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FORMULATION AND EVALUATION OF A HERBAL BASED ORAL CARE PRODUCT

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ABSTRACT

In this research work to prepared and evaluated mouth gargle with the help of neem extract and ingredients. Add sodium saccharin as a sweetening agent and also added sodium lauryl sulphate as foaming agent. To prepare 60% ethanol for the use of solvent in gargle also added menthol as a cooling agent. Neem extracts use as a antibacterial activity. Extract was prepared by maceration method. Gargles are aqueous solutions used to prevent or treat infections. They are usually available in concentrated form with direction for dilution with warm water before use. They are used to relieve soreness in mild throat infection.

KEYWORDS: Herbal Mouth Gargle, Phytochemical Screening.

INTRODUCTION

Herbal products as botanical products or phyto medicines are derived from plants and used to maintain health or treat diseases. They encompass a wide range of products, including herbal supplements (products for internal use) and applications like gels, lotions, and creams. Herbal medicines are a type of dietary supplement and can be found in various forms such as tablets, capsules, powders. They are made from plants or plant parts, including leaves, stems, flowers, roots. Mouthwashes are concentrated hydro alcoholic solutions containing one or more active ingredients and excipients. Mouthwashes (also called mouth rinses/mouth rinses, oral rinses or oral washes) are liquid, aqueous compositions mainly intended to prevent, relieve and cure oral conditions. A mouthwash is a solution used to rinse the oral cavity. This may be to maintain oral hygiene, to prevent dental plaque, or for symptomatic relief. Mouthwash is a

liquid dosage form used for rinsing and cleaning the oral cavity. It can be classified as either cosmetic or therapeutic, with the latter containing active ingredients for specific oral health benefits. Mouthwashes are designed to reduce oral bacteria, remove food particles, temporarily fresh breath, and provide a pleasant taste. Herbal mouthwashes can be used in addition to different oral hygiene techniques like flossing and teeth brushing. They can be utilized in supportive periodontal therapy due to their effective anti-inflammatory and anti-plaque characteristics, which have been demonstrated. Alcohol, artificial flavors, colours, or preservatives are not present. Hence Because of the additional benefits offered by herbal preparations, herbal mouthwashes might be thought of as a substitute for chemical mouthwashes in maintaining oral hygiene. A precise diagnosis of the oral condition and in-depth product knowledge are prerequisites for using mouthwashes.

Types of Mouthwash

- Fluoride
- Cosmetic
- Antiseptic
- Natural (herbal)
- Total care

Fluoride

Fluoride is essential to oral health as it helps to prevent tooth decay by strengthening enamel, making teeth more resistant to cavities. This type of mouthwash is especially useful for individuals prone to cavities or those with weak enamel who want to strengthen it.

Natural (herbal)

For those who prefer natural oral care products, herbal mouthwashes use ingredients such as tea tree oil, aloe Vera, and essential oils to fresh your breath and fight bacteria naturally.

Antiseptic

Antiseptic mouthwashes contain ingredients like chlorhexidine or alcohol to kill bacteria and reduce plaque buildup. This mouthwash type is commonly used to help prevent gum disease, reduce plaque, fight bacteria, and freshen your breath.

MATERIAL AND METHOD

Neem (Azadirachta indica) - Nearly all parts of the neem tree are useful, and many of its medicinal and herbal uses are based on its antibacterial and antifungal properties. It is also a component in some toothpastes and mouthwashes, especially in the Indian subcontinent, and young twigs are used directly as crude toothbrushes in rural areas. Neem leaves have long been used as a traditional treatment for diabetes, and there is some clinical evidence suggesting that it may help control blood sugar levels.

Neem (Azadirachta indica).

Preformulation studies

Phytochemical screening - Medicinal flowers are traditional medication tools and lots of modern-day drugs are circuitously derived from vegetation. Phytochemical ingredients are two major bioactive additives of the shape (chlorophyll, proteins, amino acids, sugar, and many others.) and feature secondary bioactive parts (alkaloids, terpenoids, phenols, flavonoids and so forth.). As in keeping with the standard approaches, phytochemical analyses have been done for all the extracts.

1. **Detection of alkaloids**: Extracts were dissolved for my part in dilute Hydrochloric acid and Filtered.

A) **Mayer's Test**: Filtrates is dealt with with the reagent Mayer (Potassium Mercuric Iodide). The improvement of a yellow-colored precipitate suggests that alkaloids are gift.

B) **Wagner's Test**: With Wagner's reagent, filtrates is dealt with (Iodine in Potassium Iodide). The presence of alkaloids shows the production of brown/reddish precipitates.

2. **Detection of carbohydrates**: The extracts had been in my view dissolved in 5 ml of purified water and filtered. The filtrates were used to check for carbohydrate presence.

A) **Fehling's Test**: With dil. HCl, filtrates is hydrolyzed, neutralized with alkali and heated with A & B solutions from Fehling. The purple precipitate formation shows the presence of sugar reduction.

B) **Legal's Test:** The extracts have been dealt with with pyridine-based totally sodium hydroxide. The red to blood crimson shade formation suggests the presence of cardiac glycosides

3. **Detection of saponins**

A) **Froth Test**: Extracts had been diluted to 20ml with purified water and this was shook for 15 mins in a graduated cylinder. The presence of saponins is tested by means of the formation of one cm of foam coating.

S.no	Name of Test	Result
1	**Test for Alkaloids** A) Wagner's Test: B) Hager's Test:	 -ve -ve
2	**Test for carbohydrates** A) Fehling's Test B) Legal's Test	 +ve +ve
3	**Test for Saponins** A) Froth Test	 -ve

Formulation of Mouth gargle – Take a required amount of neem herbal extract and mix with 60% Ethanol in a beaker after added propylene glycol and mix. In another beaker required amount of distilled water and add sodium saccharin mix the solution A and B solution. After added sodium lauryl sulfate as a foaming agent the foam are produce then add menthol as a flavoring agent. Transfer to a bottle, label.

S. no	Ingredients	F1 (gm)	F2 (gm)
1	Neem	**0.2**	**0.3**
2	Sodium Saccharin	**1**	**0.5**
3	Menthol	**1**	**0.5**
4	Propylene Glycol	**5**	**6**
5	Sodium Lauryl Sulfate	**0.5**	**0.2**
6	Ethanol	**5**	**2**
7	Distilled water	**qs**	**qs**

Fig. Formulation of Gargle.

Uses – Mouth gargles is a simple mouth wash which is used to cleanse the buccal cavity. It is very refreshing to the bed- ridden patients.

Sodium Saccharin used in gargle as a sweetener.
Sodium Lauryl Sulfate used in gargle as a foaming.
Menthol used in gargle as a pleasant taste and odour to the preparation.
Propylene glycol is a common ingredient in gargles, acting as a humectant, emollient

Evaluation of Herbal Mouthwash

- Physical Appearance
- pH

- **pH determination:** The pH is determined by using the pH meter. The pH should be compatible with the mucosal layer of the throat. A pH meter was calibrated using standard buffer solution. The 50ml of solution was taken in beaker and pH was recorded in digital pH meter. The Result are shown in table no. 1

The viscosity of the solution was determined through the Brookfield viscometer. In which the 50ml of the gargle solution was taken in a beaker using spindle no 7 at 50 rpm the reading was recorded. The Result are shown in table no.

Table No. 1.

S.no	Evaluation Test	F1	F2
1	Physical Appearance	Dark Brownish	Dark Brownish
2	Odour	Odourless	Odourless
3	Taste	Minty taste	Minty taste
	pH	6.5	6.4

CONCLUSION

Neem herbal mouth gargles formulations are considered to be the gold standard antiplaque mouth rinses due to their prolonged broad-spectrum antimicrobial activity and plaque inhibitory potential. Mouthwashes F1 and F2 were the most effective mouthwashes against the oral bacterial strains tested. Out of these three formulations F1 was shows optimum effect on the bacterial strains.

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