Pesticidal effects of indigenous plant extracts against rape aphids and tomato red spider mites

Abstract

Aphids, *Brevicoryne brassicae* and Red spider mites, *Tetranychus evansi* are the most damaging pests of rape, *Brassica napus* and tomato, *Solanum lycopersicum*, respectively. Farmers respond by using synthetic pesticides which pose environmental challenges. Extracts of *Lippia javanica* leaf powder and *Solanum delagoense* ripe fruit pulp were evaluated for pesticidal effects under on-station conditions against rape aphids and tomato red spider mites as alternatives to conventional pesticides and in comparison to Neem, *Azadirachta indica* leaf powder. The extracts of *A. indica, L. javanica and S. delagoense* were mixed with water at 8, 12.5 and 25 % w/v respectively. Amitraz and dimethoate were applied on tomato and rape respectively at label rate. Extracts were kept for 24 h at room temperature and then sieved. A liquid soap surfactant was added at 0.1 % v/v, prior to spraying. Sprays were applied weekly once pest infestations had established within the crop. Pests were counted 24 h after spraying for six weeks. Plant extracts significantly reduced pest numbers ($P < 0.05$) in both experiments. Dimethoate reduced aphid by 96 % while amitraz reduced red spider mite by 72%. *L. javanica* and *S. delagoense* at 12.5 and 25 % reduced aphids by 63 % and 57.9 % and mites by 66.5 % and 55 %, respectively. Both extracts were more effective on aphids than mites while *L .javanica* was more effective than *S. delagoense* on both crop pests. *L. javanica* and *S. delagoense* had some pesticidal effects against the vegetable pests.