B-87: Insect antifeedant and growth regulatory effects of azadirachtin from neem (*Azadirachta indica* A. Juss)

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Azadirachtin is the main active ingredient present in neem (*Azadirachta indica* A.Juss). It is a highly oxidized triterpenoid which has remarkable antifeedant, growth regulatory and sterilant effects. It is the most potent natural antifeedant so far discovered.

Insect antifeedant and growth regulatory effects of azadirachtin were studied in order to establish the standard dose response curves and assess the ED_{50} values.

In a binary choice antifeedancy assay, the testing insect, 3-4 day old fifth instar nymph of the desert locust (*Schistocerca gregaria*), was presented with a control disc and a disc treated with azadirachtin solutions ranging from 0.00001 to 0.01 ppm. Results showed that with the increase in the dosage of azadirachtin, antifeedancy increased in a dose dependant manner with an ED_{50} of 0.00035 ppm. Insects were completely deterred from feeding and thus 100% antifeedancy was achieved at azadirachbin level of 0.01 ppm.

Growth regulatory assays were carried out using newly moulted (<24h) fifth instar nymphs of milkweed bug, *Oncopeltus fasciatus*. Doses ranging from 0.00015-0.15 µg azadirachtin/insect were tested. It was revealed that application of azadirachtin caused moulting disruption in a dose dependant manner with an ED_{50} of 0.0136 µg azadirachtin/insect.