Effect of Carbofuran on Phosphomonoesterase Activity in Red and Black Soils using Gingelly as a Test Crop

D Srinivas and Saroja Raman
Department of Soil Science and Agricultural Chemistry, College Agriculture,
Rajendranagar, Hyderabad-30, Andhra Pradesh, India

ABSTRACT

A pot culture experiment was conducted in red and black soil to evaluate the effect of insecticides on soil phosphomonoesterase (acid phosphatase and alkaline phosphatase) activity using Gingelly as a test crop. The soil applied insecticide viz., Carbofuran @ 1.65 and 3.3 kg ha^{-1} along with a untreated control in red soil and Phorate @ 3.3 kg ha^{-1} and 6.6 kg ha^{-1} along with untreated control in black soil were used in the study. The results indicated that Carbofuran applied @ 1.65 kg ha^{-1} (recommended dose) resulted in significant increase in the acid and alkaline phosphatase activity from 0-45 days after sowing. Both the phosphatases exhibited three to four fold increased activity at its peak compared to control. Application of Phorate at higher rates (3.30 kg ha^{-1} in black soil) resulted in reduced activity of acid and alkaline phosphatases. The decreased activity might be related to proteolysis of non-stabilized extra-cellular enzymes.

Key words : Carbofuran ,Gingelly, Phosphomonoesterase activity.