



Combined Effect of Antibiotics and Copper on Catalase of Haplic Chernozem

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Abstract: The purpose of this study is to assess the influence combined effect antibiotics (oxytetracycline, tylosin) and copper (Cu) on catalase activity of Haplic Chernozem. A model experiment on the pollution of Haplic Chernozem with antibiotics and Cu was carried out in laboratory conditions. Bactericidal antibiotic oxytetracycline (OTC), bacteriostatic antibiotic tylosin (TyL) and Cu were chosen to study the combined effect of antibiotics and heavy metals on catalase activity of Haplic Chernozem. In present study, the combined effect antibiotics and heavy metal on catalase activity of Haplic Chernozem was studied after the 30-days exposure. Two treatments of single OTC and TyL (1, 10, 100 mg kg⁻¹), two treatments of single Cu (100 mg kg⁻¹), two treatments of combined OTC and Cu (1, 10, 100 mg kg⁻¹ and 100 mg kg⁻¹), two treatments of combined TyL and Cu (1, 10, 100 mg kg⁻¹ and 100 mg kg⁻¹) and a control treatment with equal deionized water were performed in laboratory experiments. It is defined, that the combined effects antibiotics and Cu has a more negative influence on catalase activity of Haplic Chernozem than the individual effect of antibiotic or heavy metal. Copper makes a more contribution to the inhibition on activity of catalase than antibiotics in the combined effect.

Keywords: Oxytetracycline, Tylosin, Copper, Haplic chernozem, Enzymes
