Original Research Article

POLY HERBAL TOOTH PASTE FORMULATION

ABSTRACT

Oral hygiene can be maintained throughout the day by using various dentifrices prepared with herbal and synthetic ingredients. Oral hygiene is maintained to keep the mouth fresh and avoid tooth decay. The largest producer of healthful herbs is India which is known as the botanical garden of the world. The main aim of this work is to formulate and evaluate polyherbal toothpaste and compare it with marketed products of the same category. The toothpaste was prepared by using several herbal ingredients which show antibacterial, antiseptic, and cooling properties. Neem, clove, babool, banyan, amla, and many other natural products are used to formulate ideal herbal toothpaste which satisfies all the required properties to keep the mouth fresh and to prevent tooth decay caused by the bacteria. The method which is used for formulating the herbal toothpaste is the trituration method. The prepared toothpaste was evaluated for its organoleptic and physical characteristics such as color, odor, taste, stability, foamability caused by bacteria, and abrasiveness to ensure that it possesses all the desired features to use against dental disease. Thus, the formulated herbal toothpaste was a good herbal toothpaste than the conventional toothpaste due to its side effect.

Keywords: Poly herbal, Toothpaste, Formulation

INTRODUCTION:

Figure 1 Herbal ingredients used for healthy teeth

A paste or gel dentifrice which is used to clean and maintain aesthetics and health of

teeth with the help of a toothbrush is called toothpaste it is said to be dentifrice that is in the form of smooth semisolid homogeneous mass containing surfactant, binders, polishing agent, humectants, abrasives, and other appropriate materials to maintain oral health "GOOD APPEARANCE AND IMPRESSION" which gives confidence to an individual is an important key to maintain oral hygiene. Nowadays people are more inclined towards the use of non-alcoholic and herbal formulation because it does not contain artificial color, flavor, or fluorides as it has several drawbacks. In ancient days various regions of the world used powdered ashes, eggshells, myrrh, crushed ostrich, crab shell, bones, and the horn of various animals. During that period they attained good abrasives action with their formulated tooth powder which was further converted into toothpaste. Proper oral hygiene should be maintained otherwise it will cause several dental problems like cavities, tooth sensitivity, calculus, and periodontal disease herbal toothpaste is referred to as an oral hygienic product to maintain the health of teeth. Mostly it contains plant products or its derivatives which it mean for the protection of teeth and is used in strengthening the teeth without causing any harmful effects. Natural or herbal toothpaste lack triclosan or fluorides and other artificial chemical ingredients which overcome the side effects like carcinogenic action as it mostly contains plant-based ingredients such as lemon, eucalyptus, rosemary, chamomile sage, and myrrh.

2. MATERIALS AND METHODS:

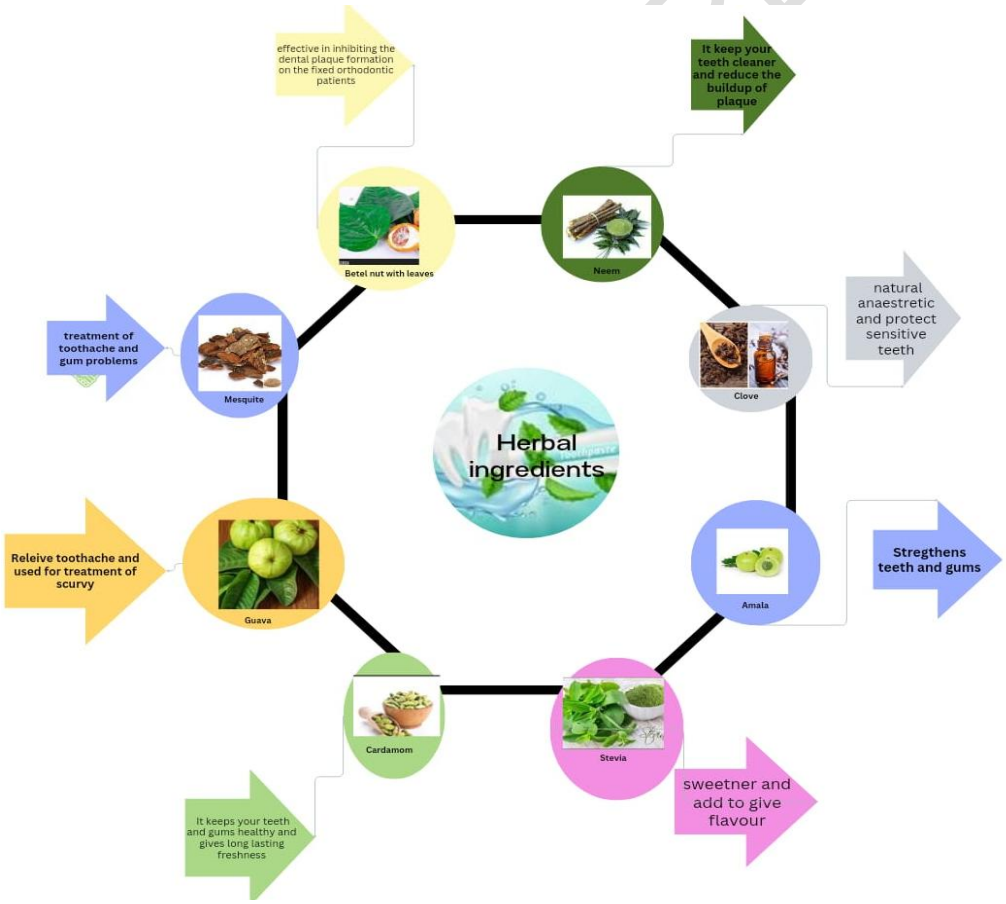
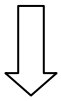


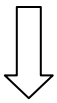
Figure 2 Formulation of herbal toothpaste

A method used for the formulation of herbal toothpaste is homogenization by using mortar and pestle for the formation base of toothpaste.

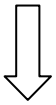
All the required materials for making the herbal toothpaste were collected.



Each ingredient was dried completely and powdered.



The powdered herbal ingredient was weighed accurately as per the need.



The ingredients were mixed with chemicals such as polyethylene glycol is used as humectant and a solvent to form a base for the preparation.

The herbal powder and the base ingredients were added to the mortar and pestle, and stevia powder was added as a sweetening agent.

The herbal ingredients are triturated well until a paste consistency is formed.

FORMULATION:

An equal proportion of all the ingredients (Neem, Babool, Guava leaf, Banyan, Clove, Betel Nut, Amla, Cardamon, and Stevia) were dried and converted into powder.

Along with the herbal powder add a sufficient quantity of Polyethylene glycol, water, and sodium lauryl sulfate and mixed well to get the herbal toothpaste.

3. RESULTS AND DISCUSSION:

Table 1: Sensory evaluation parameters (Color, odor, taste)

SI.NO	PARAMETERS	OBSERVATION
1.	Color	Dark Brownish
2.	Odor	Heavy Aromatic
3.	Taste	Spicy, Bitter, and subtly sweet

Table 2 Sensory evaluation parameters (Consistency, Smoothness, Abrasiveness)

SI.NO	PARAMETERS	OBSERVATION
1.	Consistency	Good
2.	Smoothness	Moderate Smooth
3.	Abrasiveness	Good Abarasive

Table 3 Sensory evaluation parameters (PH, Foamability, Moisture Content, Spreadability, Homogeneity, Stability)

SI.NO	PARAMETERS	OBSERVATION
1.	PH	7.09
2.	Foamability	60(100%)
3.	Moisture Content	34.8 %
4.	Spreadability	5.8 cm/sec (good)
5.	Homogeneity	Good
6.	Stability	Stable

COMPARITIVE STUDY:

FORMULATED HERBAL TOOTHPASTE WITH MARKETED FORMULATION (Colgate vedshakthi)

The formulated herbal toothpaste was compared with the marketed preparation for its color, taste, odor, consistency, smoothness, abrasiveness, moisture content, foaming test, fineness test, stability, PH determination, spreadability, and homogeneity.

PHYSICAL EXAMINATION:

Table 4. Physical examination of formulation 1

SI.NO	PARAMETERS	FORMULATION	MARKETED FORMULATION
1.	Color	Dark brown	Light Brown
2.	Odor	Heavy aromatic	Aromatic
3.	Taste	Spicy, bitter, and subtly sweet	Sweet
4.	Consistency	Good	Good

Table5 Physical examination of formulation 2

SI.NO	PARAMETERS	FORMULATION	MARKETED FORMULATION
1.	PH	7.09	9.44
2.	Good Abrasive	Good Abrasive	Moderate abrasive
3.	Homogeneity	Good	Good
4.	Smoothness	Moderate Smooth	Very smooth

PHYSIOCHEMICAL EVALUATION:

Table 6 physiochemical evaluation of parameters

SI.NO	PARAMETERS	FORMULATION	MARKETED FORMULATION
1.	Foaming test	60 (100%)	70 (100%)
2.	Fineness	Moderate Good	Good
3.	Moisture Content	20.65%	12.76%
4.	Spreadability	5.8	5
5.	Stability	Stable	Stable

4. CONCLUSION:

All the marketed herbal and natural toothpaste are not completely herbs, that contain certain chemical compounds to prevent bad breath and whiten the teeth. But, here the formulated herbal toothpaste contains various effective herbs that can be used for total dental and oral care, without causing any side effects. Evaluation tests for formulated herbal toothpaste were carried out according to the standard specified by the Bureau of Indians. Both sample was founded to be of good quality and have physicochemical properties. It is free from harmful and is economical with good quality.

Figure 3 Model diagram of cleaning of teeth

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