

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 1ST WEEK OF JULY, 2023

Whitefly: On overall Punjab basis 4.74% above ETL spots have been observed during current week as compared to 2.44% % in last week and 23.37% during the same corresponding period of last year. And 89.53% below ETL spots have been observed during current week as compared to 80.95% in last week and 75.54% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of whitefly

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	CHICHA WATNI	47.9	18	ALI PUR	4.6
2	VEHARI	24.0	19	KHANEWAL	4.5
3	BURE WALA	23.3	20	DEPALPUR	4.3
4	SAHIWAL	21.4	21	BAHAWAL PUR	4.1
5	MAILSI	20.5	22	KEHROR PACCA	4.0
6	PAK PATTAN	20.0	23	JARANWALA	3.5
7	ARIF WALA	20.0	24	TANDLIANWALA	3.5
8	MIAN CHANNU	17.3	25	JAM PUR	3.1
9	PIR MAHAL	14.6	26	JALAL PUR P.W	2.5
10	T.T.SINGH	11.5	27	MUZUFAR GARH	2.5
11	KABIR WALA	11.4	28	FAISALABAD	2.3
12	BHAKKAR	10.7	29	CHISHTIAN	1.8
13	RENALA KHURD	10.0	30	MIANWALI	1.8
14	SUMUNDRI	7.7	31	LIAQUAT PUR	1.5
15	OKARA	6.3	32	JATOI	1.4
16	HASILPUR	6.0	33	LAYYAH	1.3
17	KALLOR KOT	5.3			

Jassid: On overall Punjab basis 14.07% above ETL spots have been observed as compared to 9.92% in last week and same week of last year 17.21% and 83.21% below ETL spots have been observed during current week as compared to 82.12% in last week and 80.87% 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	SAHIWAL	75.0	32	MIAN CHANNU	13.5
2	DUYAPUR	46.7	33	KOT CHUTTA	13.0
3	BAHAWAL PUR	33.8	34	JATOI	12.7
4	SHUJABAD	31.4	35	CHICHA WATNI	12.5
5	JALAL PUR P.W	30.0	36	PIR MAHAL	12.5
6	MAILSI	29.5	37	BAHAWAL NAGAR	12.5
7	MULTAN	27.3	38	FORT ABBAS	12.5
8	YAZMAN	25.0	39	CHOBARA	10.7
9	ARIF WALA	24.0	40	RENALA KHURD	10.0
10	KEHROR PACCA	24.0	41	JAHANIAN	10.0
11	CHISHTIAN	23.2	42	SUMUNDRI	9.2
12	PAK PATTAN	20.0	43	MINCHAN ABAD	8.6
13	CHUNIAN	20.0	44	JARANWALA	8.1
14	KAROR L.E.	19.6	45	TANDLIANWALA	8.1
15	LIAQUAT PUR	19.1	46	JAM PUR	7.7
16	BURE WALA	18.6	47	MUZUFAR GARH	7.5
17	ALI PUR	18.5	48	BHAKKAR	7.1
18	HASILPUR	18.0	49	FAISALABAD	7.0
19	SAHIWAL	16.7	50	T.T.SINGH	6.4
20	A.P.EAST	16.4	51	RAJAN PUR	6.3

21	LODHRAN	16.3	52	JHANG	6.3
22	D.G.KHAN	16.1	53	DARYA KHAN	5.6
23	KHAN PUR	15.7	54	KALLOR KOT	5.3
24	OKARA	15.6	55	MIANWALI	5.3
25	R.Y.KHAN	15.6	56	HAROON ABAD	5.0
26	SADIQ ABAD	14.8	57	KOT ADDU	5.0
27	VEHARI	14.0	58	DEPALPUR	4.3
28	A.P.SIAL	13.9	59	GOJRA	3.8
29	LAYYAH	13.8	60	SHORKOT	3.1
30	KABIR WALA	13.6	61	TAUNSA	1.6
31	KHANEWAL	13.6			

Thrips: On overall Punjab basis 4.35% above ETL spots have been observed as compared to 3.87% in last week and same week of last year i.e. 4.28%. And 92.90% below ETL spots have been observed during current week as compared to 90.47% in last week and 93.61% 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	FORT ABBAS	16.1	24	ROJHAN	4.4
2	DUYAPUR	15.6	25	JATOI	4.2
3	CHISHTIAN	12.5	26	KEHROR PACCA	4.0
4	KAROR L.E.	12.5	27	HASILPUR	4.0
5	PIPLAN	12.5	28	KOT CHUTTA	3.9
6	ALI PUR	10.8	29	T.T.SINGH	3.8
7	YAZMAN	9.4	30	MUZUFAR GARH	3.8
8	MIANWALI	8.8	31	BHAKKAR	3.6
9	R.Y.KHAN	7.8	32	D.G.KHAN	3.2
10	MIAN CHANNU	7.7	33	BAHAWAL NAGAR	3.1
11	JAM PUR	7.7	34	LIAQUAT PUR	2.9
12	GOJRA	7.7	35	KHAN PUR	2.9
13	LAYYAH	7.5	36	A.P.SIAL	2.8
14	BAHAWAL PUR	6.8	37	JAHANIAN	2.5
15	RAJAN PUR	6.3	38	SAHIWAL	2.4
16	SHORKOT	6.3	39	BURE WALA	2.3
17	MINCHAN ABAD	5.7	40	KABIR WALA	2.3
18	CHOBARA	5.4	41	CHICHA WATNI	2.1
19	KALLOR KOT	5.3	42	VEHARI	2.0
20	HAROON ABAD	5.0	43	SHUJABAD	2.0
21	SADIQ ABAD	4.9	44	A.P.EAST	1.6
22	MAILSI	4.5	45	TAUNSA	1.6
23	KHANEWAL	4.5	46	KOT ADDU	1.3

Mealy Bug: On overall Punjab basis 0.23% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.09% in last week and 3.01% 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	DUYAPUR	2.2	5	ALI PUR	1.5
2	VEHARI	2.0	6	KHAN PUR	1.4
3	MIANWALI	1.8	7	LAYYAH	1.3
4	SADIQ ABAD	1.6			

Mites: On overall Punjab basis 0.00% above ETL spots has 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 2.19% below ETL spots have been observed during current week as compared to 2.57% in last week and 0.34% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of mites

No hot spot find yet.

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 13.22% below ETL spots have been observed during current week as compared to 13.05% in last week and 19.02% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Dusky Cotton Bug

No hot spot find yet.

Armyworm: On overall Punjab basis 0.03% spots (all considered above ETL) of Armyworm have been observed as compared to 0.04% in last week and 0.79% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of army worm

S. NO.	TEHSIL	%AGE
1	MAILSI	2.3

Pink Boll Worm: On overall Punjab basis 0.43% above ETL spots have been observed as compared to 0.35% in last week and 0.04% same corresponding period of the last year. And 8.34% below ETL spots have been observed as compared to 9.00% in last week and 2.71% 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	CHISHTIAN	5.4	6	SADIQ ABAD	1.6
2	YAZMAN	3.1	7	R.Y.KHAN	1.6
3	BAHAWAL NAGAR	3.1	8	ALI PUR	1.5
4	BAHAWAL PUR	2.7	9	LIAQUAT PUR	1.5
5	FORT ABBAS	1.8			

American Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.04% during same corresponding period of last year. And 0.36% below ETL spots have been observed as compared to 0.30% in last week and 0.26% 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 0.08% during same corresponding period of last year & 0.10% below ETL spots have been observed as compared to 0.04% in last week and 0.04% 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 0.07% spots (all considered above ETL) of CLCV have been observed as compared to 0.09% in last week and 15.48% 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	KHAN PUR	1.4	2	JATOI	1.4

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	39.4	30.3	60.8	0.0	38.7	29.9	61.6	0.0
Khanewal	40.3	28.4	56.7	0.0	39.4	31.0	60.7	0.0
Vehari	39.0	30.3	52.6	0.6	39.0	31.3	58.9	0.4
Lodhran	40.3	25.0	64.9	0.3	37.5	28.7	72.1	3.7
Sahiwal	39.2	28.5	45.6	2.0	41.5	28.2	37.0	0.0
Pakpattan	39.0	29.1	45.3	5.0	42.7	28.0	36.0	0.0
Okara	38.5	28.8	46.0	3.0	41.6	29.2	37.2	0.0
Bahawalpur	40.5	28.7	59.5	12.0	41.3	29.3	55.1	1.4
Bahawalnagar	40.4	29.2	57.3	0.3	39.2	28.0	54.4	3.9
R.Y.Khan	39.9	29.9	38.5	0.0	38.3	28.5	42.8	0.0
D.G. Khan	40.2	34.8	36.6	0.0	42.1	25.5	30.0	0.0
Muzaffar Garh	39.8	27.9	57.0	2.0	39.6	25.4	63.0	0.0
Rajanpur	42.3	30.2	57.6	3.0	41.6	29.9	57.0	17.0
Layyah	41.2	29.8	56.2	5.0	42.3	30.2	58.0	15.0
TOT/AVG	39.99	29.34	52.47	33.2	40.33	28.78	51.70	41.4

Weather forecast for next 7 day in cotton zone

Division	Dated	10/7	11/7	12/7	13/7	14/7	15/7	16/7
Multan	Max.Temp.	38	41	44	42	44	39	36
	Min.Temp.	28	30	31	32	33	31	29
	Humidity %	40	31	29	31	28	24	41
Sahiwal	Max.Temp.	35	38	41	39	39	35	34
	Min.Temp.	26	28	29	29	30	28	28
	Humidity %	50	43	38	42	41	33	49
Bahawalpur	Max.Temp.	38	41	42	41	41	38	35
	Min.Temp.	28	30	31	32	33	30	28
	Humidity %	40	34	31	33	33	28	81
D.G. Khan	Max.Temp.	39	42	43	43	44	39	37
	Min.Temp.	29	30	32	34	34	31	29
	Humidity %	37	28	28	28	27	27	34
Average Cotton Region	Max.Temp.	39.57						
	Min.Temp.	30.11						
	Humidity %	36.04						

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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04. 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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp.

Max. 39.57 °C, Min. 30.11°C with humidity 36.04. 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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04.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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04.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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04.Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

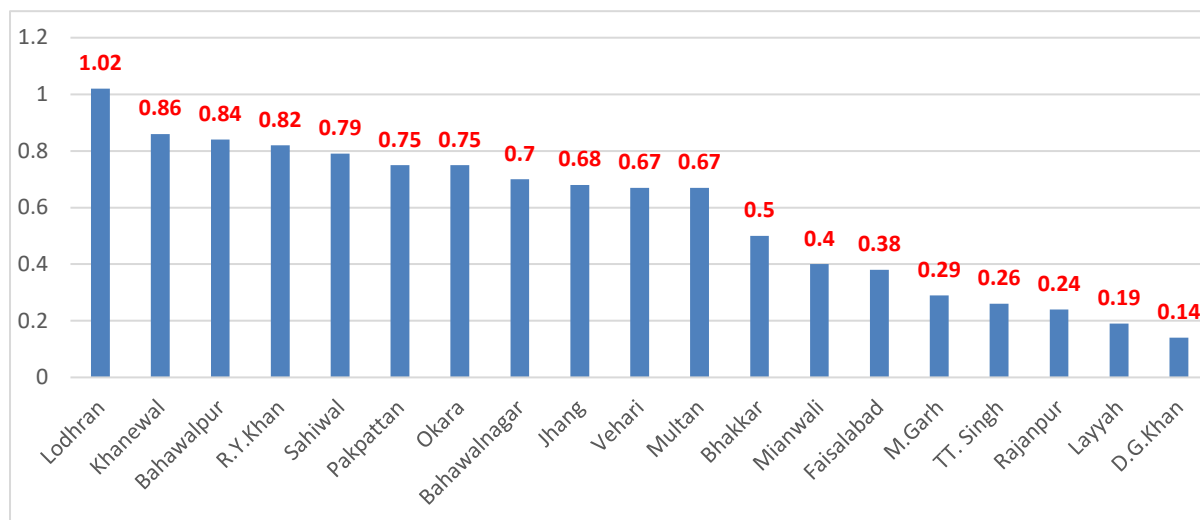
Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C

with humidity 36.04. 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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04. It is predicted that population of this pest will increase on cotton during the coming week.

Moth Catches in Pheromone Traps during 1st Week of July, 2023

Moth Catches in Pheromone Traps During 1st Week of July, 2023			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	28	0.67
Khanewal	8	48	0.86
Vehari	6	28	0.67
Lodhran	6	43	1.02
Sahiwal	4	22	0.79
Pakpattan	4	21	0.75
Okara	4	21	0.75
Bahawalpur	8	47	0.84
Bahawalnagar	10	49	0.70
R.Y.Khan	8	46	0.82
D.G.Khan	6	6	0.14
Rajanpur	6	10	0.24
M.Garh	8	16	0.29
Layyah	6	8	0.19
Bhakkar	8	28	0.50
Mianwali	6	17	0.40
Faisalabad	6	16	0.38
TT. Singh	6	11	0.26
Jhang	4	19	0.68
<i>Note. 3 moth catches on 3 consecutive nights in a trap is considered as ETL</i>			



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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04. It is predicted that population of this pest will remain sustain on cotton crop during the coming week.

Moth catches on light traps during 1st week of July, 2023

Moth Catches on Light Traps/Trap/night During 1st Week of July, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0.4	0.0	0.6
Khanewal	4	1.9	0.0	6.0
Vehari	3	0.0	0.0	0.6
Lodhran	3	2.4	0.0	3.1
Sahiwal	2	5.0	0.0	1.6
Pakpattan	2	3.0	0.0	1.6
Okara	3	5.0	0.0	2.0
Bahawalpur	4	0.2	0.6	1.3
Bahawalnagar	5	0.1	0.9	2.1
R.Y.Khan	4	0.2	0.4	0.9
D.G.Khan	3	0.4	0.0	0.6
M.Garh	4	0.0	0.0	1.1
Rajan Pur	3	0.1	0.4	1.3
Layyah	3	0.0	0.0	0.7

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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04. 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. 39.99 °C, Min. 29.34 °C with R. humidity 52.47%) & forecast for the next week temp. Max. 39.57 °C, Min. 30.11°C with humidity 36.04. 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, kangji 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 wattar 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