

# Formulation and Evaluation of Moringa Oleifera Toothpaste for Diabetic Patients

Dr. Mohammed Shakir Ghouse<sup>1</sup>, Syeda Iqra<sup>2</sup>, Shaikh Amaan<sup>3</sup>, Shaikh Awesoddin<sup>3</sup>, Shaikh Abutalha<sup>3</sup>

<sup>1</sup>Professor, Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.

<sup>2</sup>Associate Professor Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.

<sup>3</sup>Student of Aurangabad Pharmacy College, Dr, Babasaheb Ambedkar Technological University. CHS nagar, Aurangabad, Maharashtra, India.

**Abstract:** *Diabetes mellitus is a widespread metabolic disorder that often leads to complications affecting oral health, including gum disease, dry mouth, and delayed healing of oral wounds. Maintaining good oral hygiene is crucial for diabetic patients to prevent infections and manage overall health. Herbal remedies are gaining attention due to their natural origin, fewer side effects, and therapeutic benefits. Moringa oleifera, a medicinal plant known for its rich nutritional content and pharmacological properties, exhibits strong antibacterial, antioxidant, and anti-inflammatory effects, making it a suitable candidate for oral care products. This study aimed to formulate and evaluate an herbal toothpaste incorporating an aqueous extract of Moringa oleifera leaves, specifically designed for individuals with diabetes. The toothpaste was prepared using commonly accepted excipients and assessed for various quality parameters such as pH, texture, spreadability, foaming capacity, and stability. Antimicrobial activity was also evaluated against oral pathogens associated with dental problems in diabetic individuals, including Streptococcus mutans and Candida albicans. The findings revealed that the formulated toothpaste possessed desirable physical characteristics and showed promising antimicrobial properties. Its pH was found to be within a safe range for oral use, and it demonstrated good consistency and acceptable foaming ability. The antimicrobial tests indicated a significant inhibitory effect on the tested microorganisms, suggesting the potential of Moringa oleifera extract in promoting oral health among diabetic patients. Overall, the herbal toothpaste developed in this study offers a natural and effective alternative to conventional oral care products*

**Keywords:** Herbal toothpaste, Moringa oleifera, diabetes, oral hygiene, antimicrobial activity, formulation, evaluation, natural oral care.

