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MEALY BUG MENACE IN TAMIL NADU

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Mealy bugs (Hemiptera: Pseudococcidae) are small sap-sucking insects with waxy protective covering all over the body. Some species cause severe economic damage to a wide range of vegetables, horticultural and field crops. Infested plants can exhibit general symptoms of distorted and bushy shoots, crinkled and/or twisted bunchy leaves, and stunted plants that may dry completely. Honey dew secretion favours growth of sooty mould that affects photosynthesis of the plant and thus reduces the yield. Historically, mealy bugs were never considered as major pest in India except a few species like *Maconellicoccus hirsutus*. Pests of minor importance in the previous years are becoming major pest at present and cause economic loss have attained major status now.

Flare up: Mealy bug has become a major pest in almost all cotton growing states of India Recently, Papaya mealy bug, *Paracoccus marginatus* and Solenopsis mealy bug, *Phenacoccus solenopsis* have became great menace in Tamil Nadu. Though solenopsis mealybug is prevalent thoughout the country, in India, papaya mealybug believed to be native of Mexico and/or Central America was first spotted in Coimbatore only in 2008. This mealybug being exotic and polyphagous in nature and in the absence of their natural enemies has spread very fast. It has spread all over Tamil Nadu. Important hosts include, papaya, cotton, jatropha, guava, custard apple, tomato, redgram, cassava, sunflower, mulberry, pomegranate, crotons, plumeria, parthenium, kapak, teak etc.

Fig. 1: Papaya tree severely affected by *Paracoccus marginatus*

Fig. 2: *Acerophagus papayae*

Mealybugs are protected by thick waxy, cottony sacs. It also has a high reproductive rate, shorter generation, an ability to hide in the soil, cracks and crevices of plants and the propensity to spread quickly through natural carriers such as plant products, wind, water, rain, birds, human beings and farm animals. Thus, chemical controls are only partially effective and require repeated applications. Furthermore, problems with insecticide resistance and non-target effects on natural enemies make chemical control a less desirable control option to combat the papaya mealybug.

Change in climate, increase in temperature and CO_2 are the factors which favour the faster multiplication of this pest. Unless proper management measures are taken immediately, farmers will incur heavy crop loss in near future because of the high temperature, low humidity, dry wind and lesser rain prevailing now.

Management: Farmers have to adopt integrated control measures for managing these pests

Chemical control: Several chemical formulations are available to control mealybugs. Recommended chemicals include acephate, carbaryl, chlorpyrifos, dimethoate and profenophos. Regular and timely monitoring of this pest is very important. Use of synthetic pyrethroids and pesticide cocktails are to be avoided. Use high volume sprayer and are to be used. Pesticides are not recommended in the fields where parasitoids or predators released.

Botanical insecticides like neem oil 2%, mineral oils 2% and fish oil rosin soap @ 25 g/lt of water are also recommended to control mealy bugs.

Cultural control: Removing the preferred weed hosts like *Parthenium* on which the mealy bug multiplies and moves onto crop plants during the season and regular pruning of severely affected parts of the crop, also helps.

Biological control: Butterfly predator, *Spalgius epis*, Coccinellid predator, *Cryptolaemus montrozieuri* can be encouraged for management of these pests. Encyrtid endoparasitoid wasps specific to mealybugs viz., *Acerophagus papayae* (Noyes and Schauff) and *Anagyrus loecki* (Noyes and Menezes) and *Pseudleptomastix mexicana* were imported

Fig. 3 : *Pseudleptomastix mexicana*

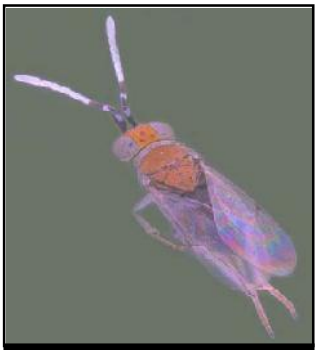

Fig. 4 : *Anagyrus loecki*

from Peurto Rica in July, 2010 by National Bureau of Agriculturally Important Insects, Bangalore are now mass multiplied and supplied to needy farmers. This classical biological control programme has been successfully implemented in Tamil Nadu by various research stations and KVKs of Tamil Nadu Agricultural University, Coimbatore and a huge amount of crop loss due to papaya mealy bug is prevented.

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