

PERMANENT REFERENCE

STUDIES ON THE POPULATION DYNAMICS
AND MANAGEMENT OF COCONUT MITES
(*Aceria guerreronis* Keifer)

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Abstract

The Coconut mites *Aceria guerreronis* Keifer is the most severe coconut pest at present in Batticaloa region. In this context, a study was carried out in relation to non-chemical control measures of this pest.

The study was conducted at Eastern University, Sri Lanka during the period of October to December 2003 to evaluate the bio efficacy of aqueous extract of Neem seeds, Lantana leaf and Tobacco stem at different concentrations (50g/lit, 25g/lit, 12.5g/lit) on the mortality of coconut mites *Aceria guerreronis* Keifer. Moreover the population dynamics of infectious mites and predatory mites on different varieties/types of coconut palm also studied.

In this experiment all the tested botanicals significantly ($p < 0.05$) reduced the population of adults and nymphs of *Aceria* mites. However, the performance of Neem at 12.5g/lit and Lantana at 12.5g/lit and 25g/lit were lower in controlling this pest, compared to other treatments. The efficacy of Tobacco at 50g/lit was significantly ($p < 0.05$) superior in controlling coconut mites than other treatments. The Tobacco at 25g/lit and Neem 50g/lit were also effective against *Aceria* mites followed to the Tobacco 50g/lit.

Based on the results the botanical, Tobacco 50g/lit can be recommended to reduce *Aceria* mites population on coconut palm, which was found to be gave about 60-65% mortality of this pest. However Tobacco 25g/lit and Neem 50g/lit can also be

recommended to be used in an alternative to suppress population of Coconut mites as they reduce more than 50% of population.

The population dynamics of infectious mites and predatory mites were also studied. Comparison was made on different varieties/types of coconut palms at two different ages of nuts (3-4 and 8-9 months). The Tall x Dwarf cross variety has significantly ($p < 0.05$) higher population of infectious mites than others. The Kevili and Plus palm have comparatively lower population of infectious mites than others.

From this study, the population density of predatory mites was significantly ($p < 0.05$) higher in Tall x Tall variety than others. Therefore we may consider using this variety to reduce infectious mites using predatory mites under natural condition.

The Kevili type has significantly ($p < 0.05$) lower population density of predatory mites/infested nut compared to other varieties.

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