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*Full Length Research Paper*

## The effect of furnace ash on crop yields and macroelement content in selected grass species

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### Abstract

The research aimed at identification of furnace ash effect on crop yield and contents of Mg, Ca, K, Na and P in various grass species. Application of a dose of  $0.533 \text{ kg} \cdot \text{pot}^{-1}$  affected a significant decline in grass species yield. From among the cultivated grass species perennial ryegrass and meadow fescue produced the greatest yield, whereas meadow-grass gave the smallest. Perennial ryegrass and meadow fescue, proved the most resistant grasses then timothy and red fescue, whereas the meadow-grass proved the most 'sensitive' to ash application. The investigations demonstrated a significant effect of  $0.533 \text{ kg} \cdot \text{pot}^{-1}$  furnace ash dose on the increase in Mg, Ca and Na contents in grass species, whereas phosphorus concentrations decreased. Furnace ash influenced also an increase in potassium content in timothy, red fescue and perennial ryegrass, while it decreased these element concentrations in meadow grass and to meadow fescue. Contents of magnesium, potassium and phosphorus in the studied grass species corresponded to the standards stated for good quality forage. The level of calcium and sodium in tested grasses was not within the optimal ranges. A decreased uptake of Ca, K, Na and P by grass species was registered under the influence of ash application to the soil.

**Key words:** Ash, reclamation, yield, macroelements, grass species.

