

BEHAVIORAL EFFECTS of FIPRONIL and IMIDACLOPRID on *COPTOTERMES FORMOSANUS*

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Fipronil and imidacloprid are non-repellant insecticides that work via direct contact and termite-to-termite transmission. This secondary form of transmission is more effective if termites continue functioning normally after they come in contact with the chemical. Behavioral changes in the Formosan subterranean termite, *Coptotermes formosanus* Shiraki, exposed to low concentrations of imidacloprid- (Premise®) or fipronil- (Termidor®) treated sand at 27°C were recorded 15 min, 4 hours, 9 hours, and 24 hours after exposure. Results showed that after 4 hours imidacloprid-treated termites walked significantly less and rested significantly more than did fipronil-treated or untreated termites. After 9 hours a significant number of imidacloprid-treated termites had their antennae stuck at right angles to the head and were unable to show normal searching patterns. Fipronil-treated termites did not show any significant behavioral changes until 24 hours after exposure, when nearly all were upside down with horizontal antennae. Fipronil may allow for longer transmission periods via allogrooming and termite-termite interactions.