# An Approach to Establish and Conserve Endemic Omani Frankincense Tree Species: A Comprehensive Tissue Culture and Molecular Analysis of Boswellia sacra under Invitro Level

Shamshad Ahmad Khan

University of Technology and Applied Sciences-Sur, 411 Oman

**ABSTRACT**

This presentation explores the feasibility of establishing a comprehensive protocol for the rapid in vitro regeneration of Boswellia sacra (frankincense), a medicinal plant of significant cultural and economic importance in Oman. The proposed research encompasses key stages aimed at the efficient propagation and conservation of this endemic species, including the development of in vitro protocols, callus culture, and synthetic seeds—an area yet to be explored in this plant system. Also, the study aims to establish a gene bank for B. sacra, facilitating the generation of novel variants with enhanced traits through accelerated propagation and somaclonal variation. Furthermore, the research will contribute to insights into plant metabolic engineering by developing regeneration systems from diverse explant sources. The study will also evaluate the bioactive potential of plant extracts against selected phytopathogenic bacteria and fungi, expanding the understanding of the species' therapeutic applications.



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