



Formulation And Evaluation Of Natural Hair Dye

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Abstract:

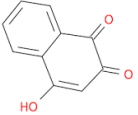

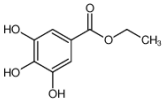

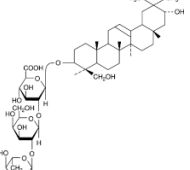

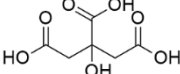

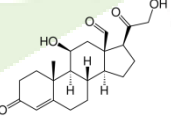

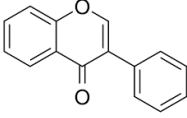

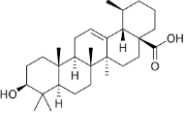

The medicinal plants are plants considered to be effective and most important for human health. Some of the natural medicinal plants are so common that we use them in our daily lives without knowing their medicinal importance. In the current examination, different blends of powdered leaves and hair care plants like Henna, Indigo, Bhringraj, Amla, Shikakai, Gulvel, Bramhi, Jatamansi, and Shatawari were assessed for their shading and awareness responses. Henna and indigo detailing were viewed as reasonable normal colourants. In the current examination, endeavours were made to make a powerful homegrown hair colour that gives a rosy, earthy tone to hair, looking like normal hair tone with better colouring impact and a more prominent maintenance limit in correlation with the showcased natural hair colour plan. Most of the showcased herbal hair colour definitions contain para-phenylenediamine at 20–25% fixations, which is the primary element of business-engineered colours. Setting off unfavourably susceptible skin responses in many people is known. Ayurvedic powder hair colour, absent any trace of any engineered specialist, was ready in the present examination work and assessed for colour productivity.

Keywords:- Natural Hair Colorants, Dye Yielding Plants, Hair Plants, Henna, Shikakai, Amla, Indigo, Gulvel, Jatamansi, Bramhi, and Shatawari

INTRODUCTION

As compared to chemical-based hair dyes, which cause skin and other skin-related diseases, natural herbal dyes are being preferred nowadays [1]. Today, most human beings are very careful about their beauty, and hair plays an important role in this. Herbal drugs without any adverse effects are used for healthy hair [2]. In the old days, different materials from plants like henna, chamomile, indigo, and so forth were utilised to colour the silver-coloured hair to get a regular dark colour, yet rather than getting a dark colour, individuals went from red to copper. Loss of variety in hair is due to fluctuating reasons like hereditary impact, impact of natural variables, utilisation of alcoholic arrangements, and so forth. Although long-lasting engineered hair colours are accessible in a variety of varieties and hold regular brilliance, they have the main burden of creating overly sensitive responses in certain people. 13% of phenylenediamine, which is an engineered hair colour, messes with the skin and garments during use. In the current examination, the details are created to get a normal dark variety by utilising a mix of various plant materials. And perform the various evaluation tests. The main aim of the present investigation is to formulate natural and safe hair colours.[3]

DESCRIPTON OF THE INGREDIENTS OF THE HERBAL HAIR DYE

Sr. no	Name of drug and synonym	Biological source	Chemical Constituents	Picture	Uses
1	Henna, Egyptian privet	Fresh and dried leaves of Lawsonia inermis, Family- Lythraceae.	Lawson, gallic acid 		Colouring agent Antifungal[4]
2	Amla, Indian goose berry, Emblica	Dried as well as fresh fruits of Emblica officinalis Family Euphorbiaceae	phyllemblin 		Antioxidant, Maintains hair colours[5]
3	Reetha, Arishta, Ritha	It consist of dried fruit of Sapindus Trifoliatus Family - Sapindaceae	Saponins, Sugar and mucilage 		Antimicrobial activity and cosmetic as a hair tonic.[6]
4	Shikakai, Vimala, Bhuriphena	It consist of fruit of the plant Acacia concinn Linn. Family- Leguminosae	Citric acid,  Citric acid		Cleanses Hair, Prevent lice.[7]
5	Bhrinraj False, daisy' Bhangra	It consist of whole herb Eclipta alba Family - Compositae	Steroids 		Natural hair tonic.[8]
6	Tea powder, cha	It consist of the prepared leaves and leaf buds of camellia sinensis Family- Theaceae	Isoflavone 		Conditioner, Mordant,Darken the hair Antioxident[9]
7	Rosemary	Obtained from fresh flowering tops of plant Rosmarinus officinalis Lab Family- Labitae	ursolic acid 		Reduces inflammation, Promotes hair growth and beauty[10]

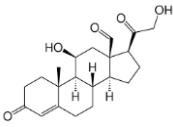

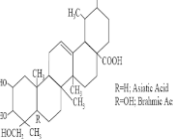

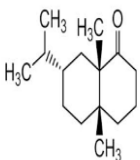

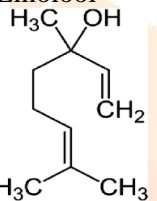

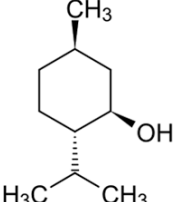

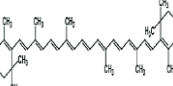

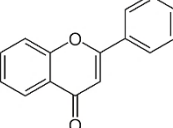

8	Gulvel, guduchi, Giloy	It consist of dried matured stem of <i>Tinospora cordifolia</i> Family- Menispermaceae	Glycoside , Alkaloids Steroids 		Astringent ,Asthma, fever[11]
9	Brahmi, Mandukparni	It consist of whole herb of <i>Centella asiatica</i> Family- Apiaceae	herpestis 		Tonic, in diseases of skin ,nerves[12]
10	Jatamansi	It obtained from dried root and rhizomes of Family- Valerianaceae	Valeranone 		Sedative [13]
11	Lavender oil	It obtained from flowers of <i>Lavandula angustifolia</i> Family- Lamiaceae	Linolool 		Hair growth, head lice treatment[14]
12	Peppermint, Pudina	<i>Mentha piperata</i> is a strongly scented perennial herb Family- Labiatae	Menthol 		Perfume and essences, carminative[15]
13	Hibiscus, china rose	It is genus of flowering plants in mallow Hibisceae tribe Family- Malvaceae	carotene 		Demulcent, lower blood pressure[16]
14	Indigo powder	Natural indigo is obtained from a variety of plants, the most widely used one being <i>indigofera tinctoria</i> Family- Fabaceae	 flavonoid		Colouring agent ,Promote hair growth[17]

Table 1:- Herbal drug material information

MATERIAL AND METHOD

For the preparation of herbal hair dye we have selected different herbal ingredients such as Henna, Reetha, Amla, Shikakai powder etc. All the ingredients were weight and pass through the sieve No.24. To prepare the homogeneous mixture of all the ingredients they are mixed uniformly to make the powder form of a dye. [18-19]

Sr. No	Ingredients	Quantity
1	Henna	25gm
2	Amla	5gm
3	Reetha	2gm
4	Shikakai	2gm
5	Bhrinjraj	2gm
6	Tea powder	1gm
7	Rosemary	2gm
8	Gulvel	2gm
9	Brahmi	2gm
10	Jatamansi	2gm
11	Lavender oil	5 drop
12	Hibiscus powder	2gm
13	Indigo powder	2gm
14	Peppermint	1gm

Table2: The composition of formulation

COMPARISON BETWEEN MARKETED HERBAL DYE AND FORMULATED FORMULATION

Indigo, Henna, Amla, Bhringraj, Brahmi, Neem, and Shikakai These are only traditional ingredients that were used in only marketed hair dyes, which resulted in an effect on hair growth and only gave colour to grey hairs.

In addition to marketed herbal hair dye, ingredients like Reetha, Tea Powder, Rosemary, Gulvel, Jatamansi, Lavender Oil, Hibiscus Powder, etc. resulted in hair growth, reduced hair fall, and promoted attractive hair colour.

5. EVALUATION TEST FOR HERBAL HAIR DYE

Evaluation test divide into three types

1. Organoleptic evaluation of hair dye
2. Physio - chemical evaluation
3. Phytochemical evaluation
4. Rheological evaluation

1. Organoleptic evaluation of hair dye: Colours and Odour of formulation, appearance and texture performed and got good result.

2. Physio - chemical evaluation: The physical and chemical feature of the herbal hair dye were evaluated to determine the pH, its moisture content for the purpose of stability, compatibility and the amount of inorganic matter present in it.

3. Phytochemical evaluation

A . Molisch's test: Take 1 gm of sample in dry test tube, Take 2 ml of distilled water in the sample, Add 2 to 3 drops of Molisch's reagent in solution, Observe colour change at junction of two layers

B. Volatile oil test:

Sample + alcoholic solution of Sudan 3
Observe the colour

C. Mayer's test (For alkaloid):-

Sample + Mayer's reagent
Observe the colour

Rheological evaluation:**A. Bulk Density:**

Weight accurately 5 gm of powder dye and transfer in 100 ml of measuring cylinder. Carefully level the powder blend without compacting and read the unsettled apparent value.

Bulk density = Bulk mass / Bulk volume

B. Tapped Density:

Accurately 5 gm of powder dye and transfer in 100 ml measuring cylinder .
Then precisely tap the chamber.
Tapped Density = Mass / Tapped volume

C. % Carr's index:

% Weigh Carr's index = (Tapped Density – Bulk density)/ tapped density *100

D. Housner's Ratio:

Housner's Ratio = Tapped density /Bulk density

Patch test:

This normally includes spotting the limited quantity of watery arrangement of hair colour behind the ear or internal elbow in a space of 1 sq. cm and passing it on to dry. The indication of disturbance or feeling on non-health is noted, if any. Estimated and small amounts of pre-arranged hair pack were applied to the region at the proper time. Irritancy, redness, and enlarging were checked and noted for standard stretching as long as 24 hours, if any.

Stability test:

Solidness testing for the pre-arranged plan was performed by putting it away at various temperature conditions for the course of one month. The pressed glass vitals of definition were put away at various temperature conditions for the actual boundaries like tone, smell, pH, surface, and smoothness. **APPLICATION OF HAIR DYE:**

The pack, which is powder, ought to be utilised week after week on wet hair, shaping a glue in water with ideal consistency. It ought to be applied uniformly to the hair with the assistance of a brush, covering the roots to the hair tip. The scalp ought to be covered. It should be left for 2–3 hours on the scalp for complete drying. Then it should be removed by dye washing with plain water and drying the hair to give the colour to the hair.

ADVANTAGES OF HERBAL HAIR DYE:

They are gentler on the scalp and hair and less likely to cause skin irritation or allergic reactions. They are providing more vibrant and long-lasting colour. They are less expensive. Less susceptible to sunlight. Available in a variety of colour shades. [16]

RESULT AND DISCUSSION:

Herbal hair packs colour the hair in the most gentle manner. The advantage of herbal-based cosmetics is their nontoxic nature. It nourishes the skin of the scalp and hair. Hair formulations provide vital nourishment for the skin. It helps to treat dandruff by removing excess oil from the scalp. Pollution, ageing, stress, and harsh climates badly affect the quality of hair. In this exploration, we found powerful properties of home-grown hair packs, and further examinations are required to investigate more helpful advantages of this natural hair pack. Natural cures are generally acknowledged with open hands these days as they are more secure and have negligible secondary effects when compared with synthetic-based items. Homegrown plants are extremely popular to satisfy the temperaments of the developing market. It is an observable endeavour to figure out the natural hair dye containing the decency of powders of various plants, which are incredible for hair care.

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