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STUDY OF PHYTOCHEMICAL CONSTITUENTS OF *CONVULVULUS PLURICAULIS* & FORMULATION AND EVALUTION OF HERBAL SOAP FOR IMPROVING SKIN HEALTH BY USING *CONVULVULUS PLURICAULIS*

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ABSTRACT
The present investigation was to formulate herbal soap using Convolvulus pluricaulis Choisy, Reetha, Shikakai, Aloe vera and coconut oil for improving skin health. The main objective of our study to develop and evaluate herbal soap which is fulfill with different activities such as Anti-aging, Anti-wrinkles, Anti-inflammatory, Anti-acne, Anti-bacterial. We studied phytochemical constituents which are useful for improving skin health such as flavanoids, alkaloids and glycosides. We studied the parameter such as pH, physical evaluation, foam test, foam retention, stability test, foam height, moisture content and skin irritation test. Based on the result we can suggest that formulation was stable and can be safely use on the skin.

KEYWORDS: Convulvulus pluricaulis, Skin heath, Flavanoids, Alkaloids, Glycosides, Anti-wrinkle.

INTRODUCTION
In the last few years, there has been an exponential growth in the field of herbal cosmetic, and these cosmetics are gaining popularity both in developing and developed countries because of their natural origin and less side effects. Early humans recognized their dependence on nature for a healthy life, and since that time humanity has depended on the diversity of plant resources for food, clothing, shelter, and medicine to cure myriads of ailments. Shankhpushpi of the Ayurvedic pharmacopoeia of India consists of the whole plant of Convulvulus pluricaulis Choisy (Convolvulaceae).

Convolvulus Pluricaulis Choisy also known as Shankhpushpi belongs to family convolvulaceae and is found in most of the regions. The most likely appearance of the flower is like a "Shankh" (a marine shell) which is why the name given to this plant is Shankhpushpi (Pushpa meaning flower). It is a perennial herb has appearance like morning glory. Presence of phenolic and flavanoids shows that this plant can be use for various pharmacological studies in betterment of human life.

According to the ancient literature, this herb has been attributed with several therapeutic properties, such as anxiolytic, neuroprotective, antioxidant, analgesic, immunomodulatory, antimicrobial, antidiabetic and cardioprotective activities. This medicinal herb has been reported to contain many bioactive phytoconstituents, such as, alkaloid (convolamine), flavonoid (kaempferol) and phenolics (scopoletin, β-sitosterol and ceryl alcohol), that have been ascribed to the observed medicinal properties.

It helps in controlling wrinkles, Skin infection, treat acne or pimples and increases moisture content in the skin. It also helps to reduce degeneration of skin cells and works as anti-aging due to its Rasayana (rejuvenating) property.

PHYTOCHEMICAL STUDIES

Detection of Glycosides				
Modified Born Trager's test	A rose-pink to blood red coloured solutions	Yes	Anti – oxidant	
Detections of Flavanoids				
Shinoda's test	A pink to crimson coloured solution {flavanol glycosides}	Yes	Anti- inflamm atory Anti- aging	
Detection of Alkaloids				
Dragendroff 's Test	A reddish-brown precipitate	Yes	Anti- acne	

Major phyto-constituents of Convolvulus pluricaulis (CP) with their reported medicinal utility.

Name of the compound	Category of phytoconstituents	Medical profile
Convolamine	Alkaloid	Antihypoxic,immune-modulating and anti-inflammatory activity
Convolvine	Alkaloid	Antihypoxic, immune-modulating, and anti-inflammatory activity blocks the M-receptors; exhibits nootropic, cytotoxic and sedative activity
Delphinidine	Anthocyanin	Antioxidant, anti-mutagenic, anti-inflammatory and antiangiogenic
Kaempfero	Flavonoid	Activates LXR-β and suppresses SREBP-1 to enhance symptoms in metabolic syndromes; potent inhibitory effect on *in vitro* bone resorption; anti-inflammatory, anti-oxidant activity; inhibition of cancer cell invasion through blocking the PKCδ/MAPK/AP-1
Quercetin	Flavonoid	Antioxidant activity; stimulator of recombinant SIRT1 and also a PI3K inhibitor; attenuated the function VEGFR, androgen receptor and the expressions of NF-κB, IL Receptor, FAK, ERK, Nrf2
Scopoletin	Coumarin	Antifungal, anti-allergic, anti-aging and hypouricemic activities

MATERIALS AND METHODS

Collection of plant material

The flower of Convolvulus Pluricaulis Choisy, seeds of Sapindus mukorossi, pods of Acacia nilotica and Leaf of Aloe barbadensis were collected from different matured plants, shaded dried, pulverized and stored in air tight bottles for study. Coconut oil was purchased from local market.

Processing of plant material

Extraction of Sapindus mukorossi, Acacia concinna, was done by decoction method taking water as a solvent. In a conical flask 10 gm of each powder was added. For 24 h, it was extracted with occasional stirring and extract was collected using rotary evaporator. The latex of Aloe barbadensis was scrapped with the help of a spatula; the latex obtained was grinded using mixer grinder and juice obtained after grinding was kept in the water bath until bubbles in the juice disappear and stored in refrigerator for further use. Extraction of oil from Convolvulus prostrates flower was done by successive solvent Shankhpushpi extraction.

and the extract was evaporated till thick liquor was obtained. After then calculate the difference in weight was noted until the constant weigh was obtained.

FORMULATION

Preparation of Soap Base

Table 3: Formulation of Soap Base.

S.NO	Ingredients	Quantity
1.	Coconut oil	20 gm
2.	Sodium hydroxide	9 gm
3.	Stearic acid	21.5 gm
4.	Distilled water	30 ml

Procedure

- For preparing the soap base, first of all take 20 ml coconut oil in a 100 ml beaker.
- Put the coconut oil in the water bath and stir-boil it until a strong consistency forms at a temperature between 40 to 45 °C.
- Then add 21.5 gm of stearic acid in the above beaker containing coconut oil heat the both mixture my maintaining constant temperature of 70°C and keep it a side.
- Then take 9 gm sodium hydroxide dissolve in 30 ml distilled water in a another beaker and mixed properly and heat it and keep it a side.
- After preparing, this solution was added slowly in coconut oil mixture with constant stirring.
- The mixture was boil at 40–45 °C until base consistency is attained and then this mixture was used as a soap base.

Formulation of Herbal soap

Table 4: Formulation of herbal Soap.

S.NO	INGRIDENTS	QUANTITY
1.	Soap Base	6ogm
2.	Reetha extract	5gm
3.	Shikakai extract	5gm
4.	Convulvulus pluricaulis extract	5gm
5.	Honey	10gm
6.	Aloe vera extract	10gm
7.	Lavender aroma	4-8 drops

Procedure

Take 60 ml of soap base in a beaker and put on water bath at 45℃.

¬ Then add the all ingredient (M. oleifera leaves extract, C. sinensis peel powder, C.

- Take 60 ml of soap base in a beaker and put on water bath at 45℃.
- Then add the all ingredient (*Convulvulus pluricaulis* Flower extract, Acacia nilotica fruit pod powder, Aloe barbadensis leaf latex extract, Sapindus mukorossi powder) with continuous stirring in to soap base
- Boil the mixture on the water bath at 45℃ and soap mixture is prepared.
- Then add lavender aroma
- Prepared soap mixture is filled in soap moulds and mould is put in the refrigerator for 15 minutes.
- After solidification cut the soap mould using cutter or blade
- The herbal soap is obtained.

Evaluation of Herbal Soap

In order to verify the efficacy and quality of the final formulations, the following physicochemical characteristics were tested such as colour, aroma, pH, clarity, dirt dispersion, foam height, foam retention, skin irritation, and saponification value, etc. The herbal soap formulation was tested using the standard approaches.

1. Colour- When visualizing the herbal soap, a white background was used so that the colour could be determined and so that the clarity of formulation could be seen.

2. Odour/Aroma- An evaluation of the odour of formulation we used two different methods. The first method included heating the sample on a hot plate. The second method involves inhaling a direct sample by five to six different people, including both males and female.

3. Shape- Evaluation of organoleptic properties, such as shape and clarity, was carried out by sensory and visual examination.

4. pH- In order to determine the pH or hydrogen ion concentration, we must prepare 1% of the sample. We used a pH 4 and pH 7 buffer solution to calibrate the pH metre. Take pH readings at room temperature, just as the reference solution. Record and note the pH level of the solution that was used to calibrate the meter and the electrode. The final readings were determined by taking an average of the three different readings that were obtained from each of the samples after they were each examined three times.

7. Foam forming ability- The Cylinder Shake Method was utilized to determine the Foaming ability. First, in a 100 ml measuring cylinder, we put 50 ml of a 1% sample solution and foam that had formed and recorded the total volume of foam.

8. Foam stability- The Cylinder Shake Method was utilised to determine the Foaming ability. First, in a 100 ml measuring cylinder, we put 50 ml of a 1% sample solution. The shaken vigorously 10 times. After shaking for 1 minute, we measured the height of the cylindrical container was covered up with the use of the hand and shaken vigorously 10 times. The volume of the foam after ten minutes was calculated.

9. Moisture content- About 10 gram of the material was heated in a hot air oven at 100 to 105 degrees Celsius for an hour. After that deducted the true weight of the tarred china dish from the total weight of the sample and dish.

The weight of the material was recorded, and the method for calculating the percentage of the

Moisture content = (Difference in weight/initial weight) x100

10. Skin Irritation test- For the determination of irritancy test, Use the soap sample on clean skin to observe for signs of irritation, such as redness, burning, or itching and 24 hours, the situation was monitored.

Results of Evaluation Parameter

S.NO	PARAMETERS	RESULT
1.	Colour and clarity characterization	Brown
2.	Odour	Pleasant
3.	Shape	Round shape
4.	Ph	9
5.	Foam forming ability	10 cm
6.	Foam stability	3cm
7.	Moisture content	0.7
8.	Skin Irritation test	No

CONCLUSION

In the present study the phytochemical constituents of Convolvulus pluricaulis were studied and observed the following chemical constituents like flavanoids, alkaloids and glycosides which are useful for rejuvenating skin. And prepared herbal soap with Convulvulus pluricaulis along with Reetha, shikakai, aloe vera and evaluated successfully for various characteristic like: colour, odour, shape, pH, foam forming ability, foam stability and moisture content and are in acceptable limit.

The prepared herbal soap might show the following properties.

1. Anti aging and anti inflammatory due to the presence of Flavonoids.
2. Anti-acne due to the presence of alkaloids.
3. Anti-oxidant due to the presence of glycosides.
4. The presence of flavanoids was confirmed by respective test hence it is concluded Shankhpushpi herbal soap is used for improving skin health.

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