

## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 2nd WEEK OF AUGUST, 2022

**Whitefly:** On overall Punjab basis 40.36 above ETL spots have been observed during current week as compared to 31.36% in last week and 24.98% during the same corresponding period of last year. And 58.98% below ETL spots have been observed during current week as compared to 67.62% in last week and 74.73% 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	MULTAN	79.3	33	HAROOON ABAD	34.4
2	JALAL PUR P.W	77.5	34	T.T.SINGH	34.3
3	SHUJABAD	75.6	35	R.Y.KHAN	34.0
4	ROJHAN	75.0	36	LIAQUAT PUR	33.3
5	KOT CHUTTA	72.5	37	GOJRA	32.6
6	TAUNSA	62.5	38	CHOBARA	32.5
7	KABIR WALA	60.0	39	LAYYAH	31.3
8	JAM PUR	59.4	40	KAROR L.E.	30.0
9	MIAN CHANNU	58.5	41	PIR MAHAL	28.6
10	VEHARI	58.3	42	SADIQ ABAD	28.3
11	RAJAN PUR	58.3	43	SAHIWAL	28.1
12	D.G.KHAN	55.0	44	A.P SIAL	25.0
13	KHANEWAL	53.2	45	ISA KHEL	25.0
14	BURE WALA	53.1	46	CHICHA WATNI	22.9
15	JAHANIAN	52.6	47	SUMUNDRI	20.8
16	MUZUFAR GARH	52.5	48	PAK PATTAN	20.0
17	HASILPUR	52.4	49	18-HAZARI	20.0
18	BAHAWAL PUR	51.1	50	FAISALABAD	20.0
19	FORT ABBAS	48.8	51	PIPLAN	19.4
20	ALI PUR	46.0	52	ARIF WALA	17.9
21	MAILSI	45.0	53	BHAKKAR	16.7
22	JATOI	44.7	54	MIANWALI	16.1
23	YAZMAN	44.4	55	JHANG	15.0
24	LODHRAN	43.8	56	MANKERA	14.7
25	KEHROR PACCA	43.8	57	DARYA KHAN	14.3
26	CHISHTIAN	42.2	58	TANDLIANWALA	14.0
27	DUYAPUR	40.0	59	OKARA	13.6
28	A.P.EAST	39.5	60	RENALA KHURD	13.6
29	MINCHAN ABAD	38.8	61	SHORKOT	12.9
30	KOT ADDU	36.6	62	KALLOR KOT	7.5
31	KHAN PUR	35.0	63	DEPALPUR	7.1
32	BAHAWAL NAGAR	34.8			

**Jassid:** On overall Punjab basis 18.66% above ETL spots has been observed as compared to 22.67% in last week and same week of last year 14.18%. And 79.97% below ETL spots have been observed during current week as compared to 76.16% in last week and 85.33% 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	BHAKKAR	83.3	32	BAHAWAL NAGAR	17.4
2	TAUNSA	42.5	33	JATOI	17.0
3	VEHARI	38.9	34	SUMUNDRI	16.7
4	BURE WALA	37.5	35	R.Y.KHAN	16.0
5	FORT ABBAS	37.2	36	SAHIWAL	15.6
6	MANKERA	35.3	37	LIAQUAT PUR	14.6
7	ALI PUR	34.0	38	PIR MAHAL	14.3
8	SHUJABAD	33.3	39	JALAL PUR P.W	12.5
9	T.T.SINGH	31.4	40	LODHRAN	12.5
10	LAYYAH	31.3	41	KHAN PUR	12.5
11	GOJRA	30.2	42	HAROO ABAD	12.5
12	KOT ADDU	29.3	43	A.P SIAL	12.5
13	18-HAZARI	28.0	44	KHANEWAL	10.6
14	CHOBARA	27.5	45	FAISALABAD	10.0
15	CHISHTIAN	26.7	46	JHANG	10.0
16	MAILSI	25.0	47	MIAN CHANNU	9.8
17	KAROR L.E.	25.0	48	HASILPUR	9.5
18	ISA KHEL	25.0	49	KEHROR PACCA	9.4
19	PAK PATTAN	24.0	50	RENALA KHURD	9.1
20	BAHAWAL PUR	22.2	51	YAZMAN	8.3
21	DARYA KHAN	21.4	52	MINCHAN ABAD	8.2
22	CHICHA WATNI	20.0	53	JAHANIAN	7.9
23	SADIQ ABAD	19.6	54	KOT CHUTTA	7.8
24	PIPLAN	19.4	55	MUZUFAR GARH	7.5
25	MIANWALI	19.4	56	DEPALPUR	7.1
26	MULTAN	19.0	57	SHORKOT	6.5
27	A.P.EAST	18.6	58	JAM PUR	6.3
28	TANDLIANWALA	18.0	59	OKARA	4.5
29	ARIF WALA	17.9	60	DUYAPUR	2.9
30	D.G.KHAN	17.5	61	KABIR WALA	2.5
31	KALLOR KOT	17.5			

**Thrips:** On overall Punjab basis 2.46% above ETL spots has been observed as compared to 2.77% in last week and same week of last year i.e. 11.71%. And 95.21% below ETL spots have been observed during current week as compared to 95.25% in last week and 86.93% 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	ALI PUR	26.0	11	SHUJABAD	4.4
2	PIPLAN	22.6	12	SADIQ ABAD	4.3
3	ISA KHEL	12.5	13	LAYYAH	4.2
4	MIANWALI	9.7	14	18-HAZARI	4.0
5	LIAQUAT PUR	8.3	15	MULTAN	3.4
6	KAROR L.E.	7.5	16	JAM PUR	3.1
7	KOT ADDU	7.3	17	CHOBARA	2.5
8	JATOI	6.4	18	KHAN PUR	2.5
9	R.Y.KHAN	6.0	19	A.P.EAST	2.3
10	JALAL PUR P.W	5.0	20	BAHAWAL PUR	2.2

**Mealy Bug:** On overall Punjab basis 10.89% spots (all considered above ETL) of Mealy Bug have been observed as compared to 7.74% in last week and 24.53% 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	JALAL PUR P.W	40.0	25	CHICHA WATNI	8.6
2	SHUJABAD	31.1	26	RAJAN PUR	8.3
3	BAHAWAL PUR	31.1	27	18-HAZARI	8.0
4	YAZMAN	30.6	28	CHOBARA	7.5
5	HAROON ABAD	28.1	29	KOT ADDU	7.3
6	MULTAN	27.6	30	HASILPUR	7.1
7	D.G.KHAN	27.5	31	LIAQUAT PUR	6.3
8	KOT CHUTTA	27.5	32	LODHRAN	6.3
9	R.Y.KHAN	26.0	33	VEHARI	5.6
10	FORT ABBAS	25.6	34	KALLOR KOT	5.0
11	CHISHTIAN	24.4	35	MUZUFAR GARH	5.0
12	JATOI	19.1	36	KABIR WALA	5.0
13	LAYYAH	18.8	37	PIR MAHAL	4.8
14	KHAN PUR	15.0	38	RENALA KHURD	4.5
15	T.T.SINGH	14.3	39	OKARA	4.5
16	DUYAPUR	14.3	40	PIPLAN	3.2
17	KAROR L.E.	12.5	41	MIANWALI	3.2
18	JAM PUR	12.5	42	JAHANIAN	2.6
19	ROJHAN	12.5	43	MIAN CHANNU	2.4
20	GOJRA	11.6	44	A.P.EAST	2.3
21	ALI PUR	10.0	45	SADIQ ABAD	2.2
22	MAILSI	10.0	46	KHANEWAL	2.1
23	KEHROR PACCA	9.4	47	MINCHAN ABAD	2.0
24	BAHAWAL NAGAR	8.7			

**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 2.24% below ETL spots have been observed during current week as compared to 1.42% in last week and 5.61% 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 1.58% above ETL spots have been observed during current week as compared to 1.24% in last week and 0.00% during the same corresponding period of last year. And 38.52% below ETL spots have been observed during current week as compared to 33.99% in last week and 18.55% 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	25.6	5	HASILPUR	4.8
2	T.T.SINGH	20.0	6	LODHRAN	3.1
3	MULTAN	13.8	7	JALAL PUR P.W	2.5
4	SHUJABAD	11.1	8	MAILSI	2.5

**Armyworm:** On overall Punjab basis 2.11% spots (all considered above ETL) of Armyworm have been observed as compared to 1.57% in last week and 1.24% 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	17.2	10	R.Y.KHAN	4.0
2	JATOI	17.0	11	PIPLAN	3.2
3	ALI PUR	16.0	12	JAM PUR	3.1
4	SHUJABAD	8.9	13	HASILPUR	2.4
5	BHAKKAR	8.3	14	FORT ABBAS	2.3
6	ROJHAN	6.3	15	BAHAWAL PUR	2.2
7	D.G.KHAN	5.0	16	KHANEWAL	2.1
8	MUZUFAR GARH	5.0	17	RAJAN PUR	2.1
9	LAYYAH	4.2	18	KALLOR KOT	0.9

**Pink Boll Worm:** On overall Punjab basis 2.72% above ETL spots have been observed as compared to 1.17% in last week and 4.16% same corresponding period of the last year. And 17.92% below ETL spots have been observed as compared to 11.43% in last week and 24.73% during same corresponding period of last year.

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

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	ROJHAN	31.3	11	LODHRAN	6.3
2	KEHROR PACCA	18.8	12	ALI PUR	6.0
3	RAJAN PUR	14.6	13	VEHARI	5.6
4	HASILPUR	11.9	14	JALAL PUR P.W	5.0
5	DUYAPUR	11.4	15	MAILSI	5.0
6	BAHAWAL PUR	11.1	16	BURE WALA	3.1
7	JAHANIAN	10.5	17	KABIR WALA	2.5
8	SHUJABAD	8.9	18	A.P.EAST	2.3
9	D.G.KHAN	7.5	19	KOT CHUTTA	2.0
10	MULTAN	6.9			

**American Bollworm:** On overall Punjab basis 0.09% above ETL spots have been observed as compared to 0.04 in last week and 0.00% during same corresponding period of last year. And 0.97% below ETL spots have been observed as compared to 0.51% in last week and 0.12% during same corresponding period of last year.

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

S. NO.	TEHSIL	%AGE
1	KOT CHUTTA	3.9

**Spotted Bollworm:** On overall Punjab basis 0.04% above ETL spots have been observed as compared to 0.18% in last week and 0.19% during same corresponding period of last year & 1.01% below ETL spots have been observed as compared to 0.33% in last week and 0.87% during same corresponding period of last year.

**Tehsil wise percentage of hot spots of SBW**

S. NO.	TEHSIL	%AGE
1	KOT CHUTTA	2.0

**CLCuV:** On overall Punjab basis 41.19% spots (all considered above ETL) of CLCV have been observed as compared to 35.85% in last week and 19.37% 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	KHANEWAL	46.7
2	JALAL PUR P.W	87.7	32	MANKERA	42.2
3	VEHARI	84.3	33	CHISHTIAN	41.4
4	SHUJABAD	86.7	34	KEHROR PACCA	30.1
5	KOT CHUTTA	80.1	35	KABIR WALA	26.3
6	ALI PUR	55.7	36	BAHAWAL NAGAR	39.6
7	HASILPUR	75.6	37	DUYAPUR	54.2
8	ROJHAN	67.9	38	BHAKKAR	42.4
9	D.G.KHAN	61.0	39	YAZMAN	40.3
10	MUZUFAR GARH	64.8	40	HAROON ABAD	36.5
11	TAUNSA	65.1	41	MIANWALI	26.9
12	FORT ABBAS	58.9	42	ISA KHEL	21.2
13	R.Y.KHAN	51.0	43	JAM PUR	35.5
14	BURE WALA	57.0	44	DARYA KHAN	23.7
15	CHOBARA	51.1	45	PAK PATTAN	20.0
16	T.T.SINGH	50.0	46	PIPLAN	15.8
17	BAHAWAL PUR	55.9	47	GOJRA	24.8
18	RAJAN PUR	40.9	48	MINCHAN ABAD	13.0
19	JAHANIAN	51.3	49	KALLOR KOT	14.8
20	LAYYAH	50.3	50	18-HAZARI	17.3
21	A.P.EAST	51.8	51	ARIF WALA	13.9
22	JATOI	46.9	52	SAHIWAL	3.5
23	KOT ADDU	46.8	53	CHICHA WATNI	5.7
24	SADIQ ABAD	43.8	54	PIR MAHAL	2.4
25	KAROR L.E.	48.1	55	OKARA	2.9
26	LODHRAN	42.7	56	SUMUNDRI	3.2
27	LIAQUAT PUR	40.8	57	TANDLIANWALA	6.9
28	MAILSI	62.3	58	SHORKOT	2.4
29	KHAN PUR	38.5	59	A.P SIAL	0.9
30	MIAN CHANNU	41.6			

## 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	36.7	26.9	71.6	0.0	36.7	30.3	63.6	0.0
Khanewal	37.3	28.7	67.0	0.0	38.5	29.6	59.0	0.0
Vehari	35.7	28.1	64.8	0.0	37.4	30.6	58.3	0.0
Lodhran	36.6	25.4	73.0	1.1	38.1	29.1	67.4	0.0
Sahiwal	37.5	28.2	70.2	0.0	39.0	28.0	70.0	0.0
Pakpattan	38.1	28.1	74.1	0.0	41.0	30.0	68.0	0.0
Okara	36.8	27.1	72.5	0.0	37.0	27.0	69.0	8.4
Bahawalpur	38.3	28.1	66.1	0.6	38.8	28.5	56.4	0.0
Bahawalnagar	37.4	27.6	69.4	2.1	40.9	28.0	54.2	0.0
R.Y.Khan	36.0	26.5	61.7	5.5	38.3	25.5	53.7	0.0
D.G. Khan	37.00	30.14	48.93	0.00	40.14	28.57	62.00	0.00
M.Garh	39.80	24.60	70.00	0.00	41.00	31.00	38.63	3.00
Rajanpur	38	30.6	64.75	0.00	40.00	29.3	43.57	0.00
Layyah	49.00	27.00	92.00	10.00	39.57	29.57	56.93	-
<b>TOT/ABG</b>	<b>38.15</b>	<b>27.65</b>	<b>69.00</b>	<b>19.3</b>	<b>39.03</b>	<b>28.93</b>	<b>58.62</b>	<b>11.4</b>

### Weather forecast for next 7 day in cotton zone

Division	Dated	17/8	18/8	19/8	20/8	21/8	22/8	23/8
<b>Multan</b>	Max.Temp.	34	34	33	36	35	36	33
	Min.Temp.	28	27	27	28	29	27	26
	Humidity %	40	58	63	54	47	44	31
<b>Sahiwal</b>	Max.Temp.	33	33	34	36	35	34	33
	Min.Temp.	26	27	27	27	28	28	26
	Humidity %	60	66	63	56	50	54	33
<b>Bahawalpur</b>	Max.Temp.	32	32	31	35	34	35	32
	Min.Temp.	28	26	27	28	29	27	25
	Humidity %	66	67	69	56	50	47	34
<b>D.G. Khan</b>	Max.Temp.	33	33	33	36	35	35	32
	Min.Temp.	28	27	28	28	30	27	26
	Humidity %	58	63	62	58	50	48	36
<b>Average Cotton Region</b>	<b>Max.Temp.</b>	<b>33.82</b>						
	<b>Min.Temp.</b>	<b>27.32</b>						
	<b>Humidity %</b>	<b>52.96</b>						

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

**Summary of weather forecast**

Overall weather for seven days in cotton zone during next week will remain hot 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. Keeping in view above all, it is predicted that population of this pest can increase 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. Keeping in view above all, it is predicted that population of this pest may 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. Keeping in view above all, it is predicted that population of this pest will increase 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. Keeping in view above all, it is predicted that population of this pest can increase during coming week.

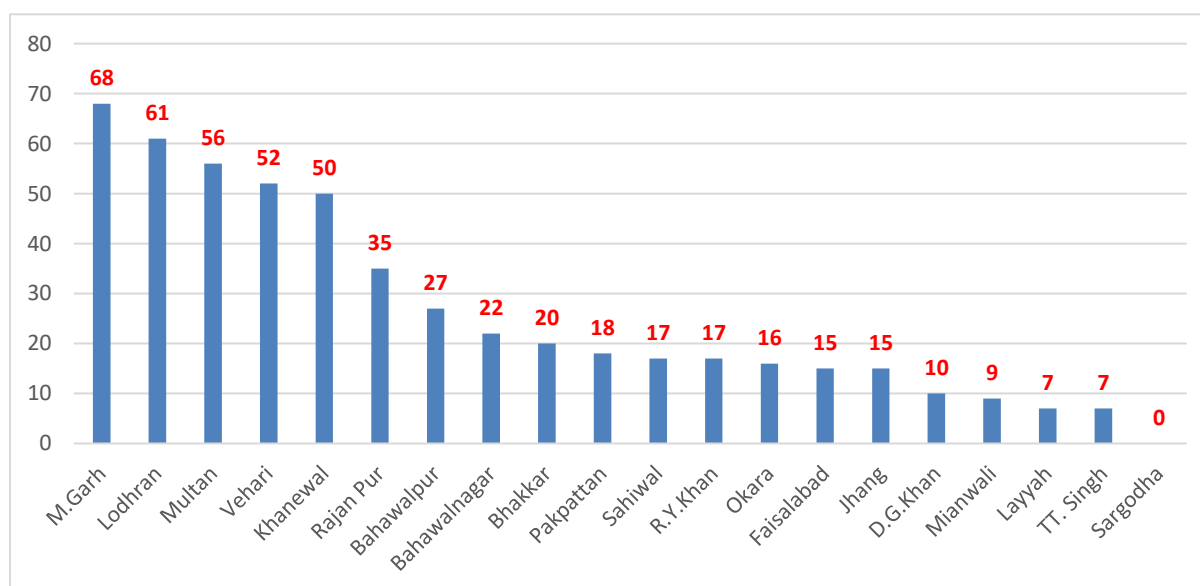
**Pink Bollworm:** This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. . The current weather conditions on overall Punjab basis (temp. Max. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. It is predicted that population of this pest will increase on cotton crop.



## Moth Catches in Pheromone Traps during 2nd Week of August, 2022

Moth Catches in Pheromone Traps During 2nd Week of August 2022			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	56	1.33
Khanewal	8	50	0.89
Vehari	6	52	1.24
Lodhran	6	61	1.45
Sahiwal	4	17	0.61
Pakpattan	4	18	0.64
Okara	4	16	0.57
Bahawalpur	8	27	0.48
Bahawalnagar	10	22	0.31
R.Y.Khan	8	17	0.30
D.G.Khan	6	10	0.24
M.Garh	8	68	1.21
Rajan Pur	6	35	0.83
Layyah	6	7	0.17
Sargodha	0	0	0.00
Mianwali	4	9	0.32
Bhakkar	8	20	0.36
Faisalabad	6	15	0.36
TT. Singh	6	7	0.17
Jhang	4	15	0.54

*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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. It is predicted that population of this pest will sustain on cotton crop during the coming week.

### **Moth catches on light traps during 2nd week of August, 2022**

<b>Moth Catches on Light Traps/Trap/week During 2nd Week of August, 2022</b>				
<b>District</b>	<b>Traps Installed</b>	<b>A.B.W</b>	<b>S.B.W</b>	<b>Armyworm</b>
Multan	3	2.0	0.1	2.1
Khanewal	4	1.7	0.0	6.6
Vehari	3	0.4	0.0	1.6
Lodhran	3	4.4	0.0	4.6
Sahiwal	2	1.4	0.0	1.4
Pakpattan	2	1.1	0.0	1.1
Okara	3	1.3	0.0	1.3
Bahawalpur	4	1.6	0.9	3.3
Bahawalnagar	5	1.0	0.9	1.9
R.Y.Khan	4	0.6	0.4	1.1
D.G.Khan	3	0.6	1.1	1.6
M.Garh	4	0.4	0.6	1.3
Rajan Pur	3	2.9	2.4	5.0
Layyah	3	0.0	0	0.6
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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity

52.96%. 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. 38.15 °C, Min. 27.65 °C with R. humidity 69.00%) & forecast for the next week temp. Max. 33.82 °C, Min. 27.32°C with humidity 52.96%. 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 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 watter 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

