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DEVELOPMENT AND EVALUATION OF HERBAL BATH SOAP CONTAINING SOME AYURVEDIC VARNYA HERBS

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ABSTRACT

The use of cosmetics was directed not only towards developing an outwardly pleasant and attractive personality, but towards achieving merit. Plants with medicinal properties are being used as traditional medicine from times immemorial. The active constituents responsible for such medicinal values are employed topically as creams, soaps, oils and ointments for treating skin related ailments like acne, wounds, eczemas, and ring-worms, as an anti-microbial agent and for cosmetic purposes. The aim of the present work is to prepare an herbal Bath soap containing the extracts of Ayurvedic Varnya Herbs like *Glycyrrhiza glabra* roots, Curcuma *longa* rhizome and *Phyllanthus emblica* fruit analyzing its physicochemical properties.

Keywords: Varnya Herbs, Herbal Soap, *Glycyrrhiza glabra* roots, Curcuma *longa* rhizome, *Phyllanthus emblica*

INTRODUCTION:

The ancient science of cosmetology is believed to have originated in Egypt and India, but the earliest records of cosmetic substances and their application dates back to Circa 2500 and 1550 B.C, to the Indus valley civilization. There is evidence of highly advanced ideas of self beautification and a large array of various cosmetic usages both by men and women, in ancient India. Many of these practices were subtly interwoven with the seasons (Sanskrit: Rutus) and the normal rituals of life (Sanskrit: Dinacharya).

Significantly, the use of cosmetics was directed not only towards developing an outwardly pleasant and attractive personality, but towards achieving merit (Sanskrit: Punya), Longevity with good health (Sanskrit: Aayush and Aarogyam) and happiness (Sanskrit: Anandam) **[1]**. The word cosmetics defined as "Substances of diverse origin, scientifically compounded and used to cleanse, allay skin troubles, cover up imperfections and beautify. Varnya refers to medicinal herbs that promote "skin whitening" (whatever brings softness and beauty to skin along with enhancement of complexion, radiance or luminescence is termed as varṇya) **[2]**.

The origin of cosmetics forms a continuous narrative throughout the history of man as they developed. The man in prehistoric times 3000BC used colors for decoration to attract the animals that he wished to hunt and also the man survived attack from the enemy by colouring his skin and adorned his body for protection to provoke fear in an enemy (whether man or animal) **[3]**. The origin of cosmetics were associated with hunting, fighting, religion and superstition and later associated with medicine **[4]**. Herbal cosmetic also known as "natural cosmetics". The demand of herbal medicines is increasing rapidly due to their lack of side effects. With the beginning of the civilization; humankind had the attractive plunge towards impressing others with their looks. At the time, there were no fancy fairness creams or any cosmetic surgeries. To begin with just thing they had was the information of nature, aggregated in the Ayurveda. With the art of Ayurveda, a few herbs and floras were used to make Ayurvedic cosmetics that truly worked. Ayurvedic cosmetics not only beautified the skin but acted as the shield against any kind of external affects for the body. Ayurvedic cosmetics also known as the herbal cosmetics have the same admirable resources in the present day period too **[5]**.

Human skin, the outer covering of the body constitutes the first line of defense protecting the body against various pathogens. As the skin interfaces with environment, it is constantly exposed to different environmental stimuli. This makes the skin damage prone. Severely damaged skin will often try to heal by forming scar tissue, which is often decolorized and depigmented **[6]**.

Plants with medicinal properties are being used as traditional medicine from times immemorial. The extract obtained from the leaves, stem and roots of various medicinal plants have been employed as a natural

remedy in curing various ailments and diseases. Even though many of the plant based products have been replaced by synthetic chemicals, the safety and efficacy of Ayurvedic products has set standards. The active constituents responsible for such medicinal values are employed topically as creams, soaps, oils and ointments for treating skin related ailments like acne, wounds, eczemas, and ring-worms, as an anti-microbial agent and for cosmetic purposes **[7]**.

Soap is an important surface-active agent and it is chemically the alkaline metal salt of long-chain fatty acids. The most common used fat or oils for production of soap through Saponification reactions are animal tallow, coconut oil, palm oil, kernel oil and linseed oil. Similarly potassium and sodium hydroxides are widely used as the caustic alkaline for the purpose **[8]**.

A natural soap may be generally divided based on the production method into: a melt – pour soap, hot process soap, and cold process soap. The hot process soap is called a transparent or translucent soap. The soap has good detergency or cleansing power, good moisturizing effects, long-lasting fragrance, and less of irritant. Herbal soaps are prepared by adding various dried herbs, flowers and stems into soap base. Herbs are the natural products could be found in the treatment of almost all diseases and skin problems owing to their high medicinal value, cost effectiveness, availability and compatibility **[7]**.

Glycyrrhiza glabra, Curcuma longa, Phyllanthus emblica are mentioned under Varnya herbs in Ayurveda and their modern counterpart

The aim of the present work is to formulate a herbal Bath soap containing the extracts of *Glycyrrhiza glabra* roots, Curcuma *longa* rhizome and *Phyllanthus emblica* fruit analyzing its physicochemical properties.

Glycyrrhiza glabra belongs to family Leguminosae commonly known as Liquorice is a is a perennial, temperate-zone herb or sub shrub, native of India. It has been used in Iranian herbal medicine for skin diseases, including dermatitis, eczema, pruritus and cysts **[9]**. *Curcuma longa* belongs to family Zingiberaceae, commonly known as turmeric, is native to Southwest India with its rhizomes being the source of a bright yellow spice with various medicinal applications. It is widely cultivated throughout the tropics and similarly used for it medicinal value in the treatment of ringworm, obstinate itching, eczema, and other parasitic skin diseases also used in the cosmetic industry, and as a dye **[10]**. *Phyllanthus emblica* (syn. *Emblica*

officinalis Gaertn). This plant ranges in status from insignificant in the Western world to highly prize in tropical Asia. The tree is graceful ornamental, normally reaching a height of 60 ft (18 m) and in rare instances of 100 ft (30 m). Emblica helps protect the skin from the damaging effects of free radicals, non-radicals and transition metal-induced oxidative stress. Emblica is suitable for use in anti-aging, sunscreen and general purpose skin care products **[11]**.

MATERIALS AND METHODS

- ✓ **Sample collection and extraction**

Glycyrrhiza glabra, Curcuma longa, Phyllanthus emblica plant materials were collected from local herbal retail shops of Nandurbar and washed and shade dried for 2 weeks. All material were powdered separately and the extracted separately by using distilled water and extract was obtained.

- ✓ **Phytochemical screening analyses**

Preliminary phytochemical screening was carried out to determine the presence of various bioactive constituents like carbohydrates, Alkaloids, Anthraquinones, Coumarins, Flavonoids, Phenol and tannins, Proteins, Saponins, Steroids, Terpenoids on all extracts **[12, 13]**.

- ✓ **Formulation of herbal soap**

Soap base was purchased from local market. About 100g of soap base was taken and cut into pieces and melted in oven until it turns into liquid base. To it, add 10 ml extract of *Glycyrrhiza glabra,* 10 ml extract of *Curcuma longa,* 10 ml extract of *Phyllanthus emblica* were added. Few drops of coconut oil were also added. The mixture was poured in a cast and allowed to dry **[7]**.

- ✓ **Evaluation of Soap**
- ✓ **Physicochemical evaluation of herbal soap**
  - **Organoleptic evaluation**

Color, odour and texture were checked against a white background by naked eyes and odor was checked by smelling.

  - **pH**

The pH of the prepared soap was assessed by touching a pH strip to the freshly formulated soap and conjointly by dissolving 1 g in 10 ml water with the help of digital pH meter.

  - **Determination of foaming ability**

2g of the soap was dissolved in 50 ml of distilled water in a 100 ml measuring cylinder and shaken vigorously for 2 min. It was allowed to stand for 10 min after which the height of the foam was measured. This was repeated thrice and the mean computed **[7]**.

  - **Foam retention**

About 1% soap solution was prepared and from this, 25 ml was taken in a 100 ml measuring cylinder. The cylinder was covered with hand and shaken for 10 min. The volume of foam at 1 min intervals for 4 min was recorded **[6]**.

- **Determination of percentage free alkali**

About 5 g of sample was added to 50 ml of neutralized alcohol and was boiled for 30 min under reflux on a water bath, then cooled and to it 1 ml of phenolphthalein solution was added. It was then titrated immediately with 0.1 N HCl **[6]**.

- **Determination of Total fatty matter (TFM)**

The total fatty matter test is carried out by reacting the soap with acid in the presence of hot water and measuring the fatty acids obtained. About 10 g of the finished soap was weighed and 150 ml distilled water was added and heated. The soap was dissolved in 20 ml of 15 % Sulphuric acid while heating until a clear solution was obtained. Fatty acids on the surface of the resulting solution were solidified by adding 7g of bee wax and is reheated. The set up was allowed to cool to form cake.[6] Cake was removed and blotted to dry and weighed to obtain the total fatty matter using a formula:

%TFM = (A –X) / W x 100

Where; A= weight of wax+ oil, X=weight of wax, W= weight of soap.

- **Determination of moisture content**

About 10g of the sample under study were accurately weighed and transferred to a tarred china dish of known weight and kept in a hot air oven at 100 – 105°C for an hour. Then, the sample was weighed along with the china dish to deduct the actual weight of tarred china dish. The weight of the content was noted to calculate the percentage moisture content.

Moisture content = (Difference in weight / initial weight) x 100

RESULT AND DISCUSSION

- ✓ **Phytochemical screening analyses**

Phytochemical analysis of *Glycyrrhiza glabra, Curcuma longa, Phyllanthus emblica* revealed the presence of phytochemicals such as carbohydrates, Alkaloids, Anthraquinones, Coumarins, Flavonoids, Phenol and tannins, Proteins, Saponins, Steroids, Terpenoids which is tabulated in **Table 1**.

Evaluation of Soap

- ✓ **Physicochemical evaluation of herbal soap**

The physicochemical properties of soap include Color, odour and texture, pH, Foaming ability, Foam retention, Alkali content, Total fatty matter (TFM), Moisture content which are tabulated in **Table 2**.

Table 1: Phytochemical screening analysis

Phytochemicals	*Glycyrrhiza glabra*	*Curcuma longa*	*Phyllanthus emblica*
Carbohydrates	+	+	+
Alkaloids	+	+	+
Anthraquinones	+	-	+
Coumarins	+	-	-
Flavonoids	+	+	+
Phenol and tanins	+	+	+
Proteins	+	+	+
Saponins	+	+	+
Steroids	+	+	-
Terpenoids	+	+	+

Table 2: Physicochemical evaluation of herbal soap

Sr. No	Parameters	Results
1	Color	Light Brown
2	Odour	Fragrant
3	Texture	Solid and smooth
4	pH	8.01
5	Foaming ability	7.9
6	Foam retention	5
7	Alkali content	0.04 %
8	Total fatty matter (TFM)	38 %
9	Moisture content	6.6 %

CONCLUSION

In conclusion, the formulated soap by different extracts showed the potential in soap formulation. The physicochemical property of the formulated soap was good and comparable.

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