

Use of plant extracts as a mosquito repellent and their insecticidal properties

MEENU SINGH

Department of Bioscience, Barkatullah University, BHOPAL (M.P.) INDIA

(Accepted : May, 2010)

Natural Products are safe for human when compared to that of synthetic compounds. Certain natural product have been investigated for repellent activity against mosquitoes and other house insects. So they are directly extracted from proper plant species are sprayed over crops to control insects pest. The plant extracts that control pest are named botanicals or botanical insecticides. Botanical insecticides are naturally occurring toxins extracted from plants, there are several advantages to use botanicals rather than synthetic insecticides. Plant derived insecticides breakdown quickly in the environment, resulting in little risk of residues on food crop and less risk to beneficial insects. Botanical insecticides are mainly used in organic form. They do not give residual effect in plant products. Some common botanical insecticides and repellents are mentioned here.

Neem :

Botanical name of neem is *Azadirachta indica*, family- Meliaceae. The whole plant is used as a insecticidal and repellent. Azadirachtin is an alkaloid present in neem tree. It is responsible for the insecticidal property of neem extract. Neem oil extracted from seed kernels and leaf extract are rich in Azadirachtin, looks like a safe, natural product and is a great solution for plant owners with any type of pest problems, broad spectrum pesticide, insecticide, fungicide and minicide. It is used to control insects and mites like whitefly, aphid and scale. Neem oil diluted with emulsified water and sprayed over the crops. The leaf extract is filtered through a fine cloth and then used for spraying. Neem extracts control about 300 insects pests many nematodes and pathogens of crop.

Pyrethrum:

Its botanical name is *Crysanthemum cinerariaefolium* and family- compositae. The word

pyrethrum is the name for the crude flower dust itself and the term pyrethrin refers to the insecticidal compounds that are extracted from pyrethrum. Pyrethroids are not botanical insecticides but synthetic pesticides that are very similar in structure to the pyrethrin. Pyrethrum is a contact insecticide and must be applied directly to the insect to be effective.

Pyrethrum rapidly paralyzes pests but may not kill them. Because in pyrethrum, mammalian toxicity is very low so, it can be applied to food crops close to harvest. Pyrethrum has high contact toxicity for common beneficial insects.

Garlic :

Its botanical name is *Alium sativum*, family Liliaceae. Garlic cloves are used for insecticidal and as a repellent. Garlic crushed with water to prepare garlic extract. It contains an antifungal compound called ajoene. Garlic extract successfully controls ergot disease of sorghum caused is marketed in several products intended to repel insects, much as capsaicin does. Products are labeled to repel a wide variety of pests on ornamental plants. But garlic may also repel beneficial insects. To date there is little research showing effectiveness of garlic insecticides.

Tobacco:

Its botanical name is *Nicotiana glauca* and family Solanaceae. The active principle of plant leaves extract is an alkaloid called nicotine. Nicotine is one of the most toxic botanicals. It is a fast acting nerve toxin and is highly toxic to mammals. It is easily absorbed through the eyes, skin and mucous membranes. Because of its high toxicity it is no longer registered for use as a pesticide. Home brewed nicotine preparations can also be quite toxic, less harmful products will produce equal results. Its flower heads are used to make probably the best natural pesticide available. Black leaf 40 is a spray mixture formulated by