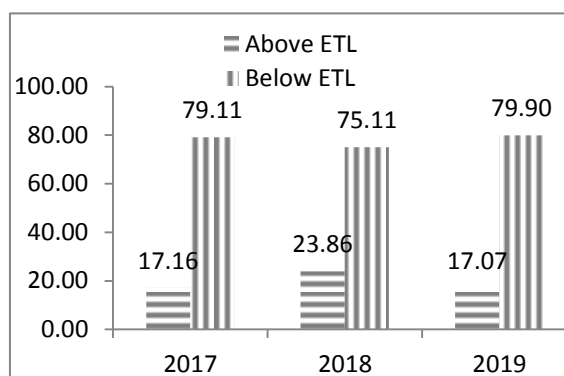


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 1ST WEEK OF SEPTEMBER, 2019

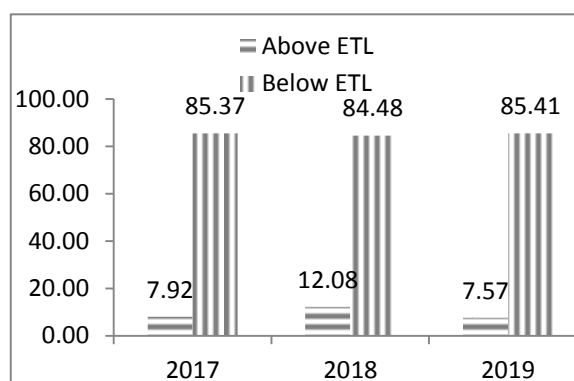
Whitefly: On overall Punjab basis 17.07% above ETL spots have been observed during current week as compared to 15.17% in last week and 23.86% during the same corresponding period of last year. And 79.90% below ETL spots have been observed during current week as compared 82.18% in last week and 75.11% 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	JALAL PUR P.W	55.0	30	JAHANIAN	14.6
2	MULTAN	43.8	31	KHANEWAL	14.3
3	HASILPUR	38.5	32	CHOBARA	14.0
4	D.G.KHAN	37.8	33	FORT ABBAS	13.6
5	JAM PUR	35.0	34	CHICHA WATNI	12.5
6	SHUJABAD	34.1	35	BAHAWAL NAGAR	12.5
7	RAJAN PUR	34.0	36	MIANWALI	12.5
8	KOT CHUTTA	33.3	37	ALI PUR	12.0
9	BAHAWAL PUR	30.0	38	LAYYAH	12.0
10	JATOI	26.1	39	KOT ADDU	10.4
11	KABIR WALA	26.0	40	SAHIWAL	10.2
12	R.Y.KHAN	25.5	41	VEHARI	10.0
13	KHAN PUR	22.8	42	PIPLAN	10.0
14	MAILSI	22.2	43	MINCHAN ABAD	9.8
15	TAUNSA	22.0	44	BHAKKAR	9.4
16	YAZMAN	21.9	45	BURE WALA	9.1
17	DUYAPUR	21.7	46	A.P.SIAL	8.5
18	A.P.EAST	21.4	47	PAK PATTAN	8.3
19	HAROON ABAD	20.0	48	KALLOR KOT	7.9
20	LIAQUAT PUR	20.0	49	SHORKOT	7.8
21	LODHRAN	19.2	50	SUMUNDRI	7.1
22	MIAN CHANNU	18.6	51	MUZUFAR GARH	6.6
23	SADIQ ABAD	18.4	52	JHANG	5.7
24	KEHROR PACCA	18.2	53	GOJRA	4.7
25	CHISHTIAN	18.0	54	OKARA	4.3
26	ROJHAN	17.2	55	RENALA KHURD	4.2
27	KAROR L.E.	15.2	56	DEPALPUR	4.2
28	ISA KHEL	15.0	57	18-HAZARI	2.8
29	MANKERA	15.0	58	TANDLIANWALA	2.1

Jassid: On overall Punjab basis 7.57% above ETL spots has been observed as compared to 9.41% in last week and same week of last year 12.08%. And 85.41% below ETL spots have been observed during current week as compared to 84.02% in last week and

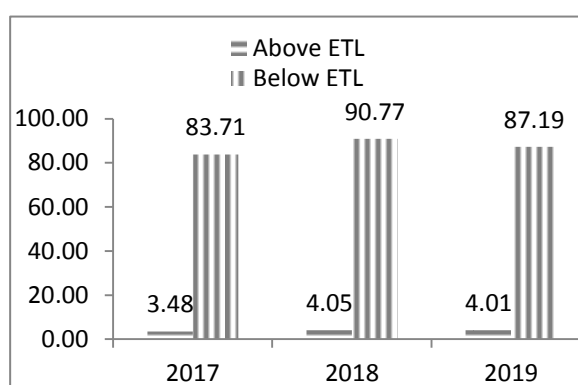


84.48% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	26.9	28	T.T.SINGH	5.8
2	FORT ABBAS	22.7	29	KHANEWAL	5.7
3	CHISHTIAN	22.0	30	JHANG	5.7
4	LIAQUAT PUR	22.0	31	BHAKKAR	5.7
5	BAHAWAL NAGAR	20.0	32	PAK PATTAN	5.6
6	MANKERA	20.0	33	KALLOR KOT	5.3
7	R.Y.KHAN	19.6	34	DUYAPUR	5.0
8	SAHIWAL	14.3	35	GOJRA	4.7
9	SADIQ ABAD	14.3	36	OKARA	4.3
10	KHAN PUR	14.0	37	RENALA KHURD	4.2
11	KAROR L.E.	13.0	38	DEPALPUR	4.2
12	MINCHAN ABAD	12.2	39	YAZMAN	4.1
13	LAYYAH	12.0	40	KOT CHUTTA	3.9
14	A.P.EAST	10.7	41	SHORKOT	3.9
15	JALAL PUR P.W	10.0	42	SUMUNDRI	3.6
16	HAROON ABAD	10.0	43	MUZUFAR GARH	3.3
17	TAUNSA	10.0	44	MULTAN	3.1
18	CHOBARA	10.0	45	ROJHAN	3.1
19	MIANWALI	10.0	46	18-HAZARI	2.8
20	PIPLAN	10.0	47	JAM PUR	2.5
21	ISA KHEL	10.0	48	D.G.KHAN	2.2
22	ARIF WALA	9.7	49	A.P.SIAL	2.1
23	SHUJABAD	9.1	50	KOT ADDU	2.1
24	CHICHA WATNI	8.8	51	KABIR WALA	2.0
25	BAHAWAL PUR	8.6	52	RAJAN PUR	2.0
26	TANDLIANWALA	8.2	53	LODHRAN	1.9
27	ALI PUR	6.0	54	KEHROR PACCA	1.8

Thrips: On overall Punjab basis 4.01% above ETL spots have been observed as compared to 6.03% in last week and same week of last year i.e. 4.05%. And 87.19% below ETL spots have been observed during current week as compared to 86.64% in last week and 90.77% during the same corresponding period of last year.

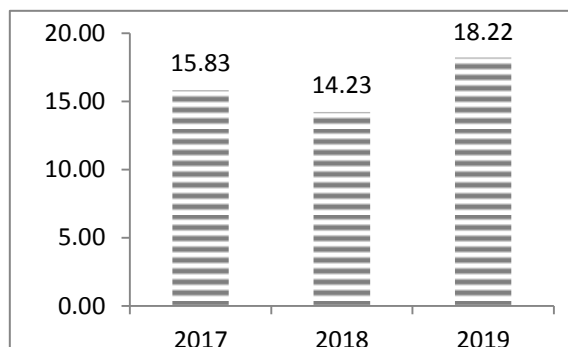


Tehsil wise percentage of hot spots of thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	BAHAWAL PUR	18.6	17	ISA KHEL	5.0
2	SADIQ ABAD	18.4	18	MANKERA	5.0
3	A.P.EAST	17.9	19	MINCHAN ABAD	4.9
4	HAROON ABAD	17.5	20	KOT CHUTTA	3.9
5	KHAN PUR	15.8	21	BHAKKAR	3.8
6	R.Y.KHAN	15.7	22	MUZUFAR GARH	3.3
7	TAUNSA	14.0	23	ROJHAN	3.1
8	BAHAWAL NAGAR	10.0	24	JHANG	2.9
9	ALI PUR	10.0	25	JALAL PUR P.W	2.5

10	SHUJABAD	9.1	26	MIAN CHANNU	2.3
11	MULTAN	7.8	27	D.G.KHAN	2.2
12	MIANWALI	7.5	28	JATOI	2.2
13	FORT ABBAS	6.8	29	KOT ADDU	2.1
14	LIAQUAT PUR	6.0	30	CHISHTIAN	2.0
15	HASILPUR	5.8	31	LODHRAN	1.9
16	PIPLAN	5.0			

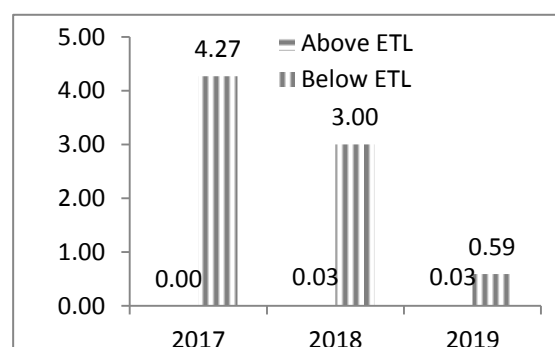
Mealy Bug: On overall Punjab basis 18.22% spots (all considered above ETL) of Mealy Bug have been observed as compared to 16.44% in last week and 14.23% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	JALAL PUR P.W	60.0	28	JAHANIAN	14.6
2	HASILPUR	59.6	29	PAK PATTAN	13.9
3	MULTAN	57.8	30	FORT ABBAS	13.6
4	BAHAWAL PUR	48.6	31	VEHARI	10.0
5	A.P.EAST	48.2	32	MIANWALI	10.0
6	RAJAN PUR	46.0	33	MINCHAN ABAD	9.8
7	SHUJABAD	45.5	34	OKARA	8.7
8	KHAN PUR	40.4	35	KHANEWAL	8.6
9	R.Y.KHAN	39.2	36	RENALA KHURD	8.3
10	YAZMAN	32.9	37	DEPALPUR	8.3
11	LODHRAN	26.9	38	HAROOON ABAD	7.5
12	JATOI	26.1	39	MIAN CHANNU	7.0
13	LIAQUAT PUR	26.0	40	BURE WALA	6.8
14	ALI PUR	26.0	41	TAUNSA	6.0
15	KOT CHUTTA	25.5	42	BHAKKAR	5.7
16	KEHROR PACCA	25.5	43	GOJRA	4.7
17	SADIQ ABAD	24.5	44	KAROR L.E.	4.3
18	BAHAWAL NAGAR	22.5	45	SAHIWAL	4.1
19	CHISHTIAN	22.0	46	CHOBARA	4.0
20	KOT ADDU	20.8	47	T.T.SINGH	3.8
21	MAILSI	20.0	48	CHICHA WATNI	3.8
22	DUYAPUR	18.3	49	ARIF WALA	3.2
23	KABIR WALA	18.0	50	18-HAZARI	2.8
24	D.G.KHAN	17.8	51	PIPLAN	2.5
25	JAM PUR	17.5	52	TANDLIANWALA	2.1
26	ROJHAN	17.2	53	PEER MEHAL	2.0
27	MUZUFAR GARH	16.4	54	LAYYAH	2.0

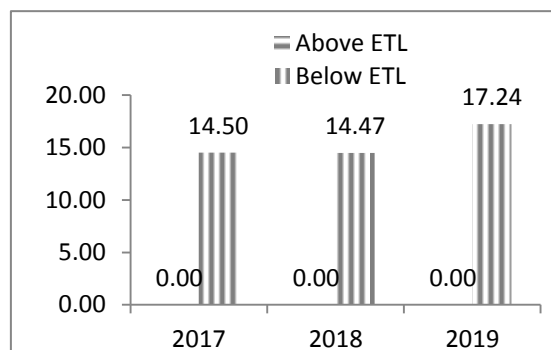
Mites: On overall Punjab basis 0.03% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.03% during the same corresponding period of last year. And 0.59% below ETL spots have been observed during current week as compared to 0.35% in last week and 3.00% during the same corresponding period of last year.



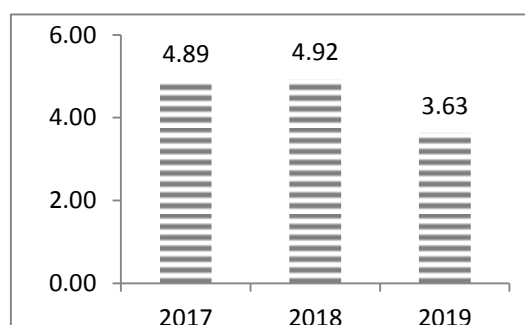
Tehsil wise percentage of hot spots of Mites

S. NO.	TEHSIL	%AGE
1	BAHAWAL PUR	1.4

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 17.24% below ETL spots have been observed during current week as compared to 12.71% in last week and 14.47% during the same corresponding period of last year.



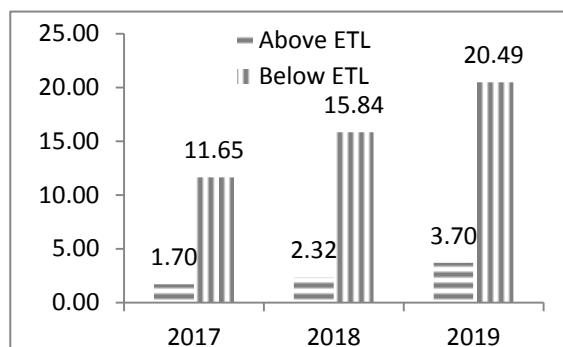
Armyworm: On overall Punjab basis 3.63% spots (all considered above ETL) of Armyworm have been observed as compared to 1.88% in last week and 4.92% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of Army worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	R.Y.KHAN	21.6	20	LIAQUAT PUR	4.0
2	KOT ADDU	12.5	21	ALI PUR	4.0
3	DUYAPUR	11.7	22	RAJAN PUR	4.0
4	KHANEWAL	11.4	23	LODHRAN	3.8
5	BAHAWAL PUR	10.0	24	BHAKKAR	3.8
6	HASILPUR	9.6	25	CHICHA WATNI	3.8
7	SHUJABAD	9.1	26	MUZUFAR GARH	3.3
8	KHAN PUR	8.8	27	18-HAZARI	2.8
9	MULTAN	7.8	28	MIANWALI	2.5
10	JALAL PUR P.W	7.5	29	PIPLAN	2.5
11	MIAN CHANNU	7.0	30	JAHANIAN	2.4
12	FORT ABBAS	6.8	31	MINCHAN ABAD	2.4
13	JHANG	5.7	32	GOJRA	2.3
14	A.P.EAST	5.4	33	JATOI	2.2
15	BAHAWAL NAGAR	5.0	34	SAHIWAL	2.0
16	JAM PUR	5.0	35	KABIR WALA	2.0
17	KAROR L.E.	4.3	36	SHORKOT	2.0
18	SADIQ ABAD	4.1	37	TANDLIANWALA	1.0
19	CHISHTIAN	4.0			

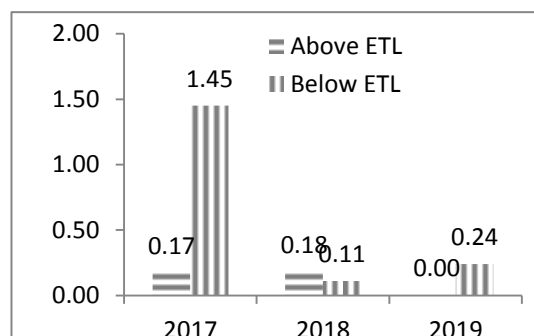
Pink Boll Worm: On overall Punjab basis 3.70% above ETL spots have been observed as compared to 2.53% in last week and 2.32% same corresponding period of the last year. And 20.49% below ETL spots have been observed as compared to 17.59% in last week and 15.84% during same corresponding period of last year.



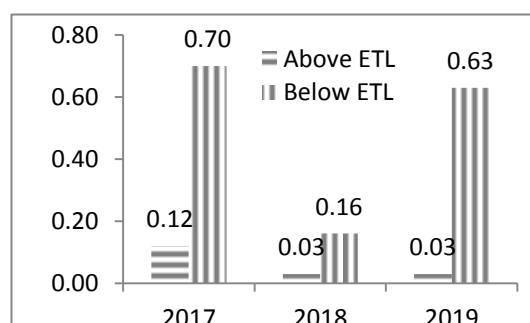
Tehsil wise percentage of hot spots of PBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	BURE WALA	15.9	19	JAHANIAN	4.9
2	VEHARI	15.0	20	SHUJABAD	4.5
3	SAHIWAL	14.3	21	OKARA	4.3
4	CHISHTIAN	14.0	22	BAHAWAL PUR	4.3
5	CHICHA WATNI	13.8	23	RENALA KHURD	4.2
6	MAILSI	13.3	24	DEPALPUR	4.2
7	ALI PUR	10.0	25	SADIQ ABAD	4.1
8	MIAN CHANNU	9.3	26	KHAN PUR	3.5
9	KABIR WALA	8.0	27	JHANG	2.9
10	R.Y.KHAN	7.8	28	18-HAZARI	2.8
11	ARIF WALA	6.5	29	MIANWALI	2.5
12	KOT ADDU	6.3	30	PIPLAN	2.5
13	HASILPUR	5.8	31	FORT ABBAS	2.3
14	T.T.SINGH	5.8	32	KAROR L.E.	2.2
15	PAK PATTAN	5.6	33	TANDLIANWALA	2.1
16	KALLOR KOT	5.3	34	LODHRAN	1.9
17	DUYAPUR	5.0	35	BHAKKAR	1.9
18	BAHAWAL NAGAR	5.0	36	KEHROR PACCA	1.8

American Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.18% during same corresponding period of last year. And 0.24% below ETL spots have been observed as compared to 0.19% in last week and 0.11% during same corresponding period of last year.



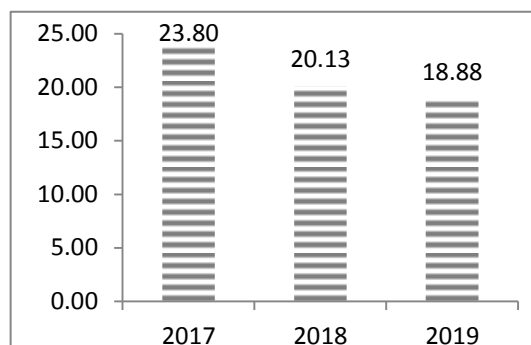
Spotted Bollworm: On overall Punjab basis 0.03% above ETL spots have been observed as compared to 0.04% in last week and 0.03% during same corresponding period of last year & 0.63% below ETL spots have been observed as compared to 0.46% in last week and 0.16% during same corresponding period of last year.



Tehsil wise percentage of hot spots of spotted bollworm

S. NO.	TEHSIL	%AGE
1	R.Y.KHAN	2.0

CLCuV: On overall Punjab basis 18.88% spots (all considered above ETL) of CLCV have been observed as compared to 17.43% in last week and 20.13% 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	83.3	27	BHAKKAR	17.0
2	JATOI	69.6	28	ROJHAN	15.6
3	VEHARI	62.5	29	KAROR L.E.	15.2
4	KABIR WALA	58.0	30	CHOBARA	14.0
5	JALAL PUR P.W	55.0	31	PAK PATTAN	13.9
6	SHUJABAD	43.2	32	ARIF WALA	12.9
7	MULTAN	37.5	33	CHICHA WATNI	12.5
8	D.G.KHAN	35.6	34	A.P.EAST	12.5
9	R.Y.KHAN	35.3	35	BURE WALA	11.4
10	KHANEWAL	34.3	36	KALLOR KOT	10.5
11	KEHROR PACCA	32.7	37	LAYYAH	10.0
12	MUZUFAR GARH	31.1	38	OKARA	8.7
13	MIAN CHANNU	30.2	39	RENALA KHURD	8.3
14	KHAN PUR	29.8	40	DEPALPUR	8.3
15	LIAQUAT PUR	28.0	41	RAJAN PUR	8.0
16	HASILPUR	26.9	42	BAHAWAL NAGAR	7.5
17	BAHAWAL PUR	25.7	43	FORT ABBAS	6.8
18	SADIQ ABAD	24.5	44	CHISHTIAN	6.0
19	KOT CHUTTA	23.5	45	JHANG	5.7
20	LODHRAN	21.2	46	JAM PUR	5.0
21	MAILSI	20.0	47	GOJRA	4.7
22	DUYAPUR	20.0	48	T.T.SINGH	3.8
23	TAUNSA	20.0	49	YAZMAN	2.7
24	MANKERA	20.0	50	MIANWALI	2.5
25	ALI PUR	18.0	51	PIPLAN	2.5
26	JAHANIAN	17.1	52	MINCHAN ABAD	2.4

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2019-2018

Districts	2019				2018			
	Temperature		R.H%	Rainfall (mm)	Temperature		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	37.00	30.17	70.60	22.30	35.83	28.00	76.00	0.00
Khanewal	38.26	29.29	66.57	3.00	38.01	28.71	56.50	0.00
Vehari	37.11	29.44	69.72	21.00	34.29	30.57	51.36	0.00
Lodhran	38.14	30.14	62.00	0.00	36.43	30.29	50.57	0.00
Sahiwal	36.70	26.70	71.88	21.10	37.25	27.25	65.00	0.00
Pakpattan	36.44	25.89	67.00	5.00	35.00	25.33	68.00	0.00
Okara	37.30	28.30	78.00	0.00	34.10	25.30	76.00	8.00
Bahawalpur	38.53	28.53	70.00	13.70	36.44	27.19	61.56	41.60
Bahawalnagar	37.63	27.31	61.13	0.00	37.88	26.94	60.19	0.00
R.Y.Khan	39.61	28.39	76.44	42.50	39.30	26.50	80.40	0.00
D.G.Khan	40.71	28.86	57.21	0.00	39.00	27.71	51.14	0.00
M.Garh	37.44	29.38	65.20	0.00	38.10	28.50	65.00	0.00
Rajanpur	37.98	28.04	65.40	0.00	38.54	27.94	46.00	0.00
Layyah	37.42	25.28	53.14	14.00	43.28	28.14	40.71	0.00
TOT/AVG	37.88	28.27	66.73	142.60	37.39	27.74	60.60	49.60

Weather forecast for next 7 day in cotton zone

Division	Dated	6/9	7/9	8/9	9/9	10/9	11/9	12/9
Multan	Max.Temp.	41	38	40	43	44	45	41
	Min.Temp.	31	30	30	31	30	31	29
	Humidity %	30	33	34	25	22	19	12
Sahiwal	Max.Temp.	38	39	41	42	44	44	38
	Min.Temp.	28	29	28	28	28	29	31
	Humidity %	39	38	31	27	23	22	14
Bahawalpur	Max.Temp.	41	39	41	44	44	44	41
	Min.Temp.	31	32	31	31	31	29	28
	Humidity %	35	36	32	22	24	23	17
D.G. Khan	Max.Temp.	43	41	42	44	45	46	40
	Min.Temp.	33	32	31	30	29	31	30
	Humidity %	24	26	29	21	19	17	12
Average Cotton Region	Max.Temp.	41.89						
	Min.Temp.	30.07						
	Humidity %	25.21						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain moderate to hot and temperature may increase than previous week up to one degree Celsius.

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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest will decrease during the coming week as the temperature will no longer 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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view above all, it is predicted that population of this pest will decrease 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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view above all, it is predicted that population of this pest will decrease 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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. 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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view above all, it is predicted that population of this pest will remain on 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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

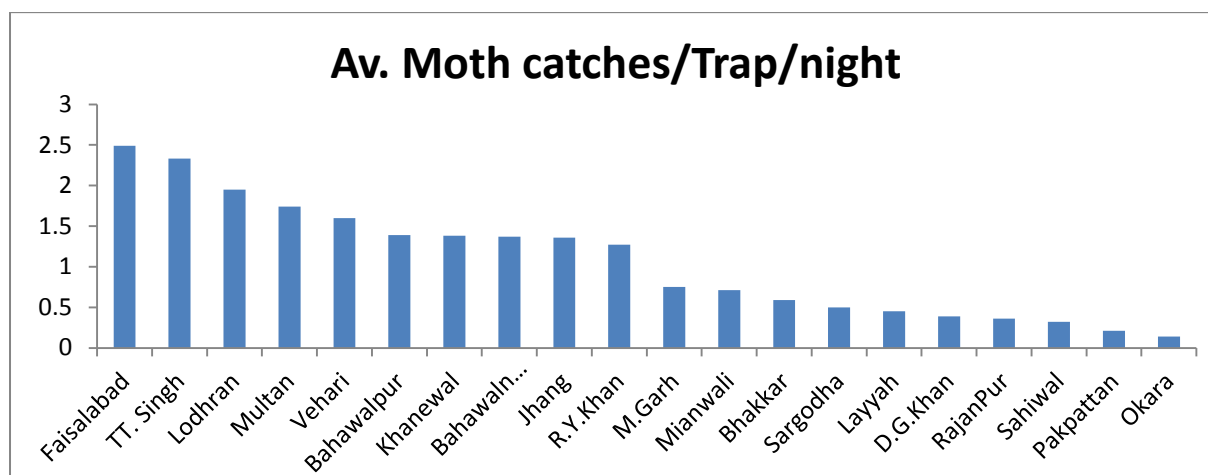
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40°C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (Max temp. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. 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 1st Week of September,2019

Moth Catches in Pheromone Traps During 1 st Week of September, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	1.74	0.0
Khanewal	8	1.38	0.02
Vehari	6	1.60	0.02
Lodhran	6	1.95	0.24
Sahiwal	4	0.32	0.00
Pakpattan	4	0.21	0.00
Okara	4	0.14	0.00
Bahawalpur	8	1.39	0.11
Bahawalnagar	10	1.37	0.20
R.Y.Khan	8	1.27	0.23
D.G.Khan	4	0.39	0.00
M.Garh	8	0.75	0.00
RajanPur	6	0.36	0.00
Layyah	6	0.45	0.00
Sargodha	2	0.50	0.00
Mianwali	4	0.71	0.00
Bhakkar	8	0.59	0.00
Faisalabad	5	2.49	0.00
TT. Singh	6	2.33	0.00
Jhang	4	1.36	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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. 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 1st week of September, 2019

Moth Catches on Light Traps/Trap/week During 1 st Week of September, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0	0	9
Khanewal	4	0	0	22
Vehari	3	0	0	13
Lodhran	3	7	6	10
Sahiwal	2	0	0	3
Pakpattan	2	0	0	6
Okara	3	0	0	4
Bahawalpur	4	2	0	6
Bahawalnagar	5	6	4	17
R.Y.Khan	4	6	5	14
D.G.Khan	3	0	0	0
M.Garh	4	1	0	13
RajanPur	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. 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Due to cultivation of more BT varieties, it is predicted that above ETL population of this pest will remain minimum 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 37.88°C, Min. 28.77°C with R. humidity 66.73%) & forecast for the next week temp. Max. 41.89°C, Min. 30.07°C with humidity 25.21%. Keeping in view above all, it is predicted that population of this pest will decrease 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;
 - Spirotetramate 125 ml+ Biopower 250 ml per Acre
 - Pyriproxifen 400 ml per Acre
 - Buprofezin 600 gm per Acre
 - Flonicamid 80 gm per Acre
 - Diafenthuron 200 ml per Acre

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;
 - Flonicamid 60 gm per Acre
 - Fipronil+Imidacloprid 60 gm per Acre
 - Nitenpiram 200ml per Acre

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;
 - Fipronil+Imidacloprid 60 gm per Acre
 - Chlorfenpyr 125 ml per Acre

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;
 - Spintoram 120SC @ 80 ml per Acre
 - Chlorantraniliprole@50ml per Acre
 - Triazophos@1000ml per Acre
 - Bifenthrin @250ml per Acre
 - Gammacyhalothrin@100ml per Acre
 - Lambdacyhalothrin@333ml per Acre

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;
 - Imidacloprid 250gm per Acre
 - Acetamaprid 125 gm per Acre
 - Chlorpyrifos 800-1000ml per Acre

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;
 - Leufenuron 200ml per Acre
 - Flubendamide 50ml per Acr.

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