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Czech J. Food Sci.

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Prediction of wheat and flour Zeleny sedimentation value using NIR technique.

Analytical quality parameters of wheat flour prepared from variety and commercial wheat samples (wheat harvest 1998, 1999, 2000 and 2001) were assessed by means of filter spectrograph Inframatic 8620 ASH (moisture and protein content) and Sedi-tester (Zeleny sedimentation value). The spectra of all samples were measured on spectrograph NIRSystem 6500. Calibration equations with cross and independent validation for all analytical characteristics were computed by NIR Software ISI Present WINISI II using MPLS and PLS method. The quality of prediction was evaluated by SEP and r parameters between the measured and the predicted values from cross and independent validation. In case of Inframatic 8620 ASH, validation was realised by NIRPRG software. A

statistically significant dependence between the predicted and the measured values of protein content and Zeleny sedimentation (with probability $P < 0.01$) was determined in both variety and commercial flour sets in the case of cross and independent validation. Better accuracy of prediction was found with NIRSystem 6500. Both important parameters of wheat were successfully predicted by independent validation with nearly the same accuracy.

Keywords:

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