

Comparison of Overall Sensitivity of *Meloidogyne incognita* to Pure Cucurbitacins and Cucurbitacin-Containing Crude Extracts

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Abstract : The Curve-fitting Allelochemical Response Data (CARD) model had been adopted as a valuable tool in enhancing the understanding of the efficacy of cucurbitacin-containing phytonematicides on the suppression of nematodes. In most cases, for registration purposes, the active ingredients should be in purified form. Evidence in other phytonematicides suggested that purified active ingredients were less effective in suppression of nematodes. The objective of this study was to use CARD model to compare the overall sensitivities of *Meloidogyne incognita* J2 hatch, mobility and mortality to Nemarioc-AL phytonematicides, cucurbitacin A, Nemafric-BL phytonematicide and cucurbitacin B. *Meloidogyne incognita* eggs and J2 were exposed to 0.00, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50 and 5.00% of each phytonematicide, whereas in purified form the concentrations were 0.00, 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75, 2.00, 2.25 and 2.50 $\mu\text{g.mL}^{-1}$. The exposure period to each concentration was 24-, 48- and 72-h. The overall sensitivities of J2 hatch to Nemarioc-AL phytonematicide, cucurbitacin A, Nemafric-BL phytonematicide and cucurbitacin B were 1, 30, 5 and 2 units, respectively, whereas J2 mobility were 3, 17, 3 and 6 units, respectively. For J2 mortality overall sensitivities to Nemarioc-AL phytonematicide, cucurbitacin A, Nemafric-BL phytonematicide and cucurbitacin B were 2, 4, 1 and 4 units, respectively. In conclusion, the two crude extracts, Nemarioc-AL and Nemafric-BL phytonematicides were generally more potent to *M. incognita* compared to their pure active ingredients. The crude plant extract preparation is easy, and they could be an ideal tactic for the management of nematodes in resource poor farming communities.

Keywords : Botanicals, cucumin, leptodermin, plant extracts, triterpenoids

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