Abstract, key words

The aim of this thesis was to perform a phytoextraction experiment with benzodiazepines chlordiazepoxide, diazepam, alprazolam and bromazepam on corn plant (*Zea mays*). After 14 days of growing of sterile cultivation, new medium (Murashige and Skoog) contaminated with benzodiazepine was added. The starting concentration of benzodiazepine was 10 mg · l^{-1}. After every 24 hours, a sample of medium was collected. The actual concentration of benzodiazepine was measured on HPLC with UV detection. Extractable residues were also analysed to find out whether the benzodiazepine is being translocated to the upper parts of the plant. The same HPLC conditions were used for these samples.

The greatest phytoextraction efficiency (the amount of drug extracted by 1 gram of biomass in 24 hours) was observed for chlordiazepoxide, followed by bromazepam, alprazolam and diazepam respectively.

The extractable residues analysis confirmed the translocation to the upper parts of the plant for every of the benzodiazepines tested. That indicates a threat for the animals through the food chain contamination.

Key words: phytoremediation, phytoextraction, benzodiazepines, extractable residuals, HPLC.