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FORMULATION AND EVALUATION OF HERBAL HAIR SERIUM

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ABSTRACT

In the mammalian system, the hair follicle is known to be the most significant organ that determines appearance, gender distinction, give violent temperature protection, and plays a part in tone- defense. The youngish generation have begun to suffer from extreme hair loss problems due to numerous life- related changes similar as fatigue, anxiety, input of junk foods, use of diiferent hairstyling/ coloring styles, etc. The loss of hairisn't temporary in utmost cases, but it results in alopecia. numerous people suffering from hair loss are in hunt of multiple treatments due to extreme anxiety and pressure, from tradition to traditional and remedial mending tothe use of minoxidil and finasteride. To ameliorate hair growth and to help hair loss, hair root activation is needed. Herbal dress are still generally used by average citizens because of smaller side goods and lesser protection and safety profile. The present study was intended to use different sauces to formulate herbal hair serum for general purposes (hair operation).

INTRODUCTION

➤ Hand hair serum

The cost increase in worldwide living standard has created a rise in demand for cosmetic products. The importance of cosmetics has increased as many people want to stay young and attractive. Cosmeceuticals refers to the combination of the cosmetics industry with thepharmaceutical industry. Cosmetics companies produce cosmetics and pharmaceutical ones produce medicines. Cosmeceuticals are skincare products that combine cosmetics andmedicines. Serum is one of the cosmetic products with very high concentration of active ingredient in their formula for providing intensive nutrition to the deeper skin layer and non-greasy finish product which suitable for skin.1

Highlights of Hair Serum:

- Hair serum is the styling product that coats the surface of the hair known as hairserum.
- It is basically a hair care product in liquid form, its consistency thicker than water.
- Hair serum is not just meant for hair styling. They are also for treating multiple hair concerns like dry hair, dull hair, and unmanageable hair.
- There are different types of hair serums for different hair goals. Depending on the products formula, a hair serum might reduce frizz, add shine, or straighten the hair.
- This is silicone based styling product that is designed to coat the surface of hair to help impart added shine, smoothness hydration, humidity and pollution protection.
- Intended to be used on wet hair.

Suitable types of hairs for using hair serum: 2

1. Straight
2. Wavy
3. Curly
4. Coily

Advantages of Hair Serum: 2, 3

- Hair serum can effectively smoothen, soften and make your hair silky.
- It protects the hair from environmental aggressors.
- Act as both pre styling treatment and finishing product.
- It can be used before or after using heat styling.
- Controls frizz. If your hair is weak and damaged, it may look frizzy or dry.
- Boosts smoothness.
- The anti-frizz effect of hair serum also helps improve the smoothness of hair serum.

Benefits of using hair Serum

Hair Serum are the benefits are following

- Multi purpose

Hair serum are transform a bad dry hair day into good hair day .apply just few drop of hairSerum feel and look different

- Protect Hair

- Serums are the protects hair in Excellent effect are protect against heat sundamage dirt dust and pollution .

Give the shine to the Hair Prevents Hair fall from breakage Best for dry hair

Nourishes Hair and make Them Manageable



Fig : hair serum

Review of literature

1. Yoshiyuki Sakai, et al., 2001 performed hair-reconstitution assays in nude mice and observed normal hair follicle morphogenesis, regardless of the VDR status of the keratinocytes and dermal papilla cells. However, follicles reconstituted with VDR-null keratinocytes demonstrated a defective response to anagen initiation. Hence, alopecia in the VDR-null mice is due to a defect in epithelial-mesenchymal communication that is required for normal hair cycling. Our results also identify the keratinocyte as the cell of origin of the defect and suggest that this form of alopecia is due to absence of ligand- independent receptor function.

2. Kalpesh Gaur,et al., 2009, suggested that the hydro-alcoholic extract of Hibiscus rosasinensis Linn. was found to possess significant immunostimulatory action on immunesystem but ethanolic extract of Cleome gynandra Linn. exhibited significant immunosuppression effect in dose dependent manner when compare with control group.

3. O.S. Kwon et al., 2007, suggested that EGCG stimulates human hair growth via its proliferative and antiapoptotic effects on DPCs, and may prolong anagen stage. The effects of EGCG on different hair follicle cell types and the molecular basis for its promotion of hair growth remain unclear and require further investigation.
4. R.K. Roy et al., 2007, concluded from the study that hair growth initiation time was significantly reduced to half on treatment with the petroleum ether extracts compared with untreated control animals. The time required for complete hair growth was also considerably reduced. The treatment was successful in bringing a greater number of hair follicles (>70%) to anagenic phase than standard minoxidil (67%). The result of treatment with 2 and 5% petroleum ether extracts were comparable with the standard minoxidil.
5. Shirode, D et al., 2005, suggested the hair growth activity of Hibiscus rosa-sinensis & Glycyrrhiza glabra were evaluated in albino rats. The extract of Hibiscus rosa-sinensis (petroleum ether & benzene extract) & Glycyrrhiza glabra (alcohol Extract) respectively 0.2% w/v & 2% w/v exhibit maximum hair growth activity as compared to standard group animals as treated with minoxidil solution (2% w/v).
6. Kabyashi, N et al., 1993, found the Effects of 70% ethanolic extract from leaves of Ginkgo biloba (GBE) on the hair regrowth in normal and high butter diet-pretreated

AIM AND OBJECTIVE

Aim: formulation and evaluation of herbal hair serum containing aloe vera extract.

Objective:

- Collection of drug.
- Authentication of drug.
- Preparation of aloe vera fresh gel.
- Preparation of formulation.
- Evaluation of prepared formulation.

The drug is collected from the herbal garden of Deulgaon raja in the district Buldhana of Maharashtra state.

The authentication of the herbal drug is done by the Vynkatesh college of science, commerce and arts Deulgaon raja, by the department of botany.

- Literature Review.
- Searching waste matter having potential to prepare cosmetic preparation.
- Collection of all Ingredients required for the preparation.
- Formulation of Herbal Hair serum Preparation.
- Evaluation of Herbal Hair serum Preparation.
- Compilation of data.

The aloe vera plant has been known and used for the centuries for its health, beauty, medicinal and skin care properties. The name of aloe vera derives from the Arabic word “Alloeh” meaning shining better substances While “vera” in Latin means true 2000’ years ago the Greek scientist regarded aloe vera as the universal panacea. Aloe vera is a popular medicinal plant with antioxidant and antibacterial properties.

Keywords: Aloe vera; health and beauty; skin.



Fig. aloe vera

- **Synonym:-** Aloe barbadensis Mill. Aloe barbadensis var. chinensis Haw
- **Biological source:-** Aloe is obtained from the dried juice of the leaves of aloe barbadensis miller.
- **Family:-** Liliaceae
- **Chemical constituents:** Barbaliin, Aloin, Isobarbaloin, aloe-emodin, and aloesone, Aloinoside A&B, resins.
- **Uses:-**
 - Anti-inflammatory.
 - Heal wound.
 - Anti-aging.
 - Treats dry skin.
 - Treats stretch mark.

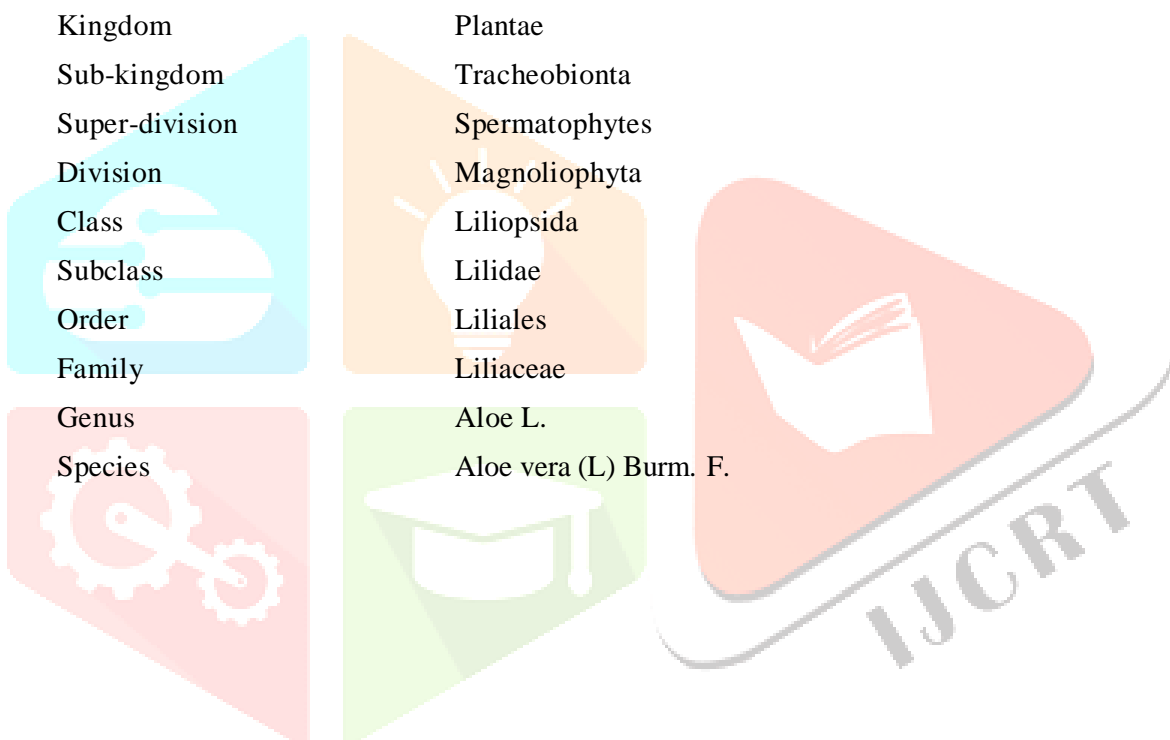
Properties of aloe vera

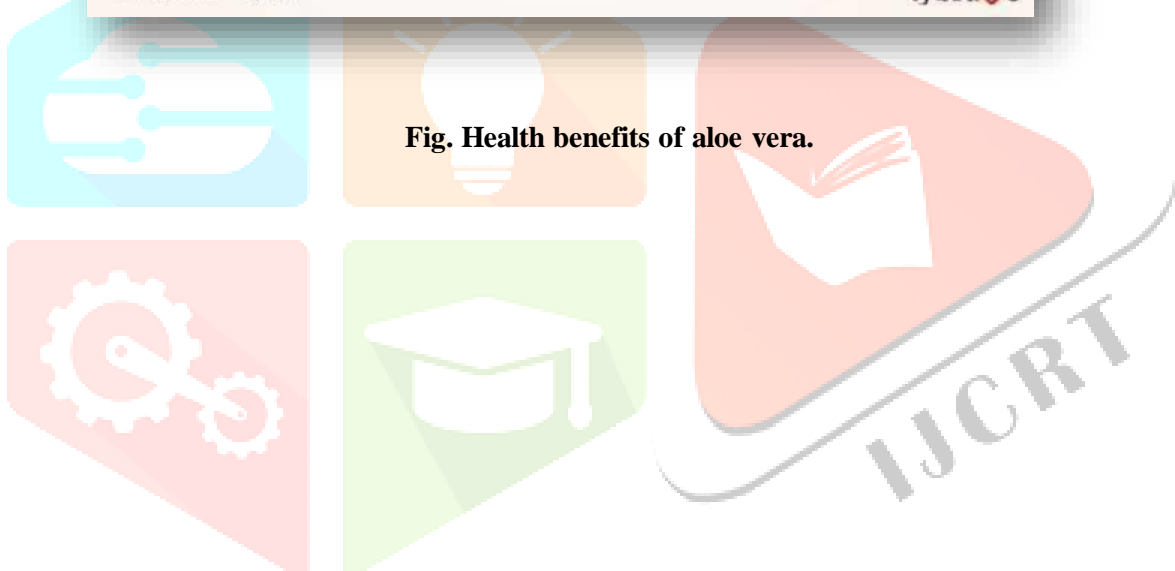
Aloe vera has various medicinal properties like

- Anti-inflammatory
- Antibacterial
- Antiviral
- Antitumor

Aloe vera

Kingdom	Plantae
Sub-kingdom	Tracheobionta
Super-division	Spermatophytes
Division	Magnoliophyta
Class	Liliopsida
Subclass	Lilidae
Order	Liliales
Family	Liliaceae
Genus	Aloe L.
Species	Aloe vera (L) Burm. F.





History:-

Aloe vera has been used for medicinal purposes in several cultures for millennia: Greece, Egypt, India, Mexico, Japan and China.¹ Egyptian queens Nefertiti and Cleopatra used it as part of their regular beauty regimes. Alexander the Great, and Christopher Columbus used it to treat soldiers' wounds. The first reference to Aloe vera in English was a translation by John Goodyew in A.D. 1655 of Dioscorides' Medical treatise De Materia Medica.² By the early 1800s, Aloe vera was in use as a laxative in the United States, but in the mid-1930s, a turning point occurred when it was successfully used to treat chronic and severe radiation dermatitis.²

Nutritional value of aloe vera:-

Aloe vera juice is a rich source of antioxidants, which help fight free radicals. This lowers oxidative stress on your body and reduces the risk of chronic conditions such as diabetes, heart disease, and cancer.

Aloe vera juice is also an excellent source of:

Vitamin C, Vitamin A, Vitamin E, Beta-carotene, Folic acid. Calcium, Magnesium, Nutrients per serving

One 8 ounce serving of pure aloe vera juice includes:

- Calories: 8
- Protein: Less than 1 gram
- Fat: Less than 1 gram
- Carbohydrates: 3 grams
- Fibre: 2 grams
- Sugar: Less than 1 gram

Aloe vera juice contains high levels of magnesium, which is a vital nutrient for nerve and muscle use. Magnesium helps your body with more than 300 different enzyme reactions, including those that regulate your blood pressure. It also helps regulate heart rhythm.

MATERIALS AND CHEMICALS:

Apparatus	Beaker, Stirrer, Measuring Cylinder (10 ml, 20 ml,100 ml)
Instruments	Weighing Balance, Digital pH meter.
Chemicals	Liquid paraffin light sitric acid . Water, Triethanolamine, 95 % Ethanol.
Ingredient	Aloe vera extract.

Table 2: Methods and chemicals.**Methodology for preparation:****Procedure for aloe vera extract preparation:**

1. The whole plant of aloe vera used for the formulation purpose collected from the herbal garden.



2. Collect the fresh aloe vera leaves from aloe vera plant.

3. Wash with clean water.



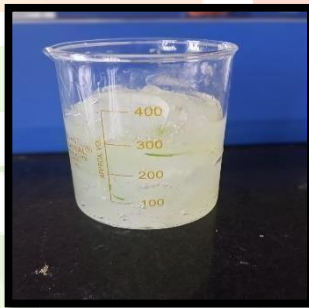
4. Remove the rinds of the leaves.



5. Separate the gel using stainless still knife.



6. Collect the fresh aloe vera pulp.



7. Grinding and homogenise it.



8. Filter it by using Maslin cloth.



9. Store it for 24 hours



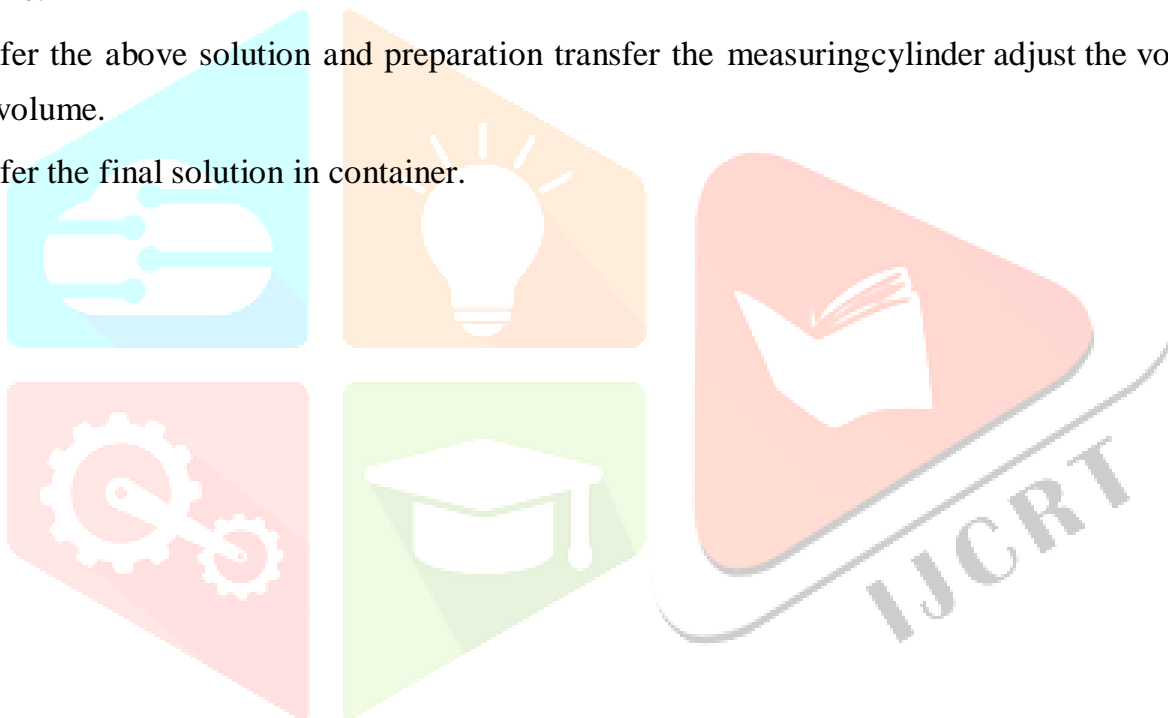
10. Store it in clean jar with close container at below the temperature 7 degree C.

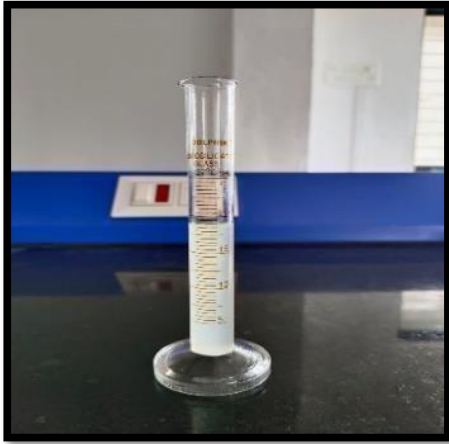


Sr. no.	Ingredients	F1	F2	F3
1	Aloe vera extract	15 ml	15 ml	10 ml
2	Sitric acid	15gm	15gm	20gm
3	Liquid paraffin light	20gm	25gm	25gm
4	perfume	Q.S	Q.S	Q.S

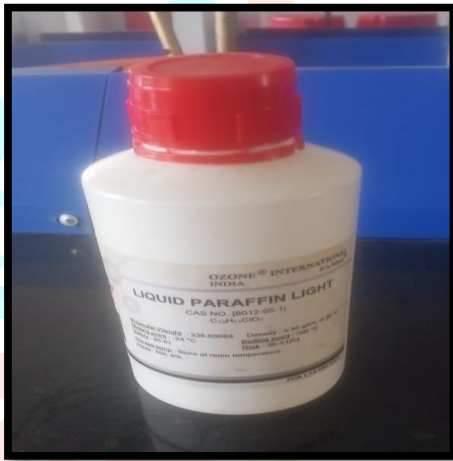
PREPERATION OF HAIR SERUM:

- Procedure of Herbal Hair Serum formulation.
- Clean in all the glassware perform the work and dry them as per the sop.
- Measure the sufficient amount of aloe vera extract than transfer in breaker.
- Mix the required quantity of vitamin E in aloe vera extract.
- Now mix the citric acid in the above mixture of the aloe vera and vitamin E.
- Liquid paraffin lights is the mix of the above mixture heat them several time. .
- After that stir the preparation of the stirrer.
- After that heat the above solution in cool and filter out in muslin cloth and add the perfume.
- Transfer the above solution and preparation transfer the measuring cylinder adjust the volume of final volume.
- Transfer the final solution in container.





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Evaluation of herbal hair serum:

The following parameter are used to evaluate the prepared Herbal Hair Serum

1 physical Appearance:

Physical appearance was evaluated by observation on the texture, colour and smell of the formulated cosmetic serum

2 PH :

The pH test will be determined by using Digital pH meter. Dipper of digital pH will be deep into the sample of serum formulation and the pH value will be recorded. The pH of the formulation should having acidic pH as the skin is around the 5-6.

3 Homogeneity Test :

A clean and dry object glass was smeared with the hair serum, and a cover glass was sealed. The appearance under the light of some coarse particle/homogeneity was investigated. Herbal hair serum was tested by visual examination for homogeneity and tested for some lumps, flocculants or aggregate.



Fig : Homogeneity

4 viscosity :

Viscosity of the formulation is determined by Brookfield Viscometer at 100rpm, using spindle type model S6 4.5 ml of the serum. The serum will placed in a big mouth container with the spindle dipped in it for about 5 minutes before the measurements.



Fig : viscosity of hair serum

5 spreadability Test :

Spreadability was measured by a parallel plate process typically used to assess and measure the spreadability of semisolid preparations. One gram hair serum was pressed between two horizontal plates of dimension 20× 20 cm, the upper of which weighed 125 g. The spread diameter was measured after 1 min. Spreadability was calculated using the following formula:

$$S = M \times L / T$$

Where,

S= Spreadability,

M= Weight in the pan (tied to the upper slide) L= Length moved by the glass slide

T = Time (in sec) taken to separate the slides completely 10.



Fig : spreadability

6 Stability Test :

The herbal hair serum was kept for three months at two separate temperatures of $4 \pm 2^\circ\text{C}$ and $30 \pm 2^\circ\text{C}$, with 65% RH. Compared with the original pH and viscosity, the pH and viscosity of the herbal hair serum were determined after three months .

Result:

Sr no	Parameters	Results
1	Physical appearance	
	Colour	Yellow
	Odour	Characteristics
	Texture	Soft
2.	pH	5 to 6
3.	Homogeneity test	Good
4.	Viscosity	229
5.	Spreadability test	Easily spreadable

pH:

Days	0 to 7	7 to 14	14 to 21	21 to 28
pH	5 to 6	5 to 6	5 to 6	5 to 6

DISCUSSION

The Present work of herbal hair Serum was evaluated for its organoleptic properties, physical properties and its Evaluation. The prepared formulation of herbal hair serum showed non- irritant effect on hair. It also has nourishment and smoothness effects.

The formulation was found in yellowish colour with oily consistency and smooth texture.

The herbal hair Serum are prepared in three formulation F1, F2 and F3 the observation of F1, F2 and F3 among that the f1 was found better than other two formulations.

Conclusion:

All the parameters showed that they are within the limits and since all the ingredients added have many advantages, this hair serum will help in maintaining good growth of hair, turning grey hair to black, essential nutrients needed to preserve the proper function of the sebaceous glands and support the growth of natural hair. In the personal hygiene and health care system, the use of herbal cosmetics has changed by several folds. Therefore, the herbal cosmeceuticals individual care or personal health care industry, which is actually concentrating and paying extra care on the production of herbal-based cosmetics has a considerable glamour.

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