## PEST FORECAST FOR THE MONTH OF DECEMBER 2019

**Rice**

Leaffolder and stemborer incidence was noticed at Nagapattinam, Thanjavur, Tiruvarur, Tirunelveli and Coimbatore districts in late Samba and early Thaladi rice crops at tillering stage and late reproductive stages. Chlorantraniliprole 18.5 SC @ 60ml/ac or cartap hydrochloride 50SP @ 400g/ac can be used for the management of these insect pests. Incidence of Gall midge was noticed in Coimbatore district, which can be managed with Fipronil 5 %SC @ 400 ml/acre or Thiamethoxam 25% @ 40g/acre.

The rice crop is in tillering and booting stages in Dindugul, Theni and Tiruppur districts. Moderate rains are recorded in these areas for the last one week. Sporadic incidence of blast and sheath blight has been observed in several rice growing areas of these districts. The following integrated management strategies should be deployed for containing the diseases.

1. Remove collateral weed hosts from bunds and channels

2. Avoid/Delay excess nitrogen

3. Apply N in three split doses (50% basal, 25% in tillering phase and 25% N in panicle initiation stage).

4. Prophylactic sprays of any one of the following fungicides is recommended for blast and sheath blight when symptoms are noticed.

1. Hexaconazole 5% EC @ 1000 ml/ha.
2. Kresoxim-Methyl 44.3% SC @ 500 gm/ha.
3. Hexaconazole 4% + Carbendazim 16% SC @ 750 gm/ha.
4. Iprodione 25% + Carbendazim 25% WP@ 500 gm/ha.
5. Carpropamid 27.8% SC @ 100 ml/ha.
6. Kitazine - 48 % EC @ 200 ml/ha
7. Tebuconazole 25.9% E.C. @ 750 ml/a.
8. Tricyclazole 45% + Hexaconazole 10% WG @ 500 gm/ha.

**Special forecast on Fall armyworm in Maize and other crops**

Fall armyworm, *Spodoptera frugiperda* attack was reported in few districts on maize. In other districts, almost maize crop has been harvested.

However, the incidence of fall army worm has to be carefully monitored in other crops to know its alternative host plants in all the districts.

**Integrated pest management packages for fall army worm**

- Plough & apply neem cake @ 100 kg/ac
- Treat seeds with thiamethoxam 30% FS or *Beauveria bassiana* @ 10 g/kg seed
- Adopt rogue spacing of 75 cm for every 10 rows in irrigated & rainfed maize
- Border cropping of cowpea, sunflower or gingelly, (2-4 rows) & intercropping with blackgram or greengram
- Mass trapping of adult FAW moths with sex pheromone trap @ 20 nos./ac from 7 DAS
- The following insecticides can be recommended based on different crop stages on rotation basis

**Early whorl stage (15 - 20 DAS)**

- Azadirachtin 1% EC 20 ml/10 l (or)
- Thiodicarb 75 WP 20 g/10 l (or)
- Emamectin benzoate 5 SG 4g/10 l

**Mid & Late whorl stages (40-45 DAS)**

- Spinetoram 12 SC (5 ml/10 lit) or
- *Metarhizium anisopliae* 1 x $10^8$ cfu/g (80 g/10 lit)
- Novaluron 10 EC (15 ml/10 lit) or
- Flubendiamide 480 SC (4 ml/10 lit) or
- Chlorantraniliprole 18.5 SC (4 ml /10 lit)

**Tasseling & cob formation stage (60-65 DAS)**

- If necessary, use any one of above chemicals on rotation basis

**Pulses**

Redgram is in flowering stage and occurrence of spotted podborer has been noticed in Coimbatore district. Application of Indoxacarb 14.5% SC @ 125 ml or Chlorantraniliprole 18.5 SC @ 60ml/ac is recommended to control the pest.

**Oilseeds**

The farmers are advised to spray mancozeb 2g / litre for the management of sunflower leaf spot disease which is prevalent in Coimbatore district.

**Cotton**

In cotton tracts of Tamil Nadu, leaffolder and stem weevil population was more due to continuous rainfall. These insects cause leaf damage and

stem respectively. Sucking pests like jassids and thrips were found crossing 10 per cent ETL in all the districts due to the conducive weather conditions. Hence, the farmers are advised to monitor the sucking pests using yellow sticky traps. If needed NSKE 5 percent or Imidacloprid 17.8 SL @ 40ml/ac (400 l spray fluid / ac) may be sprayed. Spraying of Thiodicarb 75 WP @ 400g/ac for leaf folder and soil drenching with Chloripyriphos 20% EC @ 1 l/ac can be recommended for stem weevil.

In cotton, grey mildew and *Alternaria* leaf blight are occurring in cotton growing areas. 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.

**Horticultural crops**

**Tomato**

Leafminer incidence is noticed in tomato growing areas of Tiruppur, Coimbatore, Erode, Dharmapuri and Krishnagiri districts of Tamil Nadu. The pest can be managed by spraying of neem seed kernel extract 5 % or dimethoate 30 EC @ 2 ml/lit. or cyantraniliprole 10.26 OD @ 1.8ml/lit.

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

**Brinjal**

Ash weevil incidence is noticed in brinjal. Adults feed on leaf edges and notching symptoms visibly appeared. The grubs feed on root and cause wilting symptoms. Soil application of fipronil 0.3G @ 6 kg/ac can be given for the management.

**Bhendi**

For the management of powdery mildew incidence in bhendi, dust sulphur 10 kg /ac or apply wettable sulphur 2 g/lit immediately after noticing the incidence and repeat @ 15 days interval.

**Onion**

In onion leaf blotch will occur during the rainy season. The farmers are advised to spray mancozeb 2g /l or copper oxychloride 2.5 g/l for managing the leaf blotch incidence. Downy mildew disease also noticed in

few areas with cool wet conditions. For the management, spray Mancozeb 2g/l or Propineb 2g/l or Mandipropamid 2ml/l or Mefenoxam + Chlorothalonil SC 2ml/l. Due to water stagnation in the onion filed, bacterial basal rot were noticed in the field. For effective management, drain the water from the field, followed by drenching with Copper oxy chloride (2.5g/l) or streptocycline (0.2g/lit).

**Whiteflies, leafhoppers, mealybug and thirps**

Sucking pests like leafhoppers, thrips, whitefly, mealybug and spiralling whitefly are expected in horticultural crops *viz.*, guava, tomato, brinjal and bhendi. Hence, farmers are advised to monitor the sucking pests by installing yellow sticky traps @ 5 / acre and if needed NSKE 5% (50 g/lit. of water) or fish oil rosin soap @ 25 g/lit.of water may be sprayed. Red spidermite incidence was recorded in bhendi and tomato crops in Coimbatore district. The acaricides like propargite 2.5 ml/lit or fenazaquine 2 ml/lit can be applied for the management.

**Papaya Ring Spot Virus**

Papaya ring spot virus is observed in all the papaya growing districts of Tamil Nadu. For the management of the disease, the farmers are advised to raise two rows of maize as border crop one month prior to planting, place yellow sticky traps (12 nos. /ha) swabbed with grease or castor oil to attract the aphids, spray neem oil 1% or acephate 1.5 g/lit or imidacloprid7 ml per 10 litres of water up to 4 months of planting, spray boron 0.1%(1 gram per litre) and zinc sulphate 0.5 %( 5 grams per litre) in 3rd and 7th month to sustain yield of infected plants.

***Gloriosa superba***

The leaf spot or leaf blight incidence is observed in Tirupur, Dindigul, Salem, Karur, Ariyalur and Nagapattinam districts of Tamil Nadu. For the management of the diseases the farmers are advised to take up the following management practices

- Removal of affected dried leaves.
- Foliar application of 0.1% Chlorothalonil or Tebuconazole 0.1% (1ml/litre) or carbendazim + mancozeb combination fungicide 0.1% ( 1g/litre) twice at 10 days interval.
- Foliar spray with 0.5 per cent $ZnSO_4$ (5g / litre) two times at fortnightly interval

The root rot or tuber rot incidence is observed in Tirupur, Dindigul, Karur, districts of Tamil Nadu. For the management of the diseases the farmers are advised to take up the following management practices

- Soil drenching with carbendazim 0.1% (1g/litre) or copper oxy chloride 0.25 % (2g/litre) or tebuconazole @ 0.1% (1ml /litre) twice at 10 days interval around infected plants and surrounding plants.
- Removal of severely affected dried plants

**Nematode management under protected cultivation**

In protected cultivation of tomato, cucumber, capsicum, gerbera and carnation, root knot nematode, *Meloidogyne* spp and reniform nematode, *Rotylenchulus reniformis* are widely observed in Thally, Denkanikottati, Royakottai of Krishnagiri district and Karimangalam of Dharmapuri district, causing a yield loss of 30-50 per cent based on the incidence. The nematode infested plants show yellowing of foliage, unthrifty growth and galls in the roots. The farmers are advised to remove the root biomass of previous crop, apply neem cake @ 200kg per acre polyhouse during planting. Crop rotation with non host crop like marigold, sunhemp and dhaincha. Apply *Purpureocillium lilacinum or Pochonia chlamydosporia* @ 50g/$m^2$ along with farm yard manure at 15 days after planting and intercrop with marigold for every third row of main crop.

**Coconut Rugose spiralling whitefly**

The coconut rugose spiralling whitefly was noticed in the coconut gardens of various districts of Tamil Nadu. The insects suck the sap and cause damage in the leaf fronds with copious honeydew secretions on the leaves. It induces development of sooty mould fungus and thereby leaves become completely black and reduced the photosynthesis rate. The following TNAU technologies can be adopted to manage the spiraling whitefly,

- Release of *Encarsia guadeloupae* @ 100 parasitoids /ac (10 leafbits/ac)
- Installation of yellow sticky traps (5 ft. x 1.5 ft.) smeared with castor oil @ 8 nos./ ac
- Release of *Chrysoperla zastrowi sillemi* eggs @ 500/ac in young palms
- Pesticide holiday' to conserve the natural enemies fauna

**New Pest alert: Bondar's Nesting Whitefly (BNW)**

***Paraleyrodes bondari* Peracchi (Hemiptera: Aleyrodidae)**

Recently, the occurrence of the new invasive pest of coconut, Bondar's Nesting Whitefly (BNW) was noticed in Pollachi, North, South and Anaimalai blocks of Coimbatore district and Kudimanagalam block in Tiruppur district during the third week of September 2019. The damage due to this invasive pest was very low. However the incidence of Bondar's nesting whitefly has to be carefully monitored in other coconut growing regions of Tamil Nadu.

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.

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

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