

## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4<sup>th</sup> WEEK OF JUNE, 2021

**Whitefly:** On overall Punjab basis 0.38% above ETL spots have been observed during current week as compared to 0.27% % in last week and 1.90% during the same corresponding period of last year. And 67.39% below ETL spots have been observed during current week as compared to 48.47% in last week and 64.92% 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	SAHIWAL	10.0	4	JHANG	2.8
2	MAILSI	5.1	5	T.T.SINGH	1.4
3	VEHARI	3.3			

**Jassid:** On overall Punjab basis 11.47% above ETL spots has been observed as compared to 4.68% in last week and same week of last year 5.66%. And 68.66% below ETL spots have been observed during current week as compared to 56.52% in last week and 66.63% 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 ADDU	34.1	27	MAILSI	10.3
2	MULTAN	31.0	28	VEHARI	10.0
3	MUZUFAR GARH	28.0	29	KEHROR PACCA	10.0
4	KABIR WALA	26.5	30	LIAQUAT PUR	10.0
5	D.G.KHAN	25.0	31	TAUNSA	10.0
6	MIAN CHANNU	21.9	32	PIR MAHAL	10.0
7	BAHAWAL PUR	20.4	33	T.T.SINGH	9.7
8	SHUJABAD	20.0	34	BURE WALA	9.7
9	CHICHA WATNI	20.0	35	LODHRAN	8.8
10	ARIF WALA	20.0	36	CHOBARA	8.7
11	HASILPUR	20.0	37	ROJHAN	8.5
12	KOT CHUTTA	20.0	38	SADIQ ABAD	8.0
13	KHANEWAL	19.6	39	R.Y.KHAN	7.8
14	A.P SIAL	18.8	40	JHANG	7.0
15	JAM PUR	18.0	41	CHISHTIAN	6.3
16	LAYYAH	17.1	42	KHAN PUR	5.9
17	SAHIWAL	16.7	43	OKARA	5.3
18	ALI PUR	16.4	44	JALAL PUR P.W	5.0
19	PAK PATTAN	15.0	45	YAZMAN	5.0
20	KAROR L.E.	12.5	46	DUYAPUR	4.8
21	RAJAN PUR	12.5	47	KALLOR KOT	4.5
22	18-HAZARI	12.5	48	RENALA KHURD	4.3
23	JAHANIAN	12.2	49	FAISALABAD	3.7
24	JATOI	11.4	50	A.P.EAST	3.3
25	DARYA KHAN	11.1	51	HAROON ABAD	2.4
26	GOJRA	10.9	52	FORT ABBAS	2.1

**Thrips:** On overall Punjab basis 1.26% above ETL spots has been observed as compared to 0.58% in last week and same week of last year i.e. 2.05%. And 71.34% below ETL spots have been observed during current week as compared to 56.56% in last week and 67.77% 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	JAM PUR	8.0	11	KOT CHUTTA	2.9
2	LAYYAH	7.3	12	JHANG	2.8
3	SHORKOT	6.7	13	JAHANIAN	2.4
4	CHISHTIAN	6.3	14	MINCHAN ABAD	2.4
5	A.P SIAL	6.3	15	KOT ADDU	2.4
6	JALAL PUR P.W	5.0	16	CHOBARA	2.2
7	KAROR L.E.	5.0	17	ROJHAN	2.1
8	HAROON ABAD	4.9	18	KHANEWAL	2.0
9	KALLOR KOT	4.5	19	R.Y.KHAN	2.0
10	KABIR WALA	2.9		JHANG	2.8

**Mealy Bug:** On overall Punjab basis 0.71% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.09% in last week and 0.19% 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	DUYAPUR	9.5	7	KABIR WALA	2.9
2	OKARA	5.3	8	TAUNSA	2.5
3	KHAN PUR	3.9	9	HASILPUR	2.2
4	BAHAWAL PUR	3.7	10	CHOBARA	2.2
5	GOJRA	3.6	11	LODHRAN	1.8
6	VEHARI	3.3			

**Mites:** Prevalence of Mites of above ETL is not observed during current week, last week as well as during same corresponding week of last year. However 0.80% below ETL spots have been observed during current week as compared to 0.27% in last week and 1.37% during the same corresponding period of last year.

**Dusky Cotton Bug:** On overall Punjab basis no hot spots have been observed during current week likewise in the last week against 0.27% during the same corresponding period of last year. And 5.08% below ETL spots have been observed during current week as compared to 4.45% in last week and 19.50 % during the same corresponding period of last year.

**Armyworm:** On overall Punjab basis 0.29% spots (all considered above ETL) of Armyworm have been observed as compared to 0.45% in last week and 1.94% 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	OKARA	5.3	5	KAROR L.E.	2.5
2	MIAN CHANNU	3.1	6	JAHANIAN	2.4
3	MAILSI	2.6	7	HASILPUR	2.2
4	CHICHA WATNI	2.5			

**Pink Boll Worm:** On overall Punjab basis 0.46% above ETL spots have been observed as compared to 0.31% in last week and 0.76% same corresponding period of the last year. And 5.38% below ETL spots have been observed as compared to 5.94% in last week and 8.82% during same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of Pink Bollworm**

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SHUJABAD	5.0	5	HASILPUR	2.2
2	RAJAN PUR	5.0	6	LIAQUAT PUR	2.0
3	R.Y.KHAN	3.9	7	KHAN PUR	2.0
4	JAHANIAN	2.4	8	BAHAWAL PUR	1.9

**American Bollworm:** On overall Punjab basis 0.04% 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 0.71% below ETL spots have been observed as compared to 1.76% in last week and 1.94% during same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of American Bollworm**

S. NO.	TEHSIL	%AGE
1	R.Y.Khan	0.2

**Spotted Bollworm:** Prevalence of spotted bollworm of above ETL is not observed during current week, last week as well as during same corresponding week of last year. However 0.04% below ETL spots have been observed as compared to 0.04% in last week and 0.30% during same corresponding period of last year.

**CLCuV:** On overall Punjab basis 0.13% spots (all considered above ETL) of CLCV have been observed as compared to 0.09% in last week and 0.00% 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	SHUJABAD	2.5	3	T.T.SINGH	1.4
2	CHICHA WATNI	2.5			

**FORECAST FOR THE NEXT WEEK****Table 10 Meteorological data of the current week 2020-2021**

Districts	2021				2020			
	Temperature		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
MULTAN	39.75	29.50	71.25	23.40	40.40	31.60	62.00	0.00
KHANEWAL	40.13	29.38	50.50	0.00	42.29	31.43	59.43	0.00
VEHARI	39.71	28.71	49.64	0.00	40.14	31.43	74.07	0.00
LODHRAN	38.71	25.57	74.64	28.00	42.14	30.86	65.36	0.00
Sahiwal	40.00	27.00	51.00	2.00	41.00	28.00	59.00	38.00
Pakpattan	42.00	29.00	52.00	0.00	44.80	31.20	52.80	22.00
Okara	39.00	27.00	49.00	0.00	37.10	25.94	79.57	63.00
Bahawalpur	39.90	28.02	56.86	Traces	41.12	30.06	64.60	0.00
Bahawalnagar	39.90	28.02	56.86	6.68	41.12	30.06	64.60	15.38
R.Y.Khan	41.66	27.83	42.50	0.00	42.00	30.00	44.67	0.00
D.G. Khan	41.57	29.43	59.57	19.00	43.86	31.29	58.07	0.00
Muzaffar Garh	42.33	32.50	31.50	0.00	39.29	27.03	57.50	5.00
Rajanpur	44.56	30.14	40.56	8.00	42.96	29.24	39.00	0.00
Layyah	40.25	26.75	63.00	0.00	37.88	26.75	40.63	0.00
<b>TOT/AVG</b>	<b>40.68</b>	<b>28.49</b>	<b>53.49</b>	<b>87.08</b>	<b>41.15</b>	<b>29.63</b>	<b>58.66</b>	<b>143.38</b>

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

Division	Dated	30/6	1/7	2/7	3/7	4/7	5/7	6/7
<b>Multan</b>	Max.Temp.	46	45	42	41	40	43	39
	Min.Temp.	36	32	32	29	31	33	31
	Humidity %	13	18	25	29	31	25	19
<b>Sahiwal</b>	Max.Temp.	46	44	42	40	40	43	39
	Min.Temp.	33	32	30	28	31	30	30
	Humidity %	13	18	27	33	34	25	19
<b>Bahawalpur</b>	Max.Temp.	45	44	42	40	41	42	38
	Min.Temp.	34	31	31	29	30	32	28
	Humidity %	17	21	26	30	30	25	21
<b>D.G. Khan</b>	Max.Temp.	47	46	44	42	42	44	39
	Min.Temp.	34	31	31	30	32	33	31
	Humidity %	9	15	23	26	26	24	22
<b>Average Cotton Region</b>	<b>Max.Temp.</b>	<b>42.36</b>						
	<b>Min.Temp.</b>	<b>31.25</b>						
	<b>Humidity %</b>	<b>23</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 Sunny & shiny also.

### 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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp.

Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view the above situation, it is predicted that population of this pest will maintain at same level.

**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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view the current climatic situation and weather forecast information, it is predicted that climatic conditions are very conducive for multiplication of this pests so it may rapidly 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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view above conditions, it is predicted that population of this pest will maintain at same level.

**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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp.

Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view above conditions, it is predicted that there is rising trend in its population in coming weeks

**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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view above conditions, 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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view above situation, it is predicted that population of this pest may sustain during coming week.

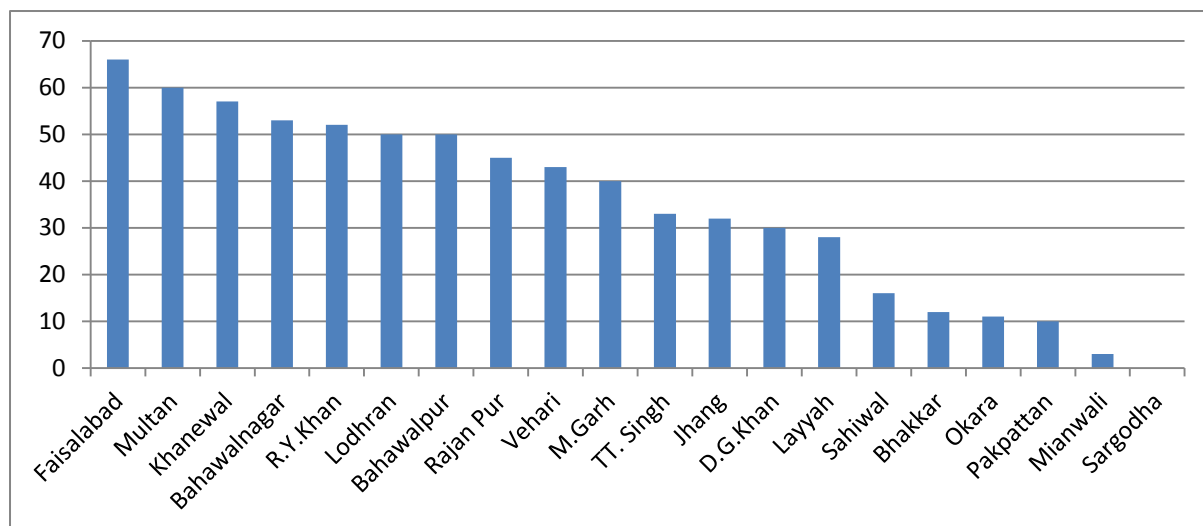
**Pink Bollworm:**

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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. It is predicted that population of this pest will increase on cotton during the coming week & mostly will be observed in flowers.

### Moth Catches in Pheromone Traps during 4rth Week of June, 2021

Moth Catches in Pheromone Traps During 4rth Week of June 2021			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	60	1.43
Khanewal	8	57	1.02
Vehari	6	43	1.02
Lodhran	6	50	1.19
Sahiwal	4	16	0.57
Pakpattan	4	10	0.36
Okara	4	11	0.39
Bahawalpur	8	50	0.89
Bahawalnagar	10	53	0.76
R.Y.Khan	8	52	0.93
D.G.Khan	6	30	0.71
M.Garh	8	40	0.71
Rajan Pur	6	45	1.07
Layyah	6	28	0.67
Sargodha	0	0	0
Mianwali	4	3	0.11
Bhakkar	8	12	0.21
Faisalabad	6	66	1.57
TT. Singh	6	33	0.79
Jhang	4	32	1.14

*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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. It is predicted that population of this pest will sustain on cotton crop during the coming week.

### **Moth catches on light traps during 4rth week of June, 2021**

<b>Moth Catches on Light Traps/Trap/week During 3rd Week of June, 2021</b>				
<b>District</b>	<b>Traps Installed</b>	<b>A.B.W</b>	<b>S.B.W</b>	<b>Armyworm</b>
Multan	3	6	0	11
Khanewal	4	14	0	20
Vehari	3	2	0	7
Lodhran	3	13	0	21
Sahiwal	2	5	0	5
Pakpattan	2	4	0	4
Okara	3	5	0	4
Bahawalpur	4	5	1	10
Bahawalnagar	5	7	2	9
R.Y.Khan	4	6	6	8
D.G.Khan	3	2	0	7
M.Garh	4	14	8	10
Rajan Pur	3	1	1	2
Layyah	3	0	0	2

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. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. 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%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 40.68 °C, Min. 28.49 °C with R. humidity 53.49%) & forecast for the next week temp. Max. 42.36 °C, Min. 31.25°C with humidity 23%. Keeping in view above situation, 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 in 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**

<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. 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
			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

