Journal of Pharmaceutical Research and Development. 2022; 10(4):98-101. Tribhuvan G.S.*, VelhalA A. B, Jadhav P.D, Redasani V.K.
- 8) <https://en.m.wikipedia.org/wiki/Cream>
- 9) Review on ethnobotany, phytochemistry, and pharmacology of Jasminum grandiflorum Linn (Chameli) A review Sandeep and Padma
M Paarakh1*
- 10) <https://youtu.be/7JeQM9pBrQs>.
- 11) <https://www.slideshare.net/arulrathna/cream-formulation-and-evaluation-148989517>
- 12) Srinivasa Rao Bolla in vitro mending of injuries energy of methanolic splint excerpt of Aristolochia saccate is possibly mediated by its stimulatory effect on collagen-1 expression, Heliyon xxx (2019) e01648