

Central Institute for Cotton Research

Eleventh Weekly Advisory for Cotton Cultivation: 2nd to 8th October 2012

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

The net sown cotton area reached an estimated 116.04 lakh hectares by 28th September 2012

NORTH ZONE

Punjab

In Punjab, generally the cotton crop is in boll development stage. The boll opening has started in early maturing varieties/hybrids of American cotton and all varieties of Desi cotton. Irrigation should be applied to late sown and late maturing varieties where crop is at peak boll development stage. The infestation of whitefly is quite high in cotton growing areas of the state. Cotton leaf curl virus disease has also been observed in larger areas of cotton cultivation in Punjab. Parawilt symptoms are noticed in some fields which can be cured by spraying cobalt chloride @10mg/litre (10ppm) on affected plant within few hours of onset of symptoms

Haryana

Cotton crop is now in reproductive stage. In general, the crop is healthy. During survey in Hisar and Jind districts, at farmers' field, it was observed that the population of leaf hopper were kept in check below economic threshold through application of insecticides. Whitefly population was below economic threshold except in Kanwari (Hisar) and Dumarkhan (Jind) villages. No incidence of pink bollworm and spotted boll worm was observed. The incidence of *Spodoptera* was observed in traces. Mealybug was kept in check by the parasitoid *Aenasius bambawalei* and the pest was found in traces. Farmers are advised to monitor their crop regularly.

Rajasthan

The cotton crop is in boll formation and boll opening stage. There is an urgent need to control spotted bollworm in Desi cotton and leaf curl virus in hirsutum cotton. The jassids and white fly are below ETL

CENTRAL ZONE

Gujarat

Total 775 mm rainfall received at this centre which is below average. Cloudy weather with little sunshine had adverse effect on crop. Withdrawal of south west monsoon from Gujarat has started with some scattered rain in some parts of the State. Moderate level of jassids infestation is observed and farmers have been suggested systemic insecticides for protection for the crop.

Maharashtra

The total rainfall received at Akola centre was 632.4 mm up to 27th September 2012. The crop is in a good condition and is now in peak boll formation stage. After a prolonged wet spell, farmers are advised to complete the inter-row cultivation as most of the fields have returned to vapsa condition. Also advised to apply urea as top-dressing if it has not been done during the flowering stages. Approximately, 40 kg urea per acre may be applied as a spot application for the hybrids and 25 kg urea per acre in case of varieties. Incidence of Jassids and white flies were noticed in Vidarbha region. Leaf spots were observed in some pockets. Bacterial blight is noticed, Planofix may be sprayed @ 5ml/15 l of spray tank to prevent premature boll shedding. Leaf reddening symptoms may get accentuated in the following weeks.

Madhya Pradesh

Crop is in boll formation stage. With the easing of rains, farmers are advised to do inter-row cultivation for controlling the late season weeds and also incorporate the fertilizers that are applied. Farmers are advised to take up precautionary measures for the control of leaf reddening that may come up in the following weeks due to increased boll load and prevailing dry weather. Spray of nutrient supplements such as 2% urea/DAP along with 1% KNO₃ is advised. Earthening operations are to be performed. Picking has commenced in summer sown irrigated crop. White fly is posing problem in most of the fields and its population is above ETL. In some of the fields, thrips incidence is also recorded and cultivators are advised to ignore it. In few fields, incidence of *Spodoptera* was observed. This is noticed only on those fields which were adjoining to the previous soybean fields and were mostly affected by *Spodoptera*.

EASTERN ZONE**Odisha**

The cotton crop is at thirteen to fourteen week (boll development) stage. Topping should be done when plants reach 1 m height or 90 days old. Spraying should be done with 2% DAP for better boll development. Proper remedial measures should be taken up for leaf reddening and *Alternaria* blight / bacterial spot diseases. If the jassid and aphid population exceeds ETL (for jassids - 2 jassids per leaf and for aphids 15-20% affected plants) recommended pest control operations may be initiated.

SOUTHERN ZONE**Andhra Pradesh**

The total acreage of cotton in Andhra Pradesh is 21.64 lakh ha during the year 2012-13. In general, the crop condition is satisfactory. In Telangana region, the crop is in boll development to initiation of boll bursting stage. Irrespective of the Bt hybrids grown, no boll worm incidence was recorded during the week under report. In Coastal region, the crop is in squaring to boll development stage. Foliar nutrition of 2% urea or 2% DAP or 2% KNO₃ along with 1% MgSO₄ at square formation, flowering and boll formation is recommended. Moderate to high incidence of leaf hopper and thrips was observed. Sporadic incidence of mealy bug infestation is observed. A booster dose of 30kg urea and 10kg Muriate of Potash is recommended to mitigate the excess moisture conditions.

Karnataka

Moderate rainfall in Dakshin Kannada and Uttar Kannada districts and sporadic rainfall in majority northern districts is expected during next week as per the weather forecast. As dry spell is prevailing in major cotton growing districts, it is suggested for light irrigation adopting alternate furrow irrigation wherever irrigation facilities are available. In majority cotton growing areas, shoot weevil problem is reported in most of the Bt hybrids. Sporadic incidence of Mealy bug is reported in Bellary district. It is advised to keep the bunds clean around the cotton crop. In 100-110 days old cotton crop, it is suggested to spray the crop for controlling pink boll worm attack. It is recommended for foliar spray of 2% urea and 2% DAP alternatively at 15 days interval after 70 DAS with 1% MgSO₄ and Planifox (5 ml in 15 lit of water) to the crop which is at peak flowering and boll formation stage to reduce leaf reddening and square dropping in the crop. In Bt genotypes, if leaf spot disease is seen on the leaves, proper remedial measures may be taken up.

Tamil Nadu

Dry and hot weather is continuing in winter irrigated cotton tracts of Tamil Nadu. One or two places in Southern districts of Tamil Nadu received rains. Farmers are advised to take up sowing after receipt of sufficient rainfall in the winter vertisol rainfed zone viz., the taluks of Thirumangalam and Peraiyur of Madurai, all taluks of Virudhunagar district, Kovilpatti and Vilathikulam taluks of Tuticorin and Sankarankovil taluk of Tirunelveli district

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 Profenophos 50 EC @ 2 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. At economic threshold of 8 moths per pheromone trap for three consecutive nights, spray the crop with cypermethrin or thiodicarb or profenophos.
13. Optimize nutrient management for macro and micronutrients. **Foliar spray of MgSO₄, 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 KNO₃.

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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