

Research Regarding the Mycotoxins Content and Bakery Features of Wheat from Transylvania

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Abstract

This paper is willing to present preliminary results of the research which has the main scope to study the correlations between the mycotic and mycotoxic charge of the wheat seeds from Transylvania area and the bakery features of the flour obtained from these seeds. Current data are referring to the mycotoxic charge of the wheat seeds harvested in 2005 from 9 districts from Transylvania and the bakery features of the flour.

For the determination of mycotoxines there was used the TLC (Thin Layer Chromatography) method.

From the total amount of the investigated samples, in 20% of the cases it wasn't found any aflatoxine or Ochratoxin A, Sălaj district being the only one where it wasn't registered the presence of mycotoxines at all. In 50% of the samples it was found Ochratoxin A, 40% from them having concentrations over the maximum level admitted (3 µg/kg). From 70% cases in which total aflatoxines were found, only 15% of the samples are exceeding the maximum level of 10 µg/kg admitted in grains.

To determine the quality of flour, there were made some analyses regarding the wet gluten, its rheological properties (deformation, extensibility) and the content of α-amylase through the Falling Number method.

Only 2 samples worked in with the regulation of the standard regarding the content in wet gluten. All samples had the deformation index very low (0.5-2.5 mm) showing a very short gluten. All samples had the extensibility index in normal values. More than half of the samples had an adequate α-amylase activity.

It is considered that it is necessary to apply a statistical method to correlate the presence of mycotoxines in wheat with the bakery features of the flour obtained by them.

Key words: wheat seeds, mycotoxines, bakery features, gluten, falling number

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