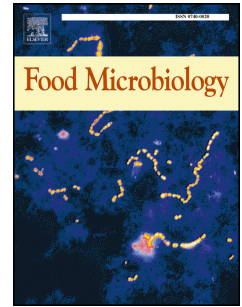


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Microbial biodiversity of Sardinian oleic ecosystems

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ABSTRACT

The olives are rich in microorganisms that, during the extraction process may persist in the oils and can influence their physicochemical and sensory characteristics. In this work, and for the first time, we isolated and identified microbial species, yeast and bacteria, present during the production process in four Sardinian (Italy) oleic ecosystems. Among these varieties, we found that *Nera di Gonnos* was associated to the highest microbial biodiversity, which was followed by *Bosana*, *Nocellara del Belice* and *Semidana*. Among the different microbial species isolated, some are specific of olive ecological niches, such as *Cryptococcus spp* and *Serratia spp*; and others to olive oils such as *Candida spp* and *Saccharomyces*. Some other species identified in this work were not found before in oleic ecosystems. The enzymatic analyses of yeast and bacteria showed that they have good β -glucosidase activity and yeast also showed good β -glucanase activity. The majority of bacteria presented lipolytic and catalase activities while in yeast were species-specific. Interestingly, yeast and bacteria isolates presented a high resistance to bile acid, and about 65% of the yeast were able to resist at pH 2.5 for 2 hours. Finally, bacteria showed no biofilm activity compared to yeast.

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