

## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3rd WEEK OF AUGUST, 2022

**Whitefly:** On overall Punjab basis 34.84 above ETL spots have been observed during current week as compared to 40.36% in last week and 31.12% during the same corresponding period of last year. And 64.51% below ETL spots have been observed during current week as compared to 58.98.62% in last week and 68.83% 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	JARANWALA	85.9	33	R.Y.KHAN	28.1
2	VEHARI	68.2	34	JAHANIAN	27.9
3	MULTAN	66.7	35	ROJHAN	26.5
4	SILLANWALI/ SAHIWAL	65.2	36	MUZUFAR GARH	25.6
5	KEHROR PACCA	64.1	37	BURE WALA	25.6
6	RAJAN PUR	57.4	38	YAZMAN	25.0
7	KHANEWAL	57.1	39	JAM PUR	25.0
8	BAHAWAL NAGAR	56.8	40	A.P SIAL	25.0
9	JALAL PUR P.W	55.8	41	DEPALPUR	23.8
10	ISA KHEL	50.9	42	KHAN PUR	22.9
11	SARGODHA	50.0	43	MINCHAN ABAD	22.0
12	MANKERA	50.0	44	BAHAWAL PUR	21.4
13	MIANWALI	50.0	45	T.T.SINGH	20.8
14	SADIQ ABAD	48.1	46	BHAKKAR	20.8
15	D.G.KHAN	44.8	47	HAROON ABAD	19.6
16	SHUJABAD	44.4	48	FAISALABAD	18.5
17	CHISHTIAN	43.1	49	TANDLIANWALA	18.2
18	LODHRAN	41.5	50	ARIF WALA	16.7
19	HASILPUR	38.5	51	SHORKOT	15.6
20	KOT CHUTTA	37.8	52	CHOBARA	14.8
21	A.P.EAST	37.5	53	PIR MAHAL	14.3
22	KAROR L.E.	37.5	54	CHICHA WATNI	14.0
23	DUYAPUR	37.0	55	LIAQUAT PUR	13.5
24	LAYYAH	34.7	56	TAUNSA	12.5
25	JATOI	33.3	57	PAK PATTAN	11.8
26	MAILSI	33.3	58	JHANG	10.0
27	KABIR WALA	33.3	59	PIPLAN	9.7
28	KALLOR KOT	33.3	60	GOJRA	7.9
29	ALI PUR	31.3	61	DARYA KHAN	5.3
30	KOT ADDU	31.3	62	RENALA KHURD	3.8
31	FORT ABBAS	30.0	63	18-HAZARI	3.7
32	MIAN CHANNU	29.6			

**Jassid:** On overall Punjab basis 15.08% above ETL spots has been observed as compared to 18.66% in last week and same week of last year 10.00%. And 83.68% below ETL spots have been observed during current week as compared to 79.97% in last week and 89.33% 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	LAYYAH	35.4	31	JATOI	13.0
2	FORT ABBAS	33.3	32	BAHAWAL PUR	13.0
3	VEHARI	33.3	33	MUZUFAR GARH	12.8
4	DARYA KHAN	33.3	34	TANDLIANWALA	12.7
5	T.T.SINGH	31.7	35	D.G.KHAN	12.5
6	BHAKKAR	30.8	36	HAROON ABAD	12.5
7	MANKERA	29.6	37	ISA KHEL	12.5
8	CHOBARA	27.1	38	LIAQUAT PUR	12.5
9	KOT ADDU	26.2	39	RENALA KHURD	12.5
10	GOJRA	23.3	40	SAHIWAL	12.5
11	SHUJABAD	23.2	41	MIANWALI	12.1
12	BURE WALA	23.1	42	18-HAZARI	11.8
13	ARIF WALA	23.1	43	SADIQ ABAD	11.1
14	CHISHTIAN	22.6	44	KALLOR KOT	10.0
15	PAK PATTAN	21.9	45	KOT CHUTTA	9.8
16	PIPLAN	21.9	46	A.P SIAL	9.7
17	BAHAWAL NAGAR	20.8	47	MIAN CHANNU	9.3
18	KAROR L.E.	19.6	48	MINCHAN ABAD	8.3
19	JALAL PUR P.W	19.6	49	LODHRAN	8.2
20	ALI PUR	18.9	50	OKARA	7.4
21	TAUNSA	17.5	51	PIR MAHAL	7.4
22	JARANWALA	16.7	52	DUYAPUR	6.9
23	SUMUNDRI	16.0	53	HASILPUR	6.3
24	KABIR WALA	15.9	54	KHANEWAL	5.9
25	MULTAN	15.6	55	SHORKOT	5.3
26	R.Y.KHAN	15.4	56	JHANG	5.3
27	CHICHA WATNI	15.0	57	YAZMAN	4.1
28	KHAN PUR	14.6	58	A.P.EAST	3.3
29	MAILSI	14.6	59	JAHANIAN	2.3
30	DEPALPUR	14.3	60	JAM PUR	1.9

**Thrips:** On overall Punjab basis 1.20% above ETL spots has been observed as compared to 2.46% in last week and same week of last year i.e. 7.44%. And 89.98% below ETL spots have been observed during current week as compared to 95.21% in last week and 90.76% 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	ISA KHEL	12.5	10	PIPLAN	3.1
2	R.Y.KHAN	7.7	11	ALI PUR	2.7
3	SADIQ ABAD	7.4	12	KOT ADDU	2.4
4	KHAN PUR	6.3	13	JALAL PUR P.W	2.2
5	YAZMAN	6.1	14	LIAQUAT PUR	2.1
6	MIANWALI	6.1	15	BAHAWAL PUR	1.9
7	18-HAZARI	5.9	16	SHUJABAD	1.8
8	MUZUFAR GARH	5.1	17	MULTAN	1.6
9	LAYYAH	4.2			

**Mealy Bug:** On overall Punjab basis 10.91% spots (all considered above ETL) of Mealy Bug have been observed as compared to 10.89% in last week and 32.29% 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	38.9	25	LIAQUAT PUR	8.3
2	SHUJABAD	35.7	26	ALI PUR	8.1
3	MULTAN	32.8	27	JAM PUR	7.5
4	JALAL PUR P.W	32.6	28	MIAN CHANNU	7.4
5	FORT ABBAS	25.9	29	PIR MAHAL	7.4
6	LAYYAH	25.0	30	KABIR WALA	6.8
7	HARROON ABAD	25.0	31	GOJRA	6.7
8	CHISHTIAN	24.5	32	18-HAZARI	5.9
9	DUYAPUR	24.1	33	SADIQ ABAD	5.6
10	T.T.SINGH	22.0	34	MUZUFAR GARH	5.1
11	D.G.KHAN	21.4	35	A.P.EAST	4.9
12	KOT CHUTTA	19.6	36	JAHANIAN	4.7
13	JATOI	17.4	37	MAILSI	4.2
14	BAHAWAL NAGAR	16.7	38	RENALA KHURD	4.2
15	RAJAN PUR	16.7	39	MINCHAN ABAD	4.2
16	KAROR L.E.	16.1	40	BHAKKAR	3.8
17	YAZMAN	14.3	41	OKARA	3.7
18	R.Y.KHAN	13.5	42	PIPLAN	3.1
19	ROJHAN	12.5	43	PAK PATTAN	3.1
20	LODHRAN	12.2	44	MIANWALI	3.0
21	CHOBARA	10.4	45	SAHIWAL	2.5
22	HASILPUR	10.4	46	KOT ADDU	2.4
23	CHICHA WATNI	10.0	47	KHANEWAL	2.0
24	KHAN PUR	8.3			

**Mites:** On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.00% during the same corresponding period of last year. And 3.13% below ETL spots have been observed during current week as compared to 2.24% in last week and 4.13% during the same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of Mites**

No hot spot found in this week.

**Dusky Cotton Bug:** On overall Punjab basis 2.57% above ETL spots have been observed during current week as compared to 1.58% in last week and 0.00% during the same corresponding period of last year. And 45.55% below ETL spots have been observed during current week as compared to 38.52% in last week and 25.52% during the same corresponding period of last year.

### Tehsil wise percentage of hot spots of Dusky bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	GOJRA	40.0	6	SHUJABAD	10.7
2	MULTAN	32.8	7	VEHARI	4.4
3	T.T.SINGH	31.7	8	BURE WALA	2.6
4	PIR MAHAL	11.1	9	MAILSI	2.1
5	JALAL PUR P.W	10.9			

**Armyworm:** On overall Punjab basis 2.57% spots (all considered above ETL) of Armyworm have been observed as compared to 2.11% in last week and 1.84% 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	MULTAN	34.4	11	FORT ABBAS	3.7
2	SHUJABAD	16.1	12	DUYAPUR	3.4
3	BAHAWAL PUR	13.0	13	PIPLAN	3.1
4	KAROR L.E.	7.1	14	MIANWALI	3.0
5	18-HAZARI	5.9	15	KEHROR PACCA	2.6
6	R.Y.KHAN	5.8	16	JATOI	2.2
7	JALAL PUR P.W	4.3	17	CHOBARA	2.1
8	YAZMAN	4.1	18	HASILPUR	2.1
9	KHANEWAL	3.9	19	LODHRAN	2.0
10	BHAKKAR	3.8	20	D.G.KHAN	1.8

**Pink Boll Worm:** On overall Punjab basis 3.33% above ETL spots have been observed as compared to 2.72% in last week and 6.68% same corresponding period of the last year. And 20.45% below ETL spots have been observed as compared to 17.92% in last week and 29.91% during same corresponding period of last year.

### Tehsil wise percentage of hot spots of PBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	DUYAPUR	27.6	11	HASILPUR	4.2
2	KEHROR PACCA	25.6	12	RAJAN PUR	4.2
3	JAHANIAN	25.6	13	OKARA	3.7
4	MULTAN	20.3	14	MANKERA	3.7
5	SHUJABAD	14.3	15	A.P.EAST	3.3
6	LODHRAN	12.2	16	MIANWALI	3.0
7	BAHAWAL PUR	9.3	17	MAILSI	2.1
8	KHANEWAL	7.8	18	CHISHTIAN	1.9
9	D.G.KHAN	7.1	19	JAM PUR	1.9
10	VEHARI	4.4	20	MIAN CHANNU	1.9

**American Boll Worm:** On overall Punjab basis 0.16% above ETL spots have been observed as compared to 0.09 in last week and 0.09% during same corresponding period of last year. And 0.88% below ETL spots have been observed as compared to 0.97% in last week and 0.18% during same corresponding period of last year.

### Tehsil wise percentage of hot spots of ABW

S. NO.	TEHSIL	%AGE
1	KOT CHUTTA	7.8

**Spotted Boll Worm:** On overall Punjab basis 0.08% above ETL spots have been observed as compared to 0.04% in last week and 0.19% during same corresponding period of last year & 0.24% below ETL spots have been observed as compared to 1.01% in last week and 0.81% during same corresponding period of last year.

### Tehsil wise percentage of hot spots of SBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	KOT CHUTTA	2.0	2	JAM PUR	1.9

**CLCuV:** On overall Punjab basis 39.29% spots (all considered above ETL) of CLCuV have been observed as compared to 41.19% in last week and 24.62% during the same corresponding period of the last year.

### Tehsil wise percentage of hot spots CLCuV

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MULTAN	100.0	31	JATOI	37.0
2	JALAL PUR P.W	100.0	32	LIAQUAT PUR	35.4
3	SHUJABAD	89.3	33	BAHAWAL NAGAR	33.3
4	VEHARI	86.7	34	MINCHAN ABAD	33.3
5	MUZUFAR GARH	66.7	35	KOT ADDU	33.3
6	D.G.KHAN	64.3	36	MAILSI	31.3
7	KOT CHUTTA	62.7	37	A.P.EAST	31.1
8	ALI PUR	56.8	38	YAZMAN	26.5
9	FORT ABBAS	55.6	39	JAM PUR	26.4
10	TAUNSA	55.0	40	PIR MAHAL	25.9
11	HASILPUR	54.2	41	HAROON ABAD	25.0
12	CHOBARA	54.2	42	ROJHAN	25.0
13	LAYYAH	54.2	43	GOJRA	23.3
14	DARYA KHAN	52.4	44	PIPLAN	21.9
15	T.T.SINGH	51.2	45	PAK PATTAN	21.9
16	SADIQ ABAD	48.1	46	BHAKKAR	19.2
17	LODHRAN	46.9	47	KEHROR PACCA	17.9
18	BAHAWAL PUR	46.3	48	CHICHA WATNI	17.5
19	KABIR WALA	45.5	49	SAHIWAL	15.0
20	CHISHTIAN	45.3	50	ISA KHEL	12.5
21	KHANEWAL	45.1	51	MIANWALI	12.1
22	DUYAPUR	44.8	52	18-HAZARI	5.9
23	KAROR L.E.	44.6	53	FAISALABAD	5.3
24	KHAN PUR	43.8	54	RENALA KHURD	4.2
25	JAHANIAN	41.9	55	OKARA	3.7
26	RAJAN PUR	41.7	56	A.P SIAL	3.2
27	BURE WALA	41.0	57	SHORKOT	2.6
28	R.Y.KHAN	40.4	58	ARIF WALA	2.6
29	MANKERA	37.0	59	SUMUNDRI	2.0
30	MIAN CHANNU	37.0			

## FORECAST FOR THE NEXT WEEK

### Meteorological data of the current week 2021-2022

Districts	2022				2021			
	Temperature °C		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	33.1	25.3	74.0	7.4	37.4	29.0	62.6	0.0
Khanewal	33.3	26.7	72.1	2.0	38.0	28.5	58.5	0.0
Vehari	32.3	25.9	62.6	6.0	38.0	29.6	57.1	0.0
Lodhran	34.3	25.4	78.9	3.1	38.5	29.0	67.9	0.0
Sahiwal	33.7	26.5	81.5	15.0	40.0	28.0	55.0	0.0
Pakpattan	34.6	27.2	79.6	13.0	41.0	30.0	50.0	0.0
Okara	35.6	27.6	80.2	12.0	39.0	28.0	54.0	0.0
Bahawalpur	33.7	26.0	73.8	73.0	39.0	27.7	57.9	0.0
Bahawalnagar	35.6	25.7	70.0	32.0	38.2	26.7	62.0	0.0
R.Y.Khan	31.7	26.2	80.7	52.8	36.9	27.0	42.0	0.0
D.G. Khan	33.0	26.0	64.0	54.0	40.1	28.5	62.0	0.0
M.Garh	32.8	21.3	82.0	10.0	40.8	30.5	39.7	3.0
Rajanpur	33	28	81.6	15.7	40.0	29.3	43.5	0.0
Layyah	32.0	25.4	94.0	70.0	47.8	32.5	50.0	0.0
<b>TOT/AVG</b>	<b>33.48</b>	<b>25.94</b>	<b>76.79</b>	<b>366.0</b>	<b>39.63</b>	<b>28.89</b>	<b>54.45</b>	<b>3.0</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.	35	33	32	30	32	34	36
	Min.Temp.	26	28	27	27	27	26	28
	Humidity %	41	37	37	36	64	39	42
Sahiwal	Max.Temp.	37	36	35	34	34	35	35
	Min.Temp.	26	29	28	28	27	26	26
	Humidity %	45	50	60	59	59	47	50
Bahawalpur	Max.Temp.	34	33	31	32	33	34	35
	Min.Temp.	26	28	26	27	27	27	28
	Humidity %	60	65	73	71	62	52	50
D.G. Khan	Max.Temp.	33	31	31	30	31	34	35
	Min.Temp.	25	27	26	25	26	26	28
	Humidity %	64	75	72	74	67	56	54
Average Cotton Region	Max.Temp.	<b>33.39</b>						
	Min.Temp.	<b>26.82</b>						
	Humidity %	<b>55.75</b>						

Source: [timeanddate.com](http://timeanddate.com)

**Summary of weather forecast**

Overall weather for seven days in cotton zone during next week will remain moderate, Cloudy and humid.

**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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest will sustain from this 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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest may 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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping 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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest will sustain on cotton crop.

**Mites:** This pest flourishes best in dry climate with optimum temperature 28-40 °C with relative humidity above 40-50. The current weather conditions on overall Punjab basis (temp. Max. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest will sustain 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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest can increase during coming week.

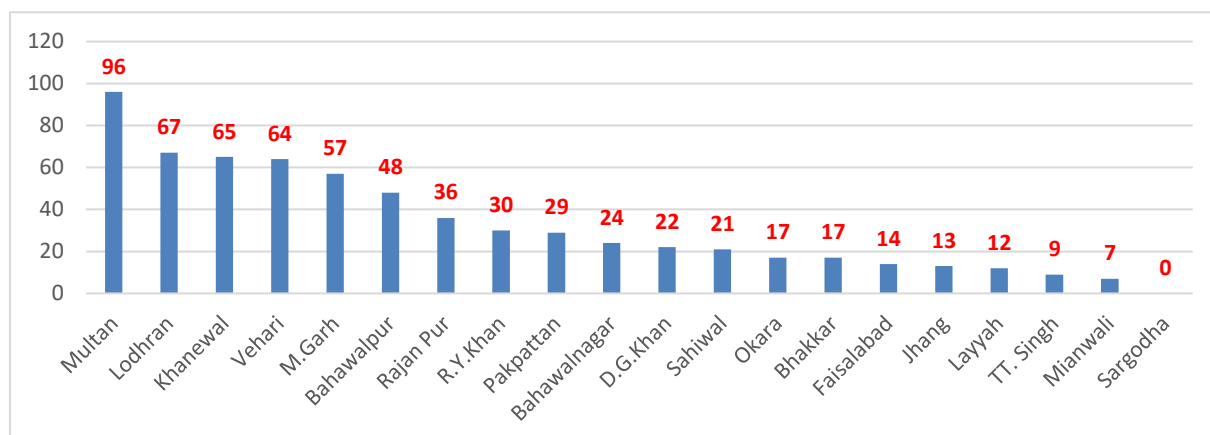
**Pink Bollworm:** This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. . The current weather conditions on overall Punjab basis (temp. Max. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. It is predicted that population of this pest will increase on cotton crop.



### Moth Catches in Pheromone Traps during 3rd Week of August, 2022

Moth Catches in Pheromone Traps During 3rd Week of August 2022			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	96	2.29
Khanewal	8	65	1.16
Vehari	6	64	1.52
Lodhran	6	67	1.60
Sahiwal	4	21	0.75
Pakpattan	4	29	1.04
Okara	4	17	0.61
Bahawalpur	8	48	0.86
Bahawalnagar	10	24	0.34
R.Y.Khan	8	30	0.54
D.G.Khan	6	22	0.52
M.Garh	8	57	1.02
Rajan Pur	6	36	0.86
Layyah	6	12	0.29
Sargodha	0	0	0.00
Mianwali	4	7	0.25
Bhakkar	8	17	0.30
Faisalabad	6	14	0.33
TT. Singh	6	9	0.21
Jhang	4	13	0.46

*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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%.

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

**Moth catches on light traps during 3rd week of August, 2022**

Moth Catches on Light Traps/Trap/week During 3rd Week of August, 2022				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1.0	0.1	2.0
Khanewal	4	1.6	0.0	8.0
Vehari	3	0.0	0.0	2.1
Lodhran	3	2.9	0.0	5.3
Sahiwal	2	1.6	0.0	1.6
Pakpattan	2	1.3	0.0	1.3
Okara	3	1.4	0.0	1.4
Bahawalpur	4	1.6	0.7	3.6
Bahawalnagar	5	1.4	1.0	2.4
R.Y.Khan	4	0.3	0.3	0.1
D.G.Khan	3	0.9	0.9	0.7
M.Garh	4	0.4	0.4	0.7
Rajan Pur	3	1.3	0.6	0.9
Layyah	3	0.0	0.0	0.3
<i>Note. 3 moth catches of a pest on 3 consecutive nights in a trap is considered as ETL</i>				

**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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C with humidity 55.75%. 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. 33.48 °C, Min. 25.94 °C with R. humidity 76.79%) & forecast for the next week temp. Max. 33.39 °C, Min. 26.82°C

with humidity 55.75%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

**CLCuV:** The incidence of this disease is expected to increase on cotton crop to 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.
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. Uproot and keep the infested plants gently in plastic bags and bury in the soil outside the field.
5. Avoid water stress to the plants.
6. Avoid repeated visits of workers from infested fields to healthy fields.

### 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. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Remove alternate host plants

**MANAGEMENT OF ARMY WORM**

1. Keep the fields clean from weeds especially Its it which is a preferred host of armyworm.
2. Avoid sowing of Jantar near cotton fields.
3. Regular pest scouting at least twice a week.
4. Hand picking and destruction of egg masses at initial stage as initially its attack starts in patches and is clearly visible.

**CLCuV MANAGEMENT**

1. Keep Cotton fields free from all kinds of weeds.
2. Eradicate other alternate host plants of CLCuV and dispose them off carefully.
3. Thinning out and destruction of Virus affected plants.
4. Remove CLCuV effected plants in less than 60 DAS (Days after sowing) crop.
5. Hoeing after each irrigation or rain at wattar condition till canopies permit.
6. 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.
7. Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
8. Balanced use of Fertilizer i.e. N.P.K.

9. Keep transmission vector (whitefly) at the low ebb

### Alternate host plants of CLCuV

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