

Evaluation of Plant Based Cosmetic (Face Creams) Against *Trichophyton Mentagrophytes*

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Abstract—Cosmetic may be defined, broadly as topical agents used to effect personal grooming, influence, appearance and improve self image. In the present study certain plant based face creams were evaluated for their antidermatophytic nature against human dermatophytes i.e. *Trichophyton mentagrophytes*

Index Terms—plant based cosmetic, human dermatophytes, herbal plants

I. INTRODUCTION

The word “Cosmetiae” was first used to describe Raoman slaves whose function was to bath men and women in perfumes [1] Cosmetic have been used for as long as there have been people to use them. Plants extracts are gaining popularities as ingredients in cosmetic formulations, primarily because of poor image of animal derived extracts acquired during the past few years. Plants were the main source of cosmetics ingredients. Even though natural molecule derived from plant extracts are currently the constituents of many cosmetic products and offer a particularly exciting avenue for further research. Herbs have been integral recipes which may be applied in cosmetic industry with fruitful results [2] The plant used in cosmetics not only enhances the beauty but also have definite medicinal value [3] A number of plants with medicinal value processed in cosmetics are in great demand in India as well as abroad [4].

II. MATERIALS AND METHODS

Fifty female consumers of different age groups were surveyed through semi structured interviews and specified questionnaires. Based on which about five herbal-based face creams i.e. Dabur- gulabari, Fairone, Himalaya, Nomarks Vicco-termeric were selected.

A. Preparation of Basal Medium

Sabonraud’s dextrose broth (SDB) medium with the following composition was employed as basal medium.

Dextrose : 40
 Peptone : 10gm
 Distilled water : 1000ml

Pre-sterilized 150ml Erlenmeyer flasks with 25 ml of SDB were taken and sterilized at 151 lbs pressure for 15 minutes in an autoclave.

B. Setting up of Experiments

Dry mycelial method [5], Presterilized 150 ml Erlenmeyer flasks with 25ml of SDB medium into which 3ml each of selected herbal-based face packs were taken under aseptic conditions. A separate set of flasks were taken with only medium and were run as control.

C. Inoculation and Harvesting

The above flasks were inoculated with innoculum discs of 6mm diameter obtained from growing margins of 10 days old colonies of *Trichophyton mentagrophytes*. All the flasks were incubated for 10 days at 281°C to obtain fair growth. After the said period observations were made for affected mycelial growth for each set of flasks in comparison to the respective fungal control. Then the contents were harvested by filtering through Whatman no. 1 filter paper disc. The filter paper discs with mycelial mats were folded and weighed.

Percentage inhibition affected in the mycelial growth of *Trichophyton mentagrophytes*, due to treatment with the plant based face creams were calculated with help of formula:

TABLE I
 EVALUATION OF PLANT BASED FACE CREAMS AGAINST *TRICHOPHYTON MENTAGROPHYTES*

S.No.	Name of face creams	Control (mg)	Treated	
			DM W (mg)	% Inhibition
1.	Dabur-gulabri	280	37	86.78
2.	Fairone	280	53	81.07
3.	Himalaya	280	18	93.57
4.	Nomarks	280	20	92.85
5.	Vicco turmeric	280	33	88.21

DMW : Dry Mycelial Weight

$$\text{Percentage Inhibition} = \frac{\text{Control} - \text{Treated}}{\text{Control}} \times 100$$

III. RESULTS AND DISCUSSION

Evaluation of herbal-based face creams against *Trichophyton mentagrophytes* was shown in Table-I. Accordingly, minimum 93.57 % inhibition was affected due to treatment with Himalaya face creams against *Trichophyton mentagrophytes*. Based on the percentage inhibition affected in the mycelial growth of

Trichophyton mentagrophytes due to treatment with the rest of the herbal-based face creams, the order was found to be in the descending manner of:

Nomarks ,92.85% > vicco-turmeric 88.21% >Dabar-gulabari 86.78% >Fairone81.07% respectively.

Cosmetic and skin care products are the part of everyday grooming. Uses of cosmetics or beauty products will not cause the skin to change or heal; these products are just meant to cover and beautify. Cosmeceuticals being cosmetic products having medicinal or drug like benefits are also able to effect the biological functioning of skin owing to type of functional ingredients they contain , there are skin care products that go beyond and adorning the skin. These products improve the functioning texture of the skin by encouraging harmful effects of free radicals thus maintaining keratin structure in good condition and making the skin healthier [6].

As such skin is constantly exposed to a highly polluted and toxic environment, dust, cosmetic, soap, sun rays etc., act as sensitizing agents. People with poor tolerance are easily affected by these agents and their sensitized skin exhibits various kinds of skin disorders characterized by redness, eruption, intense disorders and are medically diagnosed under different name as acne, eczema, urticaria, dandruff etc. [7].

IV. CONCLUSION

The formulations of cosmetic products includes addition of various natural additions like oil, waxes, natural colour and parts of plants like leaves, flower etc. by specific formulations methods “ Quality control for efficacy and safety of herbal cosmetic product is paramount importance. So Quality control test must be carried out for herbal cosmetics. It is assumed to be safe for longer periods of time [8]. The present investigations confirmed their relevant application in skin remedial preparation such as face creams.

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