

## **MICROBIOLOGICAL CHARACTERIZATION OF SOURDOUGH AND FLOURS FOR PORTUGUESE TRADITIONAL MAIZE BREAD**

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Sourdough bread, classically known as *Broa*, is a unique type of bread extensively manufactured in Northern Portugal, at the farm level, following ancient manufacturing procedures. The feedstock is maize (and rye) flour, sometimes added with some wheat flour. *Broa* has been consistently claimed to play an important role in economic and social and terms; consumption of this product has a great potential for expansion as a consequence of contemporary consumer trends toward natural foods. However, enforcement of the increasingly strict hygiene standards cannot come into full effect unless a thorough knowledge of the adventitious microflora of the departing dough is made available.

For this goal, a comprehensive study of the microbial ecology prevailing in sourdough from selected farmers has been carried out. After some preliminary work, it was possible to identify a good method for microbiological characterization of the microecology in *Broa* sourdough, as well as the dominant groups of microorganisms: almost 400 isolates were identified via API™ galleries. After this point, it will be necessary to analyse samples from several other farmers in several other regions to establish accurate microbiological standards. The results already produced have indicated that yeasts, Enterobacteriaceae and lactic acid bacteria (*Leuconostoc* spp., *Lactobacillus* spp., *Lactococcus* spp. and *Enterococcus* spp.) are the predominant microbial groups with respect to total viable counts, but clear differences were detected between the microflora of sourdough, and maize and rye flours, as expected.