

RESEARCH ARTICLE

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Correspondence

Kirti Charde*

Priyadarshini J. L. College of
pharmacy, Nagpur, Maharashtra, India
Electronic Zone Building, MIDC,
Hingna Road, Nagpur- 440016
✉ kirticharde95@gmail.com

COMPARISON OF EVALUATION PARAMETERS OF DIFFERENT BRANDS OF MARKETED TOOTHPASTE

Charde kirti*, Upadhye Kanchan, Kawade Dinesh, Gholve Yogesh,
Gajbhiye Pranali, Chaple Dinesh

Priyadarshini J. L. College of pharmacy, Nagpur, Maharashtra, India

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ABSTRACT

The fundamental point of the current work is to assess and look at changed brands Marketed toothpaste. All the advertised tooth glues which had been assessed conformed to the norms indicated by the Bureau of Indian Standards. The plans were exposed to different assessment tests like pH, Spreadability, abrasiveness, frothing capacity, cleaning capacity, fineness, dampness and unstable substance, tube inactivity test. The primary point of this examination work is to assess the normalization parameters of various brands of showcased toothpaste. To decide the security and viability of the various brands of toothpaste. Toothpaste having a stressed job in the keeping up the oral sterile nature just as forestalling dental caries. In view of this writing, a premium make to assess and contrast the six showcased toothpaste with get plan increasingly steady. In the current examination, six business toothpaste, for example, Colgate Maxfresh, Meswak, Dantkanti, Pepsodent, Closeup, and Babool have been assessed for their quality.

INTRODUCTION

Toothpastes have been utilized since the antiquated past and are one of fundamental imperative segments of oral human services. The structure of toothpaste plans started in China and India, as 300-500 BC. During that period, crushed bone, pounded egg and shellfish shells were used as abrasives as a piece of tooth cleaning.^[1] Current toothpaste definitions were created in the nineteenth century. Later on, chalk and cleanser were fused to those definitions. After 1945, a few detailing progressions of various cleansers had started, sodium lauryl sulfate had been utilized as emulsifying specialist. As of late, the center has moved towards the arrival of dynamic fixings during detailing advancements to forestall and/or treat oral illness.^[2]

Toothpaste is a dentifrice used to clean, keep up and improve the soundness of teeth. Toothpaste is primarily used to advance oral tidiness and furthermore goes about as a rough that assists with forestalling the dental plaque and nourishment particles from the teeth, helps in the

evacuating as well as veiling of halitosis, and discharges dynamic fixings, for example, fluoride to help in forestalling tooth and gum infection (eg. Gum disease). Most of the cleaning is performed by the mechanical usage of the toothbrush with the assistance of excipients utilized in toothpaste. The primary point of this examination is to assess the Herbal toothpaste definitions and contrasting and three mainstream business toothpastes.^[3]

Oral cleanliness is a significant key to keep up great appearance, impression of an individual and gives certainty. The tooth comprises of two sections, crown and the root. The crown of the tooth is secured by external surface called finish and it is the hardest tissue in the tooth. The significant creation of lacquer is hydroxyl apatite other than that it comprises of water and keratin. Dentine is the underneath part of the veneer, which is a composite of hydroxyl apatite. It additionally comprises of 70% of the collagen water. Fluorine is the significant segment of dentine.^[4] Oral

comprises of tooth as well as spit for simple to swallow the nourishment. Salivation is the significant component which proposed for greasing up the nourishment and to keep up appropriate condition in the mouth. Salivation is delivered by different organs, for example, labial, lingual, Buccal and palatal are the bigger and littler organs which produce spit consistently to keep the tooth condition in the dynamic state². Proteins, compounds, microscopic organisms and mucopolysaccharide are available in the salivation and the inorganic materials like calcium, sodium, potassium, chloride, phosphate ions.^[5]

Ideal properties of toothpaste^[6]:

- Good rough impact
- Non-aggravation and non-poisonous
- Impart no stain in tooth
- Keep the mouth new and clean
- Prolonged impact
- Cheap and effectively accessible

MATERIALS AND METHODS

The samples were purchase from the market and kept in laboratory place to evaluate the parameters of the toothpaste before examination so that any change or deterioration will not occurred.

Evaluation of Toothpaste^[7,8,9]

As indicated by the rules, the measures were recommended for every assessment trial of non-fluorinated (type I) or fluorinated (type II) toothpastes.

Tube inertness

The toothpaste holder will not create any erosion or crumbling in ordinary stockpiling conditions like warming temperature at $45\pm 20^{\circ}\text{C}$ for ten days. Cylinder latency can be analyzed by cutting the inside surface, open and seeing whether any indication of crumbling or synthetic assault happened in the compartment.

Determination of sharp and edge abrasive particles

Expel the substance 15-20 cm long on the margarine paper, rehash a similar procedure for in any event ten collapsible cylinders. Press with the substance of the whole length with fingertip for the nearness of sharp and hard edged grating particles. Toothpaste will not contain such particles.^[10]

Determination of Spreadability

One gram of toothpaste set on a glass slide (10 x 2 cm), spread with another glass slide. At that point cautiously place two kg weight of on secured glass slide (sliding, will not occur). Measure the spreading (in cm) of the toothpaste

following 3 minutes. Rehashing the test and note the normal estimation of three readings.

pH determination

Gauge 1 g of toothpaste set in 150 ml measuring utencil. Permit 25ml water. Mix vivaciously to make a suspension. Measure the pH of the suspension utilizing pH meter.

Foaming power

Take a suspension of the material in estimating chamber and shake the suspension for multiple times. Furthermore, measure the volume of the froth delivered subsequent to shaking for 5 minutes.^[11]

Methodology

Gauge 5 g of toothpaste in a 100 ml glass measuring utensil. Include 10 ml of water, spread the glass measuring utensil with a watch glass and represent 30 minutes. Warmth the suspension delicately to disintegrate the cleanser if present in it.^[12] Mix the suspension with glass bars and move it to 250 ml estimating chamber. Analyze if no froth is delivered (in excess of 2 ml). Move the buildup held in the receptacle to estimating chamber by including of 5-6 ml of water. At that point make up the chamber with 50ml of water. Mix the substance with up-down developments to get uniform suspension at 30°C . Subsequent to shaking, keep the chamber represent 5 minutes. Furthermore, last note the volume got with froth + water.^[13]

Determination of moisture and volatile matter

Gauge 5 g of test set in a porcelain dish containing 6-8 cm in measurement and 2-4 cm profundity in it. Dry the example in a broiler at 105°C .

% by mass = $100 \frac{M1}{M}$

M1 - loss of mass (in grams) on drying

M - Mass (in grams) of the material taken for the test.^[14]

RESULT AND DISCUSSION

Assessment trial of advertised toothpaste were completed by the standard determined department of Indian norm. All the showcased tests (Colgate Maxfresh, Closeup, Pepsodent, Meswak, Babool, Dantkanti) having a decent quality. Assessment test were done to see the various properties of the advertised toothpaste.

Examination of abrasiveness of the toothpaste has no abrasiveness in all the promoted tests. Spreadability of the closeup toothpaste has shown more than the remainder of the plan. Likewise the pH frothing force and assurance of dampness and unpredictable matter of closeup toothpaste essentially more than all other residual plan.

Consequently, by the proof of in vitro examinations, it was reasoned that the different parameters were assessed and contrasted in the research facility was found with be a decent quality among this closeup saw as a superior quality.

CONCLUSION

In light of trial considers, it was inferred that all the promoted toothpaste assessed and contrasted and the standard by Bureau of Indian Standards. This preliminary in vitro study showed that each of the six showcased toothpaste was similarly viable as far as all assessment properties. Consequently, by the proof of in vitro considers it was reasoned that the different parameters were assessed and thought about in the research center and was seen as a decent quality and among this closeup found to be better quality.

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IMAGE AND TABLES

Sr.no.	Sample brand name	Company name
1.	Colgate Max Fresh	Colgate Pvt Ltd
2.	Meswak	Dabar India Ltd
3.	Pepsodent	Hindustan Unilever
4.	Closeup	Hindustan Unilever
5.	Babool	Dabar India Ltd
6.	Dantkanti	Patanjali Pvt Ltd

Table 1: Sample Collection

Sr.no.	Brand name	Result
1.	Colgate Max Fresh	No Corrosion
2.	Closeup	No Corrosion
3.	Pepsodent	No Corrosion
4.	Meswak	No Corrosion
5.	Babool	No Corrosion
6.	Dantkanti	No Corrosion

Table.2: Tube inertness

Sr. no.	Brand name	Result
1.	Colgate Max Fresh	Absent
2.	Closeup	Absent
3.	Pepsodent	Absent
4.	Meswak	Absent
5.	Babool	Present
6.	Dantkanti	Absent

Table no.3: Determiation of sharp and edge abrasive particles

Sr.no.	Brand name	Result
1.	Colgate Max Fresh	3.6 cm
2.	Closeup	4.2 cm
3.	Pepsodent	3.5cm
4.	Meswak	3.9 cm
5.	Babool	3.7 cm
6.	Dantkanti	3.8 cm

Table no.4: Determiation of Spreadability

Sr. no.	Brand name	Result
1.	Colgate Max Fresh	8.9
2.	Closeup	7.2
3.	Pepsodent	8.6
4.	Meswak	7.3
5.	Babool	8.3
6.	Dantkanti	8.2

Table no.5: pH determination

Sr. no.	Brand name	Result
1.	Colgate Max Fresh	70 ml
2.	Closeup	90ml
3.	Pepsodent	85ml
4.	Meswak	74ml
5.	Babool	71ml
6.	Dantkanti	76ml

Table no.6: Foaming power

Sr. no.	Brand name	Result
1.	Colgate Max Fresh	1.15
2.	Closeup	1.15
3.	Pepsodent	1.09
4.	Meswak	1.18
5.	Babool	1.27
6.	Dantkanti	1.07

Table no.7: Determination of moisture and volatile matter



Fig.3: pH determination



Fig.4: Foaming power



Fig. 1 (a): Determination of spreadability before test



Fig.5: Determination of moisture and volatile matter

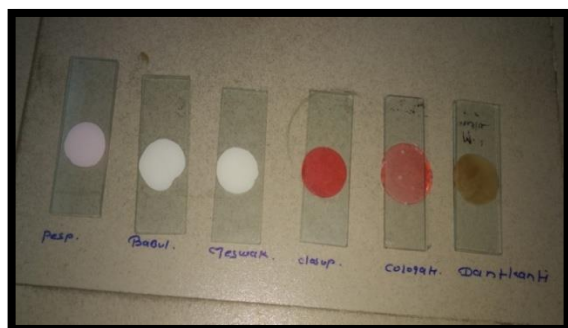


Fig. 2 (b): Determination of Spreadability after test