

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

Whitefly: On overall Punjab basis 17.26% above ETL spots have been observed during current week as compared to 20.03% in last week and 10.30% during the same corresponding period of last year. And 80.37% below ETL spots have been observed during current week as compared to 78.71% in last week and 87.69% 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	BAHAWAL PUR	72.1	26	MAILSI	17.3
2	SADIQ ABAD	47.8	27	BURE WALA	15.4
3	A.P.EAST	46.3	28	VEHARI	15.1
4	LIAQUAT PUR	46.2	29	D.G.KHAN	15.0
5	R.Y.KHAN	45.8	30	JAM PUR	14.1
6	KHAN PUR	44.8	31	CHOBARA	13.5
7	HASILPUR	42.0	32	KAROR L.E.	12.5
8	QASUR	40.0	33	LAYYAH	12.0
9	YAZMAN	32.3	34	KHUSHAB	10.0
10	SHUJABAD	30.9	35	BHAKKAR	10.0
11	CHISHTIAN	29.5	36	DUYAPUR	9.2
12	LODHRAN	29.2	37	MIANWALI	9.2
13	JALAL PUR P.W	26.6	38	DARYA KHAN	9.1
14	HAROON ABAD	25.0	39	PIPLAN	8.0
15	TAUNSA	25.0	40	ROJHAN	8.0
16	FORT ABBAS	24.4	41	JAHANIAN	7.9
17	BAHAWAL NAGAR	24.0	42	RAJAN PUR	7.9
18	KOT CHUTTA	22.6	43	KALLOR KOT	7.7
19	ALI PUR	21.4	44	KHANEWAL	7.4
20	JATOI	20.7	45	KABIR WALA	7.0
21	MULTAN	20.0	46	MIAN CHANNU	4.9
22	MINCHAN ABAD	20.0	47	ISA KHEL	4.8
23	KEHROR PACCA	18.9	48	PAK PATTAN	4.5
24	MUZUFAR GARH	18.2	49	MANKERA	4.0
25	KOT ADDU	17.9	50	CHICHA WATNI	2.4

Jassid: On overall Punjab basis 1.51% above ETL spots have been observed as compared to 1.84% in last week and same week of last year 6.44% and 95.59% below ETL spots have been observed during current week as compared to 96.03% in last week and 88.05% 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	QASUR	40.0	25	QUIDABAD	4.3
2	PATOKI	33.3	26	VEHARI	4.3
3	CHUNIAN	25.0	27	T.T.SINGH	4.1
4	KOT RADHA KISHAN	25.0	28	HAROON ABAD	3.9
5	SAHIWAL	22.2	29	ARIF WALA	3.8
6	DEPALPUR	11.1	30	MIAN CHANNU	3.7
7	KHUSHAB	10.0	31	CHICHA WATNI	3.6
8	OKARA	8.3	32	KABIR WALA	3.5
9	HASILPUR	8.0	33	MIANWALI	3.1
10	RENALA KHURD	7.1	34	KEHROR PACCA	2.7
11	FORT ABBAS	6.4	35	TANDLIANWALA	2.2
12	SAHIWAL	5.3	36	BURE WALA	1.5

13	CHISHTIAN	5.1	37	MAILSI	1.3
14	BHAKKAR	5.0	38	KHANEWAL	1.2
15	DARYA KHAN	4.5	39	SUMUNDRI	1.2
16	PAK PATTAN	4.5	40	SHUJABAD	1.1

Thrips: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and same week of last year i.e. 0.00%. And 80.26% below ETL spots have been observed during current week as compared to 85.89% in last week and 71.56% during the same corresponding period of last year.

Mealy Bug: On overall Punjab basis 14.66% spots (all considered above ETL) of Mealy Bug have been observed as compared to 14.16% in last week and 8.93% 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	BAHAWAL PUR	54.7	29	KAROR L.E.	13.3
2	KHAN PUR	38.5	30	JATOI	12.1
3	A.P.EAST	36.6	31	MUZUFAR GARH	11.4
4	R.Y.KHAN	36.5	32	DEPALPUR	11.1
5	SADIQ ABAD	34.4	33	JAM PUR	10.9
6	BAHAWAL NAGAR	30.0	34	DUYAPUR	10.8
7	LIAQUAT PUR	29.5	35	KABIR WALA	10.5
8	D.G.KHAN	28.3	36	MINCHAN ABAD	10.0
9	KOT CHUTTA	28.3	37	KHANEWAL	9.9
10	HASILPUR	28.0	38	BURE WALA	9.2
11	CHISHTIAN	25.6	39	MIANWALI	7.7
12	ROJHAN	25.0	40	KOT ADDU	7.1
13	FORT ABBAS	24.4	41	CHICHA WATNI	4.8
14	HAROON ABAD	23.7	42	PAK PATTAN	4.5
15	TAUNSA	23.3	43	QUIDABAD	4.3
16	SAHIWAL	22.2	44	OKARA	4.2
17	SHUJABAD	21.3	45	KEHROR PACCA	4.1
18	MULTAN	21.3	46	PIPLAN	4.0
19	RAJAN PUR	21.1	47	ARIF WALA	3.8
20	YAZMAN	19.4	48	RENALA KHURD	3.6
21	VEHARI	18.3	49	T.T.SINGH	2.7
22	MAILSI	17.3	50	BHAKKAR	2.5
23	CHOBARA	16.7	51	SAHIWAL	2.3
24	LODHRAN	16.0	52	TANDLIANWALA	2.2
25	JALAL PUR P.W	16.0	53	JHANG	1.8
26	ALI PUR	15.0	54	JAHANIAN	1.6
27	LAYYAH	14.6	55	A.P SIAL	1.4
28	MIAN CHANNU	13.4	56	SUMUNDRI	1.2

Mites: On overall Punjab basis 0.02% above ETL spots has been observed during current week as compared to 0.02% in last week and 0.00% during the same corresponding period of last year. And 3.16% below ETL spots have been observed during current week as compared to 4.60% in last week and 2.33% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Mite

S. NO.	TEHSIL	%AGE
1	CHOBARA	1.0

Dusky Cotton Bug: On overall Punjab basis 3.39% above ETL spots have been observed during current week as compared to 2.16% in last week and 7.96% during the same corresponding period of last year. And 61.18% below ETL spots have been observed during current week as compared to 57.48% in last week and 62.95% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of dusky cotton bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	BAHAWAL PUR	58.1	15	VEHARI	3.2
2	HASILPUR	26.0	16	KHAN PUR	2.1
3	A.P.EAST	19.5	17	KALLOR KOT	1.9
4	FORT ABBAS	15.4	18	MINCHAN ABAD	1.7
5	HAROON ABAD	13.2	19	BURE WALA	1.5
6	MULTAN	10.0	20	MIANWALI	1.5
7	SHUJABAD	9.6	21	T.T.SINGH	1.4
8	JALAL PUR P.W	8.5	22	MAILSI	1.3
9	LODHRAN	6.6	23	LIAQUAT PUR	1.3
10	CHISHTIAN	5.1	24	MIAN CHANNU	1.2
11	YAZMAN	4.8	25	KABIR WALA	1.2
12	ISA KHEL	4.8	26	SADIQ ABAD	1.1
13	QUIDABAD	4.3	27	R.Y.KHAN	1.0
14	MANKERA	4.0	28	SAHIWAL	0.8

Armyworm: On overall Punjab basis 0.66% spots (all considered above ETL) of Armyworm have been observed as compared to 0.73% in last week and 2.57% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of army worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	BAHAWAL PUR	17.4	5	A.P.EAST	2.4
2	HASILPUR	6.0	6	D.G.KHAN	1.7
3	R.Y.KHAN	5.2	7	YAZMAN	1.6
4	LIAQUAT PUR	3.8	8	KHANEWAL	1.2

Pink Boll Worm: On overall Punjab basis 13.42% above ETL spots have been observed as compared to 10.39% in last week and 20.72% same corresponding period of the last year. And 44.27% below ETL spots have been observed as compared to 40.55% in last week and 37.33% 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	BAHAWAL PUR	50.0	28	LODHRAN	14.2
2	HASILPUR	38.0	29	MULTAN	13.8
3	A.P.EAST	36.6	30	KHANEWAL	13.6
4	FORT ABBAS	24.4	31	TAUNSA	13.3
5	KHAN PUR	24.0	32	KAROR L.E.	11.7188
6	HAROON ABAD	23.7	33	CHOBARA	11.5
7	LIAQUAT PUR	23.1	34	QUIDABAD	10.0
8	BAHAWAL NAGAR	22.0	35	KHUSHAB	10.0
9	R.Y.KHAN	21.9	36	JAHANIAN	9.5
10	SADIQ ABAD	21.1	37	LAYYAH	9.5

11	KOT CHUTTA	20.8	38	ROJHAN	8.0
12	VEHARI	20.4	39	SAHIWAL	7.5
13	SHUJABAD	20.2	40	MIAN CHANNU	7.3
14	YAZMAN	19.4	41	KEHROR PACCA	6.8
15	ALI PUR	19.3	42	CHICHA WATNI	6.0
16	CHISHTIAN	19.2	43	ISA KHEL	4.8
17	JALAL PUR P.W	19.1	44	MIANWALI	4.6
18	MUZUFAR GARH	18.9	45	DARYA KHAN	4.5
19	KOT ADDU	18.6	46	OKARA	4.2
20	D.G.KHAN	18.3	47	PIPLAN	4.0
21	BURE WALA	16.9	48	ARIF WALA	3.8
22	MINCHAN ABAD	16.7	49	KABIR WALA	2.3
23	JATOI	16.4	50	PAK PATTAN	2.3
24	MAILSI	16.0	51	KALLOR KOT	1.9
25	JAM PUR	15.6	52	PIR MAHAL	1.7
26	DUYAPUR	15.4	53	T.T.SINGH	1.4
27	RAJAN PUR	14.5	54	TANDLIANWALA	1.1

American Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year. And 0.40% below ETL spots have been observed as compared to 0.37% in last week and 1.09% during same corresponding period of last year.

Spotted Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.12% during same corresponding period of last year & 0.25% below ETL spots have been observed as compared to 0.15% in last week and 0.56% during same corresponding period of last year.

CLCuV: On overall Punjab basis 4.03% spots (all considered above ETL) of CLCV have been observed as compared to 4.05% in last week and 29.00% 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	KOT CHUTTA	22.6	17	KEHROR PACCA	5.4
2	D.G.KHAN	20.0	18	MUZUFAR GARH	5.3
3	VEHARI	19.4	19	KOT ADDU	5.0
4	TAUNSA	16.7	20	BHAKKAR	5.0
5	MAILSI	16.0	21	PIPLAN	4.0
6	KABIR WALA	15.1	22	MANKERA	4.0
7	JATOI	14.3	23	MULTAN	2.5
8	BURE WALA	12.3	24	BAHAWAL PUR	2.3
9	MIAN CHANNU	12.2	25	SADIQ ABAD	2.2
10	SAHIWAL	11.1	26	CHOBARA	2.1
11	KHUSHAB	10.0	27	LODHRAN	1.9
12	R.Y.KHAN	9.4	28	JAHANIAN	1.6
13	KHANEWAL	8.6	29	KAROR L.E.	1.6
14	ALI PUR	8.6	30	KHAN PUR	1.0
15	MIANWALI	7.7	31	LAYYAH	0.6
16	KALLOR KOT	5.8			

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	36.8	25.2	63.0	0.0	36.6	24.4	60.2	0.0
Khanewal	36.4	25.1	61.9	0.0	36.9	25.3	59.9	0.0
Vehari	36.3	26.4	62.9	0.0	34.9	26.9	65.6	0.0
Lodhran	36.6	26.0	64.0	0.0	36.3	23.1	70.5	0.0
Sahiwal	34.8	24.0	75.6	8.5	33.8	23.2	76.5	6.0
Pakpattan	35.1	24.7	74.0	0.0	33.5	23.8	76.1	0.0
Okara	34.1	23.3	76.3	25.6	33.6	23.5	76.6	11.5
Bahawalpur	37.7	26.5	63.6	0.0	37.7	25.2	61.3	0.0
Bahawalnagar	36.1	25.0	68.3	0.0	37.3	24.7	69.5	0.0
R.Y.Khan	38.3	25.5	67.1	0.0	37.5	23.5	59.4	0.0
D.G. Khan	36.1	26.4	62.6	0.0	37.4	26.7	69.6	0.0
M. Garh	37.5	26.6	1.0	0.0	34.2	24.5	60.5	0.0
Rajanpur	38.3	28.0	59.1	4.0	38.2	27.3	55.0	5.0
Layyah	38.6	18.0	50.0	0.0	36.0	24.0	80.0	24.7
TOT/AVG	36.62	25.06	60.66	38.1	35.98	24.72	67.19	47.2

Weather forecast for next 7 day in cotton zone

Division	Dated	2/10	3/10	4/10	5/10	6/10	7/10	8/10
Multan	Max.Temp.	37	38	38	38	39	39	40
	Min.Temp.	21	20	20	20	20	22	25
	Humidity %	13	12	12	12	21	17	16
Sahiwal	Max.Temp.	37	38	38	38	39	39	39
	Min.Temp.	20	19	19	18	18	21	24
	Humidity %	18	14	11	14	21	21	128
Bahawalpur	Max.Temp.	38	38	38	38	38	40	42
	Min.Temp.	19	20	19	18	23	24	26
	Humidity %	15	12	12	19	26	26	11
D.G. Khan	Max.Temp.	37	38	38	38	39	40	42
	Min.Temp.	17	19	20	20	20	21	22
	Humidity %	13	12	12	13	15	15	10
Average Cotton Region	Max.Temp.	38.61						
	Min.Temp.	20.54						
	Humidity %	77.29						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain partly cloudy, 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. Keeping in view above all, it is predicted that population of this pest will sustain 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. Keeping in view above all, it is predicted that population of this pest will sustain 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. In view above all, it is predicted that population of this pest will sustain 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. Keeping in view above all, it is

predicted that population of this pest will increase 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

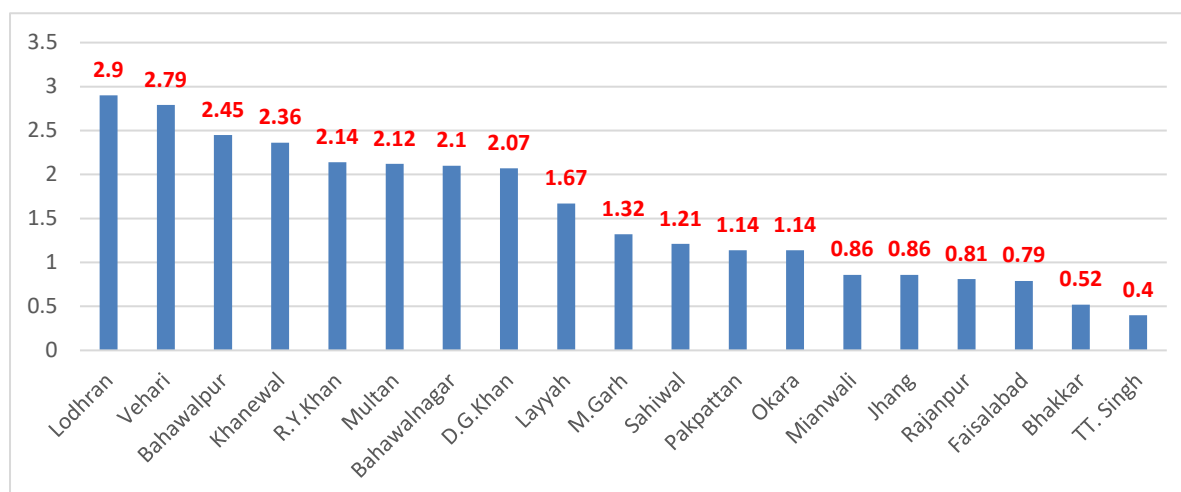
Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. 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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%. It is predicted that population of this pest will sustain on cotton during the coming week.

Moth Catches in Pheromone Traps during 4th Week of September, 2023

Moth Catches in Pheromone Traps During 4th Week of September, 2023			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	89	2.12
Khanewal	8	132	2.36
Vehari	6	117	2.79
Lodhran	6	122	2.90
Sahiwal	4	34	1.21
Pakpattan	4	32	1.14
Okara	4	32	1.14
Bahawalpur	8	137	2.45
Bahawalnagar	10	147	2.10
R.Y.Khan	8	120	2.14
D.G.Khan	6	87	2.07
Rajanpur	6	34	0.81
M.Garh	8	74	1.32
Layyah	6	70	1.67
Bhakkar	8	29	0.52
Mianwali	6	36	0.86
Faisalabad	6	33	0.79
TT. Singh	6	17	0.40
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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity

77.29%.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 September, 2023

Moth Catches on Light Traps/Trap/night During 4th Week of September, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1.0	0.0	2.7
Khanewal	4	2.3	0.0	4.9
Vehari	3	0.0	0.6	1.6
Lodhran	3	1.9	0.0	3.7
Sahiwal	2	0.3	0.0	0.7
Pakpattan	2	0.3	0.0	0.4
Okara	3	0.4	0.0	0.7
Bahawalpur	4	1.6	1.7	3.7
Bahawalnagar	5	1.6	1.1	2.9
R.Y.Khan	4	1.4	1.0	1.9
D.G.Khan	3	1.4	1.0	2.0
M.Garh	4	0.0	0.0	1.7
Rajan Pur	3	0.4	0.3	1.1
Layyah	3	0.0	0.0	0.4
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. The current weather conditions on overall Punjab basis (temp. Max. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C with humidity 77.29%.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. 36.62 °C, Min. 25.06°C with R. humidity 60.66%) & forecast for the next week temp. Max. 38.61°C, Min. 20.54°C

with humidity 77.29%. 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, kanghi 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