

Effect of *Melia azedarach* Fruit Extract on Juvenile Hormone Titer and Protein Content in the Hemolymph of Two Species of Noctuid Lepidopteran Larvae [Insecta: Lepidoptera: Noctuidae]

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The effect of an enriched methanolic extract of *Melia azedarach* L. (Meliaceae) fruits on the size of the corpora allata (CA), the juvenile hormone (JH) titer and the protein content in the hemolymph of two lepidopteran pests in Egypt, *Spodoptera littoralis* (Boisd.) and *Agrotis ipsilon* (Hufn.), was studied. Different concentrations of the extract were incorporated into an artificial diet on which the larvae were allowed to feed. In *S. littoralis*, a significant reduction in the CA volume of larvae treated at the 1000 ppm extract level vs that of control larvae was observed. In *A. ipsilon*, a reduction was found in the right CA gland only. Larvae of both species that had fed on a diet with *Melia* extract had a higher mean JH-II titer in the hemolymph than did control larvae. In both species, the content of hemolymph protein was decreased significantly after feeding for 6 days on a diet treated with concentrations above 50 ppm extract, followed by 6 days on a normal diet. The results show that a *M. azedarach* fruit extract has an effect on the neuroendocrine control in the insects. The effect on the hemolymph protein levels is discussed in connection with changes in the morphology/physiology of the gut.

KEY WORDS: *Melia azedarach* methanol extract; *Agrotis ipsilon*; *Spodoptera littoralis*; Lepidoptera; juvenile hormone titer; corpora allata; larval development; hemolymph protein.

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