

Effect of Neem Seed Kernel Extract on selected Insect Pests of Economical Importance

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Abstract

The aim of this study was to determine whether neem seed products could be used as cheap, locally available and environmentally safe insecticides. Some seed products of *Azadirachta indica* A.Juss were tested against selected insect pests of vegetable crops and stored products as well as selected insect vectors of human diseases in order to assess their efficacy as an insecticide. Comparative studies were conducted on the effects of aqueous neem seed kernel extract and synthetic insecticide Phenthoate on the brinjal pests whitefly *Bemisia tabaci* and jassid *Empoasca* sp. Experiments were also conducted with aqueous neem seed kernel extract on onion plants against the onion caterpillar *Spodoptera exigua*, on green gram *Vigna radiata* against leaf feeders and on cabbage against the cabbage borer *Hellula undalis*. Subsequently the effects of neem seed kernel extract, neem seed oil, neem seed kernel powder on stored product pest *Callosobruchus chinensis* were tested. Finally the effects of neem seed kernel extract on *Aedes aegypti* were assessed. In all experiments, it was found that the aqueous neem seed kernel extract, neem seed oil and neem seed kernel powder had a significant controlling effect (0.001) of insect pests tested. Aqueous neem seed kernel extract was very effective in reducing the number of *B.tabaci* and *Empoasca* sp. And also effective in reducing the damage on onion plants by *S.exigua* and on cabbage by larvae of *H.undalis*. The damage caused by leaf feeders of the *Vigna radiata* crop was subsequently reduced by aqueous neem seed kernel extract resulting in increased yield of green gram. The product neem seed oil, neem seed kernel extract and neem seed kernel powder acted as repellents, inhibitors of oviposition and also caused a lowering of egg hatching and adult emergence of *C.chinensis* in green gram. Aqueous neem seed kernel extract showed ovicidal and larvicidal activity against *A.aegypti*. Based on these findings, neem seed products such as aqueous neem seed kernel extract, neem seed oil and neem seed kernel powder could be recommended as cheap, environmentally safe and alternative to the use of synthetic pesticide to control insect pests.