

B-89: Evaluation of chlorpyrifos against termites (*Odontotermes* sp) in coconut

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Aldrin was the recommended insecticide to control termite damage in coconut. After the government restriction on the import and distribution of aidrin, a suitable replacement for termite control had to be identified. Since chlorpyrifos has been proven to control soil insect pests in many countries this study was undertaken to evaluate its effectiveness on termites in coconut.

The toxicity of chlorpyrifos to termites was tested by exposing termite workers to chlorpyrifos residues on glass surface. Termite workers were knocked down within half an hour at 240 ppm of chlorpyrifos. Based on this, termites were confined to soil treated with 0.4, 0.69, 0.8, and 1.0 g a.i., of chlorpyrifos/l of water. Around 95% mortality of termites was observed in the concentrations ranging from 0.6, to 1.0 g a.i.. These 4 concentrations were then evaluated in a coconut nursery which was pre-infested with termites. Two methods of application were also tested: dipping seednuts in different chlorpyrifos solutions before planting and drenching the nursery with insecticide solutions after planting. In the dipping method, each seednut was dipped for 3 min. Drenching was carried out by applying 15 l of each solution per plot (3 m²). Mortality of seedlings due to termite attack was recorded weekly for a period of 9 months.

The chlorpyrifos concentrations ranging from 0.6 to 1.0 g a.i./l water showed significantly less seedling mortality in treated plots. These concentrations protected seedlings from termite attack and caused only 2 - 3% seedling mortality as compared to a seedling mortality of 34% in the control. Therefore this range of concentrations was recommended to control termites in coconut nurseries depending on the severity of the infestation. The results also revealed that dipping of seednuts in recommended concentrations of

chlorpyrifos prior to planting was more effective than the drenching method to control termites. Termite damage was only 2% in the seednut treated by dipping technique while the damage was 8% in drenching technique.