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## Microbial challenge testing for Aloreña olive brines

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This works performs challenge tests to determine the survival of 4 food-borne pathogen species (*Escherichia coli, Staphylococcus aureus, Listeria monocytogenes* and *Salmonella enterica*) in Aloreña de Málaga table olive brines. Microorganism survival was modeled "*in vitro*" using a log-linear model. Data revealed that the olive brine had a considerable antimicrobial activity against the four pathogenic microorganisms tested, even at pH level of 5.5 and salt concentration of 25 g/l. Among pathogenic species, *S. aureus* and especially *E. coli* were the most resistant microorganisms. This way, the final population was below detection limit for all pathogens assayed after 24 hours. Furthermore, studies carried out in real olive packaging confirmed these results. Initial population of inoculated microorganisms were rapidly inactivated in the first 24 hours and not detected after 48 hours. Partial Least Squares regression showed that the inhibition of microorganisms was related with the concentration of certain phenolic compounds, especially with EDA (dialdehydic form of decarboxymethyl elenolic acid), HyEDA (EDA linked to hydroxytyrosol), hydroxytyrosol 4-glucoside, and oleoside 11-methyl ester. Data obtained in the present study confirm the adverse habitats that olive environment provides for the growth of food-borne pathogenic microorganisms and ensure that table olives are safe for consumer's health.

## **Biography**

Eduardo Medina Pradas has completed his Pre-doctoral studies at the Instituto de la Grasa – CSIC obtaining his PhD from Seville University in 2008. He has carried out his Post-doctoral studies at North Carolina State University. He has published more than 30 papers in reputed journals and 5 book chapters. His main research line is the "Biochemistry and microbiology of fermented vegetables, in particular products from olives, cucumbers and other fermented vegetables".

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