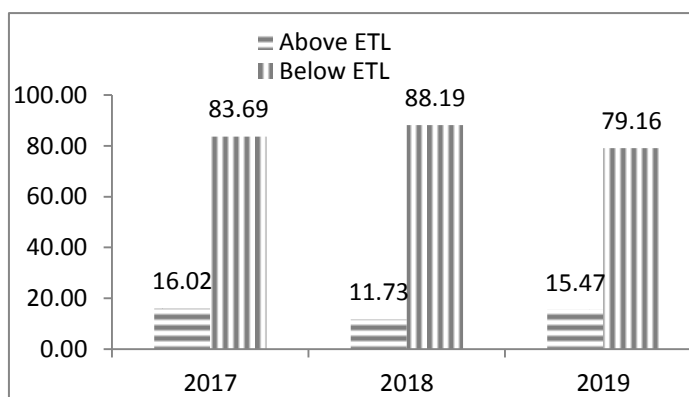


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4TH WEEK OF JULY, 2019

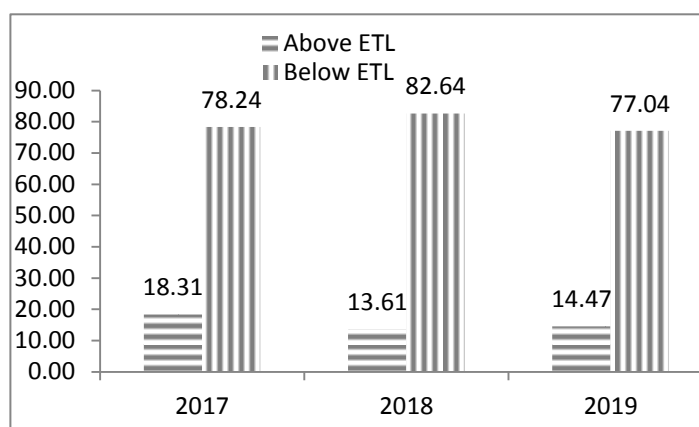
Whitefly: On overall Punjab basis 15.47% above ETL spots have been observed during current week as compared to 10.45% % in last week and 11.73% during the same corresponding period of last year. And 79.16% below ETL spots have been observed during current week as compared to 79.96% in last week and 88.19% 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	HASILPUR	57.1	31	YAZMAN	14.3
2	BAHAWAL PUR	46.7	32	KHANEWAL	12.5
3	A.P.EAST	36.4	33	FAISAL ABAD	12.5
4	CHISHTIAN	34.0	34	MIANWALI	12.5
5	OKARA	32.1	35	HAROON ABAD	12.0
6	JALAL PUR P.W	30.8	36	LAYYAH	12.0
7	SHUJABAD	28.9	37	RAJAN PUR	11.8
8	BAHAWAL NAGAR	28.0	38	MULTAN	11.5
9	LODHRAN	27.5	39	MIAN CHANNU	11.4
10	KEHROR PACCA	27.1	40	KALLOR KOT	10.5
11	RENALA KHURD	26.3	41	BURE WALA	10.0
12	MAILSI	26.1	42	KAROR L.E.	10.0
13	ARIF WALA	23.3	43	ROJHAN	10.0
14	VEHARI	20.0	44	ISA KHEL	10.0
15	CHICHA WATNI	20.0	45	JAHANIAN	9.4
16	LIAQUAT PUR	20.0	46	PEER MEHAL	8.7
17	MANKERA	20.0	47	CHOBARA	8.0
18	DEPALPUR	19.4	48	JAM PUR	7.5
19	BHAKKAR	19.2	49	TANDLIANWALA	5.4
20	SADIQ ABAD	18.9	50	PIPLAN	5.3
21	SAHIWAL	18.3	51	JHANG	4.4
22	MINCHAN ABAD	17.5	52	D.G.KHAN	2.6
23	R.Y.KHAN	17.4	53	KOT CHUTTA	2.5
24	KABIR WALA	17.0	54	JATOI	2.4
25	DUYAPUR	17.0	55	A.P.SIAL	2.3
26	SILLANWALI/ SAHIWAL	16.7	56	FORT ABBAS	2.0
27	KHAN PUR	16.0	57	TAUNSA	2.0
28	PAK PATTAN	15.0	58	ALI PUR	2.0
29	KOT ADDU	15.0	59	GOJRA	2.0
30	T.T.SINGH	14.8			

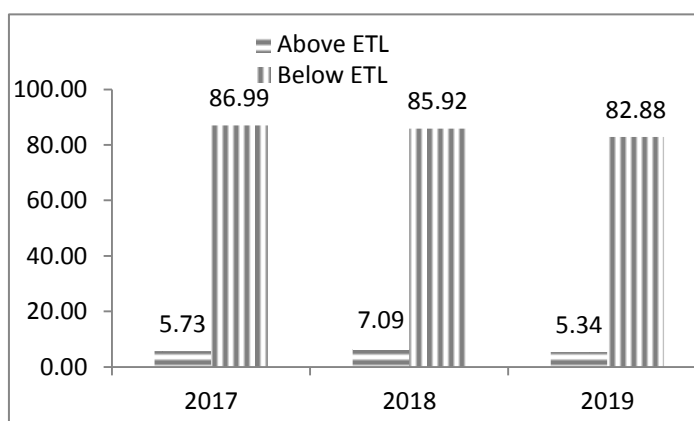
Jassid: On overall Punjab basis 14.47% above ETL spots has been observed as compared to 14.42% in last week and same week of last year 13.61%. And 77.04% below ETL spots have been observed during current week as compared to 74.23% in last week and 82.64% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	44.6	32	YAZMAN	10.7
2	SHUJABAD	36.8	33	D.G.KHAN	10.3
3	JALAL PUR P.W	34.6	34	CHICHA WATNI	10.0
4	A.P.EAST	32.7	35	PAK PATTAN	10.0
5	BAHAWAL PUR	31.7	36	ARIF WALA	10.0
6	BAHAWAL NAGAR	30.0	37	HAROON ABAD	10.0
7	CHISHTIAN	30.0	38	FORT ABBAS	10.0
8	R.Y.KHAN	28.3	39	JAM PUR	10.0
9	RENALA KHURD	26.3	40	MIANWALI	10.0
10	OKARA	25.0	41	ISA KHEL	10.0
11	SADIQ ABAD	24.3	42	GOJRA	9.8
12	BHAKKAR	23.1	43	TANDLIANWALA	9.5
13	MINCHAN ABAD	20.0	44	SHORKOT	8.57
14	KHAN PUR	20.0	45	KABIR WALA	8.5
15	KOT ADDU	20	46	KEHROR PACCA	8.3
16	SUMUNDRI	20.0	47	TAUNSA	8.0
17	MANKERA	20.0	48	CHOBARA	8.0
18	MULTAN	19.7	49	PIPLAN	7.9
19	MAILSI	19.6	50	RAJAN PUR	7.8
20	T.T.SINGH	16.7	51	MUZUFAR GARH	7.5
21	SILLANWALI/ SAHIWAL	16.7	52	JATOI	7.3
22	DEPALPUR	16.1	53	MIAN CHANNU	6.8
23	LIAQUAT PUR	16.0	54	JHANG	6.7
24	KALLOR KOT	15.8	55	PEER MEHAL	6.5
25	DUYAPUR	15.1	56	BURE WALA	5.0
26	KAROR L.E.	14.0	57	KOT CHUTTA	5.0
27	LODHRAN	12.5	58	ROJHAN	4.0
28	FAISAL ABAD	12.5	59	KHANEWAL	3.1
29	ALI PUR	12.0	60	JAHANIAN	3.1
30	LAYYAH	12.0	61	VEHARI	2.5
31	SAHIWAL	11.7	62	A.P.SIAL	2.3

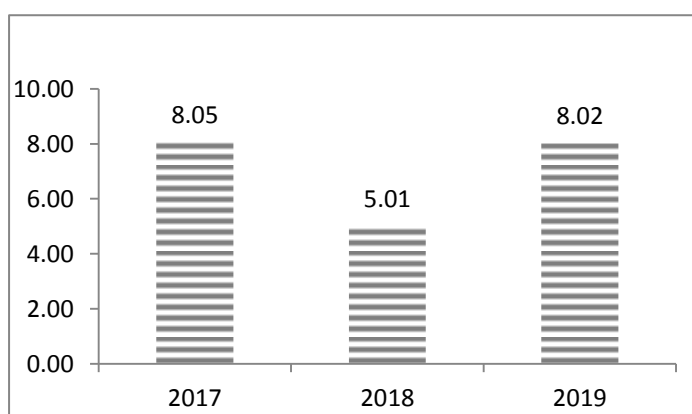
Thrips: On overall Punjab basis 5.34% above ETL spots have been observed as compared to 3.13% in last week and same week of last year i.e. 4.38%. And 82.88% below ETL spots have been observed during current week as compared to 81.96% in last week and 89.99% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	26.8	21	CHICHA WATNI	6.0
2	MAILSI	26.1	22	ALI PUR	6.0
3	DUYAPUR	20.8	23	MIANWALI	5.0
4	BAHAWAL PUR	18.3	24	KABIR WALA	4.3
5	LODHRAN	17.5	25	BAHAWAL NAGAR	4.0
6	KEHROR PACCA	12.5	26	KHAN PUR	4.0
7	CHISHTIAN	12.0	27	LIAQUAT PUR	4.0
8	A.P.EAST	10.9	28	JALAL PUR P.W	3.8
9	PAK PATTAN	10.0	29	ARIF WALA	3.3
10	ROJHAN	10.0	30	MULTAN	3.3
11	HAROON ABAD	8.0	31	SADIQ ABAD	2.7
12	SHUJABAD	7.9	32	VEHARI	2.5
13	RAJAN PUR	7.8	33	BURE WALA	2.5
14	D.G.KHAN	7.7	34	JATOI	2.4
15	MINCHAN ABAD	7.5	35	A.P.SIAL	2.3
16	JAM PUR	7.5	36	JHANG	2.2
17	MIAN CHANNU	6.8	37	TAUNSA	2.0
18	ISA KHEL	6.7	38	T.T.SINGH	1.9
19	DEPALPUR	6.5	39	YAZMAN	1.8
20	JAHANIAN	6.3			

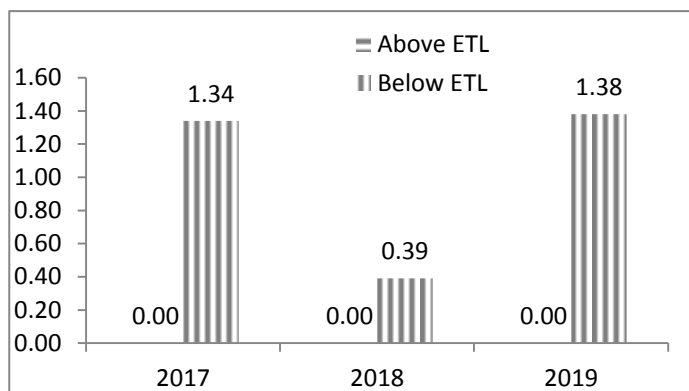
Mealy Bug: On overall Punjab basis 8.02% spots (all considered above ETL) of Mealy Bug have been observed as compared to 4.72% in last week and 5.01% spots during the same corresponding period of the last year.



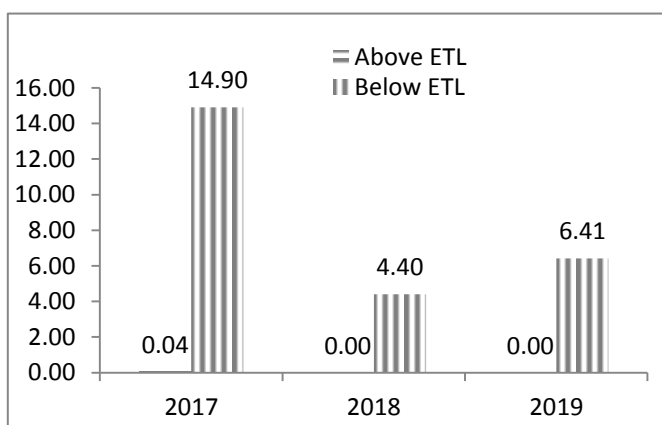
Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	46.4	21	KOT ADDU	7.5
2	A.P.EAST	40.0	22	SAHIWAL	6.7
3	BAHAWAL PUR	33.3	23	MAILSI	6.5
4	RAJAN PUR	29.4	24	KABIR WALA	6.4
5	R.Y.KHAN	28.3	25	JAHANIAN	6.3
6	JAM PUR	17.5	26	KEHROR PACCA	6.3
7	KHAN PUR	16.0	27	CHICHA WATNI	6.0
8	YAZMAN	12.5	28	LIAQUAT PUR	6.0
9	CHISHTIAN	12.0	29	VEHARI	5.0
10	MULTAN	11.5	30	MINCHAN ABAD	5.0
11	DUYAPUR	11.3	31	JATOI	4.9
12	BAHAWAL NAGAR	10.0	32	JALAL PUR P.W	3.8
13	T.T.SINGH	9.3	33	ARIF WALA	3.3
14	SADIQ ABAD	8.1	34	SHORKOT	2.9
15	ALI PUR	8.0	35	KOT CHUTTA	2.5
16	ROJHAN	8.0	36	JHANG	2.2
17	SHUJABAD	7.9	37	HAROON ABAD	2.0
18	BURE WALA	7.5	38	FORT ABBAS	2.0
19	LODHRAN	7.5	39	KAROR L.E.	2.0
20	MUZUFAR GARH	7.5	40	GOJRA	2.0

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 1.38% below ETL spots have been observed during current week as compared to 0.68% in last week and 0.39% during the same corresponding period of last year.

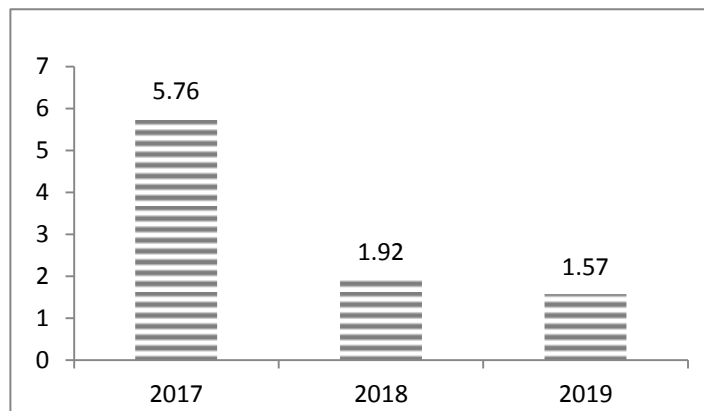


Dusky Cotton Bug: On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.04% in last week and 0.00% during the same corresponding period of last year. And 6.41% below ETL spots have been observed during current week as compared to 4.34% in last week and 4.42% during the same



corresponding period of last year.

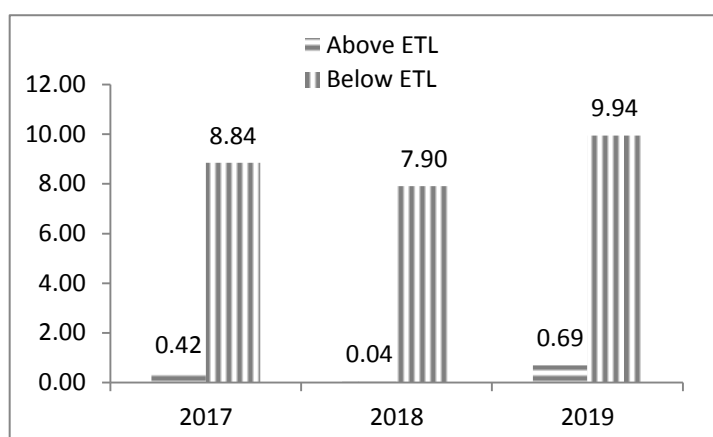
Armyworm: On overall Punjab basis 1.57% spots (all considered above ETL) of Armyworm have been observed as compared to 2.38% in last week and 1.92% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

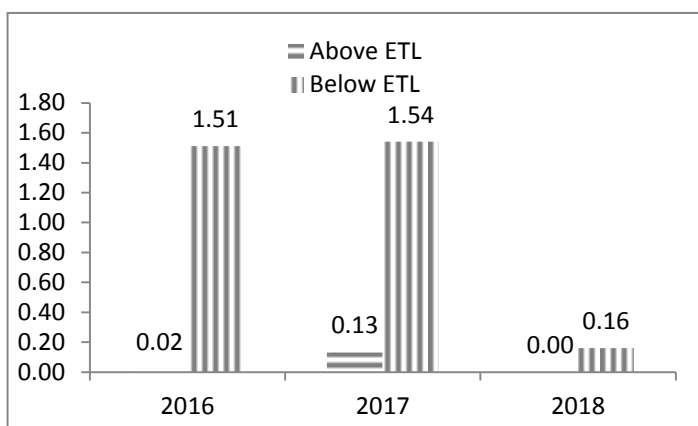
S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	OKARA	17.9	12	SADIQ ABAD	2.7
2	DEPALPUR	16.1	13	SHUJABAD	2.6
3	RENALA KHURD	15.8	14	MIAN CHANNU	2.3
4	VEHARI	7.5	15	R.Y.KHAN	2.2
5	BAHAWAL PUR	6.7	16	KEHROR PACCA	2.1
6	KOT ADDU	5.0	17	BAHAWAL NAGAR	2.0
7	JHANG	4.4	18	FORT ABBAS	2.0
8	MAILSI	4.3	19	ALI PUR	2.0
9	KHAN PUR	4.0	20	KAROR L.E.	2.0
10	LIAQUAT PUR	4.0	21	MULTAN	1.6
11	JAHANIAN	3.1			

Pink Boll Worm: On overall Punjab basis 0.69% above ETL spots have been observed as compared to 0.34% in last week and 0.04% same corresponding period of the last year. And 9.94% below ETL spots have been observed as compared to 8.08% in last week and 7.90% during same corresponding period of last year.

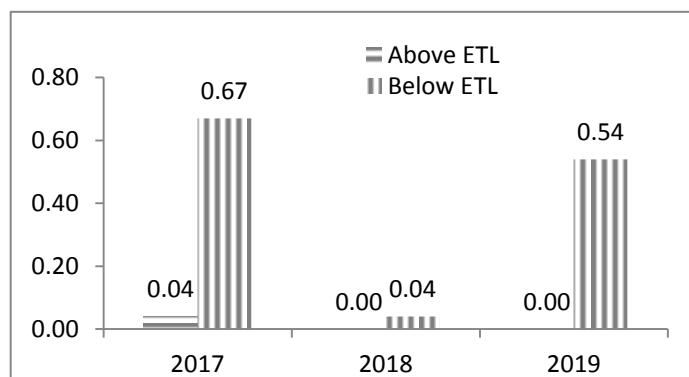


S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MAILSI	10.9	6	KHANEWAL	3.1
2	MIAN CHANNU	6.8	7	D.G.KHAN	2.6
3	BURE WALA	5.0	8	VEHARI	2.5
4	HASILPUR	3.6	9	DUYAPUR	1.9
5	BAHAWAL PUR	3.3			

American 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. And 0.04% below ETL spots have been observed as compared to 0.08% in last week and 0.16% during same corresponding period of last year.



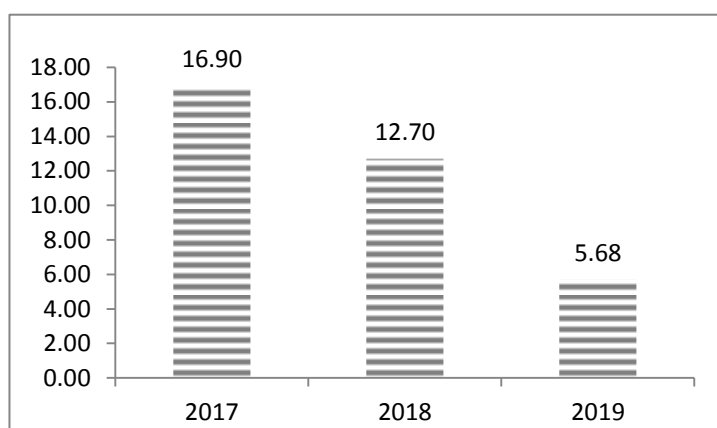
Spotted Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.54% below ETL spots have been observed as compared to 0.57% in last week and 0.04% during same corresponding period of last year.



Tehsil wise percentage of hot spots of spotted boll worm

No hot spot found yet.

CLCuV: On overall Punjab basis 5.68% spots (all considered above ETL) of CLCV have been observed as compared to 3.36% in last week and 12.67% 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	KOT ADDU	55.0	15	R.Y.KHAN	8.7
2	JALAL PUR P.W	34.6	16	SADIQ ABAD	8.1
3	SHUJABAD	31.6	17	HASILPUR	7.1
4	LIAQUAT PUR	24.0	18	ARIF WALA	6.7
5	MULTAN	23.0	19	DUYAPUR	3.8
6	KHAN PUR	22.0	20	BAHAWAL PUR	3.3
7	VEHARI	17.5	21	DEPALPUR	3.2
8	MUZUFAR GARH	15.0	22	JAM PUR	2.5
9	KABIR WALA	14.9	23	JATOI	2.4
10	KEHROR PACCA	14.6	24	MAILSI	2.2
11	KHANEWAL	12.5	25	CHICHA WATNI	2.0
12	JAHANIAN	12.5	26	ALI PUR	2.0
13	BURE WALA	10.0	27	KAROR L.E.	2.0
14	LODHRAN	10.0	28	A.P.EAST	1.8

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	38.29	30.57	67.64	0.00	37.10	30.10	70.10	5.00
Khanewal	38.25	30.31	65.88	2.00	39.70	29.84	62.10	3.00
Vehari	39.00	29.67	65.83	26.00	37.10	31.40	49.10	0.00
Lodhran	39.29	31.00	63.14	0.00	37.86	29.57	38.86	0.00
Sahiwal	36.64	27.29	69.69	45.00	38.06	28.29	72.22	0.00
Pakpattan	39.80	31.07	70.00	36.00	40.93	32.73	71.00	0.00
Okara	36.50	26.90	82.00	62.00	40.10	26.60	79.00	23.00
Bahawalpur	40.09	29.91	56.50	0.00	38.67	28.80	62.79	41.60
Bahawalnagar	40.67	27.58	55.08	16.17	43.17	29.83	52.58	3.33
R.Y.Khan	42.00	30.00	76.00	0.00	40.00	28.00	78.00	0.00
D.G. Khan	39.14	29.71	59.21	3.00	41.43	28.57	52.07	0.00
M. Garh	39.57	29.33	57.92	0.00	37.87	30.00	46.43	0.00
Rajanpur	40.36	29.78	62.90	10.00	39.40	27.90	64.80	8.00
Layyah	37.60	29.00	44.80	15.00	41.40	30.20	41.20	0.00
TOT/AVG	39.08	29.44	64.04	215.17	39.48	29.42	60.02	83.93

Weather forecast for next 7 day in cotton zone

Division	Dated	29/7	30/7	31/7	1/8	2/8	3/8	4/8
Multan	Max.Temp.	34	38	42	42	35	40	37
	Min.Temp.	29	30	31	33	29	30	29
	Humidity %	59	47	33	36	53	43	26
Sahiwal	Max.Temp.	37	38	40	37	34	38	34
	Min.Temp.	28	29	30	30	26	28	29
	Humidity %	46	43	40	56	60	47	29
Bahawalpur	Max.Temp.	34	37	42	40	34	40	37
	Min.Temp.	29	31	31	32	30	30	29
	Humidity %	60	47	35	38	55	41	27
D.G. Khan	Max.Temp.	35	39	44	43	37	42	37
	Min.Temp.	30	30	33	34	30	31	29
	Humidity %	52	43	30	34	48	36	26
Average	Max.Temp.	38.11						
Cotton	Min.Temp.	30.00						
Region	Humidity %	42.50						

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 1-2 °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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. 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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week as the temperature and rains 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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. 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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. 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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. Keeping in view above all, it is predicted that population of this pest will remain non lower ebb during the coming week pertaining to hot and humid weather and rains.

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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

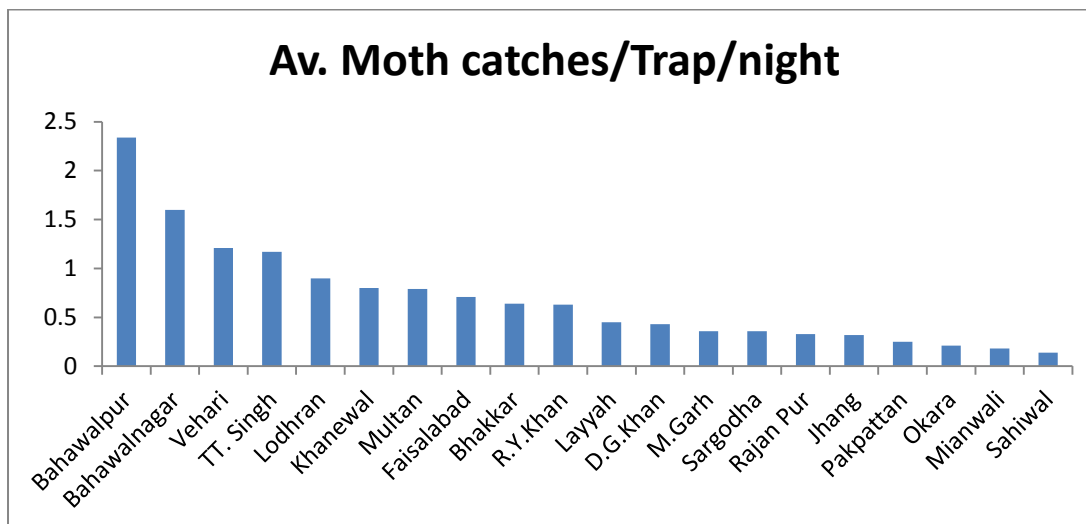
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (Max temp. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. It is

predicted that population of this pest will increase 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 4th Week of July, 2019

Moth Catches in Pheromone Traps During 4TH Week of July, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	0.79	0.0
Khanewal	8	0.80	0.05
Vehari	6	1.21	0.02
Lodhran	6	0.90	0.10
Sahiwal	4	0.14	0.00
Pakpattan	4	0.25	0.00
Okara	4	0.21	0.00
Bahawalpur	8	2.34	0.09
Bahawalnagar	10	1.60	0.17
R.Y.Khan	8	0.63	0.25
D.G.Khan	4	0.43	0.00
M.Garh	8	0.36	0.00
Rajan Pur	6	0.33	0.00
Layyah	6	0.45	0.00
Sargodha	2	0.36	0.00
Mianwali	4	0.18	0.00
Bhakkar	8	0.64	0.00
Faisalabad	5	0.71	0.00
TT. Singh	6	1.17	0.00
Jhang	4	0.32	0.00
<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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. 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 4th week of July, 2019

Moth Catches on Light Traps/Trap/week During 4 th Week of July, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0	0	8
Khanewal	4	0	0	11
Vehari	3	2	0	9
Lodhran	3	1	1	6
Sahiwal	2	2	0	3
Pakpattan	2	3	0	5
Okara	3	4	0	5
Bahawalpur	4	5	1	9
Bahawalnagar	5	12	5	16
R.Y.Khan	4	5	3	7
D.G.Khan	3	0	0	0
M.Garh	4	1	0	6
Rajan Pur	3	0	2	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. 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. Due to cultivation of more BT varieties, it is predicted that above ETL 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 39.08 °C, Min. 29.40°C with R. humidity 64.04%) & forecast for the next week temp. Max. 38.11°C, Min. 30.00°C with humidity 42.50%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

CLCuV: CLCUV spots 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.
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Spirotetramate + Biopower	125 ml + 250 ml
2	Pyriproxifen	400 ml
3	Buprofezin	600 gm
4	Flunicamid	80 gm
5	Diafenthuron	200 ml

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/card
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Flunicamid	60 gm
2	Fipronil+Imidacloprid	60 gm
3	Nitenpiram	200ml

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.

4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Fipronil+Imidacloprid	60 gm
2	Chlorfenpyr	125 ml

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 Pink Bollworm:

1. Use Sex Pheromone Traps for monitoring of PBW
2. Eradicate rosette flowers.
3. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Spintoram 120SC	80 ml
2	Chlorantraniliprole	50ml
3	Triazophos	1000ml
4	Bifenthrin	250ml
5	Gammacyhalothrin	100ml
6	Lambdacyhalothrin	333ml

MANAGEMENT OF DUSKY COTTON BUG

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Remove alternate host plants
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Imidacloprid	250gm
2	Acetamaprid	125 gm
3	Chlorpyrifos	800-1000ml

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.
5. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;

Sr.No.	CHEMICAL NAME	DOSE (Per Acre)
1	Leufenuron	200ml
2	Flubendamide	50ml

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 or Nymphs or both per Leaf
Thrips	8-10 Adults or 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 both 5 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