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Stability of Ochratoxin a During Bread Making Process

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Abstract : In this research, stability of Ochratoxin A (OTA) during bread making process including fermentation with yeasts (Saccharomyces cerevisiae) and Sourdough (Lactobacillus casei, Lactobacillus rhamnosus, Lactobacillus acidophilus and Lactobacillus fermentum) and baking at 200°C were examined. Bread was prepared on a pilot-plant scale by using wheat flour spiked with standard solution of OTA. During this process, mycotoxin levels were determined after fermentation of the dough with sourdough and three types of yeast including active dry yeast, instant dry yeast and compressed yeast after further baking 200°C by high performance liquid chromatography (HPLC) with fluorescence detector after extraction and clean-up on an immunoaffinity column. According to the results, the highest stability of was observed in the first fermentation (first proof), while the lowest stability was observed in the baking stage in comparison to contaminated flour. In addition, compressed yeast showed the maximum impact on stability of OTA during bread making process.

Keywords : Ochratoxin A, bread, dough, yeast, sourdough
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