

# Central Institute for Cotton Research

## Eighth Weekly Advisory for Cotton Cultivation: 11 to 18 September 2012

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

The net-sown cotton area in the country reached 112.83 lakh hectares by 31st August 2012

### NORTH INDIA

#### Punjab

As the region (Faridkot) received rains, Parawilt symptoms might occur for which cobalt chloride @10mg/litre (10ppm) on affected plant within few hours of onset of symptoms is recommended. Spray Potassium nitrate 2% per acre and repeat 3-4 times at weekly intervals as the flowering is at peak. Weeds can be controlled with Paraquat at 500ml/acre or Glyphosate at 1L/acre in 100 L of water with protective hood to avoid drift on to cotton leaves. At Bathinda, the crop is in boll development stage. The continuous cloudy weather and rains from last two weeks may increase the attack of pests and bacterial blight disease so farmers are advised to monitor their crop for insect pests and diseases regularly. Spotted boll worm infestation was recorded on *desi* cotton and non-*Bt* varieties of American cotton. Appropriate recommended management strategies may be initiated. At Abohar, the crop is in boll development stage. The continuous cloudy weather and rains from last two weeks may increase the attack of pests and bacterial blight disease, so farmers are advised to monitor their crop for insect pests and diseases regularly. Spotted boll worm infestation was recorded on *desi* cotton and non-*Bt* varieties of American cotton.

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. In case of heavy rains, immediate proper drainage is required.

#### Haryana

Cotton crop is now in reproductive stage. In general the crop is healthy. Excessive nitrogen application may be avoided. Foliar application of 2½% urea at flowering and boll formation stage is recommended. Weeding, interculture and fertilizer application must be done immediately during rain free period. In case of 2,4-D malformation, after cutting the malformed twigs, spray the crop with 2.5 kg of urea plus 500 g Zinc sulphate in 100L of water. In the first week of September, whitefly infestation was below economic threshold level. However leafhopper infestation was above economic threshold level. The leaf hopper population on cotton may increase if rain occurs frequently and mean relative humidity above 70 per cent. Avoid repeated use of the same insecticide or insecticides of the same group. Avoid indiscriminate and mixing of two or more insecticides. Clean the sprayer thoroughly before use. The rains and cloudy condition over the week can trigger sucking pests and foliar diseases in cotton growing area of Haryana. If foliar diseases appear, spray Streptomycin sulphate (6-8 g/ac) plus copper oxychloride (600-800 g/ac) in 200-250 L of water at 15 days interval. If heavy rains occur, proper drainage is required. Farmers are advised to monitor their crop for insect pests and diseases regularly.

#### Rajasthan

At Sriganaganagar, the crop is in boll development stage. The weather is pleasant. There was good rainfall (150 mm) and temperature around 30-33°C. At Banswara, the weather during next 4 days would be stable with light to heavy

rains resulting in excess moisture situation. Farmers are advised to drain water from the field. Whitefly and jassid infestation is noticed in some parts of the state and need attention

## **CENTRAL INDIA**

As fairly widespread rainfall is expected over Maharashtra, MP and parts of Gujarat, during next 3 days with heavy to very heavy rainfall over Madhya Maharashtra Marathwada and Vidarbha during next 48 hours, farmers are advised to make arrangements to drain out excess water from crop field and are also advised to apply plant protection measures and fertilizers and undertake intercultural operations may be done on vapsa condition to avoid leaf and floral bud fall. As cotton is at vegetative / floral bud initiation stage, farmers of North Madhya Maharashtra are advised to spray 2 % DAP for better development of cotton boll and preventive measures against red leaf. Farmers of Marathwada region 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. Under prevailing weather there may be attack of aphids, jassids and thrips in cotton in Vidarbha and adequate care must be taken.

### **Madhya Pradesh**

In Indore and surrounding areas due to continuous rains in August, crop growth is stunted. Attack of sucking pests still not observed in the field and farmers are spraying insecticides like Imidacloprid, Thiomethaxon and Difenthiuron @ 0.5 g per Lit of water against jassids, aphids and white fly. Such sprays are wastage of insecticide and money and must be avoided. In Khandwa region, the week was full of rains with high temperature in a day. This leads to the sudden drying (New wilt) symptoms at several places. Cultivators are advised to drench the affected plants with urea 1.5% immediately.

### **Gujarat**

At Surat, as per the latest available information nearly 23 lakh hectare area covered under cotton crop. Medium to heavy rainfall occurred in all over the State. Weather condition is satisfactory for cotton crop. At Junagadh, total rainfall was around 90.58 mm and 4 rainy days during this week. The crop is severely affected due to prolonged dry spell and due to excess rains, leaf reddening has been observed due to heavy boll load and cloudy conditions. The incidence of jassids was below economic threshold levels (ETL) and thrips was very low as well. Aphids, whitefly and mealy bug population was observed but below ETL

### **Maharashtra**

At Nanded, there have been good rains and the crop is in peak boll formation stage in early sown crop. The rainfed crops are now experiencing waterlogged condition due to continuous rains. It is recommended to go for draining of water from field and foliar application of Planofix. Second dressing of nitrogen should be done at 8 weeks after sowing @ 36 Kg N / ha. Spray of MgSO<sub>4</sub> @ 0.2 % should be given at 45 DAS and 75 DAS

At Akola, the total rainfall received was 591.0 mm. Incidence of Aphids, thrips and Jassids were noticed in Vidarbha region. Leaf spots were observed in some pockets. To control this disease, 25 g / 10 litres of water copper oxy chloride should be added with insecticide. Bacterial blight is noticed for which spraying of Copper oxy chloride + Streptomycin (25 g + 1 g /10 lit. water) is advised. Continuous rains during the last 25 days farmer has hampered the intercultural operations, top dressing of urea application may be done immediately after weeding. In case of water logging, excess water should be removed from field. If the symptoms of Parawilt noticed in the field a mixture of Copper-oxy chloride 25g and 200g Urea in 10 ltr of water used for drenching.

At Rahuri, the cotton crop is at reproductive and boll bursting stage and rains received protected the crop from severe water stress. The cloudy weather and moist condition in atmosphere favours the development of pest and diseases. As a precautionary measure against fungal and bacterial blight, it is essential to undertake spray of Copper oxichloride 25 gm + Streptocyclin 1 gm/10 lit. water. For management of sucking pest, it is advised to spray Buprofezin 25 EC 15 ml + Acetamiprid 20 SP 4 gm per 10 lit water. Also, it is suggested to drain out excess water saturated in fields due to heavy rains and top dressing application of Urea wherever essential.

### Odisha

The cotton crop is at ten to eleven weeks (flower and boll formation) stage. Planofix (NAA) hormone may be sprayed @ 20 ppm (7 ml per 15 litres of water) to reduce square and flower drop. There is incidence of *Alternaria* blight in some patches. To control it spray Mancozeb @ 2.5 g per one litre of water. For management of bacterial leaf spot spray Steptocycline @ 0.1g with Copper Oxychloride 2.5g per one litre water.

### SOUTH INDIA :

#### Andhra Pradesh

In Telangana region, the crop is in flowering to early boll formation stage. Depending upon the moisture availability, farmers are advised to take up third split application of fertilizers. For the control of leaf spots, spraying copper oxychloride @ 3g (or) Mancozeb @ 2.5g (or) propiconazole @ 1ml/l of water are recommended. Taking the advantage of the rains received during last week, farmers are advised to go for second split application of fertilizers. Wilt / Root rot is observed and soil drenching with Copper oxy chloride @ 3g/l or Carbendazim 1g/l is recommended. In addition to soil application of fertilizers, foliar nutrition with 2% urea or 2% DAP or 2% KNO<sub>3</sub> at square formation, flowering is recommended.

#### Karnataka

Advised top dressing of cotton crop with 25 kg N/ha (i.e. 50 kg Urea/ha) to the 60 days old crop and earthing up of crop with intercultivation. Shoot weevil damage is reported in northern districts where the crop is 40 days old. Spraying of Profenophos 50 EC @ 2 ml/lit + Dichlorovos 100 EC @ 2.0 ml/lit of water is recommended. It is also advisable to hand pick the shoot weevils during morning hours from the top surface of cotton shoot and to destroy. Foliar spray of 2% DAP or 2% 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 flowering and boll formation stage to reduce leaf reddening menace is advised. Suggested for close monitoring of mirid bug in the crop which is at peak square formation stage and advised need based control measures with spraying of Acephate 75 SP @ 1 g/lit or Fipronil 5 SC @ 1.0 ml/lit of water if the insect is noticed. 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.

At Raichur, good amount of rainfall received for two days. Thrips population ranged from 3-9/ three leaves. Leafhopper population ranged from 11-39/ three leaves, Aphids ranged from 1-4 / three leaves, Natural enemies (Spiders, coccinellid grubs, chrysopa grubs) were also noticed. In general, leaf hoppers population is high followed by thrips and aphids.

#### Tamil Nadu

In the summer irrigated zones of Tamil Nadu (Parts of Tirunelveli, Virudhunagar, Ramanathapuram, Madurai districts) if the picking of kapas was completed, it is advised to uproot the cotton plant from the field to avoid the carry over population of stem weevil in the preceding winter rainfed crop.

In the winter vertisol rainfed zone with high rainfall, the farmers of Thirumangalam Taluk of Madurai, Tiruchuli and Aruppukottai Taluks of Virudhunagar district are advised to take up sowing after receipt of sufficient rainfall. Winter irrigated cotton sowing in Coimbatore and Erode districts is going to be completed at farmers field. Pre monsoon cotton sowing in Thirunelveli and Tuticorin districts is in progress. winter rainfed cotton sowing in Perambalur district is in progress. Dry weather is continuing in most of the parts of Tamil Nadu.

## MANAGEMENT STRATEGIES

### PEST MANAGEMENT

1. **Stem application or soil application** (near the root zone) of dimethoate or acephate at 30-40 DAS and 50-60 DAS for effective eco-friendly control of thrips, mirid bugs, mealy bugs and other sucking pests.
2. **Neem oil 2.5 lit/ha mixed with 0.05% detergent** can be used for the management of jassids or whitefly or aphids.
3. ***Verticillium lecanii*** can be used for sucking pest control wherever good formulations are available from reliable manufacturers.
4. 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.
5. **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.
6. **Do not spray against minor lepidopteran insects** such as the cotton leaf folder, *Sylepta derogata* 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*.
7. *Spodoptera litura* incidence (migratory) is reported for which spraying of Novaluran @ 200ml (or) Lufenuron @ 200ml (or) Thiodicarb @ 300g/acre are recommended. In the coastal region
8. ***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.
9. **Do not spray Bt-formulations on Bt cotton** to avoid further selection pressure.
10. 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.
11. **Use Spinosad or Indoxacarb on only non-Bt-cotton** at ETLs of 50% infested plants (plants having flared squares with entry hole). **Avoid these insecticides on Bt-cotton** so that the efficacy of these insecticides can be preserved for bollworm control in non-Bt cotton. Spinosad, Emamectin benzoate and Indoxacarb 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 eco-sustainable insecticide resistance management programmes.

### WEED CONTROL AND DISEASE MANAGEMENT STRATEGIES

1. Weeds can be controlled with Paraquat at 500ml/acre or Glyphosate at 1L/acre in 100 L of water with protective hood to avoid drift on to cotton leaves.

2. 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.
3. If foliar diseases appear, spray Streptomycin sulphate (6-8 g/ac) plus copper oxychloride (600-800 g/ac) in 200-250 L of water at 15 days interval
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.
6. Bacterial blight is controlled by spraying of Copper oxy chloride + Streptocycline (25 g + 1 g /10 lit. water ).
7. 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.
8. Planofix (NAA) hormone may be sprayed @ 20 ppm (7 ml per 15 litres of water) to reduce square and flower drop.
9. There is incidence of *Alternaria* blight in some patches. To control it spray Mancozeb@2.5 g per one litre of water.
10. Wilt / Root rot is observed and soil drenching with Copper oxy chloride @ 3g/l or Carbendazim 1g/l is recommended.
11. 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.

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.

Available at : [www.cicr.org.in](http://www.cicr.org.in)