

PREPARATION AND EVALUATION OF MARIGOLD, LIQUORICE AND CORANGE PEEL EXTRACT CONTAINING HERBAL FACE WASH

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ABSTRACT

Acne vulgaris is a common human skin disease characterized by areas of skin with seborrhea (scaly red skin), comedones (blackheads & white heads), Papules (pinheads), nodules (large papules), pimples & possibly scarring. It occurs during a time of low self- esteem and high concern about appearance. The present work deals with preparation and evaluation of herbal anti acne face wash containing hydro alcoholic extract of marigold (*calendula officinalis*, Asteraceae), liquorice (*Glycerrhiza glabra*, leguminosae), Orange peel (*Citrus X sinensis*, Rutaceae). The plant has been reported in the literature having good antimicrobial, anti-inflammatory, and anti-hyperpigmentative activity. Formulation was prepared and evaluated for various parameters like colour, appearance, consistency, washability,

spreadability. It is very good attempt to establish the herbal face wash containing hydro alcoholic extract of marigold, liquorice and orange peel.

KEYWORDS: Propylene glycol, pilosebaceous, orange peel, antibacterial, liquorice.

INTRODUCTION

Acne vulgaris is a common human skin disease characterized by areas of skin with seborrhea (scaly red skin), comedones (black heads and white heads), papules (pinhead) nodules (large papules) pimples and possibly scarring. The condition usually starts at the ages of 14 to 19 yrs.

Acne develops earlier in females than in males, which shows the earlier onset of puberty in females and the severity of the diseases vary depending on the various factors. It is a chronic inflammatory disorder of the pilosebaceous units. Its prevalence is highest in adolescence, where the individual counters several psycho social changes. Acne vulgaris affects over 80% of teenagers persists beyond the age of 25 years in 3% of men and 12% of women.^[1] The individual lesions of acne vulgaris are divisible in 3 type's non inflamed lesion, inflamed lesions and scars. Typical lesions of acne include comedone, inflammatory papules and pustules. Nodules and cysts scarring & psychological distress. Comedonal acne is non inflammatory and divided into 2 types a) whiteheads and b) blackheads, white heads (closed comedo) present as fresh or white colored, raised bumps whereas blackheads (open comedo) present as open pores containing dark colored skin roughage consisting of melanin, sebum and follicular cells.^[2] Papules appear red solid, elevated lesions. Pathogenesis of acne involves multiple physiological factors like follicular hyper proliferation, increased sebum production due to higher androgen levels and colonization of organism. Propionibacterium acnes many diff. treatments exist eating fewer simple carbohydrates like sugar may help. Medications for acne include benzoyl peroxide, antibiotics (either topical or by pill) retinoids, antiseborrheic medication, anti androgen medications, hormonal treatments, salicylic acid a, alpha hydroxyl a, azelaic a, nicotinamide & keratolytic soaps. They are believed to work in at least 4 diff. ways, including normalizing shedding and sebum production into pore to prevent blockage, killing propionibacterium acnes, anti inflammatory effects and hormonal manipulation. Use of synthetic drugs leads to various adverse effects on health so natural products formulation usage is continuously increasing. Now a days, natural products of animals, plants and microbial sources have been used by man for thousand of years either in pure or crude extract. Marigold (*Callendula officinalis*) liquorice (*glycerrhiza glabra*), orange peels (*citrus x sinensis*) are 3 of those plants that were used for centuries to fight infectious diseases. Most active compound leutein (marigold), glycyrrhizin (liquorice root), limonene (orange peel). Although are considered the major antioxidant and scavenging compounds, marigold, liquorice and orange peel have very beneficial effect on acne due to anti-microbial, anti-inflammatory, anti-oxidant activities of different chemical constituents.

MATERIAL AND METHODS

The chemical used were glycerin, propylene glycol, methyl paraben, SLS.

Collection of Plant Material

Marigold fresh flowers liquorice roots and oranges were collected from local area of Ahmednagar in the month of September 2014.

Preparation of Extracts

Marigold, liquorice roots and orange peels were taken. Orange peels and liquorice roots were dried and grinded to make fine powder. Fresh marigold flower petals were taken and added to the mortar pastel and extracted with 1:1 water-ethanol mixture. The content were collected and filtered. The remaining liquid was allowed to evaporate the ethanol and pure extract were separate out. Then the weighted quantity of other crude drug were taken and extracted with 1:1 water ethanol mixture. The content was collected and filtered and allows evaporating the alcohol as above.^[3,4]

Development of Formulation

The desired amount of propylene glycol and glycerin were taken and mixed properly. Then the desired and accurately weighted amount of hydro alcoholic extract (marigold, liquorice and orange peel) were taken and one by one slowly added to the above mixture during magnetic stirring. Then stirring was continued for some period. When all above mix was homogenized, the desired quantity of SLS was added with continuous magnetic stirring, then desired quantity of methyl paraben (preservative) was added with continuous magnetic stirring was carried out. Then formulation was keep aside to check its stability prepared formulation was filled in a suitable contained and labeled accordingly.

Microbial Assay

Experiment was performed in laboratory of microbiology. The antibacterial activity of extract was measured by modified agar well diffusion method in this method, nutrient agar plates were seeded with 0.2 ml of 24hour broth culture of *S. aureus*. The agar plates were allowed to solidify and a sterile 8mm borer was used to cut wells of equidistance in each of the plates. 0.5 ml of marigold (petals) extract was introduced into the wells. The antibacterial activity was evaluated by measuring the zones of inhibition (in mm). The results of antibacterial evaluation are shown in (fig no.1).

Evaluation

1. Physical Evaluation: Physical parameters such as colour, appearance and consistency were visually checked.^[6]

2. **Wash ability:** Formulations was applied on the skin and then ease and extent of washing with water were manually checked.^[5,7]
3. **pH:** The pH was measured of formulation using a digital pH meter. The pH meter was calibrated before use with standard buffer solutions at pH 4, pH 7& at pH 9.the electrode was immersed in the gel and the reading was collected from pH meter.^[10]
4. **Spread ability:** The spread ability of formulation was found manually by applying the formulation on the skin with gentle rub.^[8]

RESULT

The result of this investigation showed that all developed formulation was found homogenous with good consistency and easily washable. The formulation had pH which was compatible with normal skin physiology and had shown good stability at room temp.

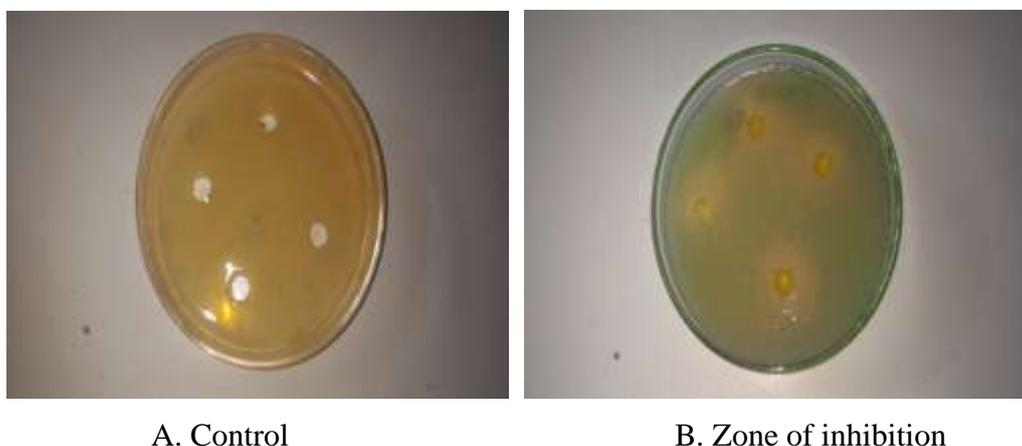


Fig no. 1: Anti acne activity of herbal face wash using styphalococous aurous.

CONCLUSION

Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic drugs. Now day's herbal formulations have growing demand in the world market. This was good attempt to establish the herbal face wash containing hydro alcoholic extract of marigold (*calendula officinalis*, Asteraceae), liquorice (*Glycerrhiza glabra*, leguminosae), Orange peel (*Citrus X sinensis*, Rutaceae).

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