

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4th WEEK OF JUNE, 2023

Whitefly: On overall Punjab basis 2.44% above ETL spots have been observed during current week as compared to 0.96% % in last week and 9.93% during the same corresponding period of last year. And 80.95% below ETL spots have been observed during current week as compared to 76.19% in last week and 87.84% during the same corresponding period of last year. Moreover, above ETL infestation is 7.49 % less than last year 2022.

Tehsil wise percentage of hot spots of whitefly

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SAHIWAL	40.0	12	JARANWALA	6.0
2	CHICHA WATNI	20.8	13	TANDLIANWALA	6.0
3	VEHARI	16.2	14	MIAN CHANNU	5.9
4	BURE WALA	15.0	15	DEPALPUR	5.9
5	SAHIWAL	14.3	16	MANKERA	5.9
6	RENALA KHURD	14.3	17	OKARA	5.0
7	KEHROR PACCA	10.3	18	ARIF WALA	4.8
8	QUAIDABAD	9.1	19	T.T.SINGH	4.1
9	MAILSI	7.3	20	SUMUNDRI	4.0
10	JHANG	6.9	21	HASILPUR	2.8
11	SHORKOT	6.3	22	BAHAWAL PUR	2.0

Jassid: On overall Punjab basis 9.92% above ETL spots have been observed as compared to 8.72% in last week and same week of last year 14.86%. And 82.12% below ETL spots have been observed during current week as compared to 77.40% in last week and 80.29% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SHUJABAD	36.0	30	PAK PATTAN	9.5
2	D.G.KHAN	35.4	31	QUAIDABAD	9.1
3	CHICHA WATNI	29.2	32	KAROR L.E.	8.9
4	YAZMAN	25.6	33	JAM PUR	8.6
5	MUZUFAR GARH	22.5	34	SADIQ ABAD	8.3
6	VEHARI	21.6	35	T.T.SINGH	8.2
7	SAHIWAL	20.0	36	KABIR WALA	7.4
8	BURE WALA	20.0	37	LAYYAH	7.1
9	MULTAN	18.8	38	A.P.EAST	6.5
10	KOT CHUTTA	18.8	39	HAROON ABAD	6.3
11	MIAN CHANNU	17.6	40	MINCHAN ABAD	6.3
12	MAILSI	17.1	41	CHISHTIAN	6.3
13	BAHAWAL PUR	16.3	42	JARANWALA	6.0
14	ALI PUR	14.6	43	TANDLIANWALA	6.0
15	SAHIWAL	14.3	44	SUMUNDRI	6.0
16	RENALA KHURD	14.3	45	DEPALPUR	5.9
17	ARIF WALA	14.3	46	HASILPUR	5.6
18	JATOI	14.0	47	BAHAWAL NAGAR	5.6
19	R.Y.KHAN	12.5	48	TAUNSA	5.0
20	LIAQUAT PUR	12.5	49	DARYA KHAN	5.0
21	RAJAN PUR	12.5	50	JALAL PUR P.W	4.5
22	DUYAPUR	12.1	51	SHORKOT	4.2
23	BHOWANA	11.1	52	JAHANIAN	3.6

24	JHANG	10.3	53	KALLOR KOT	3.3
25	KEHROR PACCA	10.3	54	GOJRA	3.2
26	OKARA	10.0	55	FORT ABBAS	3.1
27	LODHARAN	10.0	56	PIR MAHAL	2.6
28	KHAN PUR	10.0	57	CHOBARA	2.1
29	KOT ADDU	10.0			

Thrips: On overall Punjab basis 3.87% above ETL spots have been observed as compared to 2.92% in last week and same week of last year i.e. 2.31%. And 90.47% below ETL spots have been observed during current week as compared to 87.47% in last week and 92.65% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	D.G.KHAN	20.8	19	MIANWALI	5.1
2	SAHIWAL	20.0	20	BURE WALA	5.0
3	MUZUFAR GARH	17.5	21	KOT ADDU	5.0
4	MIAN CHANNU	14.7	22	TAUNSA	5.0
5	ALI PUR	12.2	23	MAILSI	4.9
6	ROJHAN	10.7	24	CHICHA WATNI	4.2
7	CHISHTIAN	9.4	25	SAHIWAL	3.6
8	RAJAN PUR	8.3	26	JAM PUR	3.4
9	YAZMAN	7.7	27	KALLOR KOT	3.3
10	GOJRA	6.5	28	FORT ABBAS	3.1
11	HAROON ABAD	6.3	29	T.T.SINGH	3.1
12	MINCHAN ABAD	6.3	30	DUYAPUR	3.0
13	CHOBARA	6.3	31	PIR MAHAL	2.6
14	BAHAWAL PUR	6.1	32	R.Y.KHAN	2.5
15	BAHAWAL NAGAR	5.6	33	JATOI	2.3
16	VEHARI	5.4	34	A.P.EAST	2.2
17	KAROR L.E.	5.4	35	KOT CHUTTA	2.1
18	LAYYAH	5.4			

Mealy Bug: On overall Punjab basis 0.09% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.00% in last week and 1.72% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	KOT CHUTTA	2.1	2	ROJHAN	1.8

Mites: On overall Punjab basis 0.04% above ETL spots have been observed during current week as compared to 0.04% in last week and 0.00% during the same corresponding period of last year. And 2.57% below ETL spots have been observed during current week as compared to 1.46% in last week and 0.86% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of mites

S. NO.	TEHSIL	%AGE
1	VEHARI	2.7

Dusky Cotton Bug: On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.04% during the same corresponding period of last year. And 13.05% below ETL spots have been observed during current week as compared to 11.28% in last week and 21.63% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Dusky Cotton Bug

No hot spot find yet.

Aphid: On overall Punjab basis 0.0% above ETL spots has been observed during current week as compared to 0.1% in last week and 0.00% during the same corresponding period of last year. And 2.7% below ETL spots have been observed during current week as compared to 3.4% in last week and 0.6% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Aphid

No hot spot find yet.

Armyworm: On overall Punjab basis 0.04% spots (all considered above ETL) of Armyworm have been observed as compared to 0.18% in last week and 0.39% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of army worm

S. NO.	TEHSIL	%AGE
1	T.T.SINGH	1.0

Pink Boll Worm: On overall Punjab basis 0.35% above ETL spots have been observed as compared to 0.14% in last week and 0.08% same corresponding period of the last year. And 9.00% below ETL spots have been observed as compared to 7.19% in last week and 2.70% during same corresponding period of last year.

Tehsil wise percentage of hot spots of pink boll worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	JATOI	4.7	4	BAHAWAL NAGAR	2.8
2	BAHAWAL PUR	4.1	5	R.Y.KHAN	2.5
3	FORT ABBAS	3.1	6	A.P.EAST	2.2

American Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.04% in last week and 0.04% during same corresponding period of last year. And 0.30% below ETL spots have been observed as compared to 0.39% in last week and 0.35% during same corresponding period of last year.

Tehsil wise percentage of hot spots of American Boll Worm

No hot spot find yet.

Spotted Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.04% below ETL spots have been observed as compared to 0.04% in last week and 0.00% during same corresponding period of last year.

Tehsil wise percentage of hot spots of Spotted Boll Worm

No hot spot find yet.

CLCuV: On overall Punjab basis 0.09% spots (all considered above ETL) of CLCV have been observed as compared to 0.04% in last week and 6.14% during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of CLCuV

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	RAJAN PUR	2.1	2	BAHAWAL PUR	2.0

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2022-2023

Districts	2023				2022			
	Temperature °C		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
MULTAN	40.6	27.4	44.6	0.0	39.6	27.6	64.0	0.0
KHANEWAL	42.6	31.4	44.4	0.0	36.4	25.4	61.3	2.0
VEHARI	41.9	31.3	48.4	0.0	39.7	28.7	59.6	0.0
LODHRAN	42.8	23.5	65.5	0.0	36.0	24.6	68.0	7.0
SAHIWAL	41.8	29.9	45.0	0.0	41.5	27.5	46.0	7.3
PAKPATTAN	41.0	29.0	46.6	0.0	41.4	27.2	48.0	2.6
OKARA	41.5	29.6	45.2	0.0	41.2	27.0	54.0	15.5
Bahawalpur	42.1	30.1	52.4	0.0	34.9	24.1	60.7	28.0
Bahawalnagar	43.8	30.7	44.9	18.5	36.2	25.2	63.1	0.0
R.Y.Khan	41.4	29.9	31.9	Dizzling	38.3	25.5	52.5	0.0
D.G. Khan	44.6	30.0	36.8	0.0	42.1	25.5	30.0	0.0
Muzaffar Garh	39.9	28.7	51.0	0.0	37.2	23.1	70.0	18.0
Rajanpur	42.8	29.8	53.3	0.0	42.5	27.7	47.3	0.0
Layyah	45.0	27.0	30.0	0.0	46.0	23.0	52.0	0.0
TOT/AVG	42.26	29.17	45.71	18.5	39.49	25.86	55.46	80.4

Weather forecast for next 7 day in cotton zone

Division	Dated	3\7	4\7	5\7	6\7	8\7	9\7	10\7
Multan	Max.Temp.	44	43	37	36	36	36	36
	Min.Temp.	33	33	28	29	29	28	28
	Humidity %	29	29	40	45	35	47	45
Sahiwal	Max.Temp.	41	40	34	34	36	32	30
	Min.Temp.	30	32	28	28	27	26	27
	Humidity %	36	36	51	63	49	72	76
Bahawalpur	Max.Temp.	42	43	38	37	38	37	34
	Min.Temp.	32	34	29	30	30	28	27
	Humidity %	27	27	40	43	41	46	56
D.G. Khan	Max.Temp.	45	43	37	37	37	38	39
	Min.Temp.	33	33	29	30	29	27	30
	Humidity %	27	24	42	39	42	40	37
Average Cotton Region	Max.Temp.	37.86						
	Min.Temp.	29.54						
	Humidity %	42.29						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain hot, sunny & shiny.

Forecast of Sucking Pests:

Whitefly: This pest flourishes best in hot dry climate with optimum temperature 35-42 °C with relative humidity below 50%. Maximum lethal temperature for this pest is 45-51 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

Jassid: This pest flourishes best in hot and humid climate with optimum temperature 35-40 °C with relative humidity above 70%. Maximum lethal temperature for this pest is 45-51 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp.

Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

Thrips: This pest flourishes best in hot dry climate with optimum temperature 35-40 °C with relative humidity below 60%. Maximum lethal temperature for this pest is 45-51 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. In view above all, it is predicted that population of this pest will increase during the coming week.

Mealy Bug: This pest flourishes best in moderate climate with optimum temperature 35-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-51 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Keeping in view above all, it is predicted that population of this pest will sustain as such on cotton crop during the coming week.

Mites: This pest flourishes best in dry climate with optimum temperature 28-40 °C with relative humidity above 40-50%. Maximum lethal temperature for this pest is 45 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C

with humidity 42.29. In view above all, it is predicted that population of this pest may sustain during the coming week.

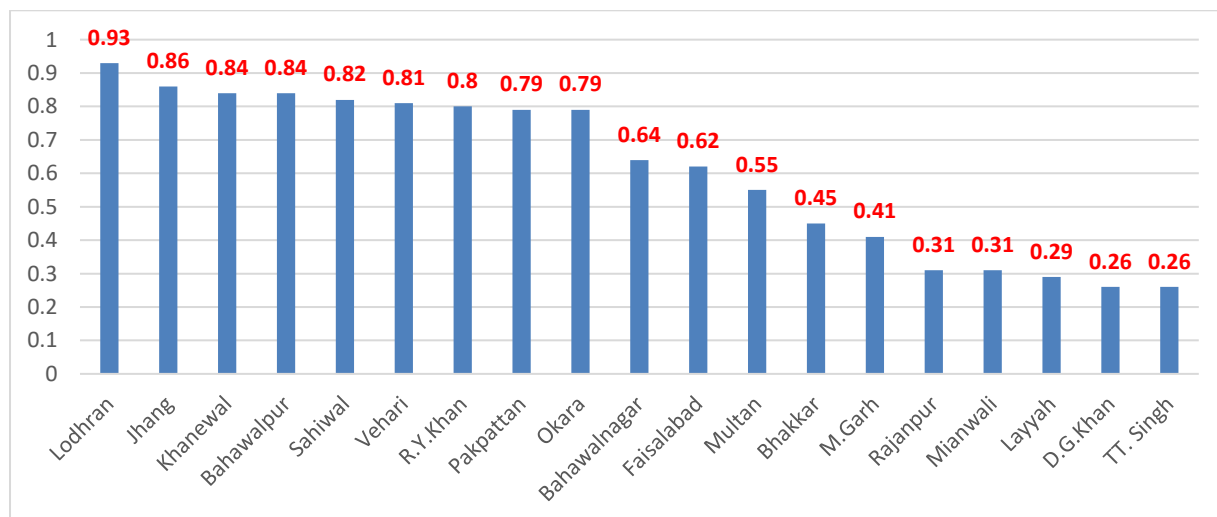
Aphid: This pest flourishes best in moderate climate with optimum temperature 25-35 °C with relative humidity above 60-80%. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Keeping in view above all, it is predicted that population of this pest may sustain during the coming week.

Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. It is predicted that population of this pest will sustain on cotton during the coming week.

Moth Catches in Pheromone Traps during 4rth Week of June, 2023

Moth Catches in Pheromone Traps During 4rth Week of June, 2023			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	23	0.55
Khanewal	8	47	0.84
Vehari	6	34	0.81
Lodhran	6	39	0.93
Sahiwal	4	23	0.82
Pakpattan	4	22	0.79
Okara	4	22	0.79
Bahawalpur	8	47	0.84
Bahawalnagar	10	45	0.64
R.Y.Khan	8	45	0.80
D.G.Khan	6	11	0.26
Rajanpur	6	13	0.31
M.Garh	8	23	0.41
Layyah	6	12	0.29
Bhakkar	8	25	0.45
Mianwali	6	13	0.31
Faisalabad	6	26	0.62
TT. Singh	6	11	0.26
Jhang	4	24	0.86

Note. 3 moth catches on 3 consecutive nights in a trap is considered as ETL



American Bollworm: This pest flourishes best at dry & moderate climate with optimum temperature 32-40 °C with relative humidity above 50-70%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity

42.29. It is predicted that population of this pest will remain sustain on cotton crop during the coming week.

Moth catches on light traps during 4rth week of June, 2023

Moth Catches on Light Traps/Trap/night During 4rth Week of June, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0.4	0.0	2.7
Khanewal	4	1.9	0.0	6.3
Vehari	3	0.0	0.0	0.4
Lodhran	3	2.4	0.0	2.6
Sahiwal	2	5.0	0.0	13.0
Pakpattan	2	3.0	0.0	13.0
Okara	3	5.0	0.0	17.0
Bahawalpur	4	0.2	0.1	0.4
Bahawalnagar	5	0.1	0.2	0.3
R.Y.Khan	4	0.2	0.2	0.2
D.G.Khan	3	0.4	0.0	0.2
M.Garh	4	0.0	0.0	0.4
Rajan Pur	3	0.1	0.1	0.3
Layyah	3	0.0	0	0.6
Note. 3 moth catches of a pest on 3 consecutive nights in a trap is considered as ETL				

Spotted Bollworm: This pest flourishes best at mild & humid climate with optimum temperature 30-40 °C with relative humidity above 60-100%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C with humidity 42.29. Due to cultivation of more BT varieties, it is predicted that population of this pest will remain as such on cotton crop in the coming week.

Armyworm: This pest flourishes best in mild & humid climate with optimum temperature 30-40 °C with relative humidity below 70-100%. The current weather conditions on overall Punjab basis (temp. Max. 42.26 °C, Min. 29.17 °C with R. humidity 45.71%) & forecast for the next week temp. Max. 37.86 °C, Min. 29.54°C

with humidity 42.29. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

CLCuV: The incidence of this disease is expected to sustain as such on cotton crop during the next week.

RECOMMENDATIONS

WHITEFLY MANAGEMENT

1. Conduct regular pest scouting of Whitefly.
2. Control the pest without delay when population reaches ETL i.e. nymphs or adults or both 5 per leaf.
3. Control weeds in and outside the field especially near water channels and fallow lands.

Alternate host plants of whitefly

Crops	Vegetables	Orchards	Weeds/ Ornamentals	Trees
Sunflower	Okra	Citrus	Gardenia	Shisham
Tobacco	Brinjal	Litchi	Mako	Shareen
	Cucurbits	Pomegranate	Maina	
	Tomato	Ber (<i>Zizyphus</i>)	Karund	
	Cabbage	Guava	Lehli	
	Cauliflower	Mulberry		
	Peas	Papaya		
	Potato			
	Onion			
	Spinach			

JASSID MANAGEMENT

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.

3. Use *Chrysoperla* Cards @ 80-90 cards per acre having 20-25 eggs on each card which are available at AARI Faisalabad, Sahiwal, Okara and Vehari.
(Repeat this process after every two weeks).

THRIPS MANAGEMENT

1. Conduct Pest Scouting regularly at least twice a week.
2. Avoid intercropping of cotton crop with vegetables.
3. Control weeds in and outside the field.

MEALY BUG MANAGEMENT

1. Visit the fields daily to detect the infestation for effective management of mealy bug well in time.
2. Keep field and water courses etc. free from weeds especially Itsit & Hazaardani, kangi booti, aksin etc.
3. To avoid its shifting from one place to another, keep the horticultural nurseries free from its infestation. Spray such infested nurseries before shifting the plants.
4. Avoid water stress to the plants.
5. Avoid repeated visits of workers from infested fields to healthy fields.
6. Apply the localized chemical spray on infected along with its 2 meter surrounding area.

Alternate host plants of cotton mealy bug

Crops	Vegetables	Ornamentals	Weeds	Orchards
Sunflower	Okra	China Rose	Hazar Dani	Citrus
Tobacco	Brinjal	Huddle	Amarantus	Mulberry
Jantar	Tomato	Cotton Rose	Bhakra	Ficus
Sesame	Chillies	Gulchain	Mako	Ber
	Pumpkin	Lantana	Sueda	
		Din Ka Raja	Itsit	
		Rat Ki Rani	Karund	

		Anthorium	Aksen	
		Gul-e-Daudi	Bathu	
		Gainda	Puth Kanda	
			Kanghi	

MANAGEMENT OF DUSKY COTTON BUG

1. Keep the special observation/ pest scouting when the boll opening starts.
2. Use of soft contact poison on the above ETL.

MANAGEMENT OF ARMY WORM

1. Keep the fields clean from weeds especially Its it which is a preferred host of armyworm.
2. Observe the field on regular basis and under close observation to assess its attack and treat the patch at earliest if necessary.
3. Avoid sowing of Jantar near cotton fields.
4. Regular pest scouting at least twice a week.
5. Hand picking and destruction of egg masses at initial stage as initially its attack starts in patches and is clearly visible.

CLCuV MANAGEMENT

1. Use CLCuV tolerant varieties for sowing.
2. Keep Cotton fields free from all kinds of weeds.
3. Eradicate other alternate host plants of CLCuV and dispose them off carefully.
4. Thinning out and destruction of Virus affected plants.
5. Remove CLCuV affected plants in less than 60 DAS (Days after sowing) crop.
6. Hoeing after each irrigation or rain at watar condition till canopies permit.

7. Apply post emergence Glyphosate for both broad and narrow leaved weeds and Glyphosate for grassy weeds with shield and use Flat Fan Nozzle, if needed.
8. Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
9. Balanced use of Fertilizer i.e. N.P.K. along with foliar growth promoters if necessary.
10. Keep transmission vector (whitefly) at the low ebb

Alternate host plants of CLCuV vector (whitefly)

Crops	Vegetables	Ornamentals	Weeds
Sunflower	Okra	Gurhal	Leh
Melon	Brinjal	Chambeli	Lehli
Tobacco	Chillies		Mako
	Tomato		Maina
	Potato		Karund/Bathu
	Cucumber		Gardenia
			Hazardani
			Rattanjot
			Sun Kukra

Economic threshold levels of cotton pests

Insect pests	Economic threshold levels
Jassid	1 Adult or Nymph per leaf
Whitefly	5 Adults or Nymphs or both per Leaf
Thrips	8-10 Adults or Nymphs per Leaf
Mealy bug	0 (on appearance)
Mites	On damage appearance
Spotted Boll worm	3 Larvae/ 25 plants.
Pink Boll worm	5 Larvae /100 bolls.
American boll worm	5 brown eggs or 3 small larvae or both 5 per 25 plants on non Bt varieties. 2 larvae of 2 nd instar per 25 plants on Bt varieties.
Army worm	0 (On appearance)
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud

