AN ASSESSMENT OF THE EFFICIENCY OF RURAL SEWAGE TREATMENT IN SOIL-PLANT SYSTEM BASED ON LYSIMETRIC STUDIED

Key words: nitrogen, plant, sewage, soil, treatment

Summary

The paper presents the results of studies on the reduction of nitrogen load in soil-plant treatment of waste waters in the period from April 2009 to March 2011. Two perennial energetic plants: Miscanthus giganteus and Sida hermaphroditus Rusby were used in the study. The experiment was performed in lysimeters of a diameter of 1.0 m and depth 1.3 m filled with loamy sand. Sewage loads applied in the experiment were 1200 mm·year⁻¹ (variant I) and 1600 mm·year⁻¹ (variant II). Both variants showed a high effectiveness of total N removal which ranged from 84 to 100% in particular months. They also demonstrated the effect of atmospheric conditions which determined the amount of drainage and hence the quantity of components washed out from the soil and the seasonal variability of nitrogen removal from waste waters.