



FORMULATION AND EVALUATION HOMEMADE OF HERBAL EYESHADOW FROM NATURAL COLORING MATTER (BEETROOT)

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The safety and reliability of natural products have triggered the need to produce herbal-based products. The use of herbal cosmetics has become increasingly popular among present-day women. Synthetic coloring agents being used in cosmetics have been found to produce carcinogenic effects. The objective of the present study involved the preparation and evaluation of herbal eye shadow using color matter from natural sources such as beetroot. Prepared herbal eye shadow was evaluated for different evaluation tests such as Color, PH, Flow properties of powder, Bulk density of powder mixture, Compressibility of powder mixture, PH parameter, Water resistance, Transfer resistance, Dispersion of pigment, Color uniformity, Force of application

INTRODUCTION

Anatomy of eye

The eye is the delicate organ in human body, with a several parts in a near-spherical structure. Each part of the eye is responsible for a certain action. The external structure of eye is given in Fig. 1. The external structures of eye include:

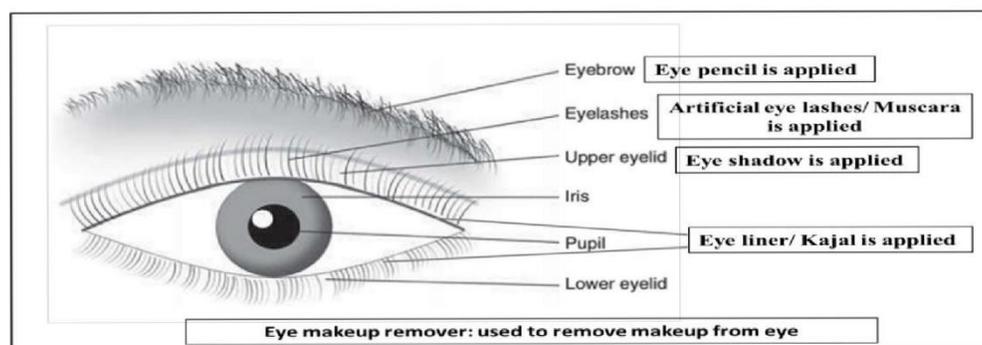


Fig. 1: Anatomy (external parts) of eye and points for eye makeup

Eyebrow

Thick and delicate hair above eye to prevent water, sweat, or others debris from dropping down in the socket of eye.

Important to facial expression and human communication

Eye lids

Thin layer of skin on outer surface to protect surface of eyes from injury.

Protect eye from blinking if foreign matters (dust, dirt or debris) come closed to eyes and bright light harmful to eyes.

Help to moisten the eyes.

Eye lashes

Give additional protection to eyes

Filter foreign particles like dirt, dust, debris or dandruff and prevent them from falling the eye surface.

Eye makeup

During all dynasties and periods, the eye makeup remained a daily pre-requisite for women. Eyes are not only the windows to the human soul, but also a powerful tool for communication. A brace of dazzling eyes is a sign of good looks and beauty. Since centuries, eye makeup has played an important role in highlighting the eyes. In historical eras and time periods, different types of colors, styles and trends were used to decorate the eyes. Black pigment/color in the form of kohl was used for centuries to accentuating eyelashes, eyebrows and eyelids.

Eyeshadows

Eye shadows are available in the market to add dimension and depth to the eyes, make eyes bigger and attractive there by drawing attention to the eye color or eye appearance. They are designed to apply to eyelids and below eyebrows. Eye shadows are formulated in

the form of crème/gel, stick and powders, either pressed or loose.



Eyeshadows Type

Eyeshadows are available in the form of creams, sticks and powder either pressed or loose.

Cream and gel eyeshadows

Cream eyeshadows are anhydrous emulsions prepared by using oils thickened with either waxes or clay gelling agents. Anhydrous cream eyeshadow is called as cream-to-powder eyeshadow because it glides onto the eyelids in a cream form and then transform into a super soft Powder. They have higher viscosity and therefore, the pearls and pigments are uniformly distributed into the cream base. There is an ease in application due to their rheological properties.

The method of preparation of cream type of eyeshadows includes mixing of all ingredients, followed by heating. After heating pearls and the pigments are homogeneously distributed in the hot mixture, cool, and fill it into an appropriate case Cream eye shadows are also available as o/w emulsions containing two phases; oily phase contains oils, thickeners and emollients and aqueous phase contains pigments, pearls and preservatives. Their preparation includes an o/w emulsification process and heating, if required. Gel form are water-free or anhydrous type whereas water-based eyeshadow contains solvents along with other excipients

Eyeshadow sticks

Eyeshadow sticks are prepared from oils, waxes and texturizing agents and colors are dispersed in the same blend. They have a soft cream-like texture and glide smoothly onto the eyelids. The main excipients are almost same as of lipsticks. But, eyeshadow stick is softer than lipstick. For formulation of eyeshadow stick, first homogeneous mixture is prepared using pigmented powder with white or off-white components (called as base) like talc blending and grinding. This step is known as extension. After extension of pigments, other white bases are mixed together. Then, Fragrances if present, are added to a homogenous mix. The blend is sprayed onto the powder with mixing. Pearls are added and mixed at last. The powder mixture is then ready for compression.

Powder eyeshadows -

Powder eyeshadows, either loose or pressed type, are the most popular types. They are applied onto the upper eyelid by lightly stroking a fine brush or a soft sponge-tipped applicator, across the skin. Pressed powder eyeshadows represent the on-the-go form of loose powders. Both types of powders are almost similar except that pressed type contains binders to hold the powder components together

Required qualities and characteristics and consumer needs:

From a consumer point of view, the quality of eye makeup products should have the following features:

Non-irritant, non-toxic and non-allergic

Available in different attractive shades

Produce homogenous color after application

Long Lasting effect

Good coverage property

Dry Quickly on application

Water resistance

Ease in application and remove without hurting the skin /eye

Adhere firmly to eyelashes and eyelids without brittleness and thickness

No clumping and flakiness in mascara

Good gliding property in eye pencils or liners

Eye makeup products should possess some technical qualities, summarized as below:

It Should have long term stability

It should be dermatological safe

It should have rheological properties

It should have high retention power

The color intensity should be same without any changes in

Loose powders should have good free

Eye makeup removes should be able to clean the skin around the eyes and remove

BEET ROOT

Red beet is a rich source of beta lain pigments, which can protect against age related diseases. Beta lain pigment can be used as a natural additive food, cosmetics and drugs in the form of beet juice as well as beet powder.



Beta lain are water soluble nitrogen containing pigment found in high concentration in red beet which consist of two sub classes: betacyanins (Red violet pigment) and beta xanthonine (yellow orange pigment) they have anti-microbial and antiviral efforts and so can be inhabit the cell proliferation of human tumor cells.

Aim: - Formulation and evaluation of homemade herbal eyeshadow from natural coloring matter (beetroot)

Objective:- The present work formulation and evaluation of herbal Eyeshadow was aimed to formulate a eyeshadow using herbal ingredients with a hope to minimize the side effect as produced by the available synthetic ones.

BACKGROUND OF THE WORK:

Selection of herbs: The herbs used in the formulation of herbal eyeshadow, is Beet root (Beta Vulgaris).

Collection of material: The herb used in development of herbal Eyeshadow was collected from (Nashik , Pimpalgon) market .

Extraction of herbal pigment:

We followed basically two techniques for the extraction of pigment from the Beetroot which are as follows:

1. Hot air drying
2. Maceration

Extraction process -1

Hot air drying

The beet root was sliced into thin pieces and sundried for 24 hrs.



The sundried pieces grind in a mixer into a fine powder



The powders where further sieved for achieving a fine uniform powder.



Extraction process –2**Maceration**

The beetroot was cut into slices having approximately 21 mm length, 5 mm width and 1-2 mm height.

Solvent used was ethanol solution 50%.

Extraction were carried out at 25 o C, liquid solid / ratio of 5 : 1, extraction time 3 minutes.

About 200 g of red beet was mixed in blender with 1 liter of ethanol (acidified with 2% citric acid) for 15 min at room temperature and left for 24 hours.

The extract was filtered and concentrated under vacuum by a rotary vacuum evaporator at 40 0 C

FORMULATION TABLE

SR.no	Ingredient	Quantity given	Quantity taken	Role
1.	Beetroot Powder	35 gm	3.5 gm	Coloring agent
2.	Petrolatum	25gm	2.5 gm	Moisturizing agent
3.	Starch Powder	30 gm	3 gm	Binding Agent
4.	Glitter	10 gm	1 gm	Reflect light Shine & Bright App.

MANUFACTURING OF EYESHADOW

First the color pigment beetroot powder mix with the binder i.e. starch

These mixtures further sieved for achieving a fine uniform powder

Add glitter in above mixture and perform flow property and evaluate powder characteristics

This mixture adds into petroleum jelly

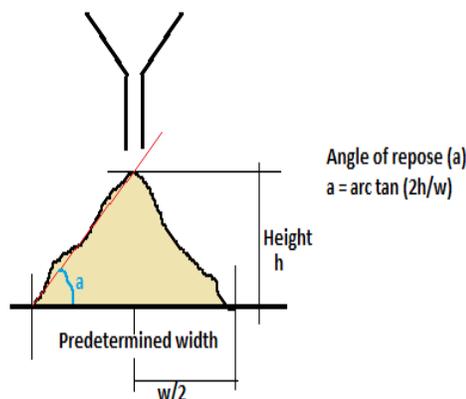
Transfer into suitable container

FORMOLETED PRODUCT-

EVALUATION OF EYE MAKEUP PRODUCTS

1. Flow properties of powders

The flow properties of powder type of eye makeup products should be determined especially during filling process of loose powder to the final container or before the compression of pressed cake in case of compressed powders. Control of the powder flow and density of final product is important to achieve high quality of the finished eye makeup products. Flow properties are measured in terms of angle of repose. Smaller the angle of repose, better will be the flow and vice versa. The angle of repose determined by fixed funnel method.



2. Bulk density and tapped density

The bulk density (V_b) and tapped density (V_t) are measured for determining the trapped air in the powder and to ensure free followability. The bulk density of a powder is the ratio of Mass of powder sample (untapped) and its total volume including void spaces/volume. It is expressed as grams per milliliter Tapped density is obtained after tapping and is measured as the ratio of the known mass of the powder and its total volume occupied without void volume. Tapping of powder is done in a apparatus that lifts and drops the volumetric cylinder containing powder at a fixed distance. Tapped density is always higher than bulk density. Both the densities provide information about the followability of the powders. The formula for both the densities are given bellow:

3. Compressibility of powder mixtures

Percent compressibility (Carr's index) and Hausner's ratio is calculated using bulk and tapped densities. Inter-particle interactions significantly influence the powder flow, which are based on these parameters (formula given below). Lower the values of compressibility index and hausner's ratio, better will be the flow. These interactions are less significant in free-flowing powder samples, and both the densities will be closer in values. Greater inter-particle interactions are there in poor flowing powder samples, and a more difference will be observed between bulk se is determined by powder pile method

$$\text{Compressibility index} = 100 \times \left(\frac{\rho_{\text{tapped}} - \rho_{\text{bulk}}}{\rho_{\text{tapped}}} \right)$$

$$\text{Hausner ratio} = \frac{\rho_{\text{tapped}}}{\rho_{\text{bulk}}}$$

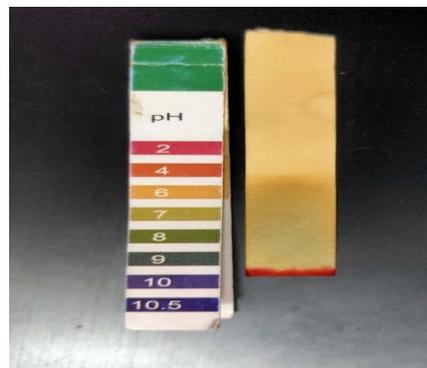
4. Skin irritation test:

Apply the eyeshadow on the skin for 10 min & observe



5 PH parameter:

Determine the PH of the eyeshadow using PH Paper (5-7)



6. Water resistance

The water-resistant or waterproof properties of mascaras, eyeliners or eyeshadows can be evaluated by applying a known concentration of the eye makeup product on the backside of the hand and is allowed to set for a minute. The hand is then immersed into water or hold it under running water again for a minute. Remaining amount left on the hand after removing the eye makeup product by/under water, is analyzed visually or using a soft ware made for such analysis



7. Transfer resistance

Transfer resistance of a cosmetics refers to the ability of a product to resist abrasive removal. It is defined as a resistance against transferring of product from skin to other surfaces like clothes, etc. The test transfer resistance is performed by applying a known concentration of eye makeup product onto the backside of the hand and is allowed to set for a minute. Then, a tissue paper is touched with slight pressure over the area for a minute without rubbing. The amount of makeup product transferred to tissue paper is analyzed visually or by software used for such analysis



8. Dispersion of pigments and color uniformity

Homogenous dispersion of pearls and pigments is a critical parameter for quality eye makeup products. Pigments are used in higher concentrations for powder eyeshadows and if any undispersed pigment is present that appears as streaks on application to the skin. Streakiness and color uniformity are evaluated either visually or by spectrophotometric and colorimetric techniques or by image analysis.



EVALUATION OBSERVATION

Sr No.	Evaluation parameter	Inference
1	Color	Red
2	PH	6 to 7
3	Flow properties of powder	Good (27)
4	Bulk density of powder mixture	Good (12-16)
5	Compressibility of powder mixture	Good (1.14-1.20)
6	PH parameter	6 to 7
7	Water resistance	Water resistance
8	Transfer resistance	Transfer resistance
9	Dispersion of pigment	Good
10	Colour uniformity	Uniform colour
11	Force of application	Good

RESULTS & DISCUSSION:

In last few decades there has been tremendous boost in use of cosmetics by women. However, the hazards cause by these chemicals has come into limelight very recently. The present work formulation and evaluation of herbal Eyeshadow was aimed to formulate a Eyeshadow using herbal ingredients with a hope to minimize the side effect as produced by the available synthetic ones

Hence, form present investigation it was concluded that this formulated herbal Eyeshadow has better option to women with Eyeshadow has better option to women with minimal side effect through a detailed clinical trials may be done to access the formulation for better efficacy

CONCLUSION:

This review concludes that the use of natural colorants in Eyeshadow formulation having no or minimum side effect. Thus we can move towards the use of natural colorants to prepare Eyeshadow. Hence the use of natural

color is step towards healthy cosmetics and which can be widely utilized by the women with great pleasure.

EXPECTED OUTCOMES:

1. The use of natural color is step towards healthy cosmetics and which can be widely utilized by the women with great pleasure.
2. Natural color is safe to use, nutritious, less polluting.
3. This formulated herbal Eyeshadow has better option to women with minimal side effected tough a detailed clinical trials may be done to assess the formulation for better efficacy.

REFERENCES:

- 1) A handbook of cosmetics by B.M.Mithal M. Pharm , PH D (Professor of pharmacy and deputy director) and Colour pigments of Beta Vulgaris Taproot (Swetha krutika) , S Sairam, Sheik Azhar.
- 2) R.N.Sahan Pharm, PH D (Professor of pharmacy and group leader head) Birla Institute of technology and science.
- 3) Formulation And Evaluation of Natural, Shaikh Sadiqi , Shraddha deb Malik & T Ramya sree (Hyderabad) 500097
- 4) Formulation and evaluation of a herbal Eyeshadow : A new approach Rautela Sunil , Tailor Chandra Shekhar,Badola Ashutosh (Division of pharmaceutical sciences, Shri guru ram rai institute of technology and science.
- 5) Formulation and evaluation of herbal Eyeshadow from natural edible colouring matter richa Kothari bhavya Shukla ,divya gautam ,minisha bagaria and akansha Sharma (department of chemistry, school of sciences,ITM university, Gwalior,(Madhya Pradesh), India(received 12 November ,2017 accepted 12 december,2017)(published by research trend ,www.resarchtrend.net)
- 6) Extraction of natural pigment from beet root (tanmay Sarkar , mrinal kantil sen and suman nihar.
- 7) Formulation and evaluation of herbal Eyeshadow from beetroot (beta vulgaris) extract (G sudha rani*,G.pooja,V.harshvardhan,B.vamshi madhav,B.pallavi.
- 8) HDRD Gove of India project report by prof. Farhan J. Ahemad Jamia hamdard , New Delhi