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Microbiological Quality of Fermented Homemade Green Olive.

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Background: Table olive is one of the most popular fermented vegetables in the Mediterranean Basin and has great importance as a food source. Traditionally, table olive fermentation proceeds spontaneously by soaking olives in a brine solution containing water and certain concentrations of table salt (NaCl). In fact, some bacterial types can grow and multiply in salty environments and high acidity conditions of fermented olives, which can be pathogenic and can increase the risk of food poisoning.

Objective: This study was done to investigate the microbial quality of fermented homemade green olives at three different salt concentrations.

Methods: Fresh green olives were processed using the traditional method, they were directly soaked in brine solutions with three different concentrations 5%, 10%, and 15% of NaCl and the fermentation process took place spontaneously. The microbial analysis was done on the olive pulp and the brine solution using the traditional producer.

Results: Lactic acid bacteria were the predominant bacterial type, the growth of lactic acid bacteria was observed in almost all samples. Fermented olives with lower concentrations of NaCl yielded higher bacterial counts. However, the bacterial counts did not show significant differences between the three levels of salt concentration with increasing the fermentation time. Total viable counts of bacteria had an average of 4.2 log CFU/mL.

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Conclusion: The harsh environmental conditions of fermented olive are not suitable for the existence of pathogenic microorganisms, resulting in a safe product with good quality. The predominant bacterial types present in fermented table olives were mainly lactic acid bacteria, and the presence of pathogenic bacteria was only detected at the beginning of the fermentation process with low salt concentrations.

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