

Formulation and Evaluation of Face Serum using Pineapple and Liquorice Extract

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Abstract: A face serum is a lightweight skincare product that contain a higher concentration of active ingredients which can be applied directly into the skin. The study aims to prepare face serum using pineapple, liquorice extract and are evaluated for their efficacy. Serum was formulated by using emulsion method, in which water phase is pineapple extract, liquorice extract, rose water and oil phase is tween 80, glycerin. Liquorice powder extract was obtained from liquorice root(glycyrrhizaglabra)belongs to the family fabaceae using maceration method and pineapple extract was obtained from pineapple fruit(ananascomosus) belongs to the family bromeliaceae by centrifugation method. We have prepared 4 formulations of our face serum, namely F1, F2, F3, F4. All 4 formulations were evaluated for different parameters. Out of this F4 was selected as best as it satisfies many tests like pH, Spreadablity, Viscosity, Homogeneity, Washability, Smoothness etc. The study indicated that face serum using pineapple and liquorice extract can be effectively used for reducing the ageing signs and dryness of the skin

Keywords: Ananascomosus, Glycyrrhizaglabra, Face serum, Anti-aging

I. INTRODUCTION

Throughout human history, cosmetics and skin care items have served a variety of significant purposes. Cosmetics are materials from a variety of sources and technically complex compounds that are used to moisturize, nurture, and cleanse the skin on the face and other body regions. They can be applied in a variety of ways to improve skin quality, address flaws, and soothe skin issues. The Greek term "kosmtikos," which meaning to have the capacity, influence, and arrangement to decorate, is where the word "cosmetic" originates. Cosmetics are used to maintain the general appearance of the face and other body parts, such as the hand, mouth, finger, hair, lip, and eye. Cosmetics come in a variety of forms, such as face serum, face packs, lotions, powders, creams, shampoos, conditioners, and hair oils for radiance. Herbal cosmetics are made up of phytochemicals derived from different botanical sources that affect how the skin works and distribute nutrients that are good for healthy, radiant skin or hair. These phytochemicals from different sources serve two purposes: they can be used as skincare cosmetics, and the botanical components give the skin biological activity and provide nutrients that are good for nourished skin or hair. Because herbal cosmetics have fewer adverse effects than conventional cosmetics, their demand is growing quickly.

Face serum is a highly concentrated solution made from water or oil ,like any other cream. serum also known as concentrates, have around ten times more biologically active ingredients than cream. They can treat cosmetic issues more quickly and efficiently. Face serum has high amount of active ingredients which effectively address variety of skin issues. They include a blend of active substances that not only target a specific skin ailment, but also address a variety of linked skin care formulas than moisturizers. Serum have smaller molecules that can penetrate deeper into the skin, making them more effective. Regular use of a serum can lead to smoother, brighter and more even-toned skin. Glass or plastic botteles are commonly used to package the face serum. Typically two to three drops are used in the application of it.

II. METHOD OF PREPARATION

Antioxidant face serum are prepared by using the extract of pineapple and liquorice. The ingredients used are Tween 80, Glycerin, Benzyl Alcohol and the required amount of rose water. Pre- emulsification phase: Mix tween 80 and

glycerin thoroughly in a beaker. Aqueous phase: Liquorice extract, pineapple extract and rose water were mixed well in another beaker. Combining phase: Aqueous phase was slowly added to the pre- emulsification phase with continuous stirring to ensure uniformity. Add preservative: Required quantity of benzyl alcohol was added.

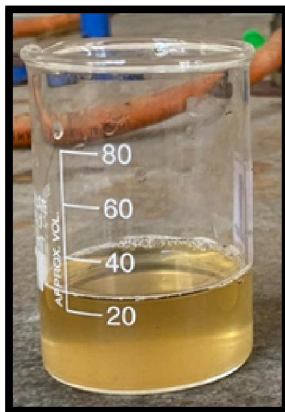


Fig 1- Prepared Face Serum

Table 1: Formulation of face serum

Ingredients	F1	F2	F3	F4
Pineapple extract	2%	2%	2%	2%
Liquorice extract	1%	1%	1%	1%
Glycerin	6ml	9ml	12ml	15ml
Tween 80	1ml	1ml	1ml	1ml
Benzyl alcohol	3drops	3 drops	3 drops	3 drops
Rose water	q.s	q.s	q.s	q.s

III. EVALUATION OF FACE SERUM

3.1 Physical properties:

The formulations is evaluated based on color, odourand texture.

3.2 Determination of pH:

Using a standard buffer solution , a pH meter was calibrated . The pH of the formulation tested using digital pH meter. The skin has an acidic pH , and skin serums should have a pH between 4.1 to 6.7.

3.3 Phase separation:

The prepared preparation was kept in a closed container at room temperature. Phase separation was then checked after 24 hours. Changes in phase separation were observed..

3.4 Determination of viscosity

Viscosity of all the formulations was noted using viscometer.

3.5 Determination of spreadability

2 ml of serum sample was placed on a surface. A slide was attached to a pan to which 20gm weight was added. The time required to separate the upper slide from surface was taken as a measure of spreadability.

IV. RESULT & DISCUSSION

Physical properties: the physical properties of the formulated serum were observed for its color, odour, texture.

SL.NO	INGREDIENTS	F1	F2	F3	F4
1	Color	Very light yellow	Light yellow	Light yellow	Light yellow
2	Odour	pleasant	pleasant	pleasant	Pleasant
3	Texture	watery	Slight oily	Slight oily	Oily

pH Value:

pH of the formulation was found to be 5.4. As the skin having an acidic pH around 4.1 to 6.7, this range of formulation is suitable for skin.

Phase Separation;

The prepared preparation was kept in a closed container at room temperature. Phase separation was checked after 24 hours. No Phase separation was observed.

Determination of Viscosity

Viscosity of all the formulations was noted using viscometer. Viscosity of formulated face serum was found to be 16Cp.

Determination of Spreadability

According to the result face serum has excellent spreadability. Spreadability was found to be 6cm

V. CONCLUSION

The goal of the current study is to create and assess a herbal formulation using appropriate plant extracts. A herbal component was chosen for the face serum formulation in order to prevent skin ageing, based on the extensive review of literature. The phytochemical tests for liquorice and pineapple extract were conducted to confirm the presence of alkaloids, flavonoids, proteins and tannins. In the present study Glycyrrhizaglabra was prepared by maceration technique and Ananascomosus by centrifugation method. Face serum was formulated by preparing the oil phase and aqueous phase. Using the Glycyrrhizaglabra, Ananascomosus extract and other ingredients the serum was formulated as oil in water type with for different concentrations F1, F2, F3, F4. Formulated serum were evaluated by physical property, absorption, skin irritancy, homogeneity, spreadability, washability and viscosity. The prepared formulations were compared and F4 formulation was found to be more compatible and consistent than other formulation. Antioxidant property of the prepared serum is validated through DPPH testing.

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