

Allelopathic effect of dry leaves of lantana and guava for controlling root knot nematode, *Meloidogyne incognita* on cowpea and some associated weeds

Wafaa M.A. El-Nagdi^{1*}, M.M.A. Youssef¹ and Kowthar G. El-Rokiek²

¹Department of Plant Pathology, Nematology Lab., National Research Centre, Dokki, Post Code 12622, Cairo, Egypt; ²Botany Department, National Research Centre, Dokki, Cairo, Egypt.

Abstract : Under screen house conditions, powdered dry leaves of lantana (*Lantana camara*) and guava (*Psidium guava*) either alone or in combination were used for investigating their allelopathy effect against root knot nematode, *Meloidogyne incognita* on cowpea (*Vigna unguiculata* (L.) Walp) cv. Baladi and two associated weeds namely *Chorchorus olitorius* and *Echinochloa colonum*. Significant ($P \leq 0.05$) reduction in dry weight of both *Chorchorus olitorius* and *Echinochloa colonum* was obtained by using leaf residues of *Lantana camara* or *Psidium guava* or their mixtures in comparison to unwedded control. The obtained results indicated that the tested treatments reduced the number of second stage juveniles in soil and roots, galls and eggmasses on roots of cowpea (*Vigna unguiculata* (L.) Walp) cv. Baladi compared to unwedded nematode- infected cowpea plants. Subsequently, they increased plant height, fresh weights of shoots and roots, dry weight of shoots and number of nodules compared to unwedded nematode- infected cowpea plants. Also, they increased number of pods/plant, weight of pods/plant, number of seeds/pod, weight of seeds/plant and weight of 100 seeds. Significant increase in carbohydrate content in the seeds of cowpea (*Vigna unguiculata*) was determined when applying leaf residues of *L. camara*, *P. guava* or their mixtures. No nematodes were found in the roots of the tested weeds. The results suggested the use of leaf residues of *Lantana camara* and *Psidium guava* mixtures as natural materials for controlling *Chorchorus olitorius* and *Echinochloa colonum* and root knot nematode, *Meloidogyne incognita*.

Key Words: Allelopathic effect, Lantana and guava plant residues, weeds, *Meloidogyne incognita*, cowpea.