

SCREENING FOR METABOLITES FROM THE ADVENTITIOUS LACTIC ACID MICROFLORA OF BRINED OLIVES, TO BE USED AGAINST UNWANTED SPOILAGE MICROORGANISMS

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Abstract

Olive trees (*Olea europaea* L.) are typically grown in the Mediterranean Basin; a number of cultivars have been selected over the ages, and (vegetatively) propagated for the qualitative and quantitative traits of their fruits. Of special importance nowadays is the number of health benefits claimed for olives, which still constitute a vital ingredient in the Mediterranean diet – which may go beyond their richness in antioxidants, fibres and monounsaturated fatty acids, to encompass an actual probiotic role as well. Owing to their perishability, olives require processing to extend their shelf life to acceptable periods; one possibility is carrying out fermentation of brined olives, during which native lactic acid bacteria (LAB) play an important role. Due to the unique microecosystem prevailing during fermentation, LAB can produce metabolites that, besides contributing to flavour, also exhibit antimicrobial activity against other bacteria and fungi; bacteriocins are among such metabolites, so they may be considered as a feasible alternative to biocontrol of brined olives instead of resorting to synthetic biocides (known for a few potential public health hazards). However, the information available on adventitious LAB strains and their ecology is still scarce, yet eventual regulatory approval will require scientific sound data pertaining to those microorganisms, tested under conditions of practical interest. Hence, the aim of this work was to screen novel isolates of LAB native in brined Portuguese olives and possessing antimicrobial properties, with a particular emphasis on their antifungal activity – with the final goal of applying such strains (and/or their bioactive metabolites) in biopreservation of brined olives in a more rational fashion.