ICAR-Central Institute for Cotton Research, Nagpur

XIII Weekly Advisory for Cotton Cultivation from15thto 21stAugust,2023

	ACTUAL RAINFALL in mm IMD					PREDICTED RAINFALL in mm IMD					ADVISORY
	AUGUST					AUGUST					
Date	**11**	**12**	**13**	**14**	**15**	**17**	**18**	**19**	**20**	**21**	
PUNJAB											
Firozpur						0	0	0	0	0	At Bathinda, the crop is 90 to 100 days old at flowering to boll formation stage. Hoeing and weeding are in progress. Sprayed 2% Potassium nitrate (13:0:45) in cotton fields where flowering has initiated. Weeds have dominated the fields. Whitefly population ranged between 0-15/ 3 leaves, jassid between 0-18/3 leaves and thrips between 3-21/3 leaves. Incidence of pink bollworm ranged up to 10%. Incidence of CLCuV and boll rot was observed in some of the fields. At Faridkot, the crop is 97 to 107 days old at peak flowering/ initiation of boll formation stage. Mechanical/ manual intercultural operations, fertilizer application and three/four sprays against sucking pests and pink bollworm were taken up. Limited mechanical intercultural operations only could be done due to rains wherein herbicide spray with Pyrithiobac Sodium 6% + Quizalofop ethyl 4% MEC and Glufosinate were given to control the weeds. Whitefly incidence was near ETL at some of the locations. jassid population has crossed ETL at most of the spots. Pink bollworm incidence was near ETL ranging between 5-15%. Cotton leaf curl disease up to Grade I, internal boll rot and leaf spots were observed at few locations. **Advisory**: At Bathinda, the overall crop condition is good. Farmers are advised to give four sprays of 2% Potassium nitrate (13:0:45) at weekly intervals in cotton fields where flowering has started which would reduce flower drop and improve boll setting in cotton. If whitefly adult population is above ETL, spray Afidopyropen 50 DC @ 400 ml/acre or Flonicamid 50 WG @ 80 g/acre or Clothianidin 50 WDG @ 20 g/acre or Dinotefuran 20 SG @ 60 g/acre.Ifnymphs of whitefly population are high, then spray Pyriproxyfen 10 EC @ 500 ml/acre. For jassids, at above ETL, spray Dinotefuran 20 SG @ 60 g/acre or Thiamethoxam 25 WG @ 40 g/acre. Rosette flowers, if any, should be removed and destroyed. Monitor them in fields where crop is at flowering stage and spray Profenofos 50 EC @ 600 ml/acre or Emamectin benzoate 5 SG @ 100 g/acre or Indoxacarb 14.5 SC/15.8 EC @ 200 ml/acre if the incidence of pink bollworm goes above 5 per cent. Give foliar spray of Carbendazim 50 WP@ 0.04% or Carbendazim 12%+Mancozeb 63% WP@0.3% or Kresoxim methyl 44.3
Faridkot	0	0	0	0	0	0	0	0	0	0	
Muktsar	0	0	0	0	0	0	0	0	0	0	
Bhatinda	0	0	0	0	0	0	0	0	0	0	
Sangrur	0	0	0	0	0	3	0	20	6	0	
Ludhiana	3.2	0	0	0	0	3	3	5	6	5	

											SC @ 0.1% or Propineb 70 WP @ 0.25 % or Propiconazole 25 EC @ 0.1% or Metiram 55% +Pyraclostrobin 5% WG @ 0.2% or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @ 0.1% or Fluxapyroxad167 g/L + Pyraclostrobin 333 g/L SC @ 0.6% to manage boll rot disease complex. Spray Azoxystrobin 18.2 + Difenconazole 11.4@ 200 ml in 200 lit of water to manage fungal foliar leaf spots of cotton. At Faridkot, farmers are advised to spray Potassium nitrate (13:0:45) @ 2% to improve boll setting and reduce flower drop at 7 to 10 days interval. For this purpose, 2 kg of Potassium nitrate should be dissolved in good quality water and spray should be very fine so that it should retain on leaves. Avoid brackish/tubewell water for any type of foliar sprays on cotton as excessive salts sometimes burn margins of cotton leaves. Cotton growers experiencing leaf reddening during last season in cotton crop must apply two sprays of Magnesium sulphate @ 1% through foliar application at 15 days interval during full bloom and boll development to minimize leaf reddening issue in Bt-cotton. Both chemicals (Potassium nitrate and Magnesium sulphate) should be sprayed at alternate weeks depending upon weather and rainfall. Spray 500 ml of Glufosinate ammonium 13.5 SL in 100 lit of water as a directed spray to control weeds between the crop rows by using a protective hood. Alternatively, spray 500 ml/acre of Pyrithiobac sodium 6% + Quizalofop ethyl 4%by dissolving in 150 lit of water after irrigation, in moist soil, to control annual grass and broadleaf weeds. Check parawiltby spraying Cobalt chloride @ 10 mg/ lit of water on the affected plants at the initial stage of wilt. In case of jassid incidence above ETL, spray Flonicamid 50 WG @ 80 g/acre or Dinotefuran 20 SG @ 60 g/acre or Imidacloprid 17.8 SL @60ml/acre.Check for squares and flowers for the infestation of pink bollworm. Spray Profenofos 50 EC @ 600 ml/acre or Emamectin benzoate 5 SG @ 100 g/acre or Indoxacarb 14.5 SC @ 200 ml/acre, if incidence crosses ETL. Install pheromone traps @ 5/ha to monitor pink bollworm and replace the lure as per validity indicated. Give foliar spray of Carbendazim 50 WP@0.04% or Carbendazim 12%+Mancozeb 63% WP@0.3% or Kresoxim methyl 44.3 SC @ 0.1% or Propineb 70 WP @ 0.25 % or Propiconazole 25 EC @ 0.1% or Metiram 55% +Pyraclostrobin 5% WG @ 0.2% or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @ 0.1% or Fluxapyroxad167 g/L + Pyraclostrobin 333 g/L SC @ 0.6% to manage boll rot disease complex.
HARYANA											
Hisar	0	0	0	0	0	3	0	6	5	0	At Hisar, the crop is 84 to 127 days old at flowering to boll development stage. Irrigation and insecticide sprays were done. Weeds have spread in some of the fields after rainfall. Manual hoeing was done as per the feasibility. Population of thrips was below ETL in the majority of the fields but jassid and whitefly population are building up above ETL in several
Jind	0	0	0	0	0	0	0	6	5	0	
Sirsa	0	0	0	0	0	5	0	0	0	5	
Rohtak	0	0	0	0	0	4	0	4	6	0	

											fields. Infestation of pink bollworm was observed above ETL in flowers and green bolls in several cotton fields. Cotton leaf curl viral disease, boll rot and *Myrothecium* /fungal leaf spot and wilting of plants were observed in most of the fields. At Sirsa, the crop is 92 to 115 days old at flowering and boll formation stage. Overall the crop is in good condition. Intercultural operations by camel and hand hoeing, irrigation, fertilizer application and insecticidal sprays are in progress. Whitefly and jassid populations crossed ETL at most of the locations with jassid injury grade II-III grade observed at all locations at increasing rate of the incidence while thrips populations have dropped drastically. Green boll damage has started increasing with pink bollwormcrossing ETL at all locations based on green boll damage. Root rot and boll rot incidence were noticed in the cotton fields. **Advisory:** At Hisar, farmers are advised to manage weeds and irrigate their cotton crop. Apply second split dose of Urea @ 1 bag (45kg)/acre in 85 to 90days old crop. Give foliar spray of 13:00:45 @ 1% during peak flowering and boll formation stage at an interval of 10 days to obtain higher yield. Spray the crop grown in light soils with Urea @ 2.0% and Zinc sulphate 21% @ 0.5% to overcome Zinc deficiency and Magnesium sulphate @ 1 kg/100 lit of waterto overcome Magnesium deficiency in crop.This month is very crucial for the monitoring and management of pink bollworm in cotton crop in Haryana.In cotton crop where flowering and boll formation has initiated, remain vigilant for pink bollworm attack in flowers and bolls and install pheromone traps @ 5/ha for monitoring purpose. If male moth catches of8 adults/trap/day for consecutive 3 days till mid-August observed, insecticide intervention for its management required. In case the infestation of pink bollworm crosses ETL of 5-10% rosette flowers or 5-10% infested green bolls, spray Profenofos 50 EC @ 600 ml/acre or Quinalphos 20 AF @ 400 ml/acre or Emamectin benzoate 5 SG @ 100 g/acre or Indoxacarb 14.5 SC @ 200 ml/acre.Famers are advised not to use combination product or tank mixing of synthetic pyrethroids for managing pink bollworm as it is increasing the incidence of whitefly. Applyneem-based insecticide @ 5ml/lit of water to manage initial population of whitefly and cotton leaf curl virus disease. Control jassid and whitefly incidence by spraying Flonicamid 50 WG @ 80 g/ acreor Afidopyropen 50 DC @ 400 ml per acre. In case of severe infestation of whitefly, spray Pyriproxyfen 10 EC @ 500 ml or Spiromesifen 22.9 SC @ 240 ml/acre with 200 lit of water/acre to manage nymphal population. For *Myrothecium* leaf spot, fungal leaf spots, *Corynespora, Alternaria* leaf spot and wet weather blight, foliar spray of Carbendazim 12%+ Mancozeb 63% WP@0.3% or Propiconazole 25 EC @10 ml or Carbendazim 50 WP@ 4 g or Fluxapyroxad 167g/litre + Pyraclostrobin 333g/litre SC @ 6 g Or Azoxystrobin 18.2% w/w + Difenoconazole 11.4%

											w/w SC @10 ml or Metiram 55%+Pyraclostrobin 5% WG @20 g per 10 litres of water. Manage boll rot by applying Carbendazim 12%+ Mancozeb 63% WP@30 g or Propiconazole 25 EC @10 ml or Carbendazim 50 WP@ 4 g or Fluxapyroxad 167 g/litre + Pyraclostrobin 333 g/litre SC @ 6 g Or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @10 ml or Metiram 55%+Pyraclostrobin 5% WG @20 g per 10 litres of water. Treat root rot-affected patches and wilt affected cotton fields by drenching withCarbendazim 50 % WP @ 2 g/lit of water. Control boll rot by applying Copper oxychloride 50 % WP/WS @ 2g or Carbendazim 50 WP@ 2g/lit of water. Remove stagnated water from the fields by making trenches. At Sirsa, farmers are suggested to continue intercultural operations. Regularly monitor the pest incidence.Apply one split of Nitrogen @ 30 to 40kg Urea/acre)between 16th to 31st August. Start foliar application of N:P:K (13:0:45) @ 2.0 kg /100 lit of water and repeat 2-3 times at 10 days interval. Give two sprays of 1kg Magnesium sulphate in 100 lit of water/acre at 15 days interval during full bloom and boll development stages for high yield and management of leaf reddening in *Bt*-cotton. Apply Dinotefuran 20 SG @ 60g or Flonicamid 50WG @80g or Imidacloprid 17.8 SL @60ml/acreor Afidopyropen 50G/L@ 400 ml/acre to control jassids and whitefly. To manage only whitefly adult's population, apply Diafenthiuron 50% WP 200 g in 150-200 lit of water and after one week, apply Pyriproxyfen 10 EC @ 500 ml or Buprofezin25 SC @ 400 ml or Spiromesifen22.9 SC@ 200 ml /acre in 150 lit of water to control the nymphs. In case Sooty mould incidence, give prophylactic/therapeutic sprays of Propiconazole 25EC @1ml/lit or Copper oxychloride (COC) 50 % WP @ 2.5g/lit of water at 15 days interval. In case pink bollwormcrosses ETL based on trap catches/green boll damage, apply Emamectin benzoate 5SG@100 g/acre or Profenophos 50 EC @ 500 ml or Chlorpyrifos 20 % EC @ 500 ml or Indoxacarb 14.5 SC 200 ml/acre in 150 lit of water. Famers are advised not to use combination product or tank mixing of synthetic pyrethroids for managing pink bollworm as it is increasing the incidence of whitefly. Do not repeat same insecticide and rotate insecticide whenever repetition is required. Drench the root rot affected plants and surrounding healthy plants with Carbendazim 50% WP @ 12 g/ 10 lit of water or *Trichoderma harzianum* or *T. viride* WP formulation@ 5-6 g/lit of water. To manage boll rot, spray Copper oxychloride 50 % WP @ 2.5 g/lit or Propiconazole 25 EC @1 ml/lit of water. Drench the parawilt affected plants with Cobalt chloride @10 mg/lit immediately after the appearance of wilting symptoms on the affected plants followed by drenching of Copper oxychloride 2.5g+10 g Urea/lit. Manage fungal foliar leaf spots by spraying Carbendazim 12%+ Mancozeb 63% WP@3 g/lit or Kresoxim-methyl 44.3% SC@ 1 ml/lit or Propiconazole 25 EC@ 1 ml/lit or Azoxystrobin 18.2% + Difenoconazole 11.4% SC@ 1 ml/lit or Pyraclostrobin 20% WG @1 ml/lit or Fluxapyroxad 167 g/lit + Pyraclostrobin 333 g/lit SC @ 0.6 g/lit of water.

RAJASTHAN											
Ajmer	0	0	0	0	0	0	0	0	0	0	In Southern Rajasthan (Banswara, Bhilwara, Chittorgarh, Dungarpur, Pratapgarh, Rajsamand and Udaipur), the crop is 49 to 95 days old at vegetative to flowering stage. Both the weeds, grassy and broad leaves, have spread in the fields. No Incidence of pests and diseases except jassid but below ETL. In Sriganganagar and Hanumangarh, the crop is 70 to 125 days old at vegetative, branching, square formation and flower initiation stages. Intercultural operations have been taken up in early and timely sown cotton. Manual hoeing and weeding havebeen done to remove the weeds from row spaces. Incidences of jassid noticed at 0 to 2.33/leaves, whitefly 0 to 3/ leaves and thrips population ranging from 0 to 5.67/leaves. CLCuD symptoms observed in the range of 0-5% PDI in the cotton fields. **Advisory:** In Southern Rajasthan (Banswara, Bhilwara, Chittorgargh, Dungarpur, Pratapgarh, Rajsamand and Udaipur), farmers are advised to apply second split of recommended dose of N fertilizers according to crop stage. Monitor infestation of sucking pests and spray 5% neem seed kernel extract (NSKE) or *Azadirachtin* 0.15% EC @ 5 ml/ lit of water or Buprofezin 25 SC @ 1.25 lit/ha or Diafenthiuron 50 WP @ 625 g/ha or Flonicamid 50 WG @200 g/ha to control them if it crosses ETL. Install yellow sticky traps 8/acre to monitor whitefly and jassid and pheromone traps @ 2/acre to monitor pink bollworm. Do not repeat same insecticides as well same group of insecticides. Avoid tank mixture of two or more insecticides. In Sriganganagar and Hanumangarh, farmers are advised to apply dose of Nitrogenous fertilizers as recommended. Avoid N application through broadcast just before irrigation as this leads to leaching of fertilizers and in turn, contamination of groundwater. Give foliar application of KNO_3 @ 2% where the crop is above 65 days. Remove weeds near and around the cotton fields**.** Monitor the crop for insect pests and diseases regularly. Spray neem-based insecticides @ 5 ml/lit at early stage of crop or in case of mild attack of sucking pests and pink bollworm. To control jassid, spray Flonicamid 50WG @ 80g/acre or Dinotefuran 20 SG @ 60 g/acre. In case of thrips infestation, use Spinetoram 11.7 SC@ 0.8 ml/lit or Profenofos 50EC @3 ml/lit of water. Install pheromone traps @ 5/ha to monitor pink bollworm. . Wherever pink bollworm population crosses ETL, i.e. flower or bolls infestations is more than 5%, spray Profenofosos 50EC @30ml or Emamectin benzoate 5SG@5g/10 lit of water or Indoxacarb 14.5%SC@1.0ml/lit. of water.
Jodhpur	0	0	0	0	0	0	0	0	0	0	
Nagaur	0	0	0	0	0	0	0	0	0	0	
Pali	0	0	0	0	0	0	0	0	0	0	
Sri Ganganagar	0	0	0	0	0	1	1	0	0	0	

ODISHA											
Koraput	19	1	5	0	0	5	7	2	2	5	At Odisha, the crop is 45 to 55 days old at reproductive stage from square formation to flower initiation stage. Intercultural operations, weeding and earthing up, application of third dose of fertilizer (25%N), spraying of neem based pesticides to suppress sucking pests like aphids and other foliar feeders like *Spodoptera* and semi loopers, application of Planofix to prevent square and flower dropwere the operations taken up. Manual weeding and earthing up are in progress. Minor incidences of aphids, jassid, *Spodoptera*, semi-loopers and leaf miners were noticed. Wilting reported from some regions of Nuapada, Bolangir and Sonepur districts. **Advisory**: Farmers are advised to complete weeding, intercultural and earthing up operations at the earliest. Apply third dose of fertilizer as 25% Nof recommended dose of 120:60:60 kg/ha for hybrids and 90:45:45 kg/ha for varieties. Micronutrients, if not applied, give as basal dose @ $ZnSO_4$ (25 kg/ha) and Boron (5 kg Borax/ha) at the time of earthing up. In case of wet soil condition where manual weeding is not possible, go for application of post emergence herbicides (at 25 -30 days after sowing) like Quizalofop ethyl 5% EC @ 2 ml/lit of water if the field is infested predominantly with grassy weeds and Pyrithiobac sodium 10 % EC @ 1.25 ml/lit of water for broad leaved weeds. Regularly monitor the crop to know about incidence of any pest and disease. Spray neem based pesticide (1500 ppm) @ 50ml/10 lit of water to prevent sucking pestsand pink bollworm. Spray Buprofezin 25 SC @ 20 ml/10 lit of water when aphid population is above ETL (10% plants infested showing symptoms of cupping / crumpling of few leaves on the upper portion of plant). If parawilt or sudden wilt occur due to heavy rains and water logging after dry spell, apply Cobalt chloride @10 mg/lit (10 ppm) on affected plants within few hours of onset of symptoms and/or drench plants with a mixture of Copper-Oxy-Chloride 50 WP@25 g and 200 g Urea mixed in 10 litresof water or Carbendazim 50 % WP@ 12 g/10 litresof water. To reduce leaf reddening if any, spray 100 g Magnesium sulphate mixed with 100 g Urea in 10 liters of water in water logged areas.
Kalahandi	5.2	0	3	0	0	2	2	3	5	7	
Balangir	0	0	71.2	10.2	0	5	3	2	2	5	
GUJARAT											
Amreli	0	0	0	0	0	4	4	4	3	3	At Surat, the sown crop is 49 to 56 days duration crop at vegetative stage. Manual weeding, intercultural operations and second split of Nitrogen application are in progress. Thrips have crossed ETL and jassid below ETL. Aphidsnoticed on young leaves along with larvae of lady bird beetle. At Junagadh, the sown crop is 56 days old at vegetative and square formation stage. Intercultural operations, weeding, fertilizer application and pesticides spray have been carried out. Aphid and jassid infestation have crossed ETL at few places. Shoot
Bhavnagar	0	3	0	0	0	2	3	3	4	0	
Jamnagar	0.3	0	0	0	0	0	0	0	0	0	
Rajkot	0	0	0.5	0	0	3	0	0	0	0	
Junagadh	2.6	1.6	0.3	0	0	4	4	4	3	0	
Sabarkantha						10	6	6	4	3	
Surendranagar	0	0	0	0	0	3	0	0	0	0	
Ahmedabad	1.5	5.7	1.8	0	0	10	0	5	5	0	
Baroda	0	0.2	5	0	0	10	4	5	5	0	

Patan	0	0	0	0	0	10	0	4	4	0	weevil(*Alcidodes affaber*) infestation has started in some isolated places.
Mehesana	0	0	0	0	0	10	0	5	4	0	**Advisory:** At Surat, farmers are advised to keep the fields free from weeds. In case of heavy rains, farmers are advised to drain out excess rain water from the cotton fields. On receiving sufficient rains, apply second split dose of Nitrogenous fertilizer at 50 to 60 days after sowing . Spray neem-based insecticides (Azadirachtin 1500 ppm) @ 50 ml or *Beauveria bassiana* @ 50 g per 10 lit of water against sucking pests and pink bollworm. Install pheromone traps (5 traps/ha) to monitor pink bollworm. If parawiltnoticed in fields, drench with Carbendazim 50 WP @12g or Copper oxychloride 50 WP @25 g+ Urea (200g) in 10 lit of water near root zone of plant and nearby plants by manually making 3 to 4 holes for proper aeration and recovery of the plant. Further, foliar spray of Carbendazim 12%+ Mancozeb 63% WP@30 g orCarbendazim 50 %WP @4 g or Kresoxim methyl 44.3 SC@10 ml or Propineb 70 WP@ 25 g or Propiconazole 25 EC@ 10 ml or Metiram 55% +Pyraclostrobin5% WG @20 g or Azoxystrobin 18.2% w/w + Difenoconazole 11.4% w/w SC @10 ml or Fluxapyroxad 167g/l + Pyraclostrobin 333 g/l SC @ 6 g mixed in 10 litres of water to manage fungal leaf spots and other blight diseases. At Junagadh, farmers are advised to do earthing up along with application of fertilizers (25 kg MOP+ 25 kg Urea/acre in irrigated condition) to the soil. Take up timely operations of weeding and intercultural operations. In case of wet soil condition, where manual weeding is not possible farmers may apply post-emergence herbicides at 25 -30 days after sowing like Quizalofop ethyl 5% EC @ 2 ml/lit of water, if the field is infested with grassy weeds and Pyrithiobac sodium 10 % EC @ 1.25 ml/lit of water for broad leaved weeds or Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 2-2.5 ml/lit of water to control both grassy and broad-leaved weeds. If aphids or thrips infestation crosses threshold level, spray Flonicamid 50 WG @ 200 g/ha or *Beuaveria bassiana* 60 g/10lit or Fipronil 5 SC @10 ml/10 lit of water. If jassid infestation crosses ETL, spray Flonicamid 50 WG @ 4 g/10 liters of water or Dinotefuran 20SG @ 3g/10 lit of water. Control Shoot weevil infestation by spray Chlorpyriphos 20 EC @ 2.5ml/litres of water.
MP											
Khargaon											At Khandwa, the crop is 49 to 98 days at vegetative, pre-flowering, flowering and boll formation stages. Weeding, intercultural operations, fertilizer and pesticide application has been carried out as per the stages of the crop. There was long dry spell in all the areas where the crop is in flowering or post flowering stage. If possible, irrigate the field. Incidence of jassid and Bacterial blight have been observed in some fields. **Advisory**
Dhar	2.1	0.3	10.3	0.3	0	3	4	6	6	6	
Khandwa											

											Farmers are advised to apply second and third dose of fertilizer with 25% of N and 50% of P and K at 60 DAS and 25% N at 90 Days after sowing. Spray neem-based insecticides @ 1 lit/acre at 45-60 days of crop age to check the sucking pests and prevent egg laying by pink bollworm.. In areas where the incidence is above ETL (2 nymph/leaf), spray Flonicamid 50 WG @ 200 g/ha or Dinotefuran 20 SG @ 150g/ha or Imidacloprid 17.8 SL @ 150 ml/ha. Install Pheromone traps @ 5 /ha to monitor pink bollworm moth activity. Observe for the presence of rosette flowers and collect them and destroy immediately. Spray Copper Oxychloride 50 %WP/WG @25-30g/10 lit of water to manage bacterial blight disease. If sudden drying symptoms appears in fields, drench immediately with Urea 1.5% around affected plants.
MAHARASHTRA											
Dhule	2.5	0	1	0	0	9	5	7	7	6	At Akola, the sown crop is of 40 to 47 days old at vegetative growth stage. Hoeing, weeding and top dressing of fertilizer is in progress. Weed infestation is more in late sown cotton. No incidence of pests and diseases except sucking pests but below ETL observed in late sown cotton. No incidence of diseases. At Nanded, the crop is 28 to 52 days old at vegetative to square formation stage.Weedshave dominated the cotton fields. No incidence of pests and diseases except jassid and aphids attack but below ETL. At Rahuri, the crop is 48 to 73 days old at vegetative to flowering stage. Sucking pests were noticed above ETL. Weeds like *Haryali*, *Parthenium* etc., have infested the fields. One to two per cent cotton plants damaged due to *Myllocerus* weevil. **Advisory:** At Akola, farmers are advised to open the furrow in cotton field at regular intervals for moisture conservation at 45 to 50 DAS by tying rope to tyne of the hoe. Spray post-emergence herbicide Pyrithiobac Sodium 10 % EC @12.5 to 15 ml/10 lit of water at 25 - 30 days after sowing for broad leaf weeds and Quizalofop ethyl 5 % EC @20 ml/10 lit of water to manage grassy weeds in cotton or Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 20-25 ml/10 lit of water for broad spectrum weed control. Carry out the intercultural operations like hoeing and weeding in cotton. Apply first split of 40 kg N (90Kg Urea/ha) for irrigated hybrid cotton and 30 kg N (65 Kg urea/ha) for rainfed hybrid/hirsutum cotton as top-dressing. Spray 2 % urea at flowering stage of cotton with first spray at 45 DAS. Spray neem-based insecticides @ 1 lit/acre at 45-60 days of crop age to check the sucking pests and prevent egg laying by pink bollworm.Install pheromone traps @ 5/ha to monitor pink bollworm.
Nandurbar	4.5	7	1.5	0	0	10	6	8	8	6	
Jalgaon	3	5	0	0	0	10	4	3	3	5	
Ahmednagar	1.5	0	0	0	0	5	6	5	4	4	
Aurangabad	0	0	0.5	0	0	10	3	1	1	6	
Jalna						9	3	2	2	4	
Beed	0	0	0	0	0	6	2	1	1	1	
Nanded	0	0	0	3.2	9	4	2	1	4	4	
Parbhani	0	0	0	9.6	0	8	2	1	1	3	
Hingoli	0	0	0	2	0	5	1	1	2	3	
Buldhana	6	0	0	1	0	2.9	1.3	3.7	3.5	3	
Akola	0	0	2.4	0	5.2	2.7	3.6	3.8	3.3	5	
Washim	0	0	0	0	0	2.3	1.9	1.5	3.8	2	
Amravati	1.2	0	0	0	0.4	3.5	2.6	3.3	4.4	6	
Yavatmal	0	0	0	0	4	4.5	1.2	1.6	3.3	6	
Wardha	0	0	0	0	0	2.4	1.2	2.2	4.5	5	
Nagpur	0	0	0	0	0	3.2	1.6	2.4	5.2	7	
Chandrapur	0	0	0	6	0	4.6	1.1	2.4	3.4	6	

											At Nanded, farmers are advised to opendrainage channel to drain out excess rainwater by opening trenches in low lying area. Intercultural operations should be done for weed management. Give top dressing of 36 kg N per ha at 30 DAS for rainfed cotton. Intall yellow sticky traps @8/ha and blue sticky traps @ 2 /ha to manage sucking pests. Spray neem-based insecticides @ 1 lit/acre at 45-60 days of crop age to check the sucking pests and prevent egg laying by pink bollworm.Install pheromone traps @ 5/ha for monitoring of pink bollworm. At Rahuri, farmers are advised to carry out intercultural operations as and when required. In case of wet soil condition, where manual weeding is not possible, go for application of post-emergence herbicides at 25 -30 days after sowing like Quizalofop ethyl 5% EC @ 2 ml/lit of water, if the field is infested with grassy weeds and Pyrithiobac sodium 10 % EC @ 1.25 ml/lit of water for broad leaved weeds or Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 2-2.5 ml/lit of water to control both grassy and broad-leaved weeds. Install yellow sticky traps @ 8 traps/acrefor jassid and whitefly to monitor blue sticky traps @ 8/acre to monitor thrips population. Spray NSKE 5% or Neem oil @ 1 lit/acre to check sucking pests and avoid pink bollworm egg laying in cotton. Install pheromone traps @ 5 traps/ha to monitor pink bollworm moth activity. Collect and destroy the rosette flowers. Spray Flonicamid 50 WG @ 4 g or Buprofezin 25 SC @ 20 ml or Diafenthiuron 50 WP @ 12 g / 10 litre of water if sucking pests crosses ETL.
TELANGANA											
Adilabad	0	0	0	0	0	13	1	9	0	9	At Warangal, the sown crop is 52 to 59 days old at vegetative stage. Post-emergence weedicide application, foliar application of nutrients and inter-cultivation with cattle pair were done. The crop growth is stunted due to continuous dry conditions.Aphid and thrips incidence was noticed above ETL. TSV incidence has started appearing in the fields. At Adilabad, the sown crop is 55 to 62 days old at vegetative stage. Post-emergence herbicide was applied.Insecticide spraying has also been completed. Overall, crop growth is stunted. Sprayed foliar nutrients like 19:19:19/13:0:45/28:28:0 @ 10g/lit to boost crop growth. Second dose of top dressing of Urea + Potash was given. Advisory At Warangal, farmers are recommended to spray 19-19-19 @ 10 g or 2% DAP (20 g/lit) twice at one-week interval to avoid stunted growth. Spray post-emergence herbicides like Quizalofop ethyl 5% EC @ 2 ml/lit of water to control grassy weeds, Pyrithiobac sodium 10 % EC @ 1.25 ml/lit of water for broad leaved weeds or Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 2-2.5 ml /lit of water to control both grassy and broad-leaved weeds. Take up intercultivation for weed control and plant growth. After weed control,
Warangal	0	0	0	0	0	9	11	1	0	1	
Khammam	0	0	0	0	0	20	9	1	3	8	
Karimnagar	0	0	0	6.4	0.3	6	11	3	0	0	
Mahabubnagar	0	0	0	0	0	2	2	0	0	4	

											applyUrea @ 25 kg and MOP @10 kg/acre. If sucking pestincidence noticed above ETL, spray Flonicamid 50 WG @ 80 g/acre or Dinotefuran 20 SG @ 60 g/acre or Thiamethoxam 25 WG @ 40 g/acreor Diafenthiuron 50 WP @ 250g/acre. To prevent Tobacco streak virus, spray these chemicals to control thrips and remove weeds like Parthenium and Abutilon in and around the cotton fields.If parawilt noticed, drench with Copper oxychloride 50 WP@ 25-30 g/10 lit of water and foliar application of 19-19-19 @ 10 g/lit of water twice in one-week intervalto correct yellowing/ reddening of leaves. If any leaf spots noticed, spray Carbendazim 50 % WP@1g or Carbendazim 12%+Mancozeb 63% WP @2.5g /lit of water. At Adilabad, farmers are advised to apply post emergence herbicides, Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 2-2.5 ml /lit of water or Fluaziopof-p-butyl @ 2 ml/lit to control both grassy and broad-leaved weeds. Spray foliar nutrients like19:19:19/13:0:45/28:28:0 @ 10 g/lit + Formula 4 or Formula 6 @ 5 g/lit for proper growth of the crop. Apply second dose of Urea @25 kg + Potash @12 kg/acre. If sucking pest incidence noticed above ETL, spray Flonicamid 50 WG @ 80 g/acre or Dinotefuran 20 SG @ 60 g/acre or Thiamethoxam 25 WG @ 40 g/acre or Diafenthiuron 50 WP @ 250g/acre.
AP											
Guntur	60.7	13	21.5	0.2	0	4	1	0	0	2	At Guntur, part of sowing is still pending due to non-receipt of rains. The sown crop is 0 to 22 days old at germination to 4-6 leaved stage. Intercultural operations arein progress. Sucking pest complex was observed; Jassid and thrips were found above ETL in some isolated fields. At Nandyal, the sown cotton is 17 to 37 days old at vegetative to square formation stage. As there is no rainfall since last ten days coupled with high day temperatures, cotton seedlings were subjected to dry spell due to lack of moisture. Sprayed 13-0-45 @ 3 g /lit of water or Urea@ 20 g/lit of water to cope up dry spell. **Advisory:** At Guntur, farmers are advised to give 2% KNO_3 spray to the crop.Remove weeds like Parthenium and Abutilon in and around the cotton fields. to avoid the early infection of thrips transmitted TSV disease.Monitor the infestation of thrips. At Nandyal, farmers are advised to provide sprinkler irrigation from nearby water source, if available, as there is no rainfall since last 10 days coupled with high day temperatures. Give a spray of 13-0-45 @ 10g /lit of water or Urea@ 20 g/lit of water once in a week to cope up withdry spell.Install pheromone traps @ 2/acre to monitor pink bollworm. Collect and destroy rosette flowers and spray Neem oil 1500 ppm@ 5ml/lit of water between 50-60 days after sowing.To manage root rot disease, drench the affected plants with Carbendazim
Prakasam	0.2	5.3	0	0	0	2	1	0	0	2	

											50 %WP @12 g mixed per 10 lit of water to recover early symptomatic affected plants.Remove weeds like Parthenium and Abutilon in and around the cotton fields. to avoid the early infection of thrips transmitted TSV disease.Monitor the infestation of thrips.
KARNATAKA											
Dharwad	0	0	0	0	0	1	1	1	1	1	At Dharwad, the sown cotton is 32 to 37 days old at initial vegetative stage. Manual weeding and intercultural operations were taken up. Grassy weeds like *Cyanodon dactylon* and the sedge, *Cyperus rotundus,* have dominated the fields. Shoot weevil was noticed. As such, no incidence of pests and diseases. At Raichur, the sown cotton is 27 to 72 days old at different stages of the crop. Most of thefields have received excess rainfall. Due to heavy infestation of weeds, growth of cotton crop was not up to the mark. Top dressing of fertilizers with Urea and Murate of potash, intercultural operations and weeding were taken up in weed infested fields. Thrips and jassid were noticed in some farmer's fields around ETL and sprayed with recommended dose. At Chamarajanagar, the crop is 102 to 107 days old at boll formation to boll development stage. Fertilizer application and intercultural operations were taken up and are in progress. Incidences of aphids (20-30/3 leaves), jassid (3-4/3 leaves) and mirid bug (5-6/25 squares) were recorded. **Advisory:** At Dharwad, farmers are advised to sow Okra for every 20 rows of cotton for shoot weevil pest management. Spray neem-based insecticide @ 5.0 ml/lit of water for 50-60 days crop to manage sucking pests and deter egg laying by pink bollworm.Manually collect the shoot weevil from Okra as a trap crop. At Raichur, farmers are advised to drain out the excess rain water from their fields and take up weeding and intercultural operations on priority basis. In case of wet soil conditions, where manual weeding is not possible, go for application of post emergence herbicides at 25-30 days after sowing like Quizalofop ethyl 5% EC @2 ml/lit of water, if the field is infested predominantly with grassy weeds and Pyrithiobac sodium 10 % EC @ 1.25 ml/lit of water for broad leaved weeds or Pyrithiobac sodium 6% EC + Quizalofop Ethyl 4% EC @ 2-2.5 ml /lit of water to control both grassy and broad-leaved weeds. Give top dressing with Urea and MoP to both early sown and late sown cotton as per the recommended dose. Spray Thiomethaxam 25% WG @ 2 g/10 L (100 g/ha) or Flonicamid 50 WG @ 4 g/10 L
Haveri	0	0	0	0	0	1	0	1	0	0	
Mysore	11.2	0	0	0	0	7	6	0	0	1	

											(200 g/ha) or Dinotefuran 20 SG @ 3g/10 L (150 g/ha) recommended against sucking pests. Drench early parawilt symptomatic affected plants with Carbendazim 50 WP @12 g or Copper oxychloride 50 WP@ 25 to 30 g+ Urea 100 g/10 litresof water. Take up spraying of 1% 19:19:19 (10 grams in 1 lit of water) + 1% $MgSO_4$(10 grams in 1 lit of water) to address the leaf reddening problem At Chamarajanagar, farmers are advised to spray spray Flonicamid 50 WG @ 80 g/acre or Dinotefuran 20 SG @ 60 g/acre or Imidacloprid 17.8 SL @60ml/acre or Thiamethoxam 25 WG @ 40 g/acreif sucking pest incidence observed above ETL. Check for squares and flowers for the infestation of pink bollworm and spray Profenofos 50 EC @ 600 ml/acre or Emamectin benzoate 5 SG @ 100 g/acre or Indoxacarb 14.5 SC/15.8 EC @ 200 ml/acre, if incidence crosses ETL.
TAMIL NADU											
Perambalur	0	0	2	0	6.4	5	3	0	0	3	At Coimbatore and surrounding areas, sowing is in progress. The sown cotton is 22 to 28 days at initial stage. Broad leaved weeds ad *Cyperus* spp. have emerged in the fields. At Srivilliputhur in and around fields, sowing is yet to commence after onset of monsoon rains. Land preparation has been completed. **Advisory:** At Coimbatore, farmers are advisedto provide adequate drainage facility in the cotton field to drain out excess water due to heavy rain.If collar rot incidence is noticed, do spot drenching with Carbendazim 50 WP@12 g/10 litres of water to early affected and surrounding healthy plants. At Srivilliputhur in and around fields, before sowing, farmers are advised to treat the seeds with Carboxin 37.5% + Thiram 37.5% DS @3.5 g per kg of seeds (root rot and bacterial diseases) or Fluxapyroxad (333 g/L FS) @1.5 ml per kg seed or Tetraconazole 11.6% W/W (12.5% w/v) SL @1.5 ml per kg of seeds to manage seed borne diseases (for root rot disease), if not treated. Remove and destroy previous cotton crop stubbles to avoid stem weevil and root rot infestation. Take up bund trimming and bring the field in good tilth condition by using rotavator. Form ridges and furrows at 75 cm and 45 cm spacing for irrigated and rainfed cotton, respectively. Follow crop rotation wherever heavy infestation of stem weevil and bollworm complex are prevalent. Apply neem cake @250 kg/ha during last ploughing to prevent stem weevil infestation.
Salem	0.4	22	0	0	0	14	8	2	1	1	
Trichy						6	3	0	1	0	
Virudhunagar	30.5	28	0	0	0	3	7	3	0	2	

Rainfall (mm) Legend colour

<5	5-20	21-50	51-80	>80

0.0 mm rainfall (no rainfall)
Blank space express data not available.

Source:
www.imdagrimet.gov.in
www.agromet.imd.gov.in

Post-season and pre-sowing package of practices

1. Clean up fields of residual stalks and partially opened bolls from previous crop season. Do not stack the uprooted cotton stalks on field bunds. At the end of crop season, the pink bollworm larvae of last generation enter the hibernation in crop residues like infested bolls, stalks or in soil. Therefore, such infested residues should be promptly destroyed in order to break the life cycle of pink bollworm. Residue destruction will also help to reduce the inoculums and infection of new season's cotton crop by diseases like bacterial leaf blight, root rot and fungal leaf spots.
2. Install at least 10 pheromone traps each at 20 m distance in the premises of market yards and ginning mills to trap post season moths or suicidal emergence if any. Change the lures in pheromone traps timely. Also kill the larvae that come out of damaged seeds. This will help to check the spread of infestation of pink bollworm from ginning or market yard premises to nearby fields.
3. Avoid pre-monsoon sowing of cotton crop. Early sown crop bears the reproductive structures like squares and flowers early. The pink bollworm moths emerging from dormant population of previous season lay eggs on these squares and flowers thus early sown crop supports completion of new season's first generation of pink bollworm. If not controlled timely, next generations of this population further spreads onto the timely sown cotton crop with onset of squares, flowers and bolls.
4. Deep summer ploughing helps to expose and kill the dormant larvae and pupae hidden in the soil due to scorching heat of sun in April-May. Also, the birds following ploughed fields predate on these life stages of insect. This helps in minimising the incidence of insects like pink bollworm, leaf eating caterpillars, and soil borne diseases like wilt, root rot and nematodes on coming season's cotton crop.
5. Crop rotation to be followed in the fields that were heavily infested with pink bollworm during last season to break the life cycle of pink bollworm. Cotton is the only host of pink bollworm, therefore crop rotation helps to break the life cycle of this pest. Crop rotation is very effective in checking the infection of soil borne diseases and nematodes in disease prone fields.
6. Grow sucking pest and disease tolerant, short duration and early maturing varieties/hybrids/cultivars of cotton. This helps in avoiding unwanted spraying of pesticides to control sucking pests and diseases during early crop growth stage. Pink bollworm infestation starts from mid-season and increases steadily towards the late season. Therefore, short duration and early maturing varieties helps to escape pink bollworm infestation in late season.
7. Sowing of cotton crop should be done in the month of June, only after receipt of 80-100 mm of monsoon rainfall. For ensuring proper germination and crop stand, withstand the prolonged dry periods during early seedling stage, there should be optimum soil moisture. This also helps to avoid re-sowing due to prolonged dry spell of rainfall. Timely sowing in June helps to avoid early infestations of pink bollworm.
8. Increased awareness should be created among the cotton farmers regarding implementation of integrated pest management (IPM) strategy for management of pink bollworm. The shopkeepers may also be advised to inform the famers not to adopt pre-monsoon sowing. This will help to spread the right message to farmers more effectively.

The detailed information regarding cotton production technology, e.g. selection of soil, varieties, fertilizer application, sowing methods, irrigation systems, management of weeds, insect pests and diseases, etc. can be availed from an android based **CICR Cotton App** developed by ICAR-CICR, Nagpur. The app can be downloaded free of cost from Google play store. Additionally, the crop growth stage specific and weather based weekly advisory are uploaded on the website of ICAR-CICR also to be consulted for the benefit of farmers