

ORIGINAL RESEARCH**FORMULATION AND EVALUATION OF SHAMPOO FORMULATED BY *GLYCINE MAX* SEEDS****Reena Bhatt*, Ashok Kumar, Ankita Sharma**

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ABSTRACT: Herbal shampoo is effective in terms of safety and treating the dandruff condition better than the chemical based shampoo. The aim of this study was to formulate a complete herbal shampoo comparable with synthetic shampoo available in the market. Formulation is done by using soybean seeds extract which is commonly used traditionally. All ingredient used to formulate shampoo are safer than silicon and synthetic conditioning agents. Several tests were performed to evaluate and compared the physiochemical properties for both herbal and marketed shampoo.

KEYWORDS: Herbal shampoo, *Glycine max* Seeds, Shampoo formulation.

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INTRODUCTION:

In today's world physical appearance and notion of looking young and energetic plays a greater role than ever. Hair length, colour, style are important for peoples for their physical appearance and self perception. The principle protein component of hairs is keratin containing 18 amino acids.

Common problems affecting the hair and scalp

include hair loss, infections, and disorders causing itching and scaling and fungal infection of scalp ringworm (*tinea capitis*).¹

Dandruff is a common chronic scalp condition marked by flaking of the skin on our scalp. Although dandruff is not contagious and is rarely serious, it can be embarrassing and sometimes difficult to treat. (As shown the below A, B & C)

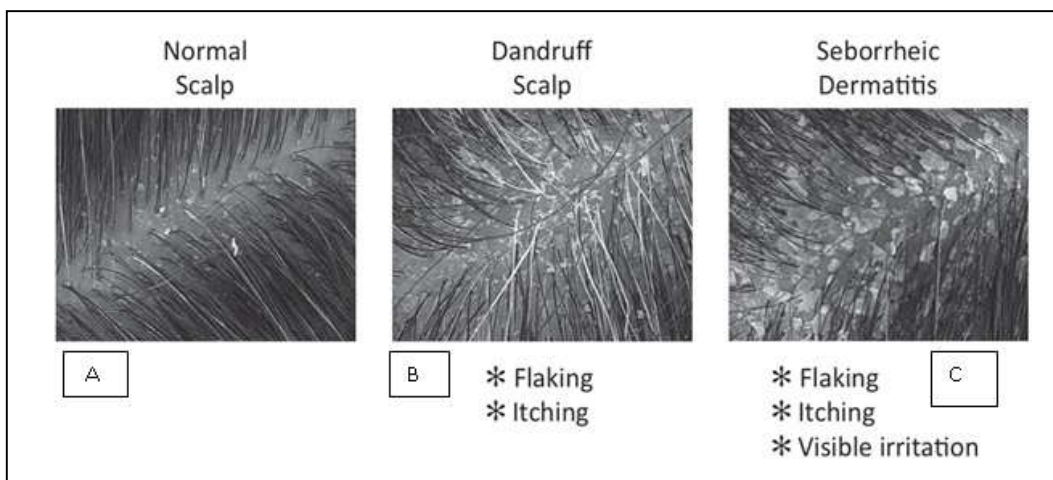


Fig. 1: Hair Conditions

(1) Usually accompanied by itching. Flakes of skin that ranges from small and white to large, greasy, and yellow.

(2) Itchy flaking that appears on the scalp or eyebrows or around the hairline, ears or nose. Dandruff is usually diagnosed through the flakes of skin, but in severe cases, other skin or health conditions may be investigated.

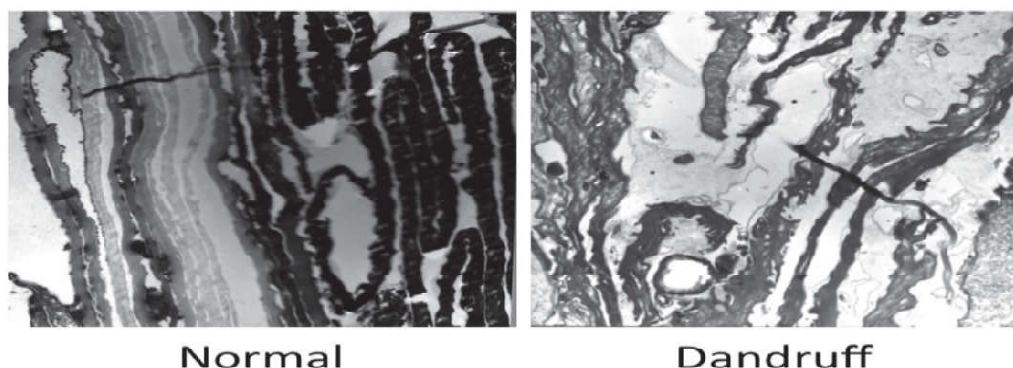


Fig.2: Scalp conditions

The microbial origin of dandruff centers on the causal role of yeasts of the genus *Malassezia furfur*. Although members of the normal cutaneous microflora, yeast of the genus *Malassezia* have been known for many years to play a role in human skin diseases including dandruff, seborrheic dermatitis, pityriasis versicolor, and *Malassezia folliculitis*, and they may likewise play a role in the exacerbation of atopic dermatitis and psoriasis.¹

Multiple topical agents are effective therapies for the treatment of dandruff. These agents include pyrithione zinc,^{2,59-62} selenium sulfide,^{2,8,63-64} salicylic acid,⁶⁰ sulfur, 60 coal tar,^{60,65} hydrocortisone,⁶⁰ and ketoconazole.^{2,8,59,62}

Some Herbal anti dandruff agents: - Clove oil, Basil oil, Tea tree oil, Rosemary oil, Pepper extract, Coleus oil.

Some synthetic anti dandruff agents: - Ketoconazole, Fluconazole, Climbazole, ZnPTO.²

A shampoo is a preparation of a surfactant (in a suitable form—liquid, solid or powder) which when used will remove surface grease, dirt, and skin debris from the hair scalp. In the early day shampoo could be defined as an effective cleansing agent for hair and scalp, but today the shampoo must do much more. It must leave the hair easy to comb, lustrous and controllable while being convenient and easy to use.³

Table 1: Classification of shampoos/types of shampoos: ^(2&3)

Types of Shampoos	Some Marketed Herbal Shampoos
Powder Shampoo	Patanjali kesh kanti milk protein hair cleanser.
Liquid Shampoo	Kesh king herbal shampoo
Lotion Shampoo	Sesa hair protein shampoo
Cream Shampoo	Aloe aroma shampoo
Jelly Shampoo	Neem herbal shampoo
Aerosol Shampoo	VLCC hibiscus anti-dandruff shampoo
Specialized Shampoo	Bio soya protein shampoo
Conditioning Shampoo	
Anti-dandruff shampoo	
Baby shampoo	
Two layer shampoo	



Fig.3: Plant and Seeds of *Glycine Max*

MATERIAL AND METHODS:

Collection of plant material

The soyabean seeds were purchased from the local market shop.

Preparation of plant extract

Aqueous extract: 10 gm of coarsely powdered drug was soaked with a little of distilled water in a conical flask. After an hour 100 ml of water was added to the moistened drug and it was allowed to macerate for 7 days with occasional shaking. After a week the liquid was filtered with the help of muslin cloth and drug material was pressed to liberate more menstrum from the marc. Both the extracts were mixed and the liquid has evaporated to get a brown colour aqueous extract.

Ethanolic extract: 10 gm of coarsely powdered drug was soaked with a little of ethanol in a conical flask. After an hour 100ml of ethanol was added to the moistened drug and it was allowed to macerate for 7 days with occasional shaking. After a week the liquid

was filtered with the help of muslin cloth and drug material was pressed to liberate more menstrum from the marc. Both the extracts were mixed and the liquid was evaporated to get a brown colour aqueous extract.

Hydroalcoholic extract: 10gm of the coarsely powdered drug was soaked with a little of 50:50 mixture of ethanol and water in a stainless steel closed container. After an hour 200ml of mixture of ethanol and water was added to moisten the drug and it was allowed to macerate for 7 days with occasional shaking. After a liquid was filtered with the help of muslin cloth and the drug material was pressed to liberate more menstrum from the marc. Both the extract was mixed and the liquid was evaporated to get a brown colour aqueous extract.

Determination of saponin property:

Foam test:- The 1 gm of powder drug was shaken vigorously with 20 ml of water. Persistent foam was observed.

Table 2: Composition of formulated herbal shampoo :

Material	Quantity
Neem oil(ml)	2.0
Eucalyptus oil(ml)	2.0
Aloevera gel(ml)	2.0
Henna oil(ml)	2.0
Carbopol(gm)	1 gm
Soyabean extract(gm)	Different concentrations
Glycerine(ml)	1
EDTA(gm)	0.15
Sodium hydroxide	To adjust pH
Water & perfume	q.s
Total	100ml

Table 3: Evaluation of shampoo.¹³

Formulation	Appearance/ Colour	pH (10% sol)	Surface tension (dy/cm)	Foam type	Dirt dispersion
F1	Creamish white	7.01	31.71%	Small,airy	Moderate
F2	Creamish white	6.14	30.12%	Small ,airy	Light
F3	Creamish white	7.02	33.36%	Small,airy	Light
F4	Creamish white	7.01	34.20%	Small ,airy	Light

Table 4: Evaluation of foam stability of formulation

Time in min	Foam vol(ml)			
	F1	F2	F3	F4
1min	92	93	97	95
2min	89	87	94	93
3min	86	86	93	92
4min	85	84	89	89
5min	83	81	88	87

Table 5: Evaluation of formulation for viscosity

RPM	Viscosity			
	F1	F2	F3	F4
(Spindle 63) 10	1210	1288	13	14
			86	76
20	588	612	62	78
			8	6
(spindle 64) 10	255	326	24	30
			6	1
20	120	288	13	29
			6	6

Table 6: Evaluation comparison of formulated herbal shampoo with marketed shampoo.¹³

PARAMETERS	FORMULATED SHAMPOO	MARKETED SHAMPOO
Colour	Creamish white	White
Transparency	Milky opaque	Milky opaque
pH (10% sol)	7.02	6.14
% Solid content	73.04%	71.56%
Foam vol(ml)	92	122
Foam type	Small, airy	Small ,dense
Surface tension(dynes/cm)	33.36	39.32

DISCUSSION:

In the present study herbal shampoo formulation attempt was made to evaluate anti dandruff and foaming potential of *Glycine max* plant (soyabean seeds).The soyabean seeds was collected from the local shop in dehradun .The seeds was crushed to powdered form which was used to prepare aqueous and alcoholic and hydroalcoholic extract which were evaluated for foaming and lather formation activity due to presence of saponins.

CONCLUSION:

The aim of this study was to formulate a

complete herbal shampoo which is compared with synthetic shampoo in the market formulation is done by using soybean seeds extract which is commonly used traditionally .All ingredient used to formulate shampoo are safer than silicones and synthetic conditioning agents. several tests were performed to evaluate and compare the physiochemical properties for both herbal and marketed shampoo. Prepared shampoo shows comparable results with that of marketed shampoo for quality control test but further research and development is required to improve its overall quality.

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