THE QUALITY OF FEED GRAIN: ENDOXYLANASE AND ENDOXYLANASE INHIBITION ACTIVITY LEVELS IN TRITICALE

Daiva Vidmantienė, Gražina Juodeikienė
Department of Food Technology, Kaunas University of Technology
Radvilėnų pl. 19, LT-50254 Kaunas, Lithuania; phone: +370 37 300188, e-mail: daivavid@ktu.lt

Summary. This is the first report in Lithuania of endoxylanase and endoxylanase inhibition activity levels in triticale. Six winter triticale varieties grown in 2006 and 2007 were tested for their variation in apparent endoxylanase and endoxylanase inhibition activities against glycoside hydrolase family 11 endoxylanases of *Trichoderma reesei* and *Thermomyces lanuginosus,* and a family 10 endoxylanase of *Aspergillus aculeatus*. The levels of apparent endoxylanase activity in the triticale varieties were largely affected by grain growing conditions. Contrary, the endoxylanase inhibition activity levels were mainly influenced by genetics. The *A. aculeatus* enzyme was not inhibited by the triticale proteins, whereas the inhibition activities against the *T. lanuginosus* varied between 43.6-56.8 and 30.1-38.2 IU/100 mg, and against *T. reesei* between 19.8-35.4 and 13.8-24.0 IU/100 mg, respectively for triticale samples of 2006 and 2007. The isolated triticale protein fractions indicating inhibition activity contain components with molecular weights of about 11, 18.4, 30.1, 29.8 and 39.9 kDa. The different functionalities of commercial endoxylanases can be explained by the obtained results and allow screening for endoxylanases suitable for processes, in which triticale is involved.

Keywords: triticale, albumins, endoxylanase, endoxylanase inhibitors.