

SIMPLE WAY OF PREPARATION OF NATURAL ANTISEPTIC CREAM AND COMPARISON OF ITS ANTIMICROBIAL ACTIVITY WITH COMMERCIALY AVAILABLE ANTISEPTIC

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ABSTRACT: Most of the medicated ointment preparation contains medicament ingredients which are dissolved, suspended or emulsified in the base and used topically for several purposes such as protectant, antiseptic, emollient, and astringent¹. Kamarapu P et al have formulated antimicrobial polyherbal ointment². The present paper is based on a study of formulation of natural antiseptic and testing the antimicrobial activity against cultured cosmopolitan saprophytic fungus in a microbial media. Further aim was also to test its compatibility with commercially available and widely used antiseptic cream "Boroline" in the same media. Agar-well diffusion method was employed for testing antimicrobial activity.

Key Words: : Natural Antiseptic, Antimicrobial activity, Microbial media, Boroline

I. INTRODUCTION:

There has been an increasing demand for herbal medicine, also called botanical medicine or phytomedicine prepared by using any plant's seeds, berries, roots, leaves, bark, or flowers for medicinal purposes³. Long practiced outside of conventional medicine, herbalism is becoming more mainstream as up-to-date analysis and research show their value in the treatment and prevention of disease. Recently, the World Health Organization estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary healthcare⁴. Plant drugs are frequently considered to be less toxic and freer from side effects than the synthetic ones⁵. Along with other dosage forms, herbal drugs are also formulated in the form of ointment and creams.

We have developed a very easy method of preparation of natural antiseptic cream using readily available natural ingredients and tested for its efficacy as an antimicrobial agent in comparison to '**Boroline**', a commercially available natural antiseptic cream.

II. MATERIALS AND METHODS:

A) PREPARATION OF THE CREAM:

The preparation of antiseptic ointment was attempted with following components.

- i) Olive oil
- ii) Calendula
- iii) Aloe Vera
- iv) Turmeric
- v) Honey(as natural preservative)

Step I: A small pot was set above the burner.

Step II: Tablespoon of olive oil, spoon turmeric paste, spoon Aloe Vera gel in the ratio 4:1:1 and few drops of alcohol extract of calendula were placed in the in the pot.

Step III: The burner was in a medium heat and the ingredient were stirred for 10 minutes

Step IV: The pot was removed from the burner. The content was filtered through muslin cloth and it was allowed to cool at room temperature.

Step V: It was then mixed with petroleum jelly in another bowl and added few drops of honey to it (as natural preservative). The bowl was set in the refrigerator for 4-5 hours.



Samples of prepared natural antiseptic cream

B) MICROBIAL STRAIN TO TEST THE EFFICIENCY OF PREPARED CREAM

- i) The selected fungus *mucor* was cultured in the Chemistry laboratory of Nagaon College. The process was very easy. A piece of moist bread was exposed to atmosphere for 24 hours and kept covered for 3 days. After 3 days a white fluffy growth of mycelium appeared on the bread. The fungus was identified in the with the help of binocular microscope. The selected fungus *mucor*, of the class Zygomycetes, is a cosmopolitan saprophytic fungus living on dead organic matter. It possesses potential toxic effects on cuts and wounds.
- ii) Preparation of PDA media: 200 g of peeled potato was taken in a 1 litre conical flask and 400 cc of water added to it. 20 g of agar into another 2 litre flask and 600 cc of distilled water added to it. Both the flasks were then heated. The juice of boiled potato was filtered and added to the dissolved agar. 20 g of dextrose was added to the potato-agar mixture along with a trace of boric acid. The whole mixture was sterilized and kept for use.
- iii) Media sterilization: The PDA media is immediately poured into a sterile, dry petriplate while holding the top carefully above the petri plate bottom in order to avoid contamination. The cap was replaced and allowed the agar to cool and harden.
- iv) The fungal inoculum was uniformly spread using sterile cotton swab on a sterile Petri dish PDA Media. Four such petriplates were taken. Three petriplates were taken where 50 μ L of prepared natural antiseptic cream were added to each of the well (7 mm diameter holes cut in the agar gel) through micropipette. To the well of fourth petriplate, same amount of Boroline was taken. The systems were incubated for 24 h at $36^{\circ}\text{C} \pm 1^{\circ}\text{C}$, under aerobic conditions.

III. RESULTS AND DISCUSSION:

After 7 days of observation, it was found that the zone of inhibition of Boroline petriplate was same with minor change in its periphery.

The other three plates containing naturally prepared antiseptic cream in the well too did not undergo appreciable change in the zone area but the outer zone was found to have less inhibition as compared to Boroline.



BOROLINE PREPARED CREAM

FOUR PETRIPLATES AFTER 7 DAYS

On studying the chemical effectiveness, the prepared antiseptic was found to be comparable with the commercially available antiseptic BOROLINE.

IV. CONCLUSION:

The natural antiseptic cream which we prepared as a part of our research study in a very easy way was found to act as an effective and potential antimicrobial agent. We think that the endeavor of preparing an antiseptic cream was practically successful and it is comparable with BOROLINE. But there is enough scope of improving the product by variation of concentration of ingredients.

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