Abstract
Lignohumate is a humic fertilizer obtained through oxidation/hydrolytic destruction of lignin-containing raw materials as brown coal and peat. This compound contains both macro- and microelements, and can be applied in combination with other fertilizers or plant protection products as growth stimulant agent. The objectives of these trials were to evaluate the influence of Lignohumate on soil microorganism activity (Gram positive bacteria, Gram negative bacteria and micromycetes) and structure of microbial populations in case of two species: maize (*Zea mays* L.) and soybean (*Glycine max* Merr.). In addition to the basic fertilization on maize, Lignohumate was applied in two steps: as treatment of seed (100 g t^{-1}) and in combination with herbicide (60 g ha^{-1}) at 3-4 leaf stage. In case of soybean, seeds were treated with 100 g t^{-1} Lignohumate and second treatment was applied before flowering time (60 g ha^{-1}). The obtained results show that Lignohumate concentration stimulates growth and development of microfungi and bacteria in case of maize (*Zea mays* L.) with 54.8% and 39.0%, respectively. In case of soybean (*Glycine max* Merr.) the procentual growth was 146.0% for microfungi and 25.4% for bacteria.

Key words: Lignohumate, structure of microbial populations, soybean, maize