PEST FORECAST FOR THE MONTH OF JANUARY 2019

Rice

Stem borer and brown planthopper incidence was recorded in Thanjavur district. Stem borer incidence as dead heart and white ear damage was noticed in Thirunelveli, Coimbatore, Krishnagiri and Erode districts. Brown planthopper can be managed by following integrated pest management strategies. The agronomic practices like use of optimum nitirogen, split application of nitrogen, alternate wetting and drying in the main field can lower the incidence. Application of insecticides buprofezin 25 SC @ 300ml/ac or fipronil 5 SC @ 400ml/ac or Imidacloprid 17.8 SL @ 40ml/ac. Stem borer can be managed by application of any one the insecticides like cartap hydrochloride 50SP 400g/ac or chlorantraniliprole 18.5 SC @ 60ml/ac. In Kanyakumari district, Agastheeswaram block direct sown rice crop is affected by swarming caterpillar. It completely cut and eaten away the young seedlings after transplanting. The caterpillar can be effectively managed by application of chlorpyriphos 20 EC @ 500ml/ac. Chemicals can be applied in the evening hours since the caterpillars are noturnal in habit.

Blast disease incidence was noticed in both summer crop nursery and transplanted rice crops. Spraying of tricyclazole 75 WP @ 200 g/ac or azoxystrobin 200ml/ac is recommended to manage the diseases. False smut incidence was recorded in samba season crops at Thanjavur, Thiruvarur and Nagapattinam district. To manage the false smut disease spray copper hydroxide 77 WP @ 2.5g/lit or propiconazole 25 EC @ 3.0 ml/lit at flowering stage.

Redgram

Incidence of pod borer and spotted pod borer were reported in Arupukottai and Coimbatore districts. Application of chlorantraniliprole 18.5 EC @ 60 ml/ac is recommended for management of pod borers.

Groundnut

Damage by *Spodoptera litura* caterpillar was noticed on the leaves of young ground nut crop at Cuddalore district. Applying any one of the insecticides like dichlorvos 76 WSC @ 350 ml/ac or diflubenzuron 25 WP 150g/ac can effectively manage the pest.

Cotton

The sucking pests like leafhopper and whitefly were recorded in young cotton crop at Theni and Perambalur Districts. Application of imidacloprid 200 SL at 40 ml/ac is recommended for the management of these sucking insects. The crops at square formation and boll development stage were attacked by boll worm complex. It can be managed by application of thiodicarb 75 WP @ 400g/ac or profenophos EC 400ml/ac.

In cotton, grey mildew and *Alternaria* leaf blight were noticed in Perambalur, Coimbatore and Dharmapuri districts. The farmers are advised to spray Carbendazim 2g/litre or Propiconazole 1ml/litre at 15 days interval for the management of grey mildew. For *Alternaria* leaf blight, spraying of Mancozeb or Copper oxy chloride 2g / litre at 15 days interval is recommended.

Sugarcane

In sugarcane, red rot incidence was recorded in Villupuram district. In these areas ratoon crop has to be avoided and the affected clumps should be uprooted and burnt outside. In the pits carbandazim 1g/lit can be drenched.

Fall army worm management in Maize

The symptoms of damage are scrapping of leaves, pin holes, small to medium elongated holes, parallel shot holes, and irregular shaped holes on leaves, loss of top portion of leaves, presence of chewed up frass material and fecal pellets in the leaf whorl, drooping of leave portion above the feeding area and feeding on tassel. The incidence has to be carefully watched and management strategies are to be followed quickly.

Integrated pest management packages

a) Deep Ploughing in order to expose the pupae of fall army warm to sun light and avian predators thereby curtailing the chance of emergence of next brood and occurrence of the pest for the next season.

b) Application of neem cake @ 100 kg per ac in soil at the time of ploughing to reduce the emergence of adults from pupae.

c) Seed treatment with *Beauveria bassiana* 10 gram per kg of seed (or) imidacloprid 70 WS (or) thiomethoxam 70 WS @ 10 gram per kg of seed.

d) Adopt a spacing of 60 x 25 cm for irrigated maize and 45 x 20 cm for rainfed maize. Closer planting always facilitates for quick movement or spread of the larvae in between plants

e) Leave rogue spacing of 75 cm for every 10 rows of maize mainly to facilitate easy spraying during cob formation stage and to minimize the damage during cob formation and cob maturity stages

f) Use solar light trap / battery chargeable light trap / ordinary electric light fitted over a wide pot or bowel containing kerosene mixed water @ one per hectare at random places in the length and breadth of the field. This can be shifted to various places in the field in rotation to monitor / mass trap the adults.

g) Cultivation of short duration varieties of cowpea, sunflower, gingelly, sorghum and Marry gold as border crop to attract, conserve and enhance the activity of natural enemies like parasitoids and predators.

h) Cultivation of *Desmodium* as intercrop between maize to repel away incoming adult moths.

i) Manual collection and destruction of egg mass as well as various stages of larvae at early stages of crop to reduce the population build up of the pest.

j) Conservation of existing natural enemies like dragon flies, damsel flies, green lace wing flies and lady bird beetles by avoiding non-recommended insecticides, incorrect method of application, excess dosage and mixing of pesticides.

k) Apply *Metarhizium anisopliae* formulation @ 1.0 lit/ac or 1 kg/ac

l) Cultivation of maize after maize should be avoided. Crop rotation can be adopted.

m) Need based spraying of the following safer Insecticides

   a. Azardirachtin 1 EC - 2 ml per litre

   b. Thiodicarb 75 WP – 2 gram per litre

   c. Emamectin Benzoate 5 SG – 0.4 gram per litre

   d. Spinetoram 12 SP - 0.5 ml per litre

(Note: Hand Sprayer / Battery Operated Hand Sprayer should only be used)

Horticultural crops

Brinjal

Ash weevil adults feed on the leaf edges and notching symptoms can be seen. The grubs feed on root and cause wilting symptoms. Soil application of carbofuran 3 G @ 7kg/ac or fipronil 0.3G @ 6 kg/ac can be done for the management.

Tomato

Leaf miner incidence was noticed in Thiruppur, Coimbatore, Erode, Dharmapuri and Krishnagiri districts. The pest can be managed by spraying of neem seed kernel extract 5 % or dichlorvos 76 SC 1ml/lit or dimethoate 30 EC 2 ml/lit.

In tomato early blight incidence is expected. Hence, the farmers are advised to spray mancozeb @ 2 g/ lit of water, twice at weekly interval.

Bhendi

For the management of powdery mildew in bhendi, dusting sulphur @ 10 kg /ac or applying wettable sulphur @ 2 g/lit immediately after noticing the incidence and repeating at 15 days interval are recommended.

Onion

In onion, leaf blotch is expected. The farmers are advised to spray mancozeb @ 2g /l or copper oxychloride @2.5 g/l for managing the leaf blotch incidence.

Banana

Sigatoka leaf spot disease was recorded in banana growing districts of Coimbatore, Erode (Gopichettypalayam). The farmers are advised to spray mancozeb @ 2.5g/litre or propiconazole @ 1ml/litre along with teepol (1 ml/litre) 3 times at 10-15 days interval with alternatively. Removal of infected leaves and burning is highly essential. Besides, Fusarium wilt is also observed in cuddalore and Coimbatore Recommended practices are dipping the suckers in 0.1 % carbendazim (1g/lit) for 30 min or *Pseudomonas fluorescens* 10g/sucker at the time of planting. Corm injection of 3 ml of 2 % carbendazim on 3, 5, and 7^{th} month after planting. Drenching the infected plants with 0.1 % carbendazim at 2, 4^{th} and 6^{th}

month after planting should be followed.

Root knot nematode in guava

In guava, root knot nematodes are widely prevalent in Tiruvannamalai, Dindigul Madurai and Coimbatore districts. The nematode infested plant shows yellowing and bronzing of leaves with extensive galling in the root and drying up due to rotting caused by fungus *Fusarium* sp. that are predisposed by nematodes. The farmers are advised to apply *Purpureocillium lilacinum* and *Pochonia chlamydosporia* in moistened farm yard manure @ 1kg of bioagent mixed in 100 kg of FYM / neem cake/ vermicompost, kept in shade for two to three weeks and incorporated @ 500 g per plant at every alternate month. In serve case apply 60g carbofuran followed by application of carbendazim 2g/ litre + phytalon (blue copper) 2g/ litre to be drenched (3 litres per plant) around the basin.

Insect pests in Coconut

Rugose spiralling whitefly

The coconut rugose spiralling whitefly was noticed in serious proportion in coconut gardens of the Tamil Nadu. The insects suck the sap and cause damge in the leaf fronts with copious honey dew secretions on the leaves. It induce development of sooty mould fungus there by leaves become completely block and reduce the photosynthesis rate. The following techniques can be adopted to manage the spiralling whitefly,

a. Spraying of synthetic insecticides should be withheld

b. Measures to conserve the natural enemies like *Encarsia* parasitoids, chrysopids and coccinellids in coconut ecosystem by avoiding use of insecticides may be followed. The parasitoid *Encarsia* is available at Coconut Research Station, Aliyar Nagar. Chrysopids can be obtained from the Department of Agricultural Entomology, TNAU, Coimbatore

c. Placing yellow sticky traps @ 10/ac smeared with castor oil/ horticultural mineral oil can be used for monitoring the population

d. If needed spraying with neem oil @ 3% (30 ml/lit.of water) or neem seed kernel extract @ 5% (50g/lit.of water) could be helpful in minimising the population builds

up.

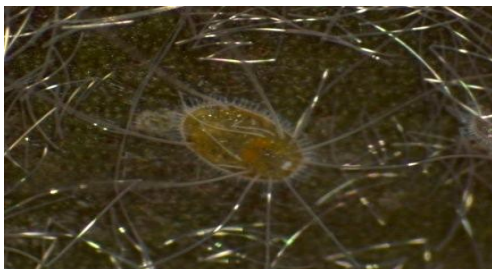
New Pest Alert

Bondar's Nesting Whitefly

A new Invasive 'Bondar's nesting whitefly' (*Paraleyrodes bondarii*, Hemiptera: Aleyrodidae) was recently recorded in coconut gardens of Kerala. Adult Bondar's nesting whitefly is small in size (<1.0 mm), with the presence of two conspicuous X-shaped oblique black bands on the wings and sustain on a unique bird nest-like woolly wax niche on the lower leaf surface. More than 25 hosts have been reported which include banana, custard apple, citrus, avocado, cassava and ornamental figs from other countries. However, this is not a pest of economic significance in any of the crops reported so far.

Special monitoring and surveillance are required on this newer pest in the coconut growing areas of entire Tamil Nadu more particularly adjoining areas of Kerala State and foot hills of Western Ghats, lower Palnies and Pothigai hills. The occurrence of new pest can be reported to Centre for Plant Protection Studies, TNAU, Coimbatore.

Bondar's Nesting whitefly on abaxial coconut leaf



Flat nymph with fibre glass like strands

Adult Bondar's Nesting Whitefly on the woolly wax like nest with oblique bands

Apart from these sucking pests, incidence of rhinoceros beetle and eriopyid mite incidence was reported during the period occasionally in Pollachi block.

Recommentations :

- Collect and destroy various bio-stages of the rhinoceros beetle from the manure pits (breeding ground of the pest). Apply 2 per cent carbaryl solution or *Metrahizium anisopliea* @ 5 x 10^{11} spores/m^3 in the manure pits to kill young grubs.
- Soak castor cake at 1 kg in 5 lit of water in small mud pots and keep them in the coconut gardens to attract and kill the adults.
- Apply naphthalene balls 10g /palm with 100g sand at the base in leaf axile of the crown once in 45 days
- Eriophyid mite can be managed with spraying of profenophos or triazophos 5 ml/lit on the young nuts nuts and buttons.

Reminder on Coconut bud rot management

The coconut gardens in the 'Gaja Cyclone' affected areas were inspected for possible occurrence of bud rot disease in the crown damaged surviving palms. The possibility of bud rot development is more due to continuous pressure on the young buds by the twisted outer fronds at crown region. The prevailing favourable environmental condition may predispose the disease. Hence, the following recommendation may be advocated to the needy farmers.

Recommendations for the prevention of bud rot in coconut

1. The broken young leaves have to be removed by cutting them at bottom
2. The bud has to be cleaned with knife
3. The cleaned bud has to be protected by swabbing with copper oxy chloride paste or entire bud has to be drenched with 0.3% (3g / litre) copper oxy chloride This has to be practiced during rain free days.

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