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Effect of the Application of an Organophosphate Pesticide (Fenitrothion) on Foraging Behavior of Ants[1]

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ABSTRACT

Organophosphate pesticides inhibit cholinesterase. It is likely that application of organophosphate pesticides affect behavior of arthropods. This study aimed to find changes in foraging behavior of ants due to application of fenitrothion, one of the widely used organophosphate pesticides. Foraging activity (FA) of ants was observed using bait cards in a pesticide sprayed pine stand and in an unsprayed stand before and after aerial application of fenitrothion in 2003 and 2004. Ant abundance and species richness of ants were also monitored using pitfall traps during the activity season in 2003 and 2004. There was not a significant decrease in abundance and species richness after the application of fenitrothion. However, FA of an ant, *Paratrechina flavipes* (Smith), which was abundant enough to be statistically compared, was depressed from 2 hours to 10 days after application of the pesticide. FA was fully recovered at day 14 in 2003, and was partially recovered at day 18 and fully at day 31 in 2004. FA of other ant species also decreased significantly during the FA depression period of *P. flavipes*. On the bait cards, workers of the species responded dully to baits during the FA depression period. Despite the decline in activity, alertness of *P. flavipes* to other species did not decrease even during the FA depression period.

Keywords : *Insecticide, Competition, Foraging behavior*

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