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# A review article on formulation and evaluation of herbal sunscreens

Ajay Yadav[1], Mohit vishwakarma*[2], Dr.Moh. wasiullah[3], Piyush Yadav [4]
*Department of Pharmacy, Prasad Institute of Technology, Jaunpur (222001), U.P, India.*
*Associate Professor, Department of Pharmacy, Prasad Institute of Technology Jaunpur (222001), U.P,India*
*Principal, Department of Pharmacy, Prasad Institute of Technology, Jaunpur (222001), U.P., India.*
*Principal, Department of Pharmacy, Prasad Polytechnic, Jaunpur,(222001),U.P,India*

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**Abstract:**
Sunscreen is a chemical emulsion that help cover you from UV shafts sunburn is caused by ultraviolet B radiation but ultraviolet a may be more dangerous to the skin. Sunscreen should immaculately block both wavebands. The end of this study was to develop herbal topical sunscreen expression grounded on some fixed canvases , in combination with some medical shops. Regular use of sunscreen reduces the development of actinic keratosis, scaled cell melanoma and carcinoma.(1) Sunscreen may be organic or inorganic chemicals. Sunscreen is also known as sunblock embrocation. The product that absorb or reflect the sun ultraviolet radiation and cover the skin. The adding prevalence of skin cancers and print damaging goods caused by ultraviolet radiation has increased the use of sunsreening agents, which have shown salutary goods in reducing the symptoms. Sunsreening agents should be safe chemically inert, non irritating non poisonous, print stable an suitable to give complete protection to the skin against damage from solar radiation.( 2)

**Keyword:** Herbal Sunscreens, SPF(sun protection factor),skin burn, Asian pigeonwings

## I. INTRODUCTION:

.Moment peoples are showing further interest towards herbal ornamental comparatively synthetic ornamental products. The sun protection factor( SPF) creams are applied on skin to cover it from sunburn. The advanced SPF value indicates maximum protection from largely energetic UV radiation emitted by sun shafts. It's also proved that the herbal sunscreen cream are more safer and produces minimal side goods compared to cream prepared from chemical substance.(3,4)

Sunscreens are constantly applied to the skin to cover it from the sun's dangerous shafts and to reduce the threat of skin diseases caused by the sun's shafts. Broad- diapason sunscreens are now being delved to reduce the long- term goods of high UV radiation( 3). Polyphenols and phenolic composites, particularly natural oil painting, are essential constituents for UV protection because of their high UV- A immersion effectiveness and antioxidant exertion( 5) Herbal sunscreen( also known as herbal sunblock, suntan embrocation) is a embrocation, spray or topical product containing herbal constituents which helps to cover from the UV radiations of the sun and hence lowering the threat of skin cancer. (9)

**Advantage of sunscreens**

1. Shields from Harmful UV Rays
2. Prevents Premature Aging
3. Lowers Skin Cancer Risk
4. Prevents Sunburns
5. Prevents Tanning
6. Enhances Health Of The Skin

**Excipient:**

**Papaya**

(carica papaya) Papaya is indeed a boon in treating dry skin issues and helps in hydrating the skin. There are special anti oxidant and enzymes present in papaya which help in treating dry and flaky skin.(10)

**Tomato**

(Solanum lycopersicum) Tomato juice on face works as a natural astringent and constricts wide spores and inhibits the accumulation of dirt and oil. It helps to protect from sunburn and sun tanning. Tomatoes are full of antioxidant including vitamin C

**Aleovera**

(Aleobarbadensis miller) Aloe Vera is the one of the most widely used herbal remedied on skin condition. This is because of the gel component of the plant that are known to heal the skin from variety of minor ailment. Including sunburn it also helps to prevent dry skin, cut on face, cold sores eczema, acne etc.

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**Honey**
(Apismellifera) In its natural form honey is made by enzyme activity, plant matter and live bacteria coming together to create a powerful ingredient with hundreds of practical use. Raw honey helps in balancing bacteria on the skin which makes it help to remove acne on the skin.

**Corn starch**

( foeniculum vulgare) Corn starch may be a convenient and cost-effective remedy for skin irritation, soothing the skin,sunburns and to reduce the skin itchiness. It works as an active ingredient and penetrates the skin. Corn starch is a natural moisture absorbing powder which is often used as an alternative to chemically formulated talcum powder

**Green tea**
(Camellia sinesis) Green tea's anti-inflammatory properties can help to reduce the skin irritation, skin redness and swelling. Applying green tea on the skin can soothe minor cuts and sunburns too.

**Lavender Oil** (Lavandula) Lavender oil gently moisturizes the skin, and is noncomedogenic for pores . It is naturally anti-bacterial that is it kills the acne-causing bacteria that might infiltrate the pores.(12-15)

**Method of preparation** :

| Sr. No | Name of ingredient | Quantity in ml |
|---|---|---|
| 1 | Papaya | 21 |
| 2 | Liquid paraffin | 6 |
| 3 | Lavender oil | 7 |
| 4 | Tomato juice | 5 |
| 5 | Corn starch | 4 |
| 6 | Carnauba | 18 |
| 7 | Aleovera | 28 |
| 8 | Honey | 2 |
| 9 | Green tea | 9 |

Concentration of each ingredient is mentioned in the table below. Required quantity of bees wax and liquid paraffin was taken in a beaker and heated on a water bath to obtain a molten mixture (Phase A). In another beaker papaya was mashed .other ingredients are mixed together and both the solutions are mixed together with continuous stirring till cream like consistency is obtained. Preservative, perfume are added and then packed in suitable container.

**Side Effects:**
Some sunscreen products( similar as those containing aminobenzoic acid orpara-aminobenzoic acid/ PABA) may stain apparel. Some constituents of sunscreens can beget the skin to come moresensitive.However, wash it off and stop using it, If a sunscreen causes greenishness or vexation. Talk to your croaker
Or druggist about using another sunscreen product with different constituents.( 13)

**Precautions:**
Before using a sunscreen, tell your croaker
Or druggist if you're antipathetic to any of its constituents( similar as aminobenzoic acid/ PABA); or to some types of anesthetic medicines( similar as benzocaine, tetracaine); or to sulfa medicines; or if you have any other disinclinations. This product may contain inactive constituents, which can beget antipathetic responses or other problems. Talk to your druggist for further details.( 14)

**Evaluation of Herbal Sunscreen**:

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1. **Organoleptic Properties**.
   The appearance and colour are included in the organoleptic property. The pH is measured and was found to be-6.2 by dilution of cream in water .Viscocity was measured by using Brookfield viscometer. Cream spreadability was measured with prepublished methods.
2. **Sun Protection Factor**.
   Sun protection factor( SPF) was measured with a UV- 2000S transmittance analyser. The cream was placed on the polymethylmethacrylate plates were tested. Cream base without UV- absorbing agents was used for blank checkup. Three samples plates were prepared was kept in dark for 15 twinkles for curing. also the plates were scrutinized at three different locales and the SPF value was recorded.

3. **Chromatographic evaluation**
   The contents of cosmetics products can be determined and confirmed by chromatography like TLC, HPTLC, HPLC, Gas chromatography.
4. **Stability studies**
   It is carried out at elevated temperature , relative humidity and pH a period of 6 months and all above parameters are evaluated periodically to confirm changes in product.
5. **Microbial Test**
   . As herbal products are sensitive to microbial growth, microbial assay was carried out by agar well diffusion method or turbidometric method.(18-20)

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