

MYCOTOXINS AND BIOGENIC AMINES CONTENT AND THEIR CHANGES DURING STORAGE IN PRODUCED IN LITHUANIA IN MAIZE SILAGES

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Abstract. The aim of the current work was to evaluate mycotoxins and biogenic amines contents and their changes during storage in maize silages produced in Lithuania after 3 and 8 months of ensilage. Maize silages samples were collected from 20 conventional dairy farms in Lithuania.

Mycotoxins were quantified by direct competitive enzyme-linked immunosorbent assays (ELISA). The highest ZON, DON and OTA contents, respectively 880.04 ± 60.62 , 2600.0 ± 260.0 and 29.15 ± 5.6 $\mu\text{g}/\text{kg}$ were found in silage samples after 3 months of storage. T-2/HT-2 (T-2 and HT-2 toxins) and aflatoxin total (AFL (total)) respectively 147.25 ± 20.80 , 20.05 ± 5.33 $\mu\text{g}/\text{kg}$ - after 8 months of storage. The amount of biogenic amines (BA) was determined by high-performance liquid chromatography. The highest biogenic amines content in maize silage samples were found in samples after 3 months of storage. The present study indicates that maize silage is an important source of mycotoxins and biogenic amines in the diet of cattle.

Keywords: mycotoxins, biogenic amines, volatile fatty acids, maize silage