

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 1st WEEK OF AUGUST, 2023

Whitefly: On overall Punjab basis 9.80% above ETL spots have been observed during current week as compared to 8.16 % % in last week and 31.36% during the same corresponding period of last year. And 89.04% below ETL spots have been observed during current week as compared to 89.39% in last week and 67.62% 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	KHUSHAB	40.0	36	HARON ABAD	9.3
2	MIAN CHANNU	33.8	37	FAISALABAD	9.2
3	SAHIWAL	30.0	38	BURE WALA	9.1
4	QASUR	25.0	39	LAYYAH	8.9
5	CHUNIAN	25.0	40	KAROR L.E.	8.5
6	RAJAN PUR	21.5	41	MIANWALI	8.4
7	KOT CHUTTA	18.4	42	ALI PUR	8.3
8	SILANWALI	18.2	43	CHOBARA	8.3
9	ROJHAN	16.8	44	SHORKOT	8.2
10	SARGODHA	16.7	45	PAK PATTAN	7.9
11	KHANEWAL	15.7	46	TANDLIANWALA	7.8
12	SADIQ ABAD	15.5	47	A.P SIAL	7.3
13	PIR MAHAL	15.3	48	JHANG	7.1
14	D.G.KHAN	15.2	49	GOJRA	6.6
15	CHICHA WATNI	14.8	50	MINCHAN ABAD	6.3
16	JAM PUR	14.8	51	HASILPUR	6.3
17	SAHIWAL	13.5	52	RENALA KHURD	6.1
18	YAZMAN	12.6	53	OKARA	6.1
19	R.Y.KHAN	12.5	54	BAHAWAL NAGAR	6.1
20	CHISHTIAN	12.0	55	ISA KHEL	5.7
21	FORT ABBAS	12.0	56	SUMUNDRI	5.4
22	KABIR WALA	11.7	57	TAUNSA	5.3
23	QUIDABAD	11.1	58	ARIF WALA	5.3
24	DARYA KHAN	10.9	59	JALAL PUR P.W	5.1
25	MANKERA	10.7	60	VEHARI	5.0
26	T.T.SINGH	10.6	61	MAILSI	4.8
27	MULTAN	10.5	62	BHAKKAR	4.8
28	JARANWALA	10.5	63	KOT ADDU	4.5
29	LIAQUAT PUR	10.4	64	PIPLAN	4.0
30	MUZUFAR GARH	10.3	65	JATOI	3.9
31	BAHAWAL PUR	10.2	66	KEHROR PACCA	3.7
32	A.P.EAST	9.8	67	DEPALPUR	3.4
33	KALLOR KOT	9.8	68	DUYAPUR	3.1
34	JAHANIAN	9.7	69	SHUJABAD	3
35	KHAN PUR	9.4	70	LODRAN	0.9

Jassid: On overall Punjab basis 11.54% above ETL spots have been observed as compared to 15.21% in last week and same week of last year 22.67% and 87.15% below ETL spots have been observed during current week as compared to 83.28% in last week and 76.16% 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	50.0	36	PIR MAHAL	10.2
2	HASILPUR	42.5	37	ALI PUR	9.8
3	KOT RADHA KISHAN	33.3	38	RAJAN PUR	9.1
4	JALAL PUR P.W	29.7	39	KOT ADDU	8.3
5	SHUJABAD	29.3	40	DUYAPUR	8.2
6	BAHAWAL PUR	26.5	41	ROJHAN	8.0
7	FORT ABBAS	26.0	42	BURE WALA	8.0
8	CHUNIAN	25.0	43	SAHIWAL	7.6
9	KOTMOMIN	25.0	44	SHORKOT	7.1
10	QASUR	25.0	45	MANKERA	7.1
11	A.P.EAST	24.4	46	PAK PATTAN	6.7
12	CHISHTIAN	24.1	47	A.P SIAL	6.4
13	SADIQ ABAD	23.9	48	ARIF WALA	6.3
14	LODHRAN	23.7	49	JHANG	6.0
15	HAROON ABAD	20.4	50	KABIR WALA	5.8
16	PATOKI	20.0	51	ISA KHEL	5.7
17	R.Y.KHAN	19.6	52	MIANWALI	5.6
18	YAZMAN	18.9	53	QUIDABAD	5.6
19	MULTAN	17.9	54	DARYA KHAN	5.5
20	LIAQUAT PUR	16.7	55	SUMUNDRI	5.4
21	TAUNSA	15.9	56	VEHARI	5.0
22	KALLOR KOT	14.6	57	OKARA	4.9
23	CHOBARA	13.9	58	CHICHA WATNI	4.6
24	KAROR L.E.	13.8	59	RENALA KHURD	4.4
25	BAHAWAL NAGAR	13.6	60	TANDLIANWALA	4.3
26	JAM PUR	13.6	61	JAHANIAN	4.3
27	LAYYAH	13.2	62	PIPLAN	4.0
28	KHAN PUR	12.9	63	GOJRA	3.9
29	MINCHAN ABAD	12.7	64	KHANEWAL	3.9
30	KOT CHUTTA	12.5	65	DEPALPUR	3.4
31	KEHROR PACCA	12.2	66	FAISALABAD	3.1
32	D.G.KHAN	12.0	67	MAILSI	2.9
33	MUZUFAR GARH	11.9	68	JATOI	2.3
34	T.T.SINGH	11.3	69	MIAN CHANNU	2.3
35	JARANWALA	10.5			

Thrips: On overall Punjab basis 4.40% above ETL spots have been observed as compared to 7.09% in last week and same week of last year i.e. 2.77%. And 93.12% below ETL spots have been observed during current week as compared to 90.25% in last week and 95.25% 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	SHUJABAD	22.2	21	MUZUFAR GARH	5.6
2	BAHAWAL PUR	19.4	22	KAROR L.E.	5.4
3	FORT ABBAS	18.0	23	HASILPUR	5.0
4	YAZMAN	16.8	24	KALLOR KOT	4.9
5	MULTAN	16.8	25	RAJAN PUR	3.3
6	A.P.EAST	12.2	26	DUYAPUR	3.1
7	JATOI	11.7	27	BAHAWAL NAGAR	3.0
8	R.Y.KHAN	11.6	28	KOT CHUTTA	2.9
9	HAROON ABAD	11.1	29	ISA KHEL	2.9
10	JALAL PUR P.W	10.2	30	JHANG	2.4
11	ALI PUR	9.8	31	JAM PUR	2.3
12	CHISHTIAN	8.4	32	VEHARI	2.0
13	LIAQUAT PUR	8.3	33	LODHRAN	1.8
14	KOT ADDU	8.3	34	D.G.KHAN	1.6
15	KHAN PUR	8.2	35	KEHROR PACCA	1.2
16	SADIQ ABAD	7.0	36	BURE WALA	1.1
17	MINCHAN ABAD	6.3	37	PAK PATTAN	1.1
18	LAYYAH	6.3	38	MAILSI	1.0
19	MIANWALI	5.6	39	TAUNSA	0.9

20	CHOBARA	5.6		
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Mealy Bug: On overall Punjab basis 3.12% spots (all considered above ETL) of Mealy Bug have been observed as compared to 2.21% in last week and 7.74% 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	R.Y.KHAN	15.2	21	TAUNSA	2.7
2	JALAL PUR P.W	13.6	22	KEHROR PACCA	2.4
3	A.P.EAST	13.4	23	KAROR L.E.	2.3
4	ROJHAN	10.4	24	MIAN CHANNU	2.3
5	RAJAN PUR	8.3	25	T.T.SINGH	2.1
6	KHAN PUR	8.2	26	LIAQUAT PUR	2.1
7	BAHAWAL PUR	7.1	27	HAROOON ABAD	1.9
8	DUYAPUR	7.1	28	CHOBARA	1.9
9	SHUJABAD	7.1	29	SAHIWAL	1.8
10	SADIQ ABAD	7.0	30	BAHAWAL NAGAR	1.5
11	JATOI	7.0	31	HASILPUR	1.3
12	ALI PUR	6.8	32	JAHANIAN	1.1
13	JAM PUR	5.7	33	MULTAN	1.1
14	YAZMAN	5.3	34	VEHARI	1.0
15	KOT CHUTTA	5.1	35	KHANEWAL	1.0
16	MUZUFAR GARH	4.8	36	MIANWALI	0.9
17	LAYYAH	3.7	37	CHICHA WATNI	0.9
18	LODHRAN	3.5	38	A.P SIAL	0.9
19	PIR MAHAL	3.4	39	D.G.KHAN	0.8
20	MINCHAN ABAD	3.2	40	KOT ADDU	0.8

Mites: On overall Punjab basis 0.00% above ETL spots has been observed during current week as compared to 0.00% in last week and 0.00% during the same corresponding period of last year. And 9.57% below ETL spots have been observed during current week as compared to 1.42% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of mites

No hot spot observed this week

Dusky Cotton Bug: On overall Punjab basis 0.08% above ETL spots have been observed during current week as compared to 0.40% in last week and 1.24% during the same corresponding period of last year. And 29.18% below ETL spots have been observed during current week as compared to 23.87% in last week and 33.99% 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	SHUJABAD	3.0	3	JALAL PUR P.W	0.8
2	DUYAPUR	1.0			

Armyworm: On overall Punjab basis 0.36% spots (all considered above ETL) of Armyworm have been observed as compared to 0.31% in last week and 1.57% 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	JAHANIAN	3.4	4	SAHIWAL	2.2
2	DUYAPUR	2.8	5	MAILSI	2.1
3	KEHROR PACCA	2.5			

Pink Boll Worm: On overall Punjab basis 1.57% above ETL spots have been observed as compared to 0.95% in last week and 1.17% same corresponding period of the last year. And 16.80% below ETL spots have been observed as compared to 15.55% in last week and 11.43% 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	ROJHAN	12.8	17	BAHAWAL NAGAR	1.5
2	BAHAWAL PUR	11.2	18	SADIQ ABAD	1.4
3	RAJAN PUR	9.1	19	ARIF WALA	1.1
4	YAZMAN	7.4	20	DUYAPUR	1.0
5	R.Y.KHAN	7.1	21	SHUJABAD	1.0
6	KEHROR PACCA	4.9	22	KHANEWAL	1.0
7	FORT ABBAS	4.0	23	CHOBARA	0.9
8	JAM PUR	3.4	24	CHICHA WATNI	0.9
9	ISA KHEL	2.9	25	TAUNSA	0.9
10	HASILPUR	2.5	26	LODHRAN	0.9
11	D.G.KHAN	2.4	27	KABIR WALA	0.8
12	JATOI	2.3	28	KAROR L.E.	0.8
13	ALI PUR	2.3	29	MIAN CHANNU	0.8
14	LIAQUAT PUR	2.1	30	KOT ADDU	0.8
15	HAROON ABAD	1.9	31	KOT CHUTTA	0.7
16	MUZUFAR GARH	1.6	32	LAYYAH	0.5

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 0.38% below ETL spots have been observed as compared to 0.52% in last week and 0.51% during same corresponding period of last year.

Tehsil wise percentage of hot spots of American Boll Worm

No hot spot observed this week

Spotted Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.18% during same corresponding period of last year & 0.23% below ETL spots have been observed as compared to 0.28% in last week and 0.33% during same corresponding period of last year.

Tehsil wise percentage of hot spots of Spotted boll worm

S. NO.	TEHSIL	%AGE
1	R.Y.KHAN	0.9

CLCuV: On overall Punjab basis 0.63% spots (all considered above ETL) of CLCV have been observed as compared to 0.61% in last week and 35.85% 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	BAHAWAL PUR	10.2	8	FORT ABBAS	2.0
2	SHUJABAD	6.1	9	MULTAN	1.1
3	JAM PUR	4.5	10	LIAQUAT PUR	1.0
4	R.Y.KHAN	3.6	11	VEHARI	1.0
5	A.P.EAST	2.4	12	MAILSI	1.0
6	MUZUFAR GARH	2.4	13	CHOBARA	0.9
7	KHAN PUR	2.4	14	KABIR WALA	0.8

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	36.7	27.6	62.8	3.8	34.9	26.4	77.4	8.8
Khanewal	34.7	29.1	68.3	1.1	31.9	26.9	78.5	3.4
Vehari	34.4	27.7	76.6	14.4	33.4	26.9	83.1	8.1
Lodhran	36.0	25.5	73.1	11.1	31.7	24.4	80.4	13.4
Sahiwal	37.4	29.3	72.0	0.0	34.9	26.0	81.0	0.0
Pakpattan	36.8	28.4	74.3	0.0	34.5	26.3	82.0	9.5
Okara	37.0	28.2	74.0	0.0	35.2	26.8	82.6	0.0
Bahawalpur	37.5	27.7	67.9	0.0	37.0	27.0	73.4	16.0
Bahawalnagar	38.3	27.6	68.6	0.0	34.2	26.4	75.2	2.2
R.Y.Khan	37.6	27.1	59.4	0.0	37.3	27.9	58.6	0.0
D.G. Khan	37.7	29.7	65.7	0.0	31.7	28.4	75.2	0.8
Muzaffar Garh	38.5	29.5	62.0	0.0	32.5	28.5	75.0	0.0
Rajanpur	38.8	28.2	64.8	0.0	38.2	28.7	71.2	0.0
Layyah	39.0	28.0	60.0	0.0	48.0	25.0	87.0	12.0
TOT/AVG	37.18	28.12	67.41	30.4	35.38	26.82	77.18	74.2

Weather forecast for next 7 day in cotton zone

Division	Dated	8/8	9/8	10/8	11/8	12/8	13/8	14/8
Multan	Max.Temp.	39	40	40	40	40	40	38
	Min.Temp.	29	30	30	30	30	31	30
	Humidity %	41	38	37	37	38	40	43
Sahiwal	Max.Temp.	38	39	40	39	40	39	36
	Min.Temp.	28	29	30	30	30	30	29
	Humidity %	45	41	37	38	36	41	50
Bahawalpur	Max.Temp.	38	38	38	38	39	39	37
	Min.Temp.	29	30	30	29	29	29	29
	Humidity %	46	42	41	43	39	40	40
D.G. Khan	Max.Temp.	39	40	40	40	41	42	39
	Min.Temp.	28	30	31	30	31	31	30
	Humidity %	43	37	37	39	37	36	40
Average Cotton Region	Max.Temp.	39.14						
	Min.Temp.	29.71						
	Humidity %	40.07						

Source: timeanddate.com

Summary of weather forecast

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

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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. In view above all, it is predicted that population of this pest may sustain during the coming week.

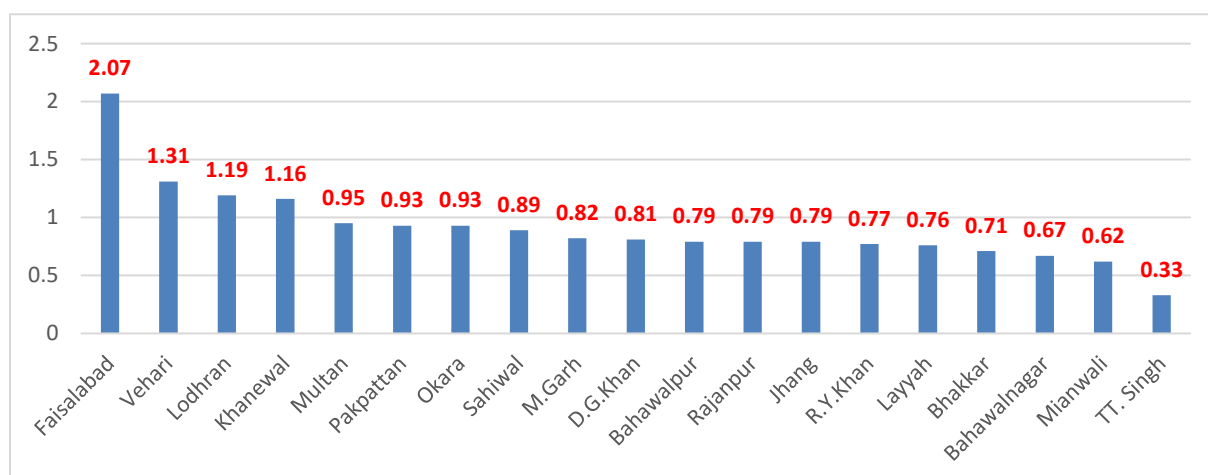
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C . The current weather conditions on overall Punjab basis (temp. Max. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%.

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 August, 2023

Moth Catches in Pheromone Traps During 1st Week of August, 2023			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	40	0.95
Khanewal	8	65	1.16
Vehari	6	55	1.31
Lodhran	6	50	1.19
Sahiwal	4	25	0.89
Pakpattan	4	26	0.93
Okara	4	26	0.93
Bahawalpur	8	44	0.79
Bahawalnagar	10	47	0.67
R.Y.Khan	8	43	0.77
D.G.Khan	6	34	0.81
Rajanpur	6	33	0.79
M.Garh	8	46	0.82
Layyah	6	32	0.76
Bhakkar	8	40	0.71
Mianwali	6	26	0.62
Faisalabad	6	87	2.07
TT. Singh	6	14	0.33
Jhang	4	22	0.79

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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) &

forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%.

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 August, 2023

Moth Catches on Light Traps/Trap/night During 1st Week of August, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1.0	0.0	1.7
Khanewal	4	1.7	0.0	6.4
Vehari	3	1.0	0.0	2.7
Lodhran	3	2.1	0.0	4.0
Sahiwal	2	0.4	0.0	1.1
Pakpattan	2	0.4	0.0	1.0
Okara	3	0.6	0.0	1.4
Bahawalpur	4	1.9	1.1	2.6
Bahawalnagar	5	1.1	0.9	2.6
R.Y.Khan	4	1.7	1.1	1.0
D.G.Khan	3	0.3	0.1	1.1
M.Garh	4	0.1	0.3	1.9
Rajan Pur	3	2.1	1.9	5.4
Layyah	3	0.1	0.0	0.9
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. 37.18 °C, Min. 28.12 °C with R. humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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. 37.18 °C, Min. 28.12 °C with R.

humidity 67.41%) & forecast for the next week temp. Max. 39.14 °C, Min. 29.71°C with humidity 40.07%. 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