

## Impact of Ethnomedicinal Plants on Toothpaste Improvement

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### Abstract:

**Objectives:** The aim of this study to evaluate the antimicrobial susceptibility of combined toothpaste with medicinal plants and the relations between the commercial toothpaste to its price and the patient age as well. **Materials and Methods:** Oral isolates of different patients aged 3 to 60 years were obtained, purified, and tested against four different ethnomedicinal plant extracts for antimicrobial activity. A total of 10 different commercial toothpastes (different brands and prices) were collected from the market, and the combined action of the medicinal plants and toothpaste was studied. **Results:** We found a higher bacterial population in the age group of 3–40 years than the group of 40–60 years, with approximately 44% and 32%, respectively. The combined action of ethanolic extract (alone) against oral isolates showed a synergistic effect, with 32.20, 30.50, and 25.42% for combinations A (Ci/Ca) , B (Ci/Ca/P), and C (Ci/Ca/P/N), respectively. By contrast, the combined action of ethnomedicinal plants with 10 different toothpastes improved the antimicrobial sensitivity by 60, 100, and 0% for combinations A, B, and C respectively. **Clinical relevance:** The ethanolic extract of only combinations A and B with commercial toothpaste showed high antibacterial activity against oral isolates and the effectiveness of toothpaste is not related to the price.

**Keyword:** microbial evolution, Oral isolates, Ethnomedicinal plants, toothpaste, antimicrobial activity.