

**The influence of the herbicide propanil on soil microbial biomass carbon  
as affected by the rate of application**

B C Walpola<sup>1\*</sup>, S D Wanniarachchi<sup>1</sup> and J A Liyanage<sup>2</sup>

<sup>1</sup>*Department of Soil Science, Faculty of Agriculture, University of Ruhuna, Kamburupitiya*

<sup>2</sup>*Department of Chemistry, Faculty of Science, University of Kelaniya, Kelaniya*

The present paper focused on soil microbial biomass carbon as affected by the rate of application of propanil, a widely used herbicide. The experiment comprised three propanil treatments (i.e. 0.0224, 0.224, and 2.24  $\mu\text{g/g}$  soil) with a control (without propanil). A Completely Randomized Design (CRD) was used with four replicates. Determination of soil microbial biomass carbon was carried out at 1, 3, 5, 7, 14, 21 and 35 days after herbicide application. Data were statistically analysed using SAS package.

Results showed that soil microbial biomass carbon decreased during the first 5 days of incubation with higher reductions at higher application rates of propanil. The highest reduction (76 %) of the soil microbial biomass carbon was observed at the application rate of 2.24  $\mu\text{g/g}$  soil. Whereas the reductions were only 46 % and 9.7 % for the application rates of 0.224  $\mu\text{g/g}$  soil and 0.0224  $\mu\text{g/g}$  soil, respectively. After the initial reductions, it kept increasing the soil microbial biomass carbon continuously, suggesting that microorganisms may adapt to the applied herbicide quickly. Results could be concluded that as soil microfauna has affected only in first few days, careful application of propanil would not be harmful in the long term.

\* buddhiwalpola@yahoo.com