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Impact of Hexaconazole (Fungicide) on the Longevity and Fecundity of the Soil Arthropod, *Philoscia muscorum*: An Ecotoxicological Approach

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Abstract

The diverse and abundant biota of soil render dynamic ecosystem services which are significant for the existence and sustenance of life on the biosphere. Soil arthropods act as ecosystem engineers by consistently involving in nutrient cycling and influencing soil quality. Anthropogenic activities including agricultural practices which involve application of different categories of chemical stressors, affect soil biota in manifold ways. In this study, impacts of a fungicide, Hexaconazole, on the longevity and fecundity of *Philoscia muscorum*, a soil isoped, was studied. Bioassay studies were done in laboratory conditions using standard procedures. Gradual increase in mortality was observed with increasing concentrations of pesticide and time durations. At 96 hours, LC 50 and LC 100 values were 0.972 and 2.807 respectively. Safe concentration and sublethal concentration were found to be 0.1601ppm and 0.243ppm respectively. Fecundity studies were done using four replicates. When normal group was compared with the experimental