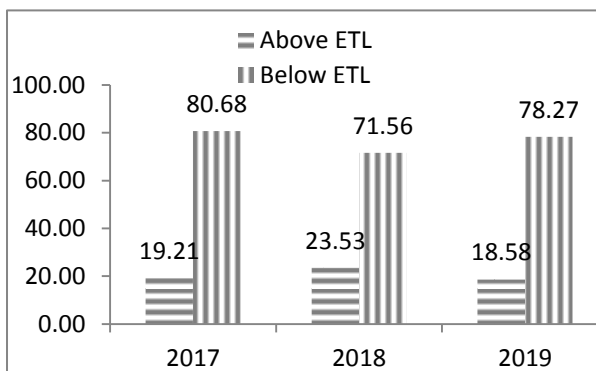


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 2ND WEEK OF SEPTEMBER, 2019

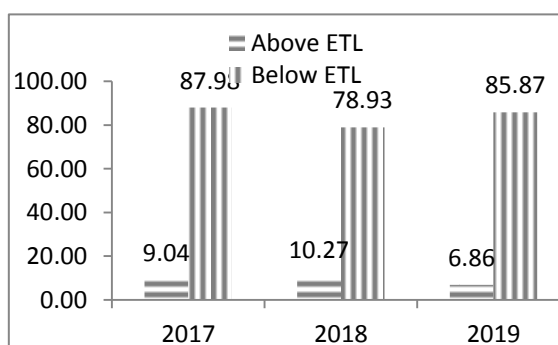
Whitefly: On overall Punjab basis 18.58% above ETL spots have been observed during current week as compared to 17.07% in last week and 23.53% during the same corresponding period of last year. And 78.27% below ETL spots have been observed during current week as compared 79.90% in last week and 71.56% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of whitefly

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MULTAN	57.4	31	MIAN CHANNU	16.2
2	SHUJABAD	48.9	32	CHOBARA	15.7
3	HASILPUR	48.1	33	KABIR WALA	14.6
4	JAM PUR	42.9	34	JAHANIAN	14.3
5	BAHAWAL PUR	40.7	35	CHISHTIAN	14.0
6	JATOI	40.0	36	LAYYAH	14.0
7	D.G.KHAN	38.1	37	ISA KHEL	12.0
8	JALAL PUR P.W	37.5	38	KAROR L.E.	11.1
9	RAJAN PUR	35.2	39	FAISAL ABAD	10.0
10	KOT CHUTTA	34.9	40	MIANWALI	10.0
11	KOT ADDU	30.0	41	FORT ABBAS	9.6
12	R.Y.KHAN	28.9	42	MINCHAN ABAD	9.5
13	DUYAPUR	27.8	43	PAK PATTAN	8.0
14	LODHRAN	27.5	44	MANKERA	7.7
15	ROJHAN	26.7	45	BURE WALA	7.5
16	KHAN PUR	25.5	46	18-HAZARI	6.7
17	KEHROR PACCA	25.0	47	ARIF WALA	6.3
18	SADIQ ABAD	24.4	48	A.P.SIAL	6.0
19	ALI PUR	24.0	49	TANDLIANWALA	5.9
20	TAUNSA	23.6	50	BHAKKAR	5.3
21	BAHAWAL NAGAR	22.7	51	KALLOR KOT	5.0
22	VEHARI	22.5	52	OKARA	4.0
23	YAZMAN	21.1	53	JHANG	4.0
24	A.P.EAST	18.3	54	T.T.SINGH	3.9
25	HAROOON ABAD	17.5	55	DEPALPUR	3.8
26	MUZUFAR GARH	17.5	56	CHICHA WATNI	3.8
27	LIAQUAT PUR	17.3	57	SHORKOT	2.2
28	KHANEWAL	17.1	58	PEER MEHAL	2.1
29	PIPLAN	17.1	59	SAHIWAL	2.0
30	MAILSI	16.3	60	SARGODHA	1.4

Jassid: On overall Punjab basis 6.86% above ETL spots has been observed as compared to 7.57% in last week and same week of last year 10.27%. And 85.87% below ETL spots have been observed during current week as compared to 85.41% in last week and 78.93% during

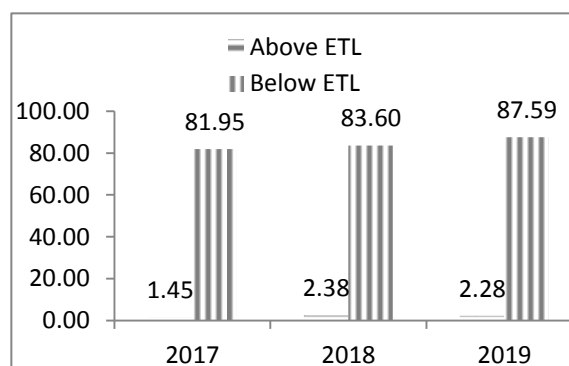


the same corresponding period of last year.

Tehsil wise percentage of hot spots of jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	30.8	26	GOJRA	6.3
2	FORT ABBAS	28.8	27	JHANG	6.0
3	BAHAWAL NAGAR	25.0	28	TANDLIANWALA	5.9
4	CHISHTIAN	22.0	29	A.P.EAST	5.0
5	SADIQ ABAD	14.6	30	HAROON ABAD	5.0
6	CHOBARA	13.7	31	MIANWALI	5.0
7	LIAQUAT PUR	13.5	32	KALLOR KOT	5.0
8	KAROR L.E.	13.3	33	MAILSI	4.7
9	TAUNSA	12.7	34	R.Y.KHAN	4.4
10	SAHIWAL	12.0	35	OKARA	4.0
11	PAK PATTAN	12.0	36	ALI PUR	4.0
12	ISA KHEL	12.0	37	RENALA KHURD	3.8
13	MINCHAN ABAD	11.9	38	DEPALPUR	3.8
14	PIPLAN	11.4	39	ARIF WALA	3.1
15	BAHAWAL PUR	11.1	40	JATOI	2.9
16	KHAN PUR	10.9	41	MUZUFAR GARH	2.5
17	VEHARI	10.0	42	KOT CHUTTA	2.3
18	LAYYAH	10.0	43	SHUJABAD	2.1
19	FAISAL ABAD	10.0	44	KABIR WALA	2.1
20	T.T.SINGH	9.8	45	PEER MEHAL	2.1
21	SHORKOT	8.9	46	A.P.SIAL	2.0
22	JALAL PUR P.W	7.5	47	MULTAN	1.9
23	KOT ADDU	7.5	48	YAZMAN	1.8
24	18-HAZARI	6.7	49	BHAKKAR	1.8
25	CHICHA WATNI	6.3			

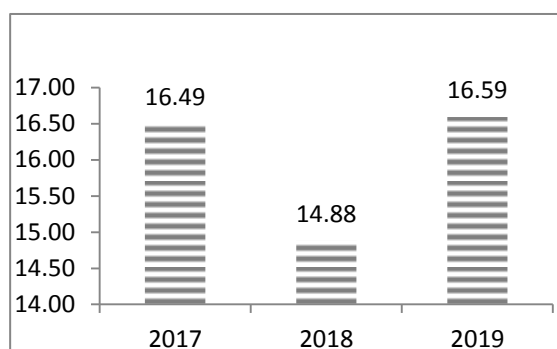
Thrips: On overall Punjab basis 2.28% above ETL spots have been observed as compared to 4.01% in last week and same week of last year i.e. 2.38%. And 87.59% below ETL spots have been observed during current week as compared to 87.19% in last week and 83.60% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HAROON ABAD	17.5	13	PIPLAN	2.9
2	TAUNSA	16.4	14	MIANWALI	2.5
3	BAHAWAL PUR	14.8	15	D.G.KHAN	2.4
4	SADIQ ABAD	14.6	16	BAHAWAL NAGAR	2.3
5	KALLOR KOT	10.0	17	SHUJABAD	2.1
6	KHAN PUR	9.1	18	CHISHTIAN	2.0
7	ISA KHEL	8.0	19	ALI PUR	2.0
8	A.P.EAST	6.7	20	JHANG	2.0
9	MINCHAN ABAD	4.8	21	A.P.SIAL	2.0
10	R.Y.KHAN	4.4	22	HASILPUR	1.9
11	LIAQUAT PUR	3.8	23	YAZMAN	1.8
12	ARIF WALA	3.1	24	BHAKKAR	1.8

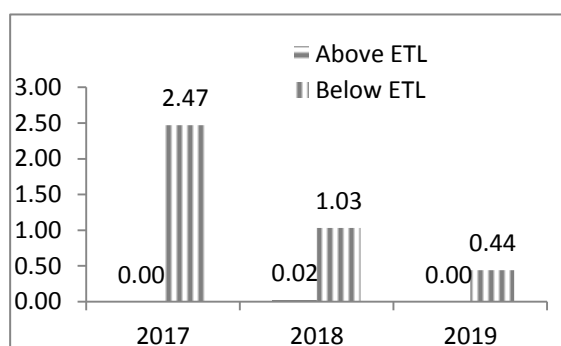
Mealy Bug: On overall Punjab basis 16.59% spots (all considered above ETL) of Mealy Bug have been observed as compared to 18.22% in last week and 14.28% spots during the same corresponding period of the last year.



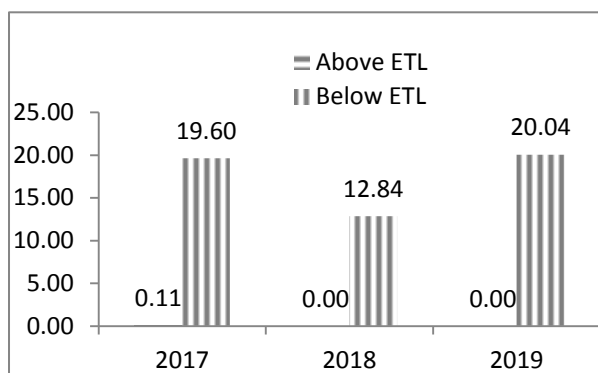
Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	HASILPUR	59.6	29	MIAN CHANNU	13.5
2	MULTAN	53.7	30	MIANWALI	12.5
3	JALAL PUR P.W	52.5	31	YAZMAN	12.3
4	BAHAWAL PUR	51.9	32	HAROON ABAD	10.0
5	SHUJABAD	44.7	33	CHOBARA	9.8
6	KHAN PUR	41.8	34	MAILSI	9.3
7	LODHRAN	39.2	35	LAYYAH	8.0
8	R.Y.KHAN	33.3	36	JAM PUR	6.1
9	ALI PUR	32.0	37	SAHIWAL	6.0
10	JATOI	31.4	38	T.T.SINGH	5.9
11	KEHROR PACCA	31.3	39	TANDLIANWALA	5.9
12	KABIR WALA	29.2	40	FORT ABBAS	5.8
13	A.P.EAST	28.3	41	BURE WALA	5.0
14	DUYAPUR	27.8	42	KALLOR KOT	5.0
15	KOT ADDU	25.0	43	MINCHAN ABAD	4.8
16	RAJAN PUR	22.2	44	KAROR L.E.	4.4
17	SADIQ ABAD	22.0	45	SHORKOT	4.4
18	VEHARI	20.0	46	GOJRA	4.2
19	CHISHTIAN	20.0	47	PEER MEHAL	4.2
20	ROJHAN	20.0	48	OKARA	4.0
21	LIAQUAT PUR	19.2	49	RENALA KHURD	3.8
22	PAK PATTAN	16.0	50	DEPALPUR	3.8
23	BAHAWAL NAGAR	15.9	51	CHICHA WATNI	3.8
24	MUZUFAR GARH	15.0	52	TAUNSA	3.6
25	KHANEWAL	14.3	53	JHANG	2.0
26	JAHANIAN	14.3	54	BHAKKAR	1.8
27	D.G.KHAN	14.3	55	SARGODHA	1.4
28	KOT CHUTTA	14.0			

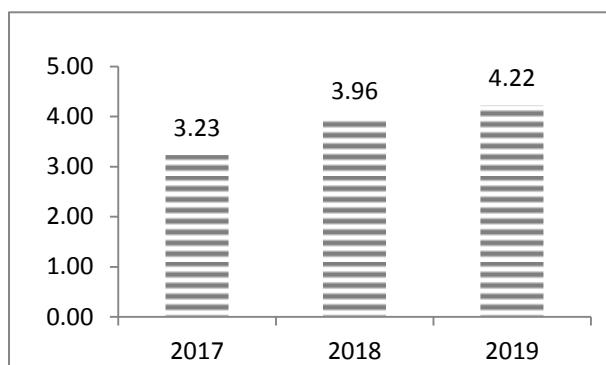
Mites: On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.03% in last week and 0.02% during the same corresponding period of last year. And 0.44% below ETL spots have been observed during current week as compared to 0.59% in last week and 1.03% during 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 0.00% in last week and 0.00% during the same corresponding period of last year. And 20.04% below ETL spots have been observed during current week as compared to 17.24% in last week and 12.84% during the same corresponding period of last year.



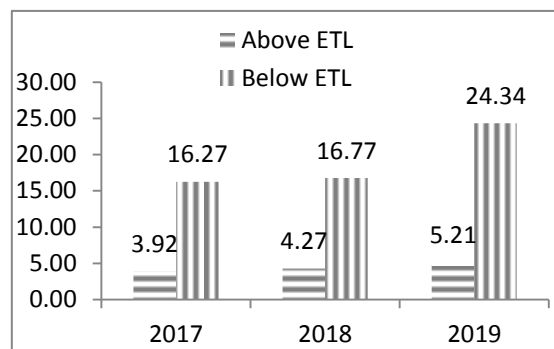
Armyworm: On overall Punjab basis 3.96% spots (all considered above ETL) of Armyworm have been observed as compared to 3.63% in last week and 4.22% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	DUYAPUR	16.7	19	FORT ABBAS	5.8
2	R.Y.KHAN	15.6	20	LIAQUAT PUR	5.8
3	HASILPUR	15.4	21	PIPLAN	5.7
4	KOT ADDU	15.0	22	KAROR L.E.	4.4
5	KHAN PUR	12.7	23	SHUJABAD	4.3
6	JALAL PUR P.W	12.5	24	JAHANIAN	2.9
7	KHANEWAL	11.4	25	MIANWALI	2.5
8	MULTAN	11.1	26	MINCHAN ABAD	2.4
9	BAHAWAL PUR	9.3	27	KOT CHUTTA	2.3
10	BAHAWAL NAGAR	9.1	28	SHORKOT	2.2
11	KEHROR PACCA	8.3	29	GOJRA	2.1
12	MIAN CHANNU	8.1	30	PEER MEHAL	2.1
13	ISA KHEL	8.0	31	LAYYAH	2.0
14	LODHRAN	7.8	32	JHANG	2.0
15	SADIQ ABAD	7.3	33	YAZMAN	1.8
16	KABIR WALA	6.3	34	A.P.EAST	1.7
17	ALI PUR	6.0	35	SARGODHA	1.4
18	T.T.SINGH	5.9	36	CHICHA WATNI	1.3

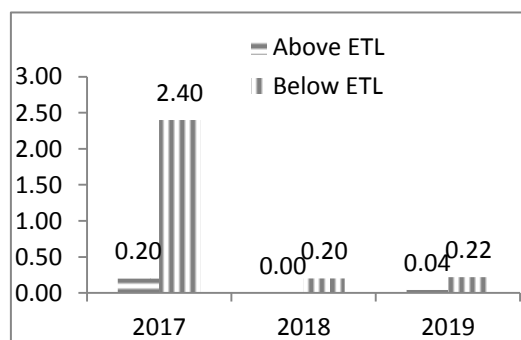
Pink Boll Worm: On overall Punjab basis 5.21% above ETL spots have been observed as compared to 3.70% in last week and 4.27% same corresponding period of the last year. And 24.34% below ETL spots have been observed as compared to 20.49% in last week and 16.77% during same corresponding period of last year



Tehsil wise percentage of hot spots of PBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	VEHARI	27.5	24	BAHAWAL PUR	5.6
2	PAK PATTAN	20.0	25	KHAN PUR	5.5
3	OKARA	20.0	26	SADIQ ABAD	4.9
4	DEPALPUR	19.2	27	BAHAWAL NAGAR	4.5
5	MAILSI	16.3	28	KAROR L.E.	4.4
6	RENALA KHURD	15.4	29	KEHROR PACCA	4.2
7	SAHIWAL	14.0	30	GOJRA	4.2
8	ALI PUR	14.0	31	PEER MEHAL	4.2
9	CHICHA WATNI	13.8	32	LODHRAN	3.9
10	DUYAPUR	11.1	33	MULTAN	3.7
11	R.Y.KHAN	11.1	34	ARIF WALA	3.1
12	BURE WALA	10.0	35	KHANEWAL	2.9
13	CHISHTIAN	10.0	36	JATOI	2.9
14	FAISAL ABAD	10.0	37	MUZUFAR GARH	2.5
15	HASILPUR	9.6	38	MIANWALI	2.5
16	MIAN CHANNU	8.1	39	JHANG	2.0
17	KOT ADDU	7.5	40	A.P.SIAL	2.0
18	SHUJABAD	6.4	41	CHOBARA	2.0
19	KABIR WALA	6.3	42	FORT ABBAS	1.9
20	T.T.SINGH	5.9	43	RAJAN PUR	1.9
21	TANDLIANWALA	5.9	44	YAZMAN	1.8
22	LIAQUAT PUR	5.8	45	BHAKKAR	1.8
23	JAHANIAN	5.7		SARGODHA	1.4

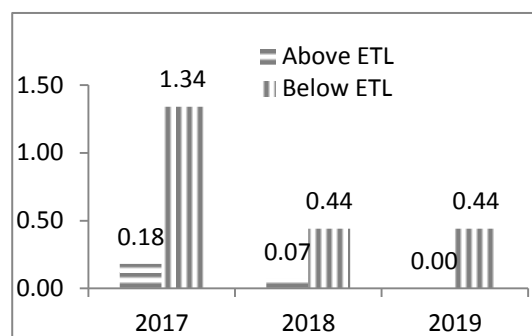
American Bollworm: On overall Punjab basis 0.04% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year. And 0.22% below ETL spots have been observed as compared to 0.24% in last week and 0.20% during same corresponding period of last year.



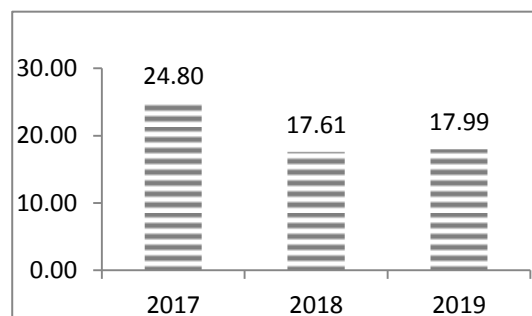
Tehsil wise percentage of hot spots of American boll worm

S. NO.	TEHSIL	%AGE
1	Mianwali	2.5

Spotted Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.03% in last week and 0.07% during same corresponding period of last year & 0.44% below ETL spots have been observed as compared to 0.63% in last week and 0.44% during same corresponding period of last year.



CLCuV: On overall Punjab basis 17.99% spots (all considered above ETL) of CLCuV have been observed as compared to 18.88% in last week and 17.61% 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	80.0	25	FORT ABBAS	15.4
2	KABIR WALA	66.7	26	KALLOR KOT	15.0
3	VEHARI	55.0	27	T.T.SINGH	13.7
4	MULTAN	53.7	28	BAHAWAL NAGAR	13.6
5	JALAL PUR P.W	52.5	29	KAROR L.E.	13.3
6	SHUJABAD	42.6	30	BURE WALA	12.5
7	MUZUFAR GARH	42.5	31	BHAKKAR	12.3
8	KEHROR PACCA	37.5	32	PAK PATTAN	12.0
9	JATOI	37.1	33	OKARA	12.0
10	HASILPUR	36.5	34	DEPALPUR	11.5
11	BAHAWAL PUR	35.2	35	MANKERA	11.5
12	D.G.KHAN	33.3	36	GOJRA	10.4
13	KHAN PUR	30.9	37	PEER MEHAL	10.4
14	MIAN CHANNU	29.7	38	CHISHTIAN	10.0
15	LOHRAN	29.4	39	LAYYAH	10.0
16	KHANEWAL	25.7	40	CHOBARA	9.8
17	KOT CHUTTA	25.6	41	CHICHA WATNI	8.8
18	R.Y.KHAN	24.4	42	A.P.EAST	8.3
19	SADIQ ABAD	24.4	43	RENALA KHURD	7.7
20	JAHANIAN	22.9	44	YAZMAN	7.0
21	DUYAPUR	22.2	45	MINCHAN ABAD	4.8
22	TAUNSA	21.8	46	MAILSI	4.7
23	ALI PUR	20.0	47	MIANWALI	2.5
24	LIAQUAT PUR	19.2			

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	39.17	30.67	77.50	0.00	35.17	26.50	75.00	0.00
Khanewal	39.70	29.00	62.29	0.00	37.79	28.09	56.39	0.00
Vehari	39.30	30.00	69.21	0.00	33.88	29.50	51.56	0.00
Lodhran	39.40	31.29	60.21	0.00	35.86	26.43	54.79	0.00
Sahiwal	39.17	27.70	65.00	0.00	36.17	27.00	68.67	0.00
Pakpattan	37.57	27.00	64.00	0.00	36.00	25.43	67.00	0.00
Okara	41.50	32.00	68.00	0.00	38.00	28.50	69.00	0.00
Bahawalpur	40.21	29.50	60.07	0.00	37.20	27.94	62.21	0.00
Bahawalnagar	40.29	28.93	58.50	0.00	40.14	29.29	55.36	0.00
R.Y.Khan	42.07	36.36	78.86	0.00	40.00	26.86	79.57	0.00
D.G.Khan	41.43	28.86	55.50	0.00	39.86	27.14	51.79	0.00
M.Garh	38.41	28.10	64.14	0.00	41.79	27.64	64.32	0.00
Rajanpur	43.78	30.24	65.00	0.00	38.44	27.30	45.70	0.00
Layyah	38.00	26.83	42.83	0.00	43.83	28.83	40.50	0.00
TOT/AVG	40.00	29.75	63.65	0.00	38.15	27.60	60.13	0.00

Weather forecast for next 7 day in cotton zone

Division	Dated	13/9	14/9	15/9	16/9	17/9	18/9	19/9
Multan	Max.Temp.	42	40	41	41	41	42	38
	Min.Temp.	31	29	29	27	27	29	29
	Humidity %	25	28	26	27	25	24	8
Sahiwal	Max.Temp.	40	39	40	40	42	42	36
	Min.Temp.	29	27	27	26	26	27	26
	Humidity %	31	30	29	28	26	26	17
Bahawalpur	Max.Temp.	42	41	42	42	43	43	40
	Min.Temp.	31	30	29	28	28	28	27
	Humidity %	25	26	25	24	22	22	8
D.G. Khan	Max.Temp.	43	42	42	43	42	43	38
	Min.Temp.	31	29	29	28	28	29	30
	Humidity %	22	25	26	23	25	19	8
Average Cotton Region	Max.Temp.	41.07						
	Min.Temp.	28.36						
	Humidity %	23.21						

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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. 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 will 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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week. 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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. 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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. Keeping in view above all, it is predicted that population of this pest will decrease 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. 40.00°C, Min.

29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. Keeping in view above all, it is predicted that population of this pest will remain on lower ebb 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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

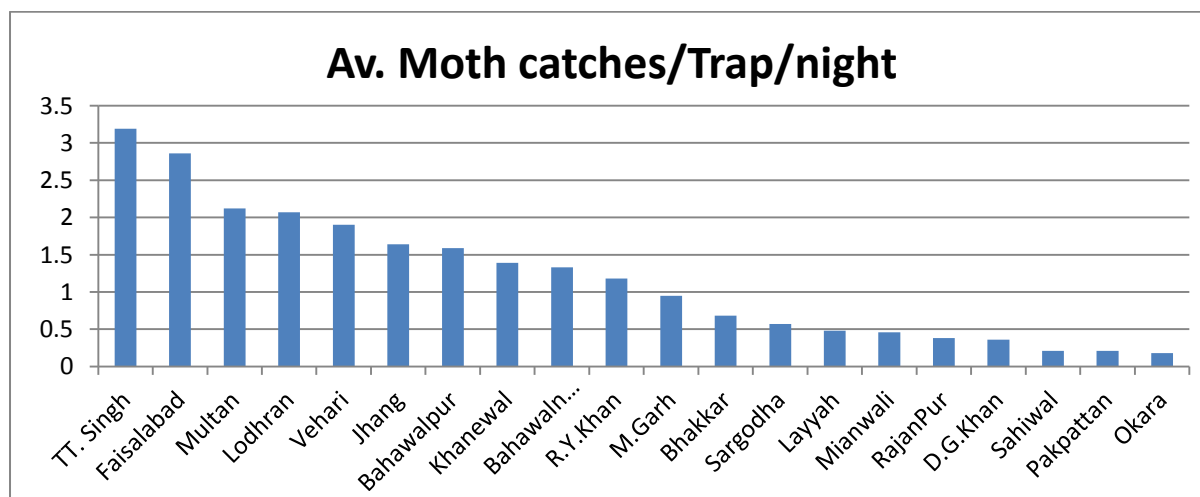
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40°C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (Max temp. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. 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 2nd Week of September, 2019

Moth Catches in Pheromone Traps During 2 nd Week of September, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	2.12	0.0
Khanewal	8	1.39	0.00
Vehari	6	1.90	0.00
Lodhran	6	2.07	0.14
Sahiwal	4	0.21	0.00
Pakpattan	4	0.21	0.00
Okara	4	0.18	0.00
Bahawalpur	8	1.59	0.14
Bahawalnagar	10	1.33	0.16
R.Y.Khan	8	1.18	0.23
D.G.Khan	4	0.36	0.00
M.Garh	8	0.95	0.00
RajanPur	6	0.38	0.00
Layyah	6	0.48	0.00
Sargodha	2	0.57	0.00
Mianwali	4	0.46	0.00
Bhakkar	8	0.68	0.00
Faisalabad	5	2.86	0.00
TT. Singh	6	3.19	0.00
Jhang	4	1.64	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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. 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 2nd week of September, 2019

Moth Catches on Light Traps/Trap/week During 2 nd Week of September, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1	0	10
Khanewal	4	0	0	16
Vehari	3	0	0	3
Lodhran	3	6	5	12
Sahiwal	2	0	0	3
Pakpattan	2	0	0	3
Okara	3	0	0	3
Bahawalpur	4	3	4	10
Bahawalnagar	5	5	3	16
R.Y.Khan	4	5	6	20
D.G.Khan	3	0	0	0
M.Garh	4	0	0	16
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. 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. 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 40.00°C, Min. 29.75°C with R. humidity 63.65%) & forecast for the next week temp. Max. 41.07°C, Min. 28.36°C with humidity 23.21%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

CLCuV: CLCUV spots decreased from last week and increased 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