

THE CHEMICAL COMPOSITION OF DIFFERENT BARLEY VARIETIES GROWN IN LITHUANIA

Saulius Alijošius^{*1}, *Gintautas Juozas Švirmickas*², *Vilma Kliševičiūtė*¹, *Romas Gružauskas*¹, *Vilma Šašytė*¹, *Asta Racevičiūtė-Stupelienė*¹, *Agila Daukšienė*¹, *Jurgita Dailidavičienė*³

¹*Institute of Animal Rearing Technology, Lithuanian University of Health Sciences
Tilžės str. 18, LT-47181, Kaunas, Lithuania*

²*Institute of Animal Science, Lithuanian University of Health Sciences
R. Žebenkos 12, Baisogala, Radviliškis distr., Lithuania*

³*Department of Anatomy and Physiology, Lithuanian University of Health Sciences*

**Corresponding author: Saulius Alijošius*

*Department of Animal Sciences, Lithuanian University of Health Sciences, Veterinary Academy
e-mail: Saulius.Alijosius@lsmuni.lt, Tel: +370 37 363505*

Abstract. The objective of the study was to evaluate the range variation in chemical composition and anti-nutritional factors of 6 spring and 6 winter barley varieties grown in Lithuania. Grain samples of different varieties were analysed for crude protein, crude fat, crude ash, crude fibre and β -glucans. The content of crude protein in spring barley varieties was higher than in winter varieties and ranged between 10.35% DM and 12.38% DM. Variety *Michelle* accumulated the highest content of crude protein. Content of crude fat in both spring and winter barley varieties ranged between 1.09% DM and 2.00% DM and crude ash ranged between 1.94% DM and 2.40% DM. The NFE content varied from 65.45% DM to 69.08% DM in the analysed varieties of barley. The mean β -glucan content was lower in spring barley samples (1.64% DM, ranging between 1.09% DM and 2.36% DM in different varieties), and in winter barley samples, it was 2.89% DM (ranging between 2.19% DM and 3.95% DM in different varieties). We found the high variation in β -D-glucan content within winter barley varieties, and the results indicate that varieties *KWS Meridian* and *Lorely* had the highest levels of β -D-glucan (> 3% DM).

The present study showed considerable differences in chemical composition between spring and winter barley varieties grown in Lithuania. The winter varieties of barley accumulated the highest amount of β -glucan, as an anti-nutritional factor in nutrition of monogastric animals.

Keywords: barley, β -glucans, chemical composition, variety