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Czech J. Food Sci.

**Švec I., Hrušková M.,
Jirsa O.:**

Effects of wheat cultivar and harvest year on technological quality studied by univariate and multivariate analyses

Czech J. Food Sci., 25 (2007): 249-258

The effects of wheat cultivar and harvest year on the wheat technological quality were studied by univariate and multivariate statistical methods. Two wheat varieties sown in the harvest years 2003– 2005 were used, the first one of European (cultivar Bezostaja, RUS), the second one of American origin (cultivar Jagger, USA). The evaluated parameter values indicated otherness of technological quality of the varieties studied, mostly in the milling effectivity and in proteins contents and quality. Principal component analysis (PCA) results suggested these differences, but their verifiability based on ANOVA testing was not proved. The harvest year mostly affected also the milling quality and alveograph parameters. The baking test

results were not affected by either of both effects studied. The crop of 2003 had higher proximity to the crop of 2004 than to that of 2005. Multivariate analysis (cluster analysis; CA), was used to evaluate the interaction between the wheat cultivar and harvest year effects. In comparison of these effects rate, the technological quality of American cultivar Jagger was strongly influenced by the cultivar (with exception of Falling Number and gases volume). In contrast, the quality of the European wheat cultivar Bezostaja depended significantly on the harvest year.

Keywords:

wheat cultivar; processing variables; univariate analysis; multivariate analysis

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