EFFECT OF NITROGEN FERTILIZATION TYPES ON THE SOIL MICROORGANISMS BIOMASS AND EMISSIONS OF CARBON DIOXIDE

Key words: carbon dioxide emission, nitrogen fertilization, soil microorganism

Summary

The aim of the study was to determine the biomass content of microorganisms in soil and carbon dioxide emissions in conditions of nitrogen fertilization in the cultivation of pot grass mixtures. In soil samples in two terms size of the biomass of living microorganisms was measured using developed by Andersen and Domsch physiological method based on measurements of generating carbon dioxide. Measurements of carbon dioxide emissions using field gas monitor INNOVA 1412 were also carried out. The results of the study were treated by two-factor analysis of variance. The linear correlation between microbial biomass and carbon dioxide emissions was performed. Used in the studies, doses of nitrogen fertilization (ammonium nitrate – 50 kg N∙ha⁻¹, liquid manure – 50 kg N∙ha⁻¹) do not influenced the development of soil microorganisms. The volume of soil microbial biomass in the cultivation of grass mixtures was affected by the type and number of doses of nitrogen fertilization. Both mineral and organic fertilization affected positively on soil microbial biomass and the volume of carbon dioxide emission.