

## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3RD WEEK OF AUGUST, 2023

**Whitefly:** On overall Punjab basis 14.99% above ETL spots have been observed during current week as compared to 10.36% % in last week and 34.84% during the same corresponding period of last year. And 83.58% below ETL spots have been observed during current week as compared to 89.51% in last week and 64.51% 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	57.3	35	MULTAN	12.1
2	BHERA	50.0	36	LIAQUAT PUR	12.1
3	KOT CHUTTA	38.3	37	KAROR L.E.	11.7
4	RAJAN PUR	34.6	38	TAUNSA	11.7
5	JAM PUR	33.3	39	SADIQ ABAD	11.3
6	KOT RADHA KISHAN	33.3	40	DUYAPUR	10.2
7	A.P.EAST	29.5	41	MIANWALI	9.3
8	HASILPUR	29.4	42	RENALA KHURD	9.1
9	ROJHAN	27.7	43	SAHIWAL	9.1
10	YAZMAN	25.0	44	ARIF WALA	8.8
11	QASUR	25.0	45	KEHROR PACCA	8.8
12	D.G.KHAN	21.6	46	PIR MAHAL	7.8
13	JARANWALA	20.0	47	T.T.SINGH	7.7
14	BHALWAL	20.0	48	PIPLAN	7.7
15	MIAN CHANNU	19.6	49	GOJRA	7.5
16	JALAL PUR P.W	19.5	50	JHANG	7.5
17	CHISHTIAN	18.9	51	DARYA KHAN	6.9
18	BAHAWAL NAGAR	17.5	52	MAILSI	6.7
19	ALI PUR	17.4	53	SHORKOT	6.5
20	KHANEWAL	17.4	54	LODHRAN	6.4
21	KHAN PUR	16.9	55	A.P SIAL	5.5
22	R.Y.KHAN	16.8	56	VEHARI	5.5
23	MUZUFAR GARH	16.4	57	PAK PATTAN	5.1
24	FORT ABBAS	16.0	58	KABIR WALA	5.0
25	JATOI	15.2	59	JAHANIAN	4.9
26	HAROON ABAD	14.9	60	KALLOR KOT	4.9
27	SHUJABAD	14.6	61	BURE WALA	4.8
28	KHUSHAB	14.3	62	OKARA	4.8
29	MANKERA	14.3	63	SUMUNDRI	4.7
30	CHOBARA	13.5	64	SAHIWAL	4.5
31	CHICHA WATNI	13.4	65	ISA KHEL	4.2
32	KOT ADDU	12.9	66	FAISALABAD	3.8
33	LAYYAH	12.4	67	BHAKKAR	3.3
34	MINCHAN ABAD	12.2	68	TANDLIANWALA	2.3

**Jassid:** On overall Punjab basis 7.23% above ETL spots have been observed as compared to 8.25% in last week and same week of last year 15.08% and 91.29% below ETL spots have been observed during current week as compared to 91.48% in last week and 83.68% 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	KOT RADHA KISHAN	33.3	35	18-HAZARI	6.7
2	BHERA	25.0	36	LIAQUAT PUR	6.6
3	QASUR	25.0	37	PIR MAHAL	5.9

4	PATOKI	25.0	38	TANDLIANWALA	5.7
5	CHUNIAN	25.0	39	A.P.SIAL	5.5
6	BAHAWAL PUR	23.9	40	MULTAN	5.5
7	BHALWAL	20.0	41	JAM PUR	5.2
8	CHISHTIAN	17.9	42	DEPALPUR	5.0
9	HASILPUR	17.6	43	JALAL PUR P.W	4.9
10	FORT ABBAS	17.0	44	T.T.SINGH	4.8
11	HAROON ABAD	17.0	45	OKARA	4.8
12	BAHAWAL NAGAR	16.3	46	SUMUNDRI	4.7
13	QUIDABAD	14.3	47	JATOI	4.5
14	TAUNSA	13.3	48	KHAN PUR	4.5
15	CHOBARA	11.3	49	BURE WALA	4.0
16	LAYYAH	10.2	50	GOJRA	3.8
17	YAZMAN	9.8	51	FAISALABAD	3.8
18	MANKERA	9.5	52	SADIQ ABAD	3.8
19	ALI PUR	9.1	53	JHANG	3.8
20	RENALA KHURD	9.1	54	BHAKKAR	3.3
21	SAHIWAL	9.0	55	R.Y.KHAN	3.2
22	CHICHA WATNI	8.9	56	DUYAPUR	2.8
23	MINCHAN ABAD	8.9	57	SHORKOT	2.6
24	KOT ADDU	8.9	58	PIPLAN	2.6
25	ARIF WALA	8.8	59	PAK PATTAN	2.6
26	MUZUFAR GARH	8.6	60	KABIR WALA	2.5
27	SHUJABAD	8.5	61	JAHANIAN	2.5
28	ROJHAN	8.0	62	KALLOR KOT	2.4
29	KAROR L.E.	8.0	63	LODHRAN	2.4
30	KEHROR PACCA	7.5	64	KOT CHUTTA	2.3
31	A.P.EAST	7.4	65	MAILSI	2.2
32	VEHARI	7.3	66	MIANWALI	1.9
33	D.G.KHAN	7.2	67	KHANEWAL	1.7
34	RAJAN PUR	6.7			

**Thrips:** On overall Punjab basis 2.00% above ETL spots have been observed as compared to 2.86% in last week and same week of last year i.e. 1.20%. And 93.69% below ETL spots have been observed during current week as compared to 94.85% in last week and 89.98% 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	QUIDABAD	14.3	15	R.Y.KHAN	3.2
2	SHUJABAD	9.8	16	CHOBARA	3.0
3	MIANWALI	9.3	17	VEHARI	2.7
4	KHAN PUR	9.0	18	PIPLAN	2.6
5	KOT ADDU	8.9	19	JATOI	2.3
6	BAHAWAL PUR	8.5	20	LIAQUAT PUR	2.2
7	LAYYAH	6.2	21	RAJAN PUR	1.7
8	MUZUFAR GARH	5.5	22	TAUNSA	1.7
9	ALI PUR	4.5	23	HASILPUR	1.5
10	YAZMAN	4.5	24	SADIQ ABAD	1.3
11	MULTAN	4.4	25	MAILSI	1.1
12	KAROR L.E.	4.4	26	DUYAPUR	0.9
13	ISA KHEL	4.2	27	LODHRAN	0.8
14	A.P.EAST	3.2			

**Mealy Bug:** On overall Punjab basis 5.71% spots (all considered above ETL) of Mealy Bug have been observed as compared to 3.87% in last week and 10.91% 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	SARGODHA	33.3	27	ISA KHEL	4.2
2	BAHAWAL PUR	23.9	28	LAYYAH	4.0
3	ALI PUR	18.2	29	GOJRA	3.8
4	RAJAN PUR	17.9	30	KABIR WALA	3.8
5	A.P.EAST	16.8	31	A.P SIAL	3.7
6	SHUJABAD	14.6	32	D.G.KHAN	3.2
7	JAM PUR	12.5	33	HAROON ABAD	3.2
8	MUZUFAR GARH	11.7	34	RENALA KHURD	3.0
9	YAZMAN	10.7	35	PAK PATTAN	2.6
10	R.Y.KHAN	10.5	36	SADIQ ABAD	2.5
11	HASILPUR	8.8	37	BAHAWAL NAGAR	2.5
12	JATOI	8.3	38	KEHROR PACCA	2.5
13	KOT CHUTTA	8.3	39	JHANG	2.5
14	MIAN CHANNU	8.2	40	JAHANIAN	2.5
15	ROJHAN	8.0	41	KOT ADDU	2.4
16	LOHRAN	8.0	42	OKARA	2.4
17	DUYAPUR	6.5	43	CHOBARA	2.3
18	JALAL PUR P.W	6.1	44	PIR MAHAL	2.0
19	FORT ABBAS	5.3	45	T.T.SINGH	1.9
20	CHISHTIAN	5.3	46	FAISALABAD	1.9
21	TAUNSA	5.0	47	SUMUNDRI	1.9
22	KHAN PUR	4.5	48	KHANEWAL	1.7
23	SAHIWAL	4.5	49	MAILSI	1.1
24	CHICHA WATNI	4.5	50	MINCHAN ABAD	1.1
25	MULTAN	4.4	51	LIAQUAT PUR	1.1
26	KAROR L.E.	4.4	52	VEHARI	0.9

**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 7.35% below ETL spots have been observed during current week as compared to 5.66% in last week and 3.13% 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 0.28% above ETL spots have been observed during current week as compared to 0.15% in last week and 2.57% during the same corresponding period of last year. And 34.89% below ETL spots have been observed during current week as compared to 30.54% in last week and 45.55% 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	JALAL PUR P.W	3.7	5	SHUJABAD	2.4
2	BAHAWAL PUR	3.4	6	MULTAN	1.1
3	A.P.EAST	3.2	7	DUYAPUR	0.9
4	HASILPUR	2.9			

**Armyworm:** On overall Punjab basis 0.90% spots (all considered above ETL) of Armyworm have been observed as compared to 1.22% 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	8.5	11	FORT ABBAS	2.1
2	YAZMAN	4.5	12	GOJRA	1.9
3	SHUJABAD	3.7	13	RAJAN PUR	1.7
4	HAROON ABAD	3.2	14	HASILPUR	1.5
5	A.P.EAST	3.2	15	JAHANIAN	1.2
6	DUYAPUR	2.8	16	MINCHAN ABAD	1.1
7	ROJHAN	2.7	17	MULTAN	1.1
8	LODHRAN	2.4	18	CHISHTIAN	1.1
9	D.G.KHAN	2.4	19	T.T.SINGH	1.0
10	ALI PUR	2.3			

**Pink Boll Worm:** On overall Punjab basis 4.63% above ETL spots have been observed as compared to 2.49% in last week and 3.33% same corresponding period of the last year. And 27.28% below ETL spots have been observed as compared to 22.58% in last week and 20.45% 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	34.2	25	KOT ADDU	4.0
2	YAZMAN	14.3	26	LAYYAH	4.0
3	ALI PUR	10.6	27	PIR MAHAL	3.9
4	A.P.EAST	9.5	28	KABIR WALA	3.8
5	ROJHAN	8.9	29	KEHROR PACCA	3.8
6	HASILPUR	8.8	30	ARIF WALA	3.5
7	SADIQ ABAD	8.8	31	KHANEWAL	3.5
8	RAJAN PUR	8.4	32	KHAN PUR	3.4
9	HAROON ABAD	7.4	33	BHAKKAR	3.3
10	JALAL PUR P.W	7.3	34	LIAQUAT PUR	3.3
11	LODHRAN	7.2	35	KAROR L.E.	2.9
12	JATOI	6.8	36	PAK PATTAN	2.6
13	R.Y.KHAN	6.3	37	BAHAWAL NAGAR	2.5
14	BURE WALA	5.6	38	JAHANIAN	2.5
15	DUYAPUR	5.6	39	CHOBARA	2.3
16	MULTAN	5.5	40	MAILSI	2.2
17	FORT ABBAS	5.3	41	CHICHA WATNI	1.8
18	CHISHTIAN	5.3	42	KOT CHUTTA	1.5
19	SHUJABAD	4.9	43	SAHIWAL	1.1
20	MUZUFAR GARH	4.7	44	MINCHAN ABAD	1.1
21	VEHARI	4.5	45	T.T.SINGH	1.0
22	JAM PUR	4.2	46	TAUNSA	0.8
23	ISA KHEL	4.2	47	D.G.KHAN	0.8
24	MIAN CHANNU	4.1			

**American Boll Worm:** On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.03% in last week and 0.16% during same corresponding period of last year. And 0.46% below ETL spots have been observed as compared to 0.60% in last week and 0.88% 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 0.08% during same corresponding period of last year & 0.28% below ETL spots have been observed as compared to 0.54% in last week and 0.24% during same corresponding period of last year.

### Tehsil wise percentage of hot spots of spotted boll worm

No hot spot observed this week

**CLCuV:** On overall Punjab basis 1.89% spots (all considered above ETL) of CLCV have been observed as compared to 1.07% in last week and 39.29% 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	ALI PUR	18.2	14	JALAL PUR P.W	2.4
2	BAHAWAL PUR	17.9	15	MIANWALI	1.9
3	MUZUFAR GARH	10.9	16	KHANEWAL	1.7
4	SAHIWAL	9.1	17	CHOBARA	1.5
5	KHAN PUR	6.7	18	KOT CHUTTA	1.5
6	R.Y.KHAN	4.2	19	SADIQ ABAD	1.3
7	KABIR WALA	3.8	20	JAHANIAN	1.2
8	SHUJABAD	3.7	21	MAILSI	1.1
9	VEHARI	3.6	22	MULTAN	1.1
10	A.P.EAST	3.2	23	FORT ABBAS	1.1
11	HASILPUR	2.9	24	JAM PUR	1.0
12	KAROR L.E.	2.9	25	TAUNSA	0.8
13	PIPLAN	2.6	26	LODHRAN	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	36.9	27.6	60.3	0.0	33.1	25.3	74.0	7.4
KHANEWAL	39.3	29.1	51.0	0.0	33.3	26.7	72.1	2.0
VEHARI	37.3	28.7	58.0	0.0	32.3	25.9	62.6	6.0
LODHRAN	37.6	26.3	68.6	0.0	34.3	25.4	78.9	3.1
Sahiwal	37.4	27.9	70.6	0.0	33.7	26.5	81.5	15.0
Pakpattan	37.2	27.6	70.2	0.0	34.6	27.2	79.6	13.0
Okara	37.6	28.1	71.4	0.0	35.6	27.6	80.2	12.0
Bahawalpur	38.5	27.8	61.5	0.0	33.8	26.1	75.3	73.3
Bahawalnagar	38.8	27.5	58.4	0.0	35.6	25.7	70.0	5.3
R.Y.Khan	39.4	26.6	54.5	0.0	31.8	26.0	78.0	0.0
D.G. Khan	37.1	29.9	62.0	0.0	33.0	26.0	65.2	7.7
Muzaffar Garh	37.4	27.4	46.0	0.0	32.8	21.3	82.0	10.0
Rajanpur	39.2	27.8	55.1	0.0	33.7	27.5	78.1	63.0
Layyah	42.0	30.0	42.0	0.0	48.0	24.0	94.0	70.0
<b>TOT/AVG</b>	<b>38.25</b>	<b>28.02</b>	<b>59.26</b>	<b>0</b>	<b>34.68</b>	<b>25.79</b>	<b>76.53</b>	<b>288</b>

## Weather forecast for next 7 day in cotton zone

Division	Dated	22/8	23/8	24/8	25/8	26/8	27/8	28/8
Multan	Max.Temp.	43	40	39	38	39	40	41
	Min.Temp.	33	30	29	28	28	30	28
	Humidity %	30	35	37	39	38	34	32
Sahiwal	Max.Temp.	41	38	37	37	37	39	39
	Min.Temp.	30	30	29	28	28	27	26
	Humidity %	37	40	44	48	45	37	36
Bahawalpur	Max.Temp.	41	38	38	38	38	39	40
	Min.Temp.	32	29	29	29	28	29	28
	Humidity %	35	40	38	40	39	34	34
D.G. Khan	Max.Temp.	44	42	40	38	39	40	41
	Min.Temp.	33	31	29	28	29	28	29
	Humidity %	26	30	36	40	37	33	32
Average Cotton Region	Max.Temp.	39.43						
	Min.Temp.	29.11						
	Humidity %	36.64						

Source: [timeanddate.com](http://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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%. 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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%. 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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

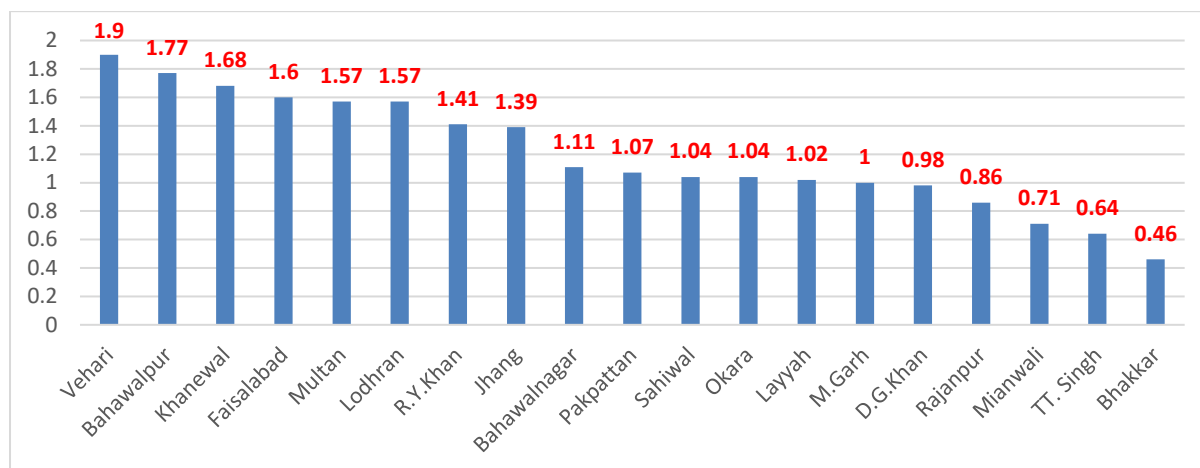
**Dusky Cotton Bug:** This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%..t is predicted that population of this pest will increase on cotton during the coming week.

### **Moth Catches in Pheromone Traps during 3rd Week of August, 2023**

<b>Moth Catches in Pheromone Traps During 3rd Week of August, 2023</b>			
<b>District</b>	<b>Traps Installed</b>	<b>Moth catches/Trap/week</b>	<b>Av. Moth catches/Trap/night</b>
Multan	6	66	1.57
Khanewal	8	94	1.68
Vehari	6	80	1.90
Lodhran	6	66	1.57
Sahiwal	4	29	1.04
Pakpattan	4	30	1.07
Okara	4	29	1.04
Bahawalpur	8	99	1.77
Bahawalnagar	10	78	1.11
R.Y.Khan	8	79	1.41
D.G.Khan	6	41	0.98
Rajanpur	6	36	0.86
M.Garh	8	56	1.00
Layyah	6	43	1.02
Bhakkar	8	26	0.46
Mianwali	6	30	0.71
Faisalabad	6	67	1.60
TT. Singh	6	27	0.64
Jhang	4	39	1.39
<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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.It is predicted that population of this pest will remain sustain on cotton crop during the coming week.

### Moth catches on light traps during 3rd week of August, 2023

Moth Catches on Light Traps/Trap/night During 3rd Week of August, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0.3	0.0	2.9
Khanewal	4	2.1	0.0	6.9
Vehari	3	1.1	0.0	1.7
Lodhran	3	4.7	0.0	5.3
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	1.7	1.4	3.1
Bahawalnagar	5	1.1	1.0	2.0
R.Y.Khan	4	2.7	2.3	2.0
D.G.Khan	3	0.6	0.3	2.3
M.Garh	4	0.0	0.3	2.3
Rajan Pur	3	1.1	0.7	2.1
Layyah	3	0.0	0.0	0.1
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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.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. 38.25 °C, Min. 28.02 °C with R. humidity 59.26%) & forecast for the next week temp. Max. 39.43°C, Min. 29.11°C with humidity 36.64%.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**

<b>Crops</b>	<b>Vegetables</b>	<b>Ornamentals</b>	<b>Weeds</b>	<b>Orchards</b>
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 <sup>nd</sup> 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