

INSECTICIDAL ACTIVITY OF LATEX OF *EUPHORBIA ANTIQUORUM* ON AGRICULTURAL INSECT PESTS

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Euphorbia antiquorum (Euphorbiaceae) (Sinhalese name: Daluke), a plant native to Sri Lanka, has various medicinal uses. Its latex has been described as having emetic, purgative, diuretic and poisonous properties. The latex is used to control paddy pests such as *Scirpophaga insertulas* and *Sitophilus orizae* in rural areas of Sri Lanka. This study was undertaken to investigate the potential use of *E. antiquorum* latex as an insect pest control agent and to isolate the compounds that are responsible for insect control.

Latex of *E. antiquorum* was collected from Ebbagala (Kurunegala District) and dissolved separately in 7 solvents dichloromethane, distilled water, n-hexane, petroleum ether, methanol, diethyl ether and acetone. Activity of each solution was tested against laboratory colonies of the aphids *Myzus persicae* and *Aphis gossypii*, using a potters' sprayer. Both species showed 100% mortality at levels of 10,000ppm of the xylene solution. At this concentration the degree of activity was much lower in acetone (20% mortality), distilled water (8% mortality) and methanol (38% mortality) solutions. The latex when dissolved in dichloromethane, n-hexane and diethyl ether formed a white precipitation when applied on insects. Insecticidal activity of the xylene solution (10,000ppm) was further tested on paddy bug *Leptocoriza oratorius* (48% mortality) black bug *Scotinophara lurida* (0% mortality) brown plant hopper *Nilaparvata lugens* (50% mortality) and cabbage looper *Chrysodeixis erisoma*. Predatory ladybird beetles, *Harmonia octomaculata* and *Menochilus sexmaculatus* showed 0% mortality whereas predatory the spider *Lycosa pseudoannulata* showed 100% mortality at this concentration. control experiments were done using seven solvents dichloromethane, distilled water, n-hexane, petroleum ether, methanol, diethyl ether and acetone.

Of the seven latex solutions, latex in xylene gave clear spots on thin layer chromatography (TLC). Column chromatography (florisil 60-80 mesh size) was used for the separation of xylene solution. Sample was eluted with n-hexane (120ml) and 5ml fractions were collected. Bioassays were carried out using *Myzus persicae* with each fraction (0.25 μ l of each solution was topically applied on to the thorax of the insect using a microapplicator) Fraction 17 had the highest bioefficacy (80% mortality). Separated fractions were studied by TLC and high performance liquid chromatography (HPLC). Fraction 17 showed one clear spot on TLC and showed three separated peaks on HPLC. LD₅₀ values for the xylene latex solution (10,000ppm) and the 17th fraction were 0.06721ppm and 3.221ppm respectively when tested on *Myzus persicae*.

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