Michał MENDRA, Jerzy BARSZCZEWSKI

THE EFFECT OF FERTILISATION AND SPRINKLER IRRIGATION ON YIELDING AND ROOT MASS OF MEADOW SWARD

Key words: fertilisation, meadow sward, root mass, sprinkler irrigation, yielding

Summary

The study was carried out in the years 2008–2010 on permanent grassland situated on mineral soil classified as degraded black soil. The vegetation was cut three times a year (season). The aim of the study was to recognise the impact of fertilisation and soil moisture on the yield of meadow sward plants and root mass in the upper soil layer. Soil moisture was maintained at a level of 60–100 of field water capacity by sprinkler irrigation. Yields of the sward were measured in each swath and root mass was determined in autumn 2008 and 2010. Soil samples of 0.5 dm$^3$ volume were collected from the top layer of soil profiles (0–10 and 10–20 cm) to examine the root mass. Samples were rinsed, dried and weighed. Root mass and yields of meadow sward were subjected to statistical analysis.

Increase of N dose above 60 kg·ha$^{-1}$ significantly increased sward yield. Irrigation had no clear effect on yield. This was a result of unusually high precipitation in 2010 that increased the yields in some not irrigated experimental fields. The influence of fertilisation on root mass was not found. Root mass in the 0–10 cm layer from not irrigated fields was larger than that in irrigated fields. In the 10–20 cm soil layer the opposite trend was observed.