

# Central Institute for Cotton Research

## Fifteenth Weekly Advisory for Cotton Cultivation: 30<sup>th</sup> October to 5<sup>th</sup> November 2012

*"The advisory is based on inputs received from the State Agricultural Universities of the respective states"*

### NORTH ZONE

#### Punjab

The second picking is complete and now the field can be cleared for taking rabi crop. Cotton stalks harbouring residual populations of mealybug must be destroyed by burning.

#### Haryana

Cotton crop is in picking stage. In general, the crop is healthy. Do not irrigate the field after one-third opening of the bolls in the field. Avoid picking of rotten bolls. Dry the kapas before storage to avoid micro-organism damage. Farmers are advised to monitor their crop regularly. Cotton stalks harbouring residual populations of mealybug must be destroyed by burning.

#### Rajasthan

Weather during next 3 days would be stable with declining night temperature. Farmers are advised to clear fields and as per availability of moisture, they are advised to go for sowing of gram or mustard. The farmers are also advised to start sowing of winter maize for irrigated conditions. Preparations for wheat and barley sowing may be started. Autumn planting of sugarcane may be completed. Cotton stalks harbouring residual populations of mealybug must be destroyed by burning.

### CENTRAL ZONE

#### Gujarat

In Surat, weather condition was suitable for cotton crop. The crop growth is good. Moderate infestation of *Helicoverpa* in non Bt cotton and low to moderate level of white fly infestation was recorded in Bt as well as non Bt cotton. In Junagadh region, there was no rains. The crop condition is stable. The incidence of jassids was below ETL and thrips was low. Population of whitefly was below ETL and mealybug was observed low throughout the week. Population of mite was observed very low at some farmers' field. Stem borer infestation was observed in all trials. Low incidence of *Helicoverpa* and *Earias* was observed in non Bt cotton hybrids. Spodoptera was not found this week. *Coccinellids* and Spiders were noted and *Chrysoperla* was not found during mid week. Overall condition of the farmers' field of Junagadh Agricultural University jurisdiction area was moderate for cotton growth, boll formation and maturity stages.

#### Maharashtra

Total rainfall received at Akola centre was 682.5 mm up to 25<sup>th</sup> October 2012. White flies were noticed in Vidarbha region. Avoid Pyrethroid sprays if the incidence of white fly is seen on the crop. Leaf spots were observed in some pockets. Farmer should take up spray of 2 per cent Urea at flowering and 2 percent spray of DAP at boll development stage. Pheromone traps @5/acre may be set up for pink bollworm monitoring.

**Madhya Pradesh**

The cotton crop is in picking and boll formation stage. Farmers are advised for clean picking. Fields should be irrigated as per requirement. Irrigation should be given by alternate row method and not by flooding the fields. This will save the water and also useful to protect from pests and diseases. The problems of white flies as well as jassids were observed in the fields. Cultivators are advised to adopt suitable control measures as per need. There is no disease problem in fields. The weather remained dry during last week. Pheromone traps @5/acre may be set up for pink bollworm monitoring.

**Odisha**

The cotton crop is at 17 to 18 weeks (boll maturity and boll opening) stage. Picking of fully open bolls may be done during clear weather conditions. Spraying should be done with 2% DAP for better boll development. To reduce leaf reddening, spray 1% urea mixed with 1% MgSO<sub>4</sub>.

**SOUTH ZONE****Andhra Pradesh**

The crop is in flowering to boll bursting stage. In early sown crop, first picking is in progress in some parts of Andhra Pradesh. Low to moderate incidence of whitefly is observed. Foliar application of 2% urea/ 2%DAP/ 2% KNO<sub>3</sub> at square formation, flowering and boll development stages is recommended to combat abiotic stresses. For the control of leaf spots, spray copper oxy chloride @ 3g/ Mancozeb 2.5g/ Propiconazole 1g/l of water. Mealy bug incidences are observed and for control, spray the infested plants with Acephate @ 2g/ Prophenofos @ 3 ml/l of water. Pheromone traps @5/acre may be set up for pink bollworm monitoring.

**Karnataka**

Dry weather with rain free days is expected during next week in all northern districts and majority of southern districts of the State as per the weather forecast. Incidence of sucking pests and white fly is reported in Bt cotton at all growth stages. Avoid Pyrethroid sprays if the incidence of white fly is seen in the crop. Along with the appropriate insecticidal sprays, it is advised to tank mix 2% DAP or 1% of 19:19:19 soluble fertiliser with 1% MgSO<sub>4</sub> and Planofix (5 ml in 15 lit of water) to the crop which is at peak boll formation stage to reduce square dropping and leaf reddening. In 100 days old crop, it is suggested to spray any recommended Pyrethroid chemical for controlling pink bollworm. Field sanitation is to be maintained by collecting the dropped diseased leaves and squares from the field and to be buried in the soil or to be burnt. Seed cotton is to be picked on rain free days wherever the first formed bolls are opened and stored properly. Light irrigation is to be given after each kapas picking.

**Tamil Nadu**

North east monsoon has set in over the State with several districts across the State of Tamil Nadu. All the parts of Tamil Nadu received well distributed rainfall during the week under report. Forecast has been given for heavy rain in subsequent days. The rain is highly suitable for cotton crop since the crop is in critical vegetative period.

**MANAGEMENT STRATEGIES****PEST MANAGEMENT**

1. **Neem oil 2.5 lit/ha mixed with 0.05% detergent** can be used for the management of jassids or whitefly or aphids.
2. ***Verticillium lecanii*** can be used for sucking pest control wherever good formulations are available from reliable manufacturers.

3. If whitefly and/or jassid damage reaches economic threshold levels of grade-II damage of curling and crinkling of lower leaves and yellowing of margins, any one of the insecticides such as Flonicamid or Fipronil or Dimethoate or Difenthiuron or Acephate or Ethion can be used.
4. If mirid bug is observed in the developing squares, it is advised to spray Acephate 75 SP @ 1 g/lit or Fipronil 5 SC @ 1.0 ml/lit of water
5. For the control of *Spodoptera* sp. farmers are advised to spray 200 ml Rimon 10 EC or 250g Larvin 75WP in 250 litres of water per acre or or SINPV @ 500 LE/ha
6. **On non-Bt American cotton and Desi cotton varieties, use HaNPV on Bt-cotton at 50% bollworm infested plants (plants having flared squares with entry hole) followed by the application of 5% NSKE a week later. Or, use Phosalone at 50% bollworm infested plants (plants having flared squares with entry hole) or for the management of *Spodoptera* or whitefly.**
7. For boll rot complex, spray copper oxychloride (800g/ac) or carbendazim (400 g/ac) in 250 Litres of water. For better results, mix 10g Selvet 99 or 50 ml Triton in 100 litres of fungicidal solution.
8. To minimise shoot weevil damage, it is suggested to spray the crop with Curacron @ 2 ml/lit + (Dichlorovas) DDVP @ 0.5 ml/lit.
9. **Do not spray against minor lepidopteran insects** such as the cotton leaf folder, *Sylepta derogate* and cotton semilooper, *Anomis flava*. The larvae cause negligible damage to cotton but serve as hosts for parasitoids such as *Trichogramma* spp., *Apanteles* spp and *Sysiropa formosa*, that attack *H. armigera*.
10. ***Trichogramma***, if available, can be used on non-Bt genotypes at 70-80 DAS. Avoid *Trichogramma* egg parasitoid releases on Bt-cotton since maximum neonates get killed on Bt-cotton and with *Trichogramma* application becoming superfluous.
11. **Do not spray Bt-formulations on Bt cotton** to avoid further selection pressure.
12. Spray the crop with Profenophos 50 EC @ 2 ml/lit of water / Spray of Thiodicarb 75 WP @ 20 g or Spinosad 45 SC @ 4 ml/10 lit for controlling pink boll worm attack and about 750 lit of spray mixture has to be sprayed for one hectare area.
13. Optimize nutrient management for macro and micronutrients. **Foliar spray of MgSO<sub>4</sub>, 2% Urea followed by 2% DAP**, to ensure proper Cry1Ac expression and also to reduce problems of leaf reddening. Sprays of 1% cobalt chloride and soil drenching with Bavistin 1 % in the initial stage of wilt was found to help in the recovery of plants.
14. **If conventional insecticides are ineffective, use Spinosad, Emamectin benzoate or Indoxacarb or Rynaxypyr on non-Bt-cotton** at ETLs of 50% infested plants (plants having flared squares with entry hole). Spinosad, Emamectin benzoate, Indoxacarb and Rynaxypyr are highly effective on pyrethroid resistant *H. armigera*. Apart from their toxicity to *H. armigera*, Spinosad and Emamectin benzoate are also effective on *E. vittella* and jassids and hence are preferred first over indoxacarb. Both insecticides have a high selective toxicity towards the target pests while being less toxic to many beneficial insects in the cotton ecosystem. These insecticides are ideally suited in ecosustainable insecticide resistance management programmes.

## WEED CONTROL AND DISEASE MANAGEMENT STRATEGIES

1. Parawilt symptoms are noticed in some fields after rains or irrigation which can be cured by spraying cobalt chloride @10mg/litre (10ppm) on affected plant within few hours of onset of symptoms or a mixture of Copper Oxy chloride 25g and 200g Urea in 10 ltr of water used for drenching.
2. If foliar diseases appear, spray Streptomycin sulphate (6-8 g/ac) plus copper oxychloride (600-800g/ac) in 200-250 L of water at 15 days interval.
3. For Myrothecium leaf spot disease, spray of Streptomycin sulphate (6-8 g/ac) plus copper oxychloride (600-800 g/ac) in 200-250 L of water at 15 days interval can check the further spread of the disease and for better results mix 10g Selvet 99 or 50 ml Triton in 100 litres of fungicidal solution.
4. For sudden drying (New wilt) symptoms at several places, cultivators are advised to drench the affected plants with urea 1.5% immediately.

5. Leaf spots can be controlled by adding 25 g / 10 litres of water copper oxy chloride with insecticide or Dithane M 45 @ 2.5g or Propiconazole 1ml/l of water.
6. Bacterial blight is controlled by spraying of Copper oxy chloride + Streptocycline (25 g + 1 g /10 lit. water ).
7. For control of *Alternaria* blight, spray Mancozeb@2.5 g per one litre of water.
8. For Wilt / Root rot, soil drenching with Copper oxy chloride @ 3g/l or Carbendazim 1g/l is recommended.
9. Rotting of early formed lower bolls is expected due to cloudy and drizzling conditions. Depending upon the severity of the disease, spraying the crop with Mancozeb 75 WP + Chlorothalonil 70 WP each @ 2 g/lit of water is advised.
10. Farmers are advised to spray 2 % urea, 0.5% Zinc Sulphate and 0.2 % Boron, twice at 15 days interval as preventive measures against red leaf.
11. Planofix (NAA) hormone may be sprayed @ 20 ppm (7 ml per 15 litres of water) to reduce square and flower drop.
12. If grey mildew disease is seen on the leaves, it is suggested to spray the crop with Carbendizim or Tridemorph @ 1g/lit of water.
13. To overcome leaf reddening problem, farmers can take up spray of 2% DAP along with 1% Muriate of Potash or KNO<sub>3</sub>.

Note: The advisory is based on inputs received from the State Agricultural Universities of the respective states and for queries or clarifications or details, the Project coordinator (cotton), Coimbatore may be contacted.

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