



## **THE ACCEPTABILITY OF HYDROXYAPATITE EXTRACTED FROM SARDINE SCALES AS A DENTAL BIOMATERIAL**

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### **INTRODUCTION**

The search for alternative and sustainable biomaterials has driven research focused on the reuse of industrial waste. In dentistry, hydroxyapatite ( $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ ) is a reference material for bone substitution and regeneration due to its similarity to the mineral component of bone tissue (Porsani et al., 2018, Ceram.). This study evaluates the acceptability of hydroxyapatite obtained from sardine scales among dental professionals, considering its feasibility as a sustainable alternative for clinical applications.

### **MATERIAL AND METHODS**

The sardine scales used in this study were provided by a local fishing industry, enabling the use of a commonly discarded residue. Hydroxyapatite was obtained through sample treatment, followed by calcination and characterization processes, with the aim of confirming the compound's presence and analyzing its potential as a dental biomaterial. Furthermore, to assess professional perceptions of the developed product, a descriptive exploratory study was conducted using a questionnaire administered via the Google Forms platform. The objective was to gather data on clinical feasibility and the willingness to use the biomaterial. The questionnaire focused on the potential use of a material derived from industrial waste, emphasizing its sustainable origin and low cost.

### **RESULTS**

The analysis of the responses revealed that 77.8% of the professionals interviewed expressed a direct willingness to use the proposed biomaterial. Another 22.2% indicated openness to its adoption, provided that prior testing of the product was conducted. Regarding the current use of biomaterials in clinics, there was a significant predominance of bovine bone-derived materials, often associated with commercial brands.

### **CONCLUSIONS**

The study revealed a positive reception from dental professionals regarding the use of new biomaterials. In this context, hydroxyapatite extracted from sardine scales presents itself as a promising alternative with potential for adoption in clinical dental practice. The acceptance demonstrated by the participants reinforces the importance of further studies to validate the efficacy and biocompatibility of the material, thus enabling its application as a reliable and accessible biomaterial for bone grafting procedures.

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