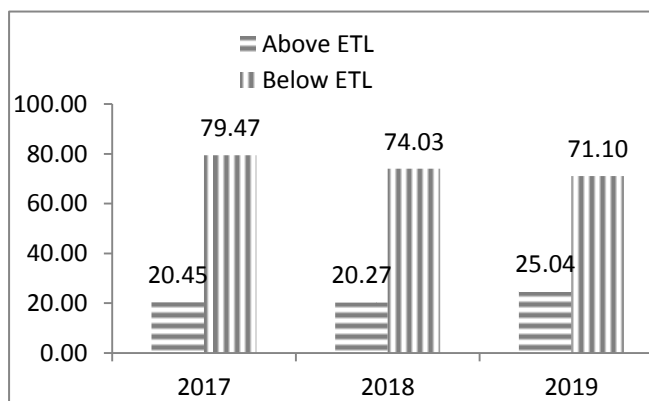


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3RD WEEK OF SEPTEMBER, 2019

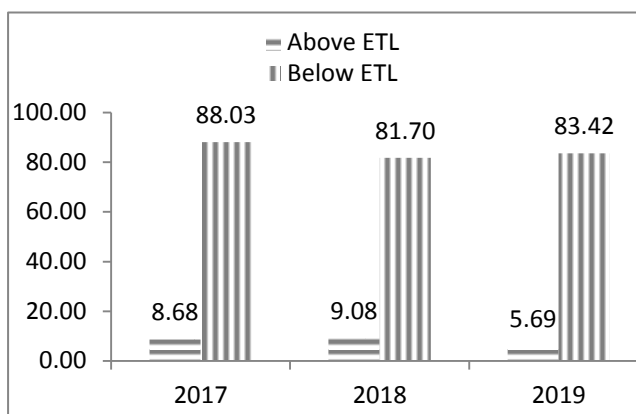
Whitefly: On overall Punjab basis 25.04% above ETL spots have been observed during current week as compared to 18.58% in last week and 20.27% during the same corresponding period of last year. And 71.10% below ETL spots have been observed during current week as compared to 78.27% in last week and 74.03% 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	JAM PUR	81.5	31	KHANEWAL	16.2
2	MULTAN	74.0	32	PAK PATTAN	16.0
3	JALAL PUR P.W	67.5	33	MAILSI	15.0
4	RAJAN PUR	67.5	34	MINCHAN ABAD	14.6
5	KOT CHUTTA	65.4	35	MUZUFAR GARH	14.6
6	SHUJABAD	58.1	36	KAROR L.E.	13.3
7	BAHAWAL PUR	56.7	37	KABIR WALA	12.8
8	ROJHAN	55.0	38	VEHARI	12.5
9	D.G.KHAN	48.9	39	ARIF WALA	12.0
10	HASILPUR	44.2	40	PIPLAN	11.4
11	JATOI	43.6	41	CHOBARA	11.1
12	LODHRAN	41.4	42	BURE WALA	10.0
13	A.P.EAST	34.6	43	MIANWALI	10.0
14	KOT ADDU	34.0	44	JAHANIAN	8.6
15	DUYAPUR	33.3	45	KALLOR KOT	8.6
16	SADIQ ABAD	32.5	46	LAYYAH	7.8
17	R.Y.KHAN	31.3	47	BHAKKAR	7.1
18	KHAN PUR	29.4	48	JHANG	6.9
19	ALI PUR	29.4	49	A.P.SIAL	6.8
20	CHISHTIAN	28.0	50	OKARA	5.9
21	FORT ABBAS	26.7	51	SAHIWAL	5.2
22	LIAQUAT PUR	26.0	52	T.T.SINGH	5.1
23	TAUNSA	26.0	53	CHICHA WATNI	5.0
24	YAZMAN	25.6	54	TANDLIANWALA	4.7
25	MIAN CHANNU	25.0	55	PEER MEHAL	4.7
26	KEHROR PACCA	23.3	56	SHORKOT	4.4
27	MANKERA	22.7	57	RENALA KHURD	4.0
28	BAHAWAL NAGAR	22.5	58	DEPALPUR	4.0
29	HAROON ABAD	20.0	59	SUMUNDRI	3.8
30	ISA KHEL	18.5	60	GOJRA	1.9

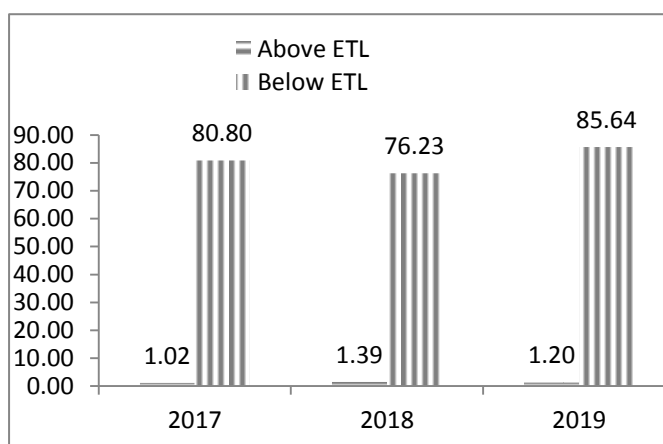
Jassid: On overall Punjab basis 5.69% above ETL spots has been observed as compared to 6.86% in last week and same week of last year 9.08%. And 83.42% below ETL spots have been observed during current week as compared to 85.87% in last week and 81.70% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of Jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	FORT ABBAS	22.2	24	LAYYAH	5.9
2	PAK PATTAN	20.0	25	JALAL PUR P.W	5.0
3	BAHAWAL NAGAR	20.0	26	MAILSI	5.0
4	CHISHTIAN	18.0	27	HAROON ABAD	5.0
5	LIAQUAT PUR	18.0	28	MIANWALI	5.0
6	HASILPUR	17.3	29	TANDLIANWALA	4.7
7	MINCHAN ABAD	14.6	30	PIPLAN	4.5
8	PEER MEHAL	14.0	31	CHOBARA	4.4
9	R.Y.KHAN	12.5	32	MULTAN	4.0
10	SILLANWALI/ SAHIWAL	12.5	33	RENALA KHURD	4.0
11	ARIF WALA	12.0	34	A.P.EAST	3.8
12	OKARA	11.8	35	GOJRA	3.8
13	KHAN PUR	11.8	36	SUMUNDRI	3.8
14	KAROR L.E.	11.1	37	KALLOR KOT	2.9
15	SAHIWAL	10.3	38	18-HAZARI	2.8
16	TAUNSA	10.0	39	MUZUFAR GARH	2.4
17	CHICHA WATNI	8.8	40	SHUJABAD	2.3
18	DEPALPUR	8.0	41	A.P.SIAL	2.3
19	SADIQ ABAD	7.5	42	SHORKOT	2.2
20	ISA KHEL	7.4	43	KABIR WALA	2.1
21	JHANG	6.9	44	ALI PUR	2.0
22	T.T.SINGH	6.8	45	BHAKKAR	1.8
23	BAHAWAL PUR	6.7	46	YAZMAN	1.3

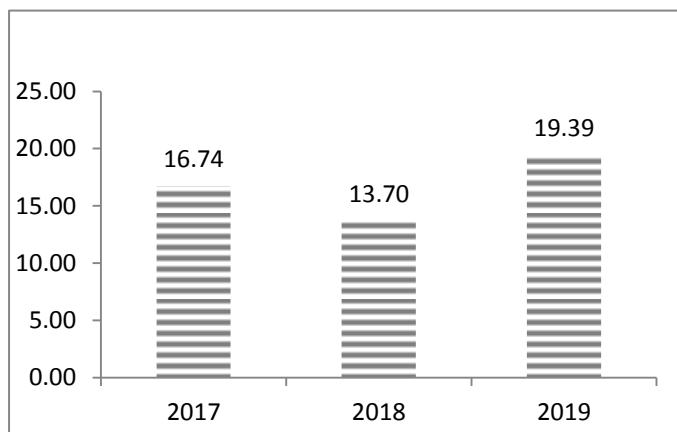
Thrips: On overall Punjab basis 1.20% above ETL spots have been observed as compared to 2.28% in last week and same week of last year i.e. 1.39%. And 85.64% below ETL spots have been observed during current week as compared to 87.59% in last week and 76.23% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of Thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	TAUNSA	24.0	7	JHANG	3.4
2	HAROOON ABAD	10.0	8	BAHAWAL PUR	3.3
3	LIAQUAT PUR	10.0	9	MAILSI	2.5
4	ISA KHEL	7.4	10	SADIQ ABAD	2.5
5	R.Y.KHAN	4.2	11	A.P.EAST	1.9
6	KHAN PUR	3.9			

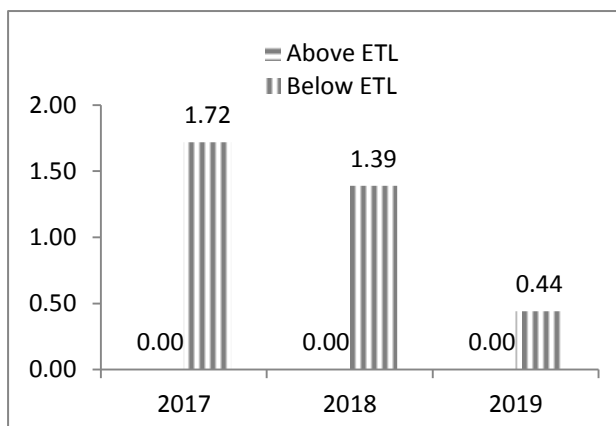
Mealy Bug: On overall Punjab basis 19.39% spots (all considered above ETL) of Mealy Bug have been observed as compared to 16.59% in last week and 13.70% spots during the same corresponding period of the last year.



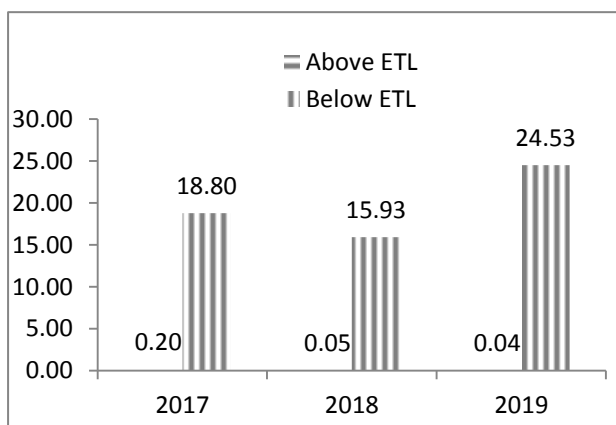
Tehsil wise percentage of hot spots of Mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	BAHAWAL PUR	65.0	29	PAK PATTAN	12.0
2	HASILPUR	57.7	30	TAUNSA	12.0
3	MULTAN	56.0	31	BURE WALA	10.0
4	SHUJABAD	53.5	32	MIANWALI	10.0
5	RAJAN PUR	52.5	33	MANKERA	9.1
6	LODHRAN	43.1	34	KAROR L.E.	8.9
7	KHAN PUR	41.2	35	JAHANIAN	8.6
8	JALAL PUR P.W	37.5	36	T.T.SINGH	8.5
9	CHISHTIAN	36.0	37	KHANEWAL	8.1
10	R.Y.KHAN	35.4	38	ARIF WALA	8.0
11	KEHROR PACCA	33.3	39	LAYYAH	7.8
12	ROJHAN	33.3	40	MAILSI	7.5
13	A.P.EAST	32.7	41	ISA KHEL	7.4
14	ALI PUR	27.5	42	PEER MEHAL	7.0
15	LIAQUAT PUR	26.0	43	OKARA	5.9
16	SADIQ ABAD	25.0	44	GOJRA	5.8
17	KOT CHUTTA	23.1	45	MINCHAN ABAD	4.9
18	JATOI	23.1	46	CHOBARA	4.4
19	DUYAPUR	22.9	47	RENALA KHURD	4.0
20	YAZMAN	20.5	48	DEPALPUR	4.0
21	MIAN CHANNU	20.0	49	CHICHA WATNI	3.8
22	VEHARI	20.0	50	SAHIWAL	3.4
23	HAROOON ABAD	20.0	51	JHANG	3.4
24	FORT ABBAS	20.0	52	TANDLIANWALA	3.1
25	KOT ADDU	20.0	53	KALLOR KOT	2.9
26	JAM PUR	18.5	54	A.P.SIAL	2.3
27	BAHAWAL NAGAR	17.5	55	PIPLAN	2.3
28	KABIR WALA	17.0		SHORKOT	2.2
29	D.G.KHAN	17.0		BHAKKAR	1.8
30	MUZUFAR GARH	14.6			

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 0.02% during the same corresponding period of last year. And 0.44% below ETL spots have been observed during current week as compared to 0.44% in last week and 1.39% during the same corresponding period of last year.



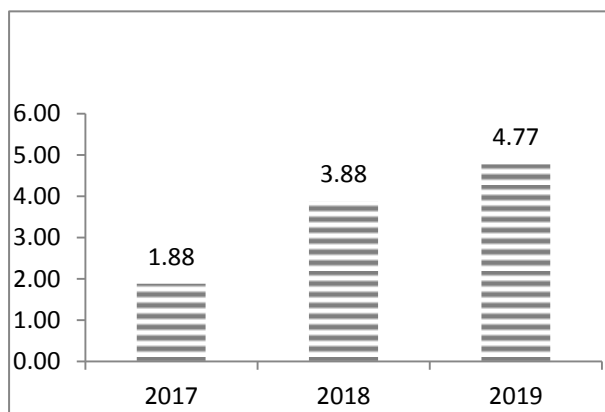
Dusky Cotton Bug: On overall Punjab basis 0.04% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.05% during the same corresponding period of last year. And 24.53% below ETL spots have been observed during current week as compared to 20.04% in last week and 15.93% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of Dusky Cotton Bug

S. NO.	TEHSIL	%AGE
1	Bahawalpur	1.7

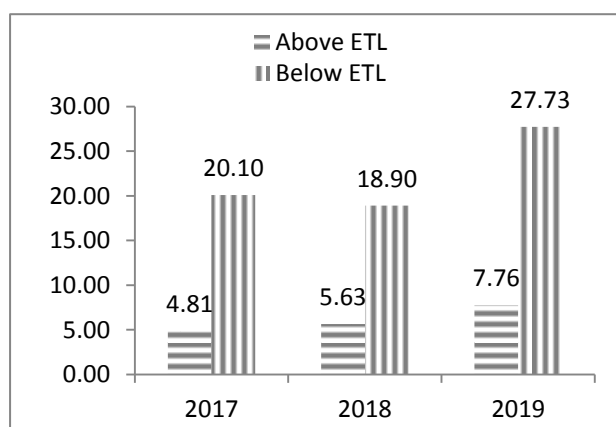
Armyworm: On overall Punjab basis 4.77% spots (all considered above ETL) of Armyworm have been observed as compared to 3.96% in last week and 3.88% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of Army worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	JALAL PUR P.W	17.5	21	ALI PUR	5.9
2	BAHAWAL PUR	16.7	22	T.T.SINGH	5.1
3	R.Y.KHAN	16.7	23	BAHAWAL NAGAR	5.0
4	MULTAN	16.0	24	MIANWALI	5.0
5	KHAN PUR	15.7	25	PIPLAN	4.5
6	SHUJABAD	11.6	26	FORT ABBAS	4.4
7	DUYAPUR	10.4	27	GOJRA	3.8
8	LODHRAN	10.3	28	ISA KHEL	3.7
9	MIAN CHANNU	10.0	29	JHANG	3.4
10	HASILPUR	9.6	30	18-HAZARI	2.8
11	KAROR L.E.	8.9	31	JATOI	2.6
12	KHANEWAL	8.1	32	BURE WALA	2.5
13	LIAQUAT PUR	8.0	33	CHICHA WATNI	2.5
14	KOT ADDU	8.0	34	MINCHAN ABAD	2.4
15	A.P.EAST	7.7	35	MUZUFAR GARH	2.4
16	MAILSI	7.5	36	PEER MEHAL	2.3
17	SADIQ ABAD	7.5	37	KABIR WALA	2.1
18	RAJAN PUR	7.5	38	KOT CHUTTA	1.9
19	KEHROR PACCA	6.7	39	BHAKKAR	1.8
20	CHISHTIAN	6.0	40	SAHIWAL	1.7

Pink Boll Worm: On overall Punjab basis 7.76% above ETL spots have been observed as compared to 5.21% in last week and 5.63% same corresponding period of the last year. And 27.73% below ETL spots have been observed as compared to 24.34% in last week and 18.90% during same corresponding period of last year.

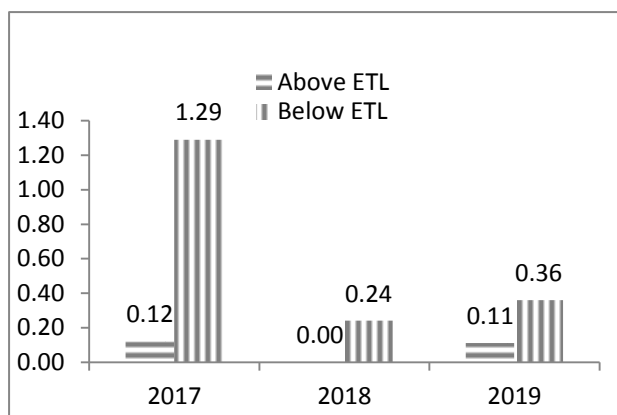


Tehsil wise percentage of hot spots of Pink Bollworm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	VEHARI	27.5	27	MULTAN	8.0
2	CHISHTIAN	26.0	28	ARIF WALA	8.0
3	OKARA	23.5	29	MIANWALI	7.5
4	RENALA KHURD	20.0	30	ISA KHEL	7.4
5	DEPALPUR	20.0	31	BHAKKAR	7.1
6	SHUJABAD	18.6	32	PEER MEHAL	7.0
7	ALI PUR	17.6	33	DUYAPUR	6.3
8	SADIQ ABAD	17.5	34	KALLOR KOT	5.7
9	R.Y.KHAN	16.7	35	T.T.SINGH	5.1
10	LIAQUAT PUR	16.0	36	BAHAWAL NAGAR	5.0
11	JAHANIAN	14.3	37	MUZUFAR GARH	4.9
12	CHICHA WATNI	13.8	38	PIPLAN	4.5
13	KHAN PUR	13.7	39	CHOBARA	4.4
14	JALAL PUR P.W	12.5	40	KAROR L.E.	4.4
15	MIAN CHANNU	12.5	41	GOJRA	3.8
16	MAILSI	12.5	42	SUMUNDRI	3.8
17	SAHIWAL	12.1	43	LODHRAN	3.4
18	PAK PATTAN	12.0	44	TANDLIANWALA	3.1
19	BAHAWAL PUR	11.7	45	18-HAZARI	2.8
20	A.P.EAST	11.5	46	JATOI	2.6
21	BURE WALA	10.0	47	MINCHAN ABAD	2.4

22	KEHROR PACCA	10.0	48	FORT ABBAS	2.2
23	HASILPUR	9.6	49	KOT ADDU	2.0
24	MANKERA	9.1	50	LAYYAH	2.0
25	KABIR WALA	8.5	51	YAZMAN	1.3
26	KHANEWAL	8.1			

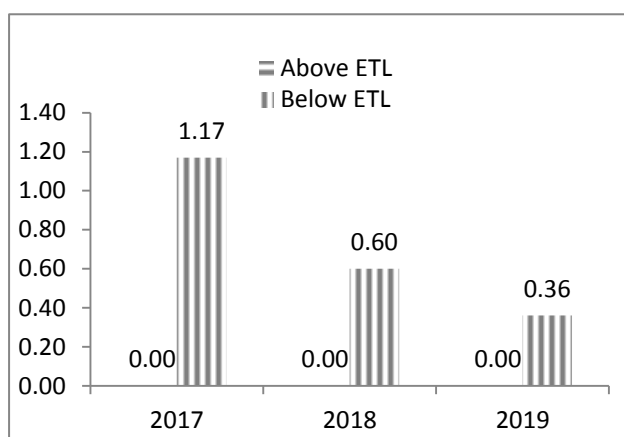
American Bollworm: On overall Punjab basis 0.11% above ETL spots have been observed as compared to 0.04% in last week and 0.00% during same corresponding period of last year. And 0.36% below ETL spots have been observed as compared to 0.22% in last week and 0.24% during same corresponding period of last year.



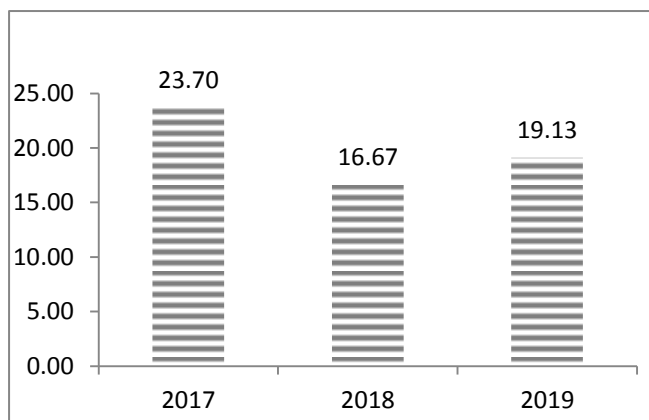
Tehsil wise percentage of hot spots of American boll worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	ISA KHEL	3.7	3	PIPLAN	2.3
2	MIANWALI	2.5			

SBW: 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 & 0.36% below ETL spots have been observed as compared to 0.44% in last week and 0.60% during same corresponding period of last year.



CLCuV: On overall Punjab basis 19.13% spots (all considered above ETL) of CLCV have been observed as compared to 17.99% in last week and 16.67% 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	80.0	27	KAROR L.E.	15.6
2	KABIR WALA	68.1	28	BAHAWAL NAGAR	15.0
3	VEHARI	62.5	29	BHAKKAR	14.3
4	MIAN CHANNU	55.0	30	CHOBARA	13.3
5	KHANEWAL	54.1	31	YAZMAN	12.8
6	MULTAN	54.0	32	PAK PATTAN	12.0
7	KEHROR PACCA	41.7	33	OKARA	11.8
8	JALAL PUR P.W	40.0	34	A.P.EAST	11.5
9	SHUJABAD	39.5	35	GOJRA	11.5
10	BAHAWAL PUR	36.7	36	KALLOR KOT	11.4
11	LODHRAN	32.8	37	T.T.SINGH	10.2
12	MAILSI	32.5	38	LAYYAH	9.8
13	JAHANIAN	31.4	39	PEER MEHAL	9.3
14	MUZUFAR GARH	29.3	40	FORT ABBAS	8.9
15	KHAN PUR	27.5	41	D.G.KHAN	8.5
16	MANKERA	27.3	42	ROJHAN	8.3
17	R.Y.KHAN	27.1	43	DEPALPUR	8.0
18	HASILPUR	26.9	44	KOT CHUTTA	7.7
19	ARIF WALA	24.0	45	JATOI	7.7
20	SADIQ ABAD	22.5	46	HAROON ABAD	7.5
21	TAUNSA	20.0	47	JAM PUR	5.6
22	ALI PUR	19.6	48	CHICHA WATNI	5.0
23	DUYAPUR	18.8	49	RAJAN PUR	5.0
24	BURE WALA	17.5	50	RENALA KHURD	4.0
25	CHISHTIAN	16.0	51	MIANWALI	2.5
26	LIAQUAT PUR	16.0	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	38.00	28.00	75.50	0.00	35.50	24.88	78.69	0.00
Khanewal	38.86	27.14	65.43	0.00	37.26	28.09	62.86	0.00
Vehari	38.14	28.43	70.50	0.00	33.00	28.00	49.45	0.00
Lodhran	38.43	28.29	66.14	0.00	36.71	25.00	64.57	0.00
Sahiwal	37.00	28.00	68.00	0.00	36.17	27.00	69.00	0.00
Pakpattan	36.00	26.50	69.00	0.00	37.00	25.88	71.00	0.00
Okara	38.00	29.00	68.00	0.00	37.00	28.50	70.00	0.00
Bahawalpur	38.27	27.53	63.21	0.00	38.90	25.24	57.21	0.00
Bahawalnagar	40.29	25.25	49.50	0.00	31.88	23.13	40.81	0.00
R.Y.Khan	41.06	27.19	79.63	0.00	38.00	25.50	79.25	0.00
D.G.Khan	39.71	27.86	52.93	0.00	39.00	25.86	51.64	0.00
M.Garh	38.47	28.70	52.21	0.00	35.36	25.29	56.14	0.00
Rajanpur	39.45	28.7	52.21	0.00	36.44	25.40	46.75	0.00
Layyah	37.40	24.00	41.80	0.00	42.80	27.40	40.40	0.00
TOT/AVG	38.51	27.47	62.43	0.00	36.79	26.08	59.84	0.00

Weather forecast for next 7 day in cotton zone

Division	Dated	21/9	22/9	23/9	24/9	25/9	26/9	27/9
Multan	Max.Temp.	37	39	38	39	38	36	37
	Min.Temp.	26	27	27	28	28	28	28
	Humidity %	38	32	34	33	34	23	21
Sahiwal	Max.Temp.	36	37	36	37	37	35	36
	Min.Temp.	24	24	25	26	25	28	28
	Humidity %	40	35	39	38	38	28	29
Bahawalpur	Max.Temp.	37	38	38	38	38	36	37
	Min.Temp.	26	27	28	28	28	28	28
	Humidity %	38	33	34	34	34	26	21
D.G. Khan	Max.Temp.	40	41	40	40	40	36	37
	Min.Temp.	26	26	26	28	28	28	28
	Humidity %	29	27	29	29	23	19	22
Average Cotton Region	Max.Temp.	37.64						
	Min.Temp.	26.96						
	Humidity %	30.71						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain moderate and temperature may slight decrease 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. 38.51°C, Min. 27.47°C with R.humidity62.43%) &forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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. 38.51°C, Min. 27.47°C with R. humidity 62.43%) &forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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. 38.51°C,

Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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. 38.51°C, Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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. 38.51°C, Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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. 38.51°C, Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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

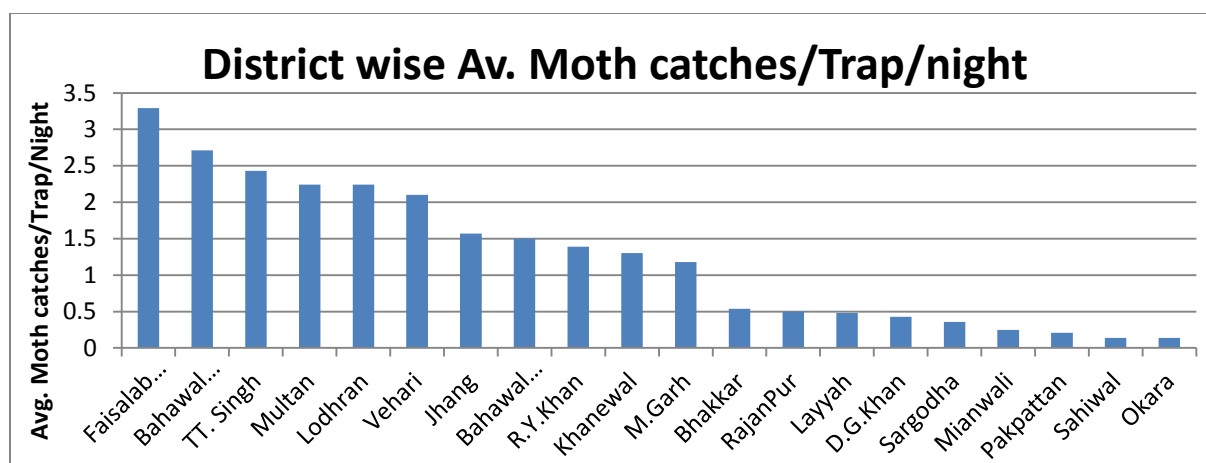
Punjab basis (Max temp. 38.51°C, Min. 27.47°C with R.humidity 62.43%)
&forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%.It is predicted that population of this pest will increase on cotton during the coming week as expected temperature range is favorable for the development 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 3RD Week of September, 2019

Moth Catches in Pheromone Traps During 3 RD Week of September, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	2.24	0.0
Khanewal	8	1.30	0.02
Vehari	6	2.10	0.05
Lodhran	6	2.24	0.17
Sahiwal	4	0.14	0.00
Pakpattan	4	0.21	0.00
Okara	4	0.14	0.00
Bahawalpur	8	2.71	0.07
Bahawalnagar	10	1.50	0.20
R.Y.Khan	8	1.39	0.43
D.G.Khan	4	0.43	0.00
M.Garh	8	1.18	0.00
RajanPur	6	0.50	0.00
Layyah	6	0.48	0.00
Sargodha	2	0.36	0.00
Mianwali	4	0.25	0.00
Bhakkar	8	0.54	0.00
Faisalabad	5	3.29	0.00
TT. Singh	6	2.43	0.00
Jhang	4	1.57	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. 38.51°C, Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity

30.71%. 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 3rd week of September, 2019

Moth Catches on Light Traps/Trap/week During 3 rd Week of September, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	2	0	15
Khanewal	4	0	0	14
Vehari	3	0	0	6
Lodhran	3	4	4	10
Sahiwal	2	0	0	3
Pakpattan	2	0	0	4
Okara	3	0	0	3
Bahawalpur	4	3	4	6
Bahawalnagar	5	9	3	15
R.Y.Khan	4	6	6	20
D.G.Khan	3	0	0	0
M.Garh	4	0	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. 38.51°C, Min. 27.47°C with R.humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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 38.51°C, Min. 27.47°C with R. humidity 62.43%) & forecast for the next week temp. Max. 37.64°C, Min. 26.96°C with humidity 30.71%. 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 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
			Rattan jot
			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