

Efficacy of *Curcuma aeruginosa* rhizome and *Adhatoda vasica* plant extracts, on red spider mite, *Tetranychus urticae* in *Livistona rotundifolia*.

Svinningen, A.E., Rashani, K.P., Jegathambigai, V., Karunaratne, M.D. and Mikunthan, G.

Green Farms Ltd., Marawilla, Sri Lanka.

Abstract

Queen palm, *Livistona rotundifolia* foliage contributes greatly in export industry. Red spider mite (RSM) (*Tetranychus urticae*) infests on the foliage and reduces its affordable market quality. *T. urticae* is found in dry environment and is one of the phytophagous mite belongs to family Tetranychidae. Different chemicals such as 80% sulphur + Diazinon @ (50g+12ml/10L) are recommended against red spider mite, but these have lesser effect on this tiny mite. Since these chemicals are not environment friendly, Green Farms Ltd., in Sri Lanka prefers to use biological agents for mite management. Extracts of *Curcuma aeruginosa* rhizome and *Adhatoda vasica* plant parts were studied separately causing mortality on *T. urticae*. Field experiments were conducted to study the efficacy of *C. aruginosa* extract for controlling RSM on *L. rotundifolia* leaves. *Curcuma aruginosa* was tested at concentrations of 2, 5, 10, 15, 20 and 25 g/L and a control with equal amount of water. *C. aruginosa* extracts of different concentrations were treated six times at five days interval on the palms separately. Living spider mites and eggs were pre-counted in marked leaves before applying *C. aruginosa* extracts. Next count was taken a day prior to next spraying. The result revealed that all the concentrations except 2 g/L were found to be effective compared to control. However there was no difference between the concentrations from 5 to 25 g/L. Hence *C. aruginosa* rhizome extract at its lowest concentration of 5 g/L is equally effective for the control of RSM on *L. rotundifolia* leaves. In another experiment extracts of *Adhatoda vasica* bark, leaves, and flower and water as control were applied thrice with three days interval. Pre treatment counting of living spider mites and eggs were taken in marked leaves. Post count was taken a day prior to next spraying. Third and fourth counting were done after three days and four weeks from final spraying respectively. The results revealed that bark, flowers were found to be more effective compared to control. Flowers and bark were the best and hence there is no need of third sprayings as almost all the spider mites population were eradicated after second spraying. Flower extraction showed best performance until three months since final spraying. Flower and bark extracts showed higher acaricidal property and leaf showed moderate acaricidal property.

Indexed keywords

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