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Res. Agr. Eng.

**Z. Stražil, V. Váňa, M.
Ká š**

The reed canary grass

(Phalaris arundinacea **L.) cultivated for energy utilization**

Res. Agr. Eng., 51 (2005): 7-12

The reed canary grass as a source of energy was tested in field experiments on small plots at three different sites in 1996– 2003. The effects of soil and weather conditions, different times of harvest (July, November, March) and different doses of nitrogen fertilization (0, 30, 60 kg/ha) on yields of phytomass were investigated. The effects of the harvest time on the water content in harvested phytomass, loss of phytomass in different harvest period and the content of basic nutrients and heavy metals in plants were all specified. The influence of the year, site and N fertilization on yields of phytomass of the reed canary grass was highly significant. The reed canary grass responded positively to increasing doses of nitrogen by the increase of yields of phytomass. On the averages of years and sites, the N application dose of 30 kg/ha increased dry phytomass yields of the reed canary grass harvested in

November by 14.6% (1.08 t/ha). The higher dosage of N 60 kg/ha increased yields of phytomass of the reed canary grass at all sites by 32.8% (2.08 t/ha) on average in contrast with variants without fertilization. By the dose of N 60 kg/ha, the dry above-ground phytomass harvested in autumn was 10.04 t/ha in Ruzyně, 8.27 t/ha in Lukavec and 6.94 t/ha in Chomutov on average over the whole period. The later times of harvest resulted in a decrease of the average yield of phytomass (8.41 t/ha in July, 8.00 t/ha in November and 6.04 t/ha in March) and the average water content (64.3% – 45.2% – 21.5%); on the contrary, energy value of phytomass increased (16.93 GJ/t – 17.02 GJ/t – 17.19 GJ/t). The average content of ash in plants varied from 6.5% in Lukavec to 9.31% in Chomutov. The content of heavy metals in plants never exceeded the highest permissible values set in the Czech Republic for food and feed purposes.

Keywords:

reed canary grass; yields of phytomass; energy yield; N fertilization; times of harvest; content of nutrients; content of

[[fulltext](#)]

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