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Effects of Insecticide-Difenoconazole and Fungicide-Chloropyrifos on *Azolla cristata* and *Salivinia natans*

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ABSTRACT

A study was carried out to investigate the effect of an insecticide difenoconazole (cis,trans-3-chloro-4-[4-methyl-2-(1H-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-2-yl]phenyl 4-chlorophenyl ether) and fungicide chloropyrifos (Diethoxy-sulpanylidene-(3, 5, 6-trichloropyridin-2-yl) oxy-5-phosphane) on the chlorosis, leaf split and survival rate of Azolla cristata and Salvinia natans at concentrations of 0.005, 0.01, 0.025, 0.05, 0.1, 0.25, and 0.5ml per 4 litre of water. The inhibition was found to be dose dependent. The fungicide chloropyrifos was found to be detrimental to the developmental of Azolla cristata and Salvinia natans. However, the deleterious effects of difenoconazole on Azolla cristata and Salvinia natans were low. The experimental trials showed the significant reduction in growth and survival rate of Azolla cristata due to chloropyrifos treatment. Further, chloropyrifos exposure was considerably affecting the photosynthetic pigments of plant. The strong inhibitory effect on the growth and photosynthetic pigments could be related with chloropyrifos induced inhibition. In contrast to this, Salvinia natans, showed resistence and can withstand toxic effects of different pesticides. The results of our study showed that Azolla cristata have low tolerance to all concentrations of chloropyrifos and high tolerance to difenoconazole at the different concentrations, as compared to the Salvinia natans which showed more tolerance to the lower concentrations of chloropyrifos and different concentrations of difenoconazole.

Key Words: Azolla cristata, Growth rate, Photosynthetic pigments, Salvinia natans, Suvival rate