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Chemical composition and larvicidal activities of *Zanthoxylum armatum* against diamondback moth, *Plutella xylostella*

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The diamondback moth, *Plutella xylostella* (L.) (Lepidoptera: Yponomeutidae) is the most serious pest of cruciferous vegetable crops grown in different parts of India causing economic yield loss. Several synthetic insecticides besides cultural control and microbial pesticides have been used against *P. xylostella* but satisfactory control was not achieved. It has also developed resistance to many synthetic pesticides. Therefore, the present work was carried out to study the larvicidal activity of *Zanthoxylum armatum* L. growing abundantly in the region of mid hills of western Himalayas against *P. xylostella*. Bioassay results indicated that, all the fractions of leaf extracts showed significant activity to *P. xylostella*. However, n-Hexane fraction of *Z. armatum* showed maximum larvicidal activity with minimum LC50 (2988 mg/ml) values, whereas chloroform fraction was least toxic (LC50 =16750 mg/ml). The GC-MS analysis of n-hexane fraction of leaf extract showed maximum larvicidal activity, which may be due to two major compounds i.e. 2-undecanone (19.75%) and 2-tridecanone (11.76%).

Biography

S G Eswara Reddy has completed his Masters and PhD (Agril. Entomology) from University of Agricultural Sciences, GKVK, Bangalore, Karnataka (India). He is the Scientist at the CSIR-Institute of Himalayan Bioresource Technology (Council of Scientific and Industrial Research, Govt. of India), Palampur, Himachal Pradesh (India). Presently working on development of bio-pesticides (botanicals and entomopathogenic fungi) for insect pest management, effect of elevated temperature and carbon dioxide on insect life cycle. He has published more than 15 papers in reputed journals.

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