

CHANGES OF WHEAT QUALITY CAUSED BY MOLD CONTAMINATION

Menkovska Mirjana^{1*}, Marija Sharic², Natasha Mateva¹, Natasha Djorgovska¹, Vesna Levkov¹, Nedeljka Nikolova¹

¹Institute of Animal Science, St. Cyril and Methodius University, Ilinden, 92a, 1000 Skopje, Republic of Macedonia

²Faculty of Technology, University of Novi Sad, Cara Lazara 1, 21000 Novi Sad, Republic of Serbia

*e-mail: Menkovska06@yahoo.com

Abstract

Great importance for the wheat flour/dough quality besides the content and quality of gluten proteins, also have starch and the enzymatic activity. The sprouted kernels can change wheat enzymatic activity and worse the bread making quality.

The aim of this study was the presence of field molds in wheat kernel and flour of the most spread out wheat varieties in domestic production to be determined, as well as to investigate their enzymatic activity.

Three wheat varieties of *Triticum aestivum*, which kernels on the basis of sensory, mycological and toxicological investigations were classified into three kernel fractions: sound, "little fusariosus" and "much fusariosus" kernels. Quantitative and qualitative microbiological analyses were performed on the wheat kernels in order the mold contamination to be determined. The enzymatic activity was comparatively investigated according to Berliner swelling number, the amyolytic number and Hagberg falling number.

The results obtained from the investigations have shown that there were differences in the enzymatic activity of the wheat fractions contaminated with *Fusarium* spp., i.e. it was increased with the contaminated fractions compared to the sound one. So, the average value of the Hagberg falling number for the "little fusariosus" kernels were smaller for 7.0-2.0%, while for the "much fusariosus" kernels it was smaller for 35 - 40%.

With the fraction "little fuzariosus" kernels the average decreasing of Berliner number was in the range 22 - 35%, and with the fraction "much fuzariosus" kernels were smaller for 60 - 70%.

The value of the amyolytic number has also decreased, which in average ranged from 35 to 40% with the fraction "little fuzariosus" kernels, and for 45 - 55% with the fraction "much fuzariosus" kernels.

Key words: *Wheat, Variety, Enzyme activity, Mycotoxins, Fusarium spp.*