

Effects of Post-Emergence Herbicides on Soil Micro-Flora and Nitrogen Fixing Bacteria in Pea Field

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Abstract : The effect of post emergence herbicides on soil micro-flora and nitrogen fixing bacteria was studied in pea field. Pea (*Pisum sativum*) was grown and treated with one or a mixture of two of several herbicides 2 weeks after sowing. Soil samples were collected 2 weeks after herbicides application. Average number of colony forming units per gram of soil of bacteria, actinomycetes and fungi were determined. Average number of nodules per plant was obtained at the end of the growing season. The results of the study showed MCPB, Bentazon, MCPB+Fluozifop-p-butyl, Bentazon+Fluozifop-p-butyl, Metribuzin, Flouzifop-p-butyl+Metribuzin, Cycloxydin, and Sethoxydin increased the population of soil fungi, with 4 to 10 times compared with the control. The herbicides used showed no significant effects on nitrogen fixing bacteria. The effects of herbicides on soil bacteria and actinomycetes were different. The study showed the use of herbicides could influence the biological balance of soil microflora, which has an important role in soil fertility and microbial ecosystem.

Keywords : herbicides, post emergence, nitrogen fixing bacteria, environmental systems

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