

Properties and antibacterial effects of Bee Venom

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Bee venom is a natural substance produced by worker bees. The aim of this research paper is to determine the characteristics of Anatolian bee venom by evaluating its chemical content and microbiological properties. Physical, chemical and microbiological analyses were performed on 25 bee venom samples from different areas of Anatolia, Turkey. Data obtained by 3-replicate studies were evaluated with normality and one-way and two-way ANOVA / Tukey tests. Chemical analyses of the bee venoms revealed average melittin, apamin, and phospholipase A2 contents of 40.57%, 2.12% and 13.67%, respectively. The results suggest that Anatolian bee venom has a high phospholipase A2 content compared to the previous literature. The results for apamin content were similar to those reported in other countries. Melittin content was within the range of standard values. Bee venom samples were also observed to have a high sugar content, associated with pollen and nectar contamination. Total aerobic mesophilic bacteria counts revealed no microbial development in 11 samples of bee venom. Staphylococcus aureus was not detected in any sample. A low microbial load was associated with a high phospholipase A2 content in the bee venom composition, thus contributing to its antimicrobial character. This study presents an examination of Anatolian bee venom in terms of chemical content and microbial quality. The examination of other components in addition to phospholipase A2, melittin and apamin in future studies, together with an analysis of antimicrobial properties will further our understanding of Anatolian bee venom. Scientific studies show that bee venom also has an antibacterial effect.

Biography

Asli Elif Tanugur Samanci is a woman entrepreneur, Co-founder of Beeo, Turkey's first and only domestic propolis manufacturer and also awarded to 38 different national and international prizes. She was graduated from the Department of Food Engineering of İstanbul Technical University in 1996. She has been awarded a Master of Science degree by the same university in 2006. Her thesis involved research on the determination of origin in honey. She has been working as R&D and Quality Director since the year 2000 at Altıparmak Food Co. Her research interest focused on bee products characterization with a particular emphasis on analytical methodology.