

Formulation and Evaluation of Poly-Herbal Toothpaste for Pediatrics Use

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Abstract: Pediatric dental health is crucial for overall well-being. Herbal toothpaste formulations offer a promising avenue for safe and effective oral care in children. This study aimed to develop and evaluate a poly-herbal toothpaste tailored for pediatric use. A toothpaste formulation was developed using natural ingredients known for their oral health benefits, including neem extract, clove, peppermint, black pepper, amla, and turmeric. Excipients such as calcium carbonate, glycerine, and sodium lauryl sulphate were incorporated to enhance texture and efficacy. Evaluation parameters included physical examination, abrasiveness, spreadability, pH determination, homogeneity, foaming ability, stability, and microbial growth. Phytochemical analysis confirmed the presence of bioactive compounds in the herbal ingredients, aligning with their traditional medicinal uses in oral care. The formulated toothpaste exhibited favorable sensory attributes, including pleasant color, odor, taste, and smooth texture. Evaluation results demonstrated optimal pH (7.76), good foaming ability (13 ml), moisture content (15.46%), spreadability (3.5 cm/sec), homogeneity, and stability, with no microbial growth observed. The developed poly-herbal toothpaste formulation holds promise for pediatric oral care, offering safe and effective protection against oral bacteria, plaque, and gum disease. Further studies on efficacy and clinical trials are warranted to validate its suitability for pediatric use.

Keywords: Poly-herbal toothpaste, pediatric oral care, herbal ingredients, formulation, evaluation