FORMULATION AND EVALUATION OF NATURAL ANTI AGING CREAM [EDIBLE] –

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ABSTRACT

Skin aging is a complex process induced by constant exposure to UV radiation and damages the human skin. UV generates reactive oxygen species leading to collagen deficiency and eventually skin wrinkling. There is a growing demand for herbal products in the world market and they are invaluable gift of nature. Therefore, edible cream containing natural ingredients such as mung bean, olive oil, aloe vera etc.., has been prepared. These natural ingredients not only give beneficiary effect to the skin but also does not show any side effect as of artificial cream produces side effect when applied to the skin. The cream was formulated using different concentrations G1, G2 and G3. G2 formulation was found with good consistency and stability of 7 days by performing accelerated stability testing at different temperature and humidity conditions. It can be concluded that herbal cream without side effects can be used as provision of a barrier to protect the skin and avoid aging of the skin.

Index terms: Herbal products, edible cream, mung bean.

1) INTRODUCTION

Skin aging is gradual deterioration of mature organism resulting from time dependent and irreversible changes in the structure. Aging process is observed because of sequential skin aging and photo aging. Both have different features. Sequential skin aging is universal process characterised by physiological Alterations in skin functions. In the aging process keratinocytes aren't able to form a functional stratum corneum and rate of formation, from neutral lipids slows down. It is characterised by dry pale skin and wrinkles. And photo aging is caused due to over exposure to sun. UV generates reactive oxygen species leading to collagen deficiency and skin wrinkling. It is characterised by dry and pale skin with deep furrows that is caused by disorganisation of dermal and epidermal components. [1]

Anti-aging cosmetics is a branch of cosmetics which deals with the removal of signs of aging. The anti-aging ingredients present in the anti-aging cosmetics helps to reduce the fine lines and increase the moisture level of the skin. And its main function is to reduce wrinkles and puffiness from the skin.

The demand of herbal cosmetics is rapidly expanding, this expansion is due to availability of new ingredients, the financial rewards for developing successful products, consumer demand, and a better understanding of skin physiology. The ingredients used in the preparation should have varieties of properties like antioxidant, anti-inflammatory, antiseptic and antibacterial activity etc. [2]

Comparison between natural cream and artificial cream:

Artificial creams work rapidly on the skin**.** This chemical-based skin care products do offer benefits to the skin but they come with side effects. These products contain chemicals like formaldehyde, imidazolinyl urea, phenoxyethanol etc that cause several side effects. If you use them, you are actually exposing your skin to pollution and toxicity. So, the products you use in order to benefit your skin, they actually harm your skin. Beauty products can also degrade the mental state of human beings. So, if you maintain the makeup for large amount of time, you can experience fatigue or tiredness and can develop dizziness. Most beauty products are non-organic and therefore are regarded as unsafe. Artificial fragrances are designed to cover up the smell of other chemicals. Natural is the real beauty and artificial as the name itself says would always remain unadorned.

Natural creams are earth friendly. Natural health and beauty products use natural ingredients that won't affect your body. And while some people have allergies to a few natural ingredients the effects are much more understood than the ones from synthetic ingredients. Natural products smell like their natural ingredients, not a cocktail of chemicals. Natural products work with your skin instead of against it.[3][4]

How natural cream is good?

Skin irritation in the form of skin allergies, skin rashes and scars are the result of using skin care products that are loaded with corrosive chemicals and harmful colours. The one with sensitive skin must stop using chemical based skincare products to avoid skin breakouts. Whereas natural skin care products act gently on the skin to prevent the chance of skin breakdown and acne. If there are chemicals in skin care products, they may invade your bloodstream as well. Harmful chemicals can pose a great threat to the internal organs of the body. There will be no chance of any harm to the internal organ if you choose natural skincare product. [5]

2) MATERIALS AND METHODOLOGY:

Materials:

Phase 1

1. Ginger tea decoction
2. Aloe vera gel [6]
3. Mung bean powder

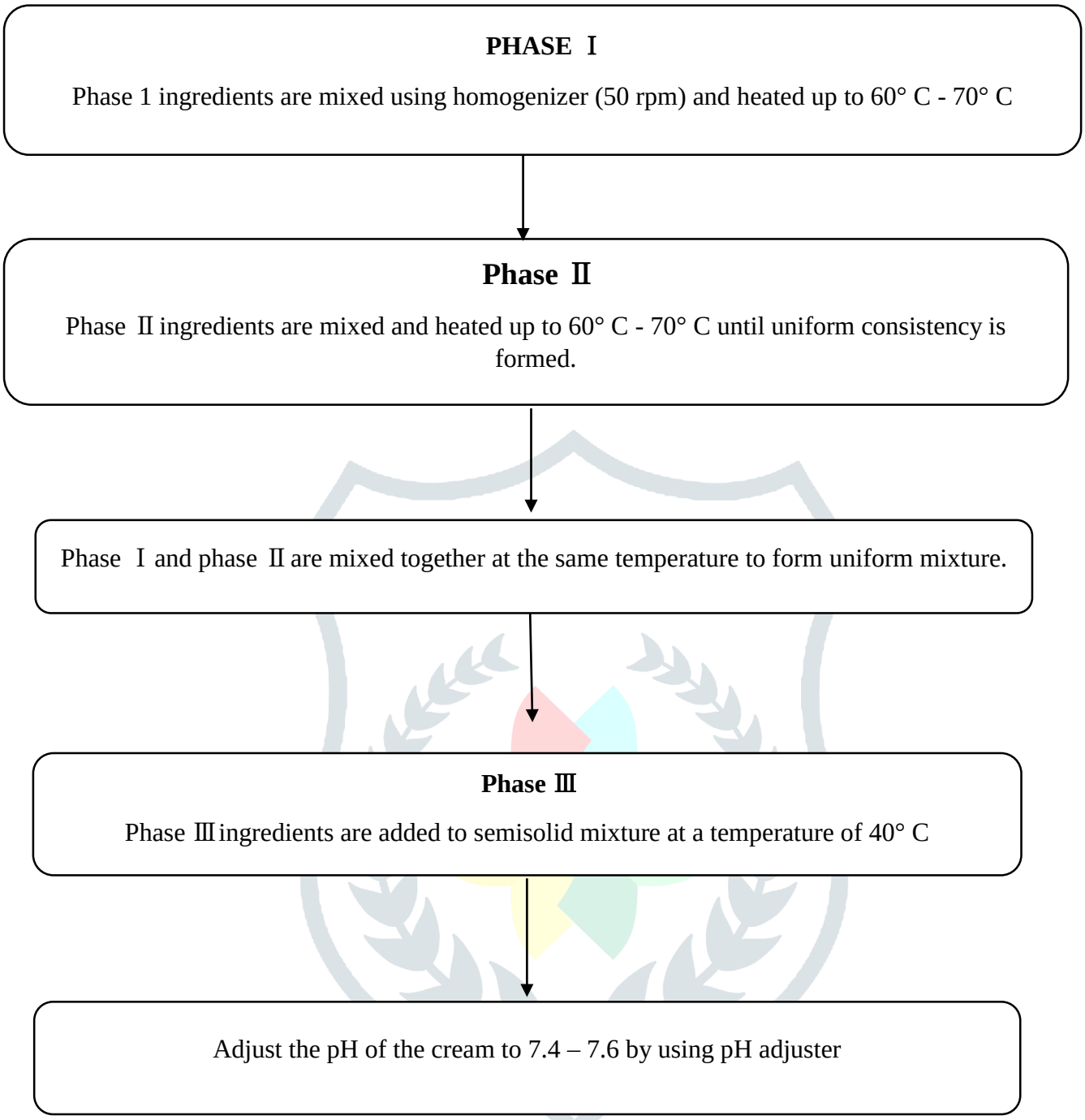
Phase 2

1. Olive oil
2. Butter
3. Xanthan gum/acacia/corn starch

Phase 3

1. Honey
2. Natural preservative
3. pH adjuster

3) METHDOLOGY: [7]



FORMULATION TABLE:

Phase	Ingredients	%w/w
A	Ginger decoction	To 100.0
A	Aloe vera gel	5.0
A	Mung bean	1.0
B	Olive oil	5.0
B	Natural butter	5.0
B	Xanthan gum/acacia/corn starch	2.0
C	Honey	5.0
C	Preservative	0.1
C	Colouring agent	-
C	pH adjuster	q. s

Table 1: formulation table of the cream preparation

4) EVALUATION TESTS:

- **Appearance:**

The appearance of the cream was judge by its colour, pearlscence and roughness.

- **pH of the cream:**

The pH meter was calibrated using standard buffer solution about 0.5g of the cream was weighed and dissolved in 50ml of distilled water and its pH was measured.[8]

- **Acid value:**

10g of the cream was dissolved in 50ml mixture of equal volume of alcohol and solvent ether in a flask. The flask is connected to a reflux condenser and slowly heated, until the sample dissolve completely, to this 1ml of phenolphthalein was added and titrated with 0.1N NaOH, until faintly pink colour appears after shaking for 30sec. [9]

Acid value=n*5.61/w

Where, n=The number of ml of NaOH required; w=The weight of the cream

- **Saponification value:**

2g of the cream was refluxed with 25ml of 0.5N alcoholic KOH for 30min, to this 1ml of phenolphthalein is added and titrated immediately, with 0.5N HCL.[9]

Saponification value=(b-a) *28.05/w

Where, a=The volume in ml of titrant; b=The volume in ml of titrate, w=The weight of the cream

- **Viscosity:**

Viscosity of the formulation was determined by Brookfield viscometer. The viscosity measurements were done using Brookfield DV-Ⅱ + viscometer using LV-4 spindle. The developed formulation was poured into the adapter of the viscometer and the angular velocity increased gradually from 0.5 to 20r/min. [8]

- **Stability study:**

The purpose of stability testing is to provide evidence on how the quality of drug substance or drug product varies with time under the influence of variety of environmental factors such as temperature, humidity and light and enables to recommend storage condition and to predict the shelf life. Stability study for cream was performed at accelerated condition i.e.40°C±2°C / 75%RH±5%RH.[1]

5) Results:

Ginger tea decoction as aqueous phase:

Formulation	**Base**	**Emulsifier**	**Consistency and stability**
G1	Butter	Acacia	Not good consistency
G2	Butter	Xanthan gum	Good compared to G1 consistency and stability of 7 days
G3	Butter	Potato starch	Not good consistency

Table 2: Consistency and stability of cream

CONCLUSION:

The usage of natural cosmetics has been increased to many folds in personal care system and there is a great demand for herbal cosmetics. The use of bioactive ingredients in cosmetics influence biological functions of the skin and provide nutrients necessary for healthy skin. The anti-aging cream slow down the skin aging by regenerating and activating the cells and protect against ultraviolet rays, free radicals etc. As artificial creams give many side effects it's better to use cream prepared by natural ingredients as it does not show any side effect rather is beneficial to skin. The results demonstrated that the formulated anti-aging cream are safe and usable for skin.

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