



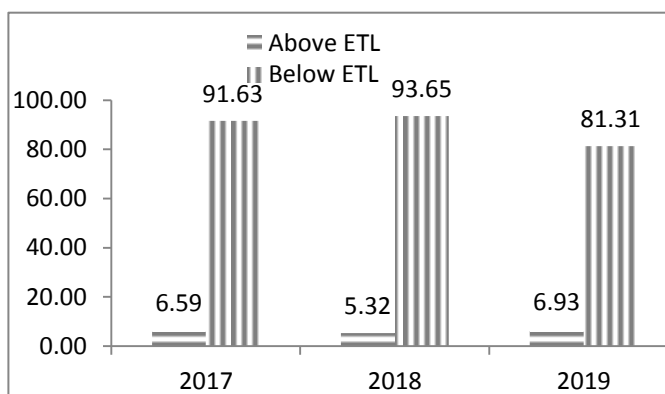
DIRECTORATE GENERAL
PEST WARNING AND QUALITY CONTROL OF PESTICIDES, PUNJAB,
 3rdFloor, 21-Davis Road, Lahore
 Phone: (042) 99204371 Fax: 99204373 Email: pestwarning@yahoo.com

Pest Alert for 3RD Week of July 2019

- In overall cotton zone the climatic conditions and crop stage are conducive for flare up of various insect pests as also observed from the pest situation reports.
- Among sucking insect pests the hot spots of white fly, Jassid, Thrips and Mealy bug have increased during 2nd week of July which is expected to further intensify during the next week.
- In case of bollworms the infestation of Pink bollworm, American bollworm and Armyworm has increased which may further flare up during next week.
- All the field formations, extension workers and stakeholders are informed to remain vigilant during pest scouting and also guide the farmers for timely management of these insect pests to save the cotton crop from any economic loss.

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 2ND WEEK OF JULY, 2019

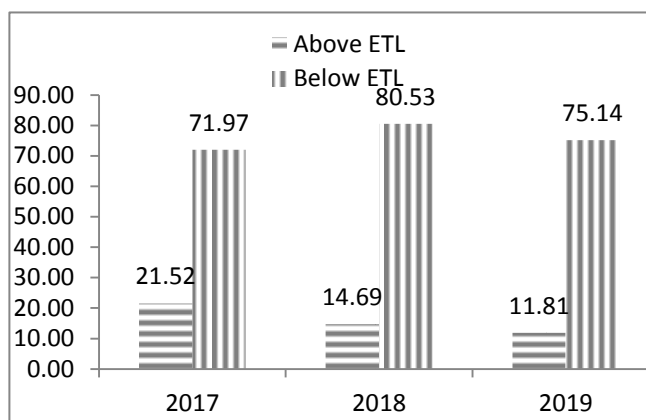
Whitefly: On overall Punjab basis 6.93% above ETL spots have been observed during current week as compared to 4.16% % in last week and 5.32% during the same corresponding period of last year. And 81.31% below ETL spots have been observed during current week as compared to 78.21% in last week and 93.65% 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	RENALA KHURD	28.6	26	BURE WALA	6.7
2	PAK PATTAN	27.8	27	KALLOR KOT	6.7
3	BAHAWAL PUR	26.8	28	JHANG	6.3
4	OKARA	25.0	29	KABIR WALA	6.0
5	DEPALPUR	25.0	30	MINCHAN ABAD	5.1
6	HASILPUR	25.0	31	JALAL PUR P.W	5.0
7	CHISHTIAN	22.5	32	JAM PUR	5.0
8	SILLANWALI/ SAHIWAL	18.2	33	MIANWALI	4.9
9	BHAKKAR	17.4	34	SHUJABAD	4.7
10	SUMUNDRI	16.7	35	MULTAN	4.5
11	HAROON ABAD	15.0	36	MAILSI	4.4
12	MANKERA	14.3	37	A.P.EAST	3.9
13	CHICHA WATNI	14.0	38	A.P.SIAL	3.8
14	SAHIWAL	13.0	39	TANDLIANWALA	3.6
15	KEHROR PACCA	12.7	40	PEER MEHAL	3.3
16	ARIF WALA	12.5	41	SHORKOT	2.9
17	BAHAWAL NAGAR	12.5	42	FORT ABBAS	2.5
18	R.Y.KHAN	11.6	43	PIPLAN	2.5
19	YAZMAN	11.1	44	JATOI	2.4
20	LODHAN	10.0	45	KHAN PUR	2.2
21	KAROR L.E.	10.0	46	CHOBARA	2.0
22	T.T.SINGH	9.4	47	MIAN CHANNU	1.9
23	SADIQ ABAD	8.9	48	KHANEWAL	1.8
24	LAYYAH	8.0	49	DUYAPUR	1.7
25	LIAQUAT PUR	7.1	20	GOJRA	1.5

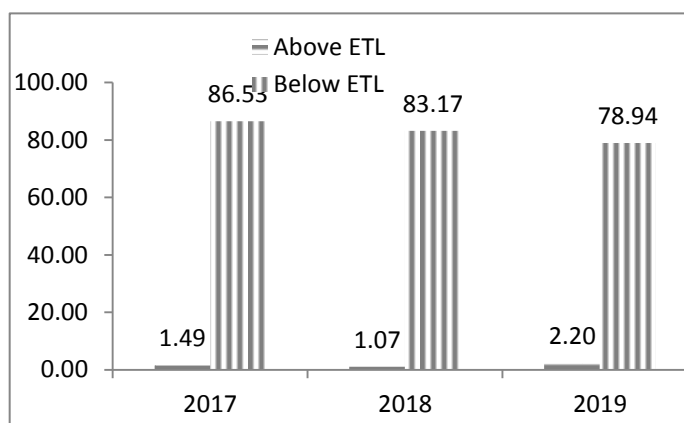
Jassid: On overall Punjab basis 11.81% above ETL spots has been observed as compared to 7.86% in last week and same week of last year 14.69%. And 75.14% below ETL spots have been observed during current week as compared to 69.26% in last week and 80.53% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SHUJABAD	34.9	31	DUYAPUR	10.0
2	HASILPUR	31.8	32	HAROON ABAD	10.0
3	BHAKKAR	30.4	33	JAM PUR	10.0
4	BAHAWAL PUR	30.4	34	JATOI	9.8
5	JALAL PUR P.W	30.0	35	T.T.SINGH	9.4
6	A.P.EAST	25.5	36	ARIF WALA	9.4
7	CHISHTIAN	25.0	37	LAYYAH	8.0
8	MULTAN	24.2	38	CHOBARA	8.0
9	YAZMAN	18.5	39	A.P.SIAL	7.7
10	SILLANWALI/ SAHIWAL	18.2	40	JAHANIAN	7.5
11	KOT CHUTTA	17.9	41	VEHARI	7.5
12	KOT ADDU	17.5	42	FORT ABBAS	7.5
13	R.Y.KHAN	16.3	43	PEER MEHAL	6.7
14	RAJAN PUR	16.0	44	KALLOR KOT	6.7
15	SADIQ ABAD	15.6	45	JHANG	6.3
16	RENALA KHURD	14.3	46	GOJRA	6.2
17	DEPALPUR	14.3	47	TAUNSA	6.0
18	LIAQUAT PUR	14.3	48	D.G.KHAN	5.7
19	MANKERA	14.3	49	PAK PATTAN	5.6
20	CHICHA WATNI	14.0	50	ALI PUR	5.6
21	KEHROR PACCA	12.7	51	ROJHAN	5.0
22	LODHRAN	12.5	52	MAILSI	4.4
23	OKARA	12.5	53	KHANEWAL	3.6
24	BAHAWAL NAGAR	12.5	54	TANDLIANWALA	3.6
25	MUZUFAR GARH	12.5	55	SHORKOT	2.9
26	KABIR WALA	12.0	56	PIPLAN	2.5
27	KAROR L.E.	12.0	57	MIANWALI	2.4
28	MIAN CHANNU	11.5	58	18-HAZARI	2.3
29	SAHIWAL	10.9	59	BURE WALA	2.2
30	KHAN PUR	10.9			

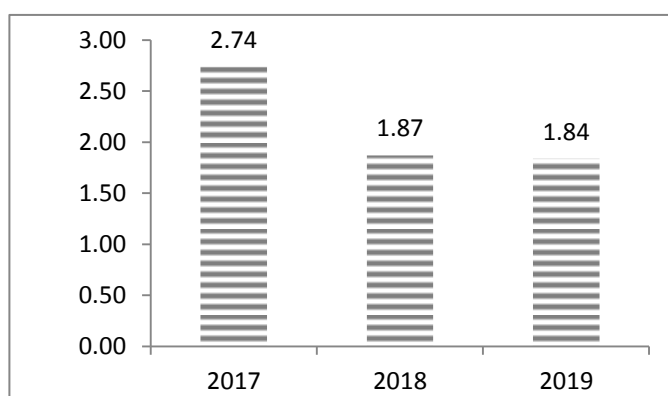
Thrips: On overall Punjab basis 2.20% above ETL spots have been observed as compared to 1.40% in last week and same week of last year i.e. 1.07%. And 78.94% below ETL spots have been observed during current week as compared to 76.93% in last week and 83.17% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SILLANWALI/ SAHIWAL	18.2	15	KHANEWAL	3.6
2	HAROOON ABAD	10.0	16	ARIF WALA	3.1
3	CHISHTIAN	10.0	17	JHANG	3.1
4	HASILPUR	9.1	18	SHORKOT	2.9
5	MIAN CHANNU	7.7	19	D.G.KHAN	2.9
6	T.T.SINGH	7.5	20	JAHANIAN	2.5
7	BAHAWAL PUR	7.1	21	FORT ABBAS	2.5
8	SAHIWAL	6.5	22	PIPLAN	2.5
9	KABIR WALA	6.0	23	MIANWALI	2.4
10	ISA KHEL	5.9	24	CHICHA WATNI	2.3
11	BAHAWAL NAGAR	5.0	25	MAILSI	2.2
12	LIAQUAT PUR	4.8	26	SADIQ ABAD	2.2
13	BURE WALA	4.4	27	KHAN PUR	2.2
14	A.P.SIAL	3.8	28	KAROR L.E.	2.0

Mealy Bug: On overall Punjab basis 1.84% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.89% in last week and 1.87% spots during the same corresponding period of the last year.

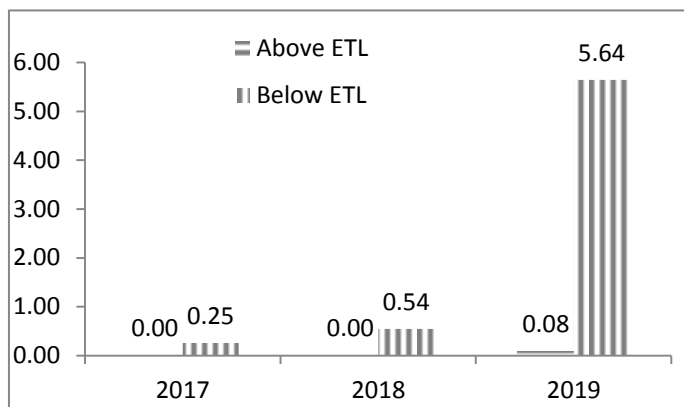


Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	R.Y.KHAN	25.6	10	RAJAN PUR	4.0

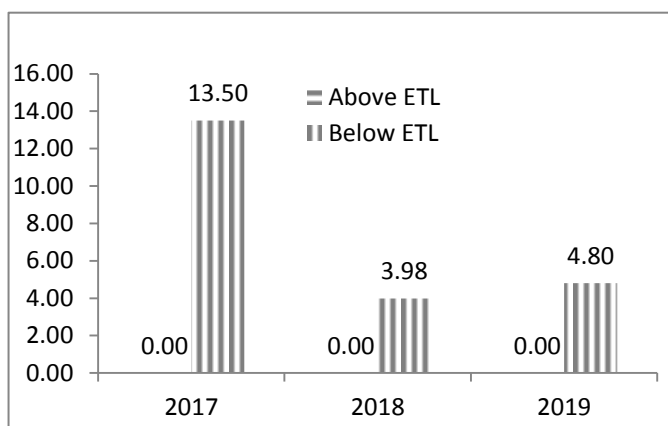
2	CHISHTIAN	10.0	11	T.T.SINGH	3.8
3	PEER MEHAL	10.0	12	MINCHAN ABAD	2.6
4	HASILPUR	9.1	13	SHUJABAD	2.3
5	KHAN PUR	8.7	14	MAILSI	2.2
6	BAHAWAL PUR	5.4	15	SAHIWAL	2.2
7	KOT CHUTTA	5.1	16	A.P.EAST	2.0
8	LIAQUAT PUR	4.8	17	YAZMAN	1.9
9	SADIQ ABAD	4.4	18	MULTAN	1.5

Mites: On overall Punjab basis 0.08% 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 5.64% below ETL spots have been observed during current week as compared to 0.62% in last week and 0.54% during the same corresponding period of last year.

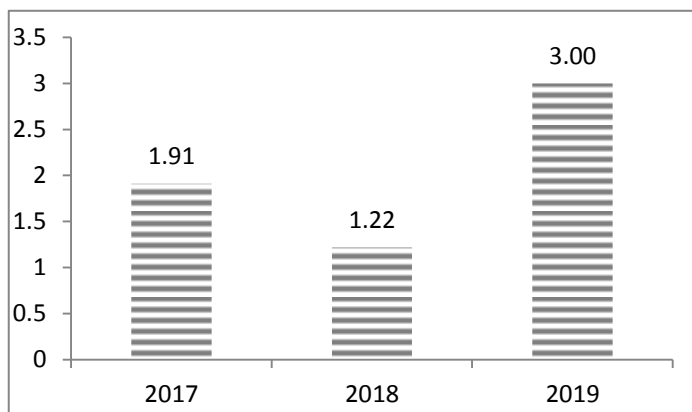


S. NO.	TEHSIL	%AGE
1	BAHAWAL PUR	3.6

Dusky Cotton Bug: 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 4.80% below ETL spots have been observed during current week as compared to 2.18% in last week and 3.98% during the same corresponding period of last year.



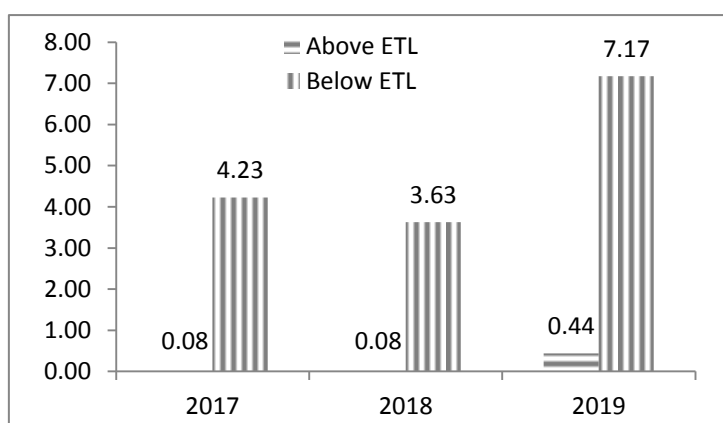
Armyworm: On overall Punjab basis 3.00% spots (all considered above ETL) of Armyworm have been observed as compared to 1.55% in last week and 1.22% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

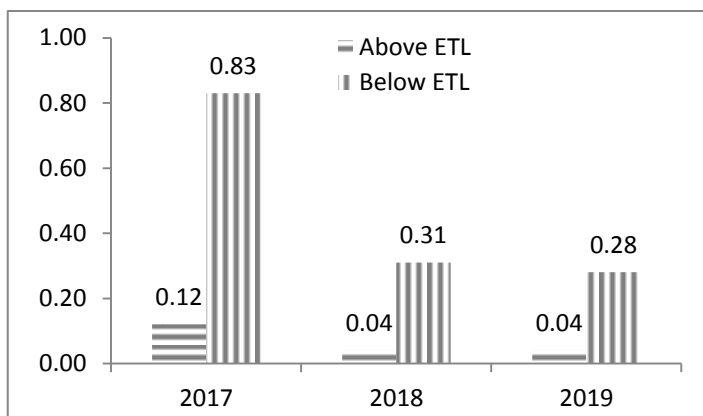
S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	RENALA KHURD	28.6	17	R.Y.KHAN	4.7
2	A.P.EAST	19.6	18	HASILPUR	4.5
3	OKARA	18.8	19	KHAN PUR	4.3
4	DEPALPUR	14.3	20	RAJAN PUR	4.0
5	BAHAWAL PUR	10.7	21	MIAN CHANNU	3.8
6	MAILSI	8.9	22	T.T.SINGH	3.8
7	KABIR WALA	8.0	23	JHANG	3.1
8	MULTAN	7.6	24	D.G.KHAN	2.9
9	JAHANIAN	7.5	25	VEHARI	2.5
10	ARIF WALA	6.3	26	FORT ABBAS	2.5
11	PAK PATTAN	5.6	27	JAM PUR	2.5
12	KOT CHUTTA	5.1	28	ROJHAN	2.5
13	CHISHTIAN	5.0	29	SADIQ ABAD	2.2
14	KOT ADDU	5.0	30	YAZMAN	1.9
15	LIAQUAT PUR	4.8	31	KHANEWAL	1.8
16	SHUJABAD	4.6			

Pink Boll Worm: On overall Punjab basis 0.44% above ETL spots have been observed as compared to 0.31% in last week and 0.08% same corresponding period of the last year. And 7.17% below ETL spots have been observed as compared to 7.28% in last week and 5.63% during same corresponding period of last year.



S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	CHISHTIAN	5.0	6	MIAN CHANNU	1.9
2	HASILPUR	4.5	7	KHANEWAL	1.8
3	KHAN PUR	2.2	8	BAHAWAL PUR	1.8
4	KABIR WALA	2.0	9	DUYAPUR	1.7
5	A.P.EAST	2.0			

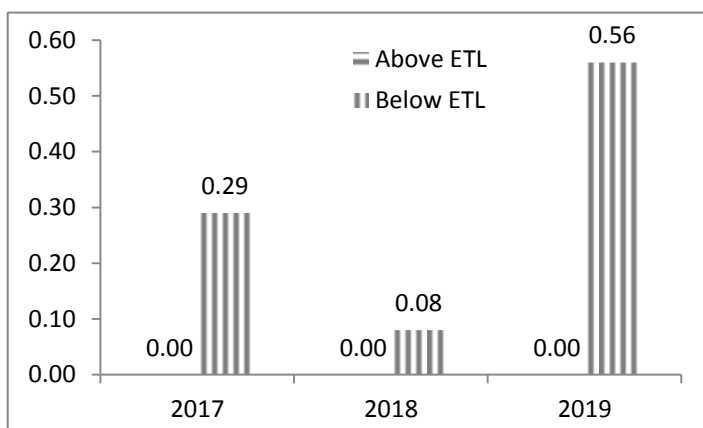
American Bollworm: On overall Punjab basis 0.04% above ETL spots have been observed as compared to 0.00% in last week and 0.04% during same corresponding period of last year. And 0.28% below ETL spots have been observed as compared to 0.27% in last week and 0.31% during same corresponding period of last year.



Tehsil wise percentage of hot spots of American boll worm

S. NO.	TEHSIL	%AGE
1	CHISHTIAN	2.5

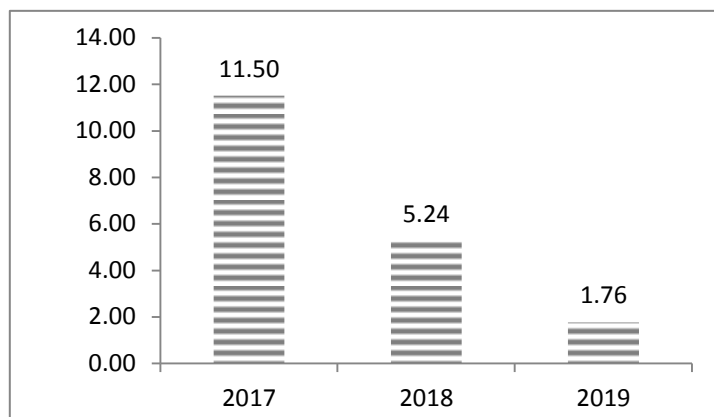
Spotted Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.56% below ETL spots have been observed as compared to 0.00% in last week and 0.08% during same corresponding period of last year.



Tehsil wise percentage of hot spots of spotted boll worm

No hot spot found yet.

CLCuV: On overall Punjab basis 1.76% spots (all considered above ETL) of CLCV have been observed as compared to 1.36% in last week and 5.24% during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of cotton leaf curl virus

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	R.Y.KHAN	16.3	8	BURE WALA	4.4
2	KHAN PUR	13.0	9	MIAN CHANNU	3.8
3	JAHANIAN	12.5	10	KHANEWAL	3.6
4	KABIR WALA	12.0	11	JATOI	2.4
5	KOT ADDU	10.0	12	LIAQUAT PUR	2.4
6	BAHAWAL PUR	8.9	13	SHUJABAD	2.3
7	HASILPUR	4.5	14		

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2019-2018

Districts	2019				2018			
	Temperature		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	39.00	31.57	63.86	0.00	37.29	30.14	68.71	0.00
Khanewal	39.75	30.75	65.88	0.00	41.10	30.40	46.40	0.00
Vehari	41.00	31.86	63.29	0.00	40.90	31.14	38.60	0.00
Lodhran	41.22	32.44	50.94	0.00	48.00	25.60	38.80	0.00
Sahiwal	44.00	31.00	35.00	0.00	42.00	29.00	38.00	0.00
Pakpattan	44.14	32.29	30.29	0.00	42.00	33.14	29.43	0.00
Okara	46.20	28.00	60.00	0.00	44.00	27.00	66.00	0.00
Bahawalpur	41.57	30.54	55.21	0.00	40.39	27.00	51.00	41.60
Bahawalnagar	42.08	29.17	41.17	0.00	43.17	29.83	52.58	3.33
R.Y.Khan	43.08	29.92	73.33	0.00	39.66	26.50	71.33	0.00
D.G. Khan	43.71	31.86	54.29	0.00	43.29	31.29	48.50	0.00
M. Garh	40.64	29.79	49.33	0.00	38.30	27.30	56.30	0.00
Rajanpur	41.54	30.16	67.00	0.00	39.10	27.80	44.90	0.00
Layyah	41.00	29.33	42.60	0.00	44.16	32.66	41.50	0.00
TOT/AVG	42.07	30.62	53.73	0.00	41.67	29.20	49.43	44.93

Weather forecast for next 7 day in cotton zone

Division	Dated	15/7	16/7	17/7	18/7	19/7	20/7	21/7
Multan	Max.Temp.	38	39	38	36	38	43	38
	Min.Temp.	28	28	29	28	29	30	29
	Humidity %	41	39	43	45	42	31	23
Sahiwal	Max.Temp.	34	36	37	37	39	42	36
	Min.Temp.	26	26	28	28	30	30	30
	Humidity %	50	48	44	43	37	30	21
Bahawalpur	Max.Temp.	40	39	39	36	37	42	39
	Min.Temp.	28	28	29	27	27	28	29
	Humidity %	36	39	39	45	44	31	24
D.G. Khan	Max.Temp.	40	40	40	39	40	45	39
	Min.Temp.	28	29	30	29	28	30	29
	Humidity %	37	37	39	40	40	28	21
Average Cotton Region	Max.Temp.	38.79						
	Min.Temp.	28.50						
	Humidity %	37.04						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain less hot than previous week, cloudy and little chances of precipitation with an average 3-4°C decrease in temperature.

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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest will increase during the coming week as the temperature remain favorable for the development of this pest.

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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week as the temperature will remain conducive for its rapid growth. The reason for more attack in the same week of last year is due to the timely sowing of crop.

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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will increase 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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will increase 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. 42.07 °C,

Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week pertaining to hot and dry weather.

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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week.

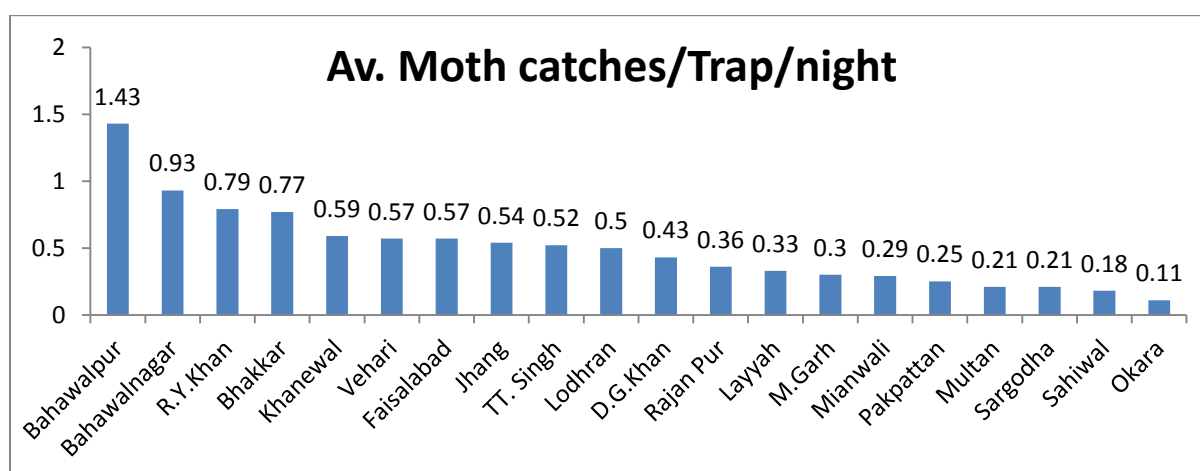
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. It is predicted that population of this pest will decrease on cotton during the coming week as expected temperature range is favorable for the development of this pest. Moreover its increase in population than last year is due to:

- a. There was ban by imposing section 144 on early cotton last year. This practice was not exercised this year so as to promote grow more cotton campaign.
- b. The early sown cotton provide host for the suicidal generation of PBW moths and also become nursery of this pest and potential danger for the seasonal cotton.

Moth Catches in Pheromone Traps during 2nd Week of July, 2019

Moth Catches in Pheromone Traps During 2 nd Week of July, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	0.21	0.0
Khanewal	8	0.59	0.00
Vehari	6	0.57	0.00
Lodhran	6	0.50	0.14
Sahiwal	4	0.18	0.00
Pakpattan	4	0.25	0.00
Okara	4	0.11	0.00
Bahawalpur	8	1.43	0.05
Bahawalnagar	10	0.93	0.16
R.Y.Khan	8	0.79	0.32
D.G.Khan	6	0.43	0.00
M.Garh	8	0.30	0.00
Rajan Pur	6	0.36	0.00
Layyah	6	0.33	0.00
Sargodha	2	0.21	0.00
Mianwali	4	0.29	0.00
Bhakkar	9	0.77	0.00
Faisalabad	5	0.57	0.00
TT. Singh	6	0.52	0.00
Jhang	4	0.54	0.00

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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Due to cultivation of more BT varieties, it is predicted that population of this pest will remain on low ebb on cotton crop in the coming week.

Moth catches on light traps during 2nd week of July, 2019

Moth Catches on Light Traps/Trap/week During 2nd Week of July, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1	0	6
Khanewal	4	0	0	12
Vehari	3	2	0	9
Lodhran	3	2	2	4
Sahiwal	2	2	0	2
Pakpattan	2	1	0	2
Okara	3	3	0	2
Bahawalpur	4	6	1	8
Bahawalnagar	5	10	6	19
R.Y.Khan	4	6	6	7
D.G.Khan	3	0	0	0
M.Garh	4	0	0	6
Rajan Pur	3	0	0	0
Layyah	3	0	0	0
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. 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Due to cultivation of more BT varieties, it is predicted that population of this pest will remain zero 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 42.07 °C, Min. 30.62°C with R. humidity 53.73%) & forecast for the next week temp. Max. 38.79°C, Min. 28.50°C with humidity 37.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

CLCuV:

CLCUV spots slightly increased from last week and decreased from same week of last year on cotton crop. The incidence of this disease is expected to increase on cotton crop in next week due to increase in its potential vector i.e. whitefly.

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
Melon	Cucurbits	Pomegranate	Maina	
	Tomato	Ber (<i>Zizyphus</i>)	Karund	
	Cabbage	Guava	Lehli	
	Cauliflower	Mulbery	Gurhal	
	Peas	Papaya	Chambelli	
	Potato		Leh	
	Onion		Hazardani	
	Spinach		Rattan Jot	
	Chillies		Sun Kukra	
	Cucumber			

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	Mulbery
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
			Rattanjot
			Sun Kukra

Economic threshold levels of cotton pests

Insect pests	Economic threshold levels
Jassid	1 Adult or Nymph per leaf
Whitefly	5 Adults and Nymphs per Leaf
Thrips	8-10 Adults and Nymphs per Leaf
Mealy bug	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 5 both per 25 plants on non Bt varieties. 2 larvae of 2 nd instar per 25 plants on Bt varieties.
Army worm	On appearance
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud