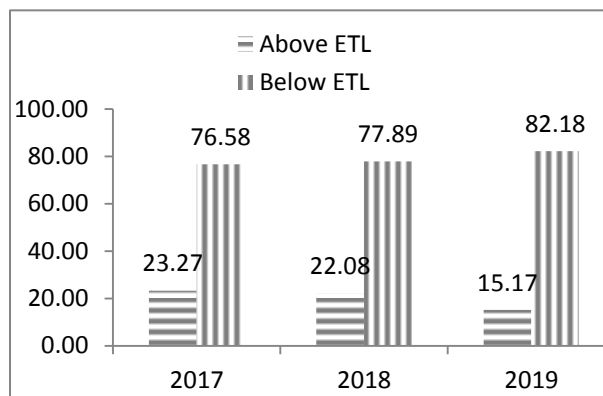


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4TH WEEK OF AUGUST, 2019

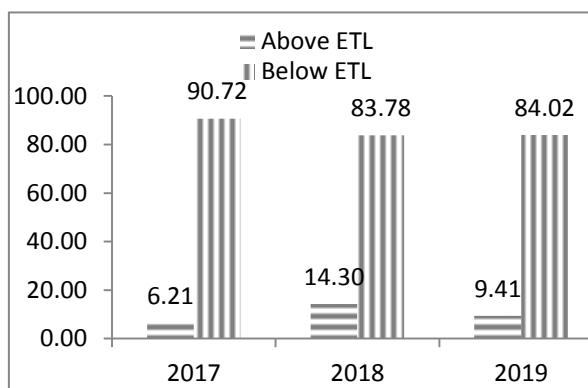
Whitefly: On overall Punjab basis 15.17% above ETL spots have been observed during current week as compared to 14.49% in last week and 22.08% during the same corresponding period of last year. And 82.18% below ETL spots have been observed during current week as compared 83.00% in last week and 77.89% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of whitefly

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	BAHAWAL PUR	36.2	31	KEHROR PACCA	15.7
2	D.G.KHAN	32.5	32	ROJHAN	15.2
3	JAM PUR	32.5	33	SILLANWALI/ SAHIWAL	14.3
4	KOT CHUTTA	31.0	34	CHISHTIAN	14.0
5	JALAL PUR P.W	30.3	35	MAILSI	14.0
6	RAJAN PUR	27.9	36	LAYYAH	13.7
7	SHUJABAD	26.3	37	LODHRAN	13.6
8	YAZMAN	25.0	38	PAK PATTAN	13.3
9	HASILPUR	25.0	39	R.Y.KHAN	12.8
10	MULTAN	24.1	40	KHANEWAL	12.5
11	HAROON ABAD	22.5	41	CHICHA WATNI	12.5
12	OKARA	20.0	42	JATOI	12.5
13	RENALA KHURD	20.0	43	KOT ADDU	12.2
14	ISA KHEL	20.0	44	CHOBARA	12.0
15	MANKERA	20.0	45	KAROR L.E.	12.0
16	DUYAPUR	19.5	46	KALLOR KOT	11.6
17	ARIF WALA	19.0	47	SAHIWAL	10.9
18	A.P.EAST	18.9	48	PIPLAN	10.2
19	TAUNSA	18.8	49	VEHARI	10.0
20	JAHANIAN	18.2	50	BURE WALA	10.0
21	FORT ABBAS	18.2	51	SHORKOT	9.3
22	MIAN CHANNU	17.5	52	A.P.SIAL	9.1
23	BAHAWAL NAGAR	17.5	53	MIANWALI	7.5
24	MINCHAN ABAD	17.5	54	BHAKKAR	6.3
25	SADIQ ABAD	17.5	55	GOJRA	5.4
26	KABIR WALA	16.7	56	JHANG	4.7
27	KHAN PUR	16.4	57	MUZUFAR GARH	4.3
28	DEPALPUR	16.0	58	T.T.SINGH	4.0
29	LIAQUAT PUR	16.0	59	TANDLIANWALA	3.8
30	ALI PUR	16.0	60	PEER MEHAL	1.9

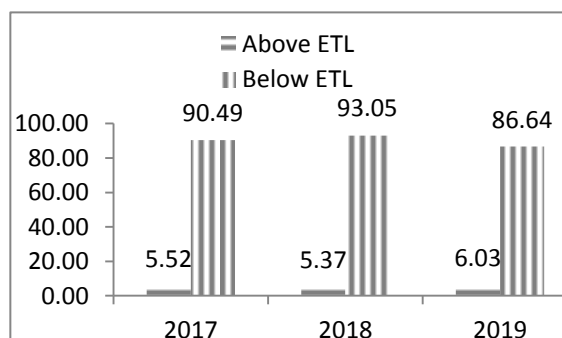
Jassid: On overall Punjab basis 9.41% above ETL spots has been observed as compared to 11.46% in last week and same week of last year 14.30%. And 84.02% below ETL spots have been observed during current week as compared to 83.71% in last week and 83.78% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of jassid

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	BAHAWAL PUR	40.0	27	KHAN PUR	12.2
2	D.G.KHAN	28.0	28	DEPALPUR	10.0
3	JAM PUR	26.0	29	LIAQUAT PUR	10.0
4	KOT CHUTTA	25.0	30	ALI PUR	9.3
5	JALAL PUR P.W	25.0	31	KEHROR PACCA	8.0
6	RAJAN PUR	22.5	32	ROJHAN	7.5
7	SHUJABAD	21.2	33	SILLANWALI/ SAHIWAL	7.1
8	YAZMAN	20.0	34	CHISHTIAN	7.0
9	HASILPUR	20.0	35	MAILSI	6.5
10	MULTAN	20.0	36	LAYYAH	6.3
11	HAROON ABAD	20.0	37	LODHRAN	5.6
12	OKARA	18.0	38	PAK PATTAN	5.3
13	RENALA KHURD	17.0	39	R.Y.KHAN	5.0
14	ISA KHEL	16.4	40	KHANEWAL	5.0
15	MANKERA	16.0	41	CHICHA WATNI	4.8
16	DUYAPUR	15.0	42	JATOI	4.7
17	ARIF WALA	14.9	43	KOT ADDU	4.3
18	A.P.EAST	14.3	44	CHOBARA	3.8
19	TAUNSA	14.3	45	KAROR L.E.	3.7
20	JAHANIAN	14.0	46	KALLOR KOT	3.1
21	FORT ABBAS	13.7	47	SAHIWAL	3.0
22	MIAN CHANNU	13.3	48	PIPLAN	2.5
23	BAHAWAL NAGAR	13.2	49	VEHARI	2.3
24	MINCHAN ABAD	12.5	50	BURE WALA	2.3
25	SADIQ ABAD	12.5	51	SHORKOT	2.1
26	KABIR WALA	12.2	52	A.P.SIAL	1.9

Thrips: On overall Punjab basis 6.03% above ETL spots have been observed as compared to 7.20% in last week and same week of last year i.e. 5.37%. And 86.64% below ETL spots have been observed during current week as compared to 88.23% in last week and 93.05% during

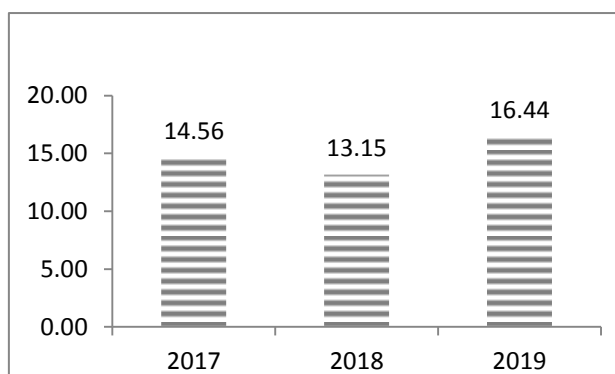


the same corresponding period of last year.

Tehsil wise percentage of hot spots of Thrips

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	SHUJABAD	29.8	20	BAHAWAL PUR	7.3
2	JALAL PUR P.W	24.5	21	A.P.EAST	7.0
3	KHANEWAL	21.1	22	YAZMAN	6.8
4	JAHANIAN	18.0	23	HASILPUR	6.5
5	KABIR WALA	17.0	24	BAHAWAL NAGAR	6.1
6	MIAN CHANNU	16.7	25	HAROON ABAD	5.0
7	VEHARI	16.7	26	FORT ABBAS	4.8
8	MAILSI	16.0	27	MINCHAN ABAD	4.3
9	BURE WALA	15.0	28	CHISHTIAN	3.9
10	LODHRAN	15.0	29	R.Y.KHAN	3.1
11	DUYAPUR	13.3	30	KHAN PUR	2.5
12	KEHROR PACCA	12.5	31	LIAQUAT PUR	2.4
13	SAHIWAL	12.2	32	SADIQ ABAD	2.3
14	CHICHA WATNI	11.5	33	D.G.KHAN	2.3
15	PAK PATTAN	11.4	34	TAUNSA	2.1
16	ARIF WALA	10.0	35	KOT CHUTTA	2.0
17	OKARA	10.0	36	MUZUFAR GARH	2.0
18	RENALA KHURD	8.0	37	KOT ADDU	1.0
19	DEPALPUR	7.5			

Mealy Bug: On overall Punjab basis 16.44% spots (all considered above ETL) of Mealy Bug have been observed as compared to 14.80% in last week and 13.15% spots during the same corresponding period of the last year.

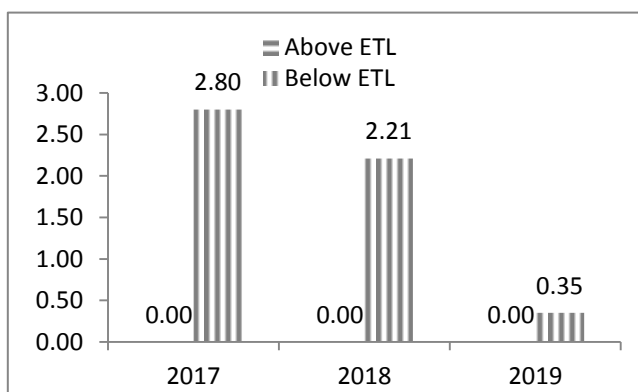


Tehsil wise percentage of hot spots of mealy bug

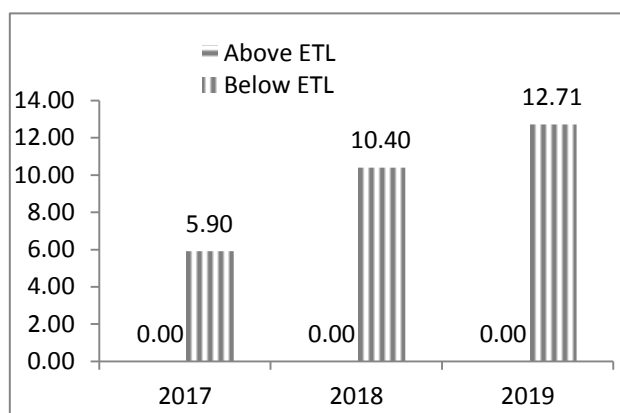
Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	SHUJABAD	63.5	29	R.Y.KHAN	12.2
2	JALAL PUR P.W	51.5	30	KHAN PUR	12.1
3	KHANEWAL	51.2	31	LIAQUAT PUR	12.0
4	JAHANIAN	51.1	32	SADIQ ABAD	10.6
5	KABIR WALA	48.1	33	D.G.KHAN	10.4
6	MIAN CHANNU	39.6	34	TAUNSA	10.0
7	VEHARI	38.3	35	KOT CHUTTA	10.0
8	MAILSI	32.8	36	MUZUFAR GARH	10.0
9	BURE WALA	31.3	37	KOT ADDU	10.0
10	LODHRAN	28.9	38	ALI PUR	9.6
11	DUYAPUR	28.0	39	JATOI	9.4

12	KEHROR PACCA	27.3	40	LAYYAH	8.0
13	SAHIWAL	23.8	41	CHOBARA	8.0
14	CHICHA WATNI	22.5	42	KAROR L.E.	7.5
15	PAK PATTAN	22.0	43	RAJAN PUR	7.5
16	ARIF WALA	22.0	44	JAM PUR	7.1
17	OKARA	22.0	45	ROJHAN	6.7
18	RENALA KHURD	20.0	46	JHANG	6.5
19	DEPALPUR	17.6	47	SHORKOT	6.0
20	BAHAWAL PUR	17.5	48	A.P.SIAL	5.0
21	A.P.EAST	15.0	49	18-HAZARI	4.1
22	YAZMAN	14.6	50	T.T.SINGH	4.0
23	HASILPUR	14.3	51	GOJRA	3.8
24	BAHAWAL NAGAR	14.3	52	PEER MEHAL	2.5
25	HAROON ABAD	14.0	53	FAISAL ABAD	2.3
26	FORT ABBAS	13.0	54	SUMUNDRI	2.3
27	MINCHAN ABAD	12.5	55	TANDLIANWALA	2.3
28	CHISHTIAN	12.5			

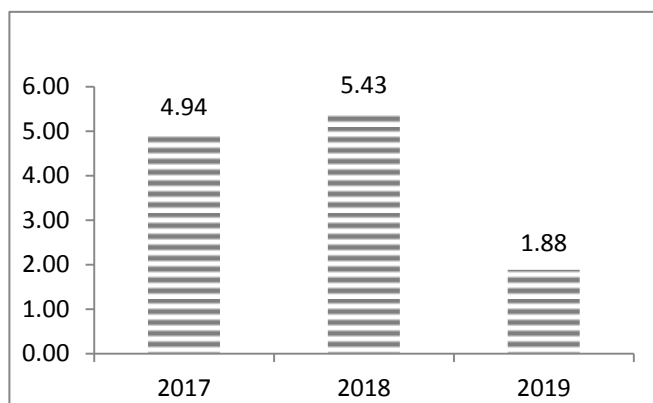
Mites: On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.00% during the same corresponding period of last year. And 0.35% below ETL spots have been observed during current week as compared to 0.44% in last week and 2.21% during 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 12.71% below ETL spots have been observed during current week as compared to 13.48% in last week and 10.39% during the same corresponding period of last year.



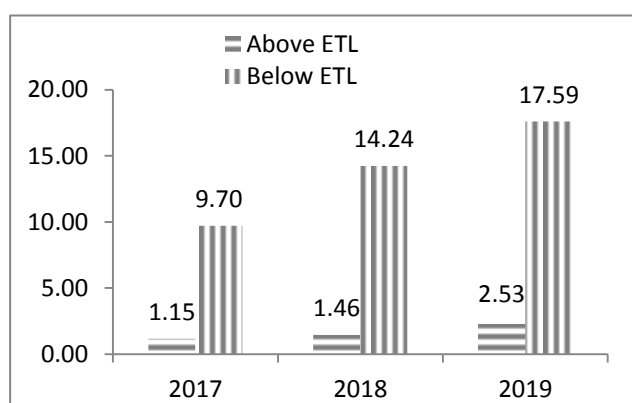
Armyworm: On overall Punjab basis 1.88% spots (all considered above ETL) of Armyworm have been observed as compared to 2.15% in last week and 5.08% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	SHUJABAD	14.9	12	KEHROR PACCA	4.0
2	JALAL PUR P.W	12.5	13	SAHIWAL	2.5
3	KHANEWAL	12.5	14	CHICHA WATNI	2.5
4	JAHANIAN	10.0	15	PAK PATTAN	2.5
5	KABIR WALA	6.4	16	ARIF WALA	2.4
6	MIAN CHANNU	6.1	17	OKARA	2.4
7	VEHARI	6.1	18	RENALA KHURD	2.4
8	MAILSI	6.0	19	DEPALPUR	2.3
9	BURE WALA	4.9	20	BAHAWAL PUR	2.0
10	LODHRAN	4.7	21	A.P.EAST	2.0
11	DUYAPUR	4.0			

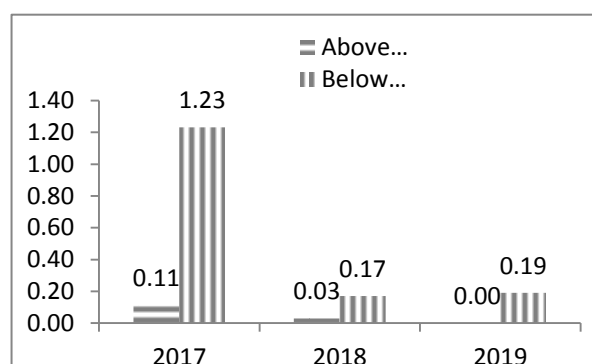
Pink Boll Worm: On overall Punjab basis 2.53% above ETL spots have been observed as compared to 2.02% in last week and 1.46% same corresponding period of the last year. And 17.59% below ETL spots have been observed as compared to 17.48% in last week and 14.24% during same corresponding period of last year.



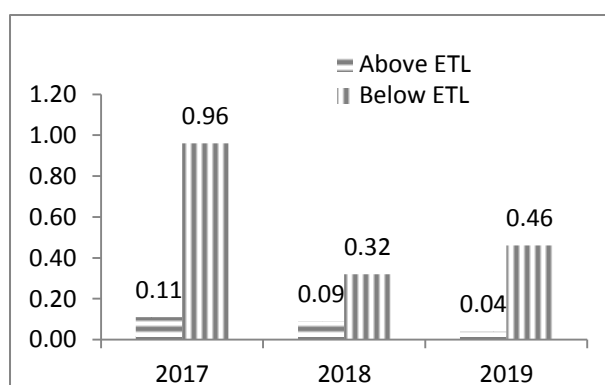
Tehsil wise percentage of hot spots of PBW

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	SHUJABAD	15.0	18	RENALA KHURD	4.0
2	JALAL PUR P.W	12.5	19	DEPALPUR	3.8
3	KHANEWAL	12.5	20	BAHAWAL PUR	3.8
4	JAHANIAN	11.1	21	A.P.EAST	3.1
5	KABIR WALA	10.0	22	YAZMAN	2.6
6	MIAN CHANNU	8.0	23	HASILPUR	2.5
7	VEHARI	7.5	24	BAHAWAL NAGAR	2.4
8	MAILSI	7.0	25	HAROON ABAD	2.4
9	BURE WALA	6.7	26	FORT ABBAS	2.3
10	LODHRAN	6.5	27	MINCHAN ABAD	2.3
11	DUYAPUR	6.3	28	CHISHTIAN	2.1
12	KEHROR PACCA	6.0	29	R.Y.KHAN	2.0
13	SAHIWAL	5.0	30	KHAN PUR	2.0
14	CHICHA WATNI	4.8	31	LIAQUAT PUR	2.0
15	PAK PATTAN	4.3	32	SADIQ ABAD	1.8
16	ARIF WALA	4.1	33	D.G.KHAN	1.0
17	OKARA	4.0			

American Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.03% during same corresponding period of last year. And 0.19% below ETL spots have been observed as compared to 0.13% in last week and 0.17% during same corresponding period of last year.



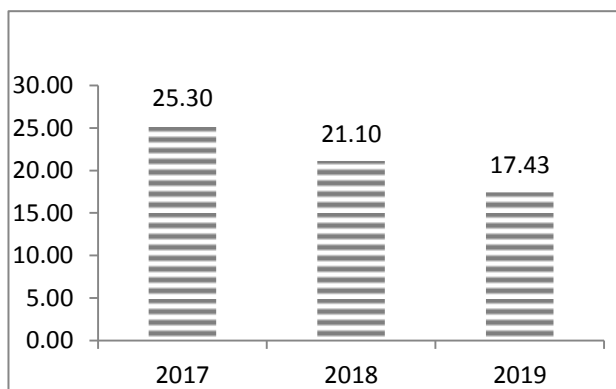
Spotted Bollworm: On overall Punjab basis 0.04% above ETL spots have been observed as compared to 0.00% in last week and 0.09% during same corresponding period of last year & 0.46% below ETL spots have been observed as compared to 0.70% in last week and 0.32% during same corresponding period of last year.



Tehsil wise percentage of hot spots of spotted boll worm

Sr#	TEHSIL	%AGE
1	R.Y.KHAN	2.1

CLCuV: On overall Punjab basis 17.43% spots (all considered above ETL) of CLCV have been observed as compared to 14.80% in last week and 20.47% during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of cotton leaf curl virus

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	SHUJABAD	75.8	26	FORT ABBAS	18.6
2	JALAL PUR P.W	55.6	27	MINCHAN ABAD	18.0
3	KHANEWAL	50.0	28	CHISHTIAN	17.5
4	JAHANIAN	50.0	29	R.Y.KHAN	17.5
5	KABIR WALA	49.0	30	KHAN PUR	16.0
6	MIAN CHANNU	42.1	31	LIAQUAT PUR	16.0
7	VEHARI	34.0	32	SADIQ ABAD	15.0
8	MAILSI	33.3	33	D.G.KHAN	15.0
9	BURE WALA	32.7	34	TAUNSA	14.0
10	LODHRAN	31.9	35	KOT CHUTTA	12.5
11	DUYAPUR	31.3	36	MUZUFAR GARH	12.0
12	KEHROR PACCA	30.0	37	KOT ADDU	12.0
13	SAHIWAL	30.0	38	ALI PUR	11.6
14	CHICHA WATNI	27.5	39	JATOI	10.0
15	PAK PATTAN	25.0	40	LAYYAH	9.5
16	ARIF WALA	24.0	41	CHOBARA	8.7
17	OKARA	22.9	42	KAROR L.E.	8.0
18	RENALA KHURD	22.7	43	RAJAN PUR	7.8
19	DEPALPUR	22.0	44	JAM PUR	6.8
20	BAHAWAL PUR	22.0	45	ROJHAN	6.7
21	A.P.EAST	21.9	46	JHANG	6.5
22	YAZMAN	21.3	47	SHORKOT	5.0
23	HASILPUR	21.2	48	A.P.SIAL	3.6
24	BAHAWAL NAGAR	19.7	49	18-HAZARI	2.5
25	HAROON ABAD	18.8	50	T.T.SINGH	2.3

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2019-2018

Districts	2019				2018			
	Temperature °C		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	36.33	27.83	69.30	25.00	37.30	28.80	77.40	0.00
Khanewal	38.29	27.71	64.29	0.00	36.90	28.40	61.40	0.00
Vehari	36.71	27.57	66.86	6.00	36.10	30.10	50.20	0.00
Lodhran	38.14	28.57	63.00	0.00	33.30	20.90	58.07	0.00
Sahiwal	37.00	27.00	74.00	19.00	37.20	28.10	63.50	0.00
Pakpattan	37.14	25.86	78.00	0.00	35.11	24.89	82.44	0.00
Okara	37.50	27.80	82.00	0.00	35.40	26.80	84.00	90.00
Bahawalpur	38.54	27.94	59.29	30.70	37.44	28.13	62.14	41.60
Bahawalnaga	39.67	28.67	55.08	0.00	40.42	29.17	54.92	0.00
R.Y.Khan	40.29	27.86	77.71	0.00	39.64	27.93	79.71	0.00
D.G.Khan	39.29	29.14	62.93	0.00	39.57	28.57	51.86	0.00
M.Garh	35.63	28.36	69.00	0.00	38.60	28.63	64.75	0.00
Rajanpur	38.46	28.58	64.20	0.00	38.80	29.36	47.40	0.00
Layyah	37.14	26.42	53.14	9.00	42.57	29.85	40.71	0.00
TOT/AVG	37.87	27.81	67.06	89.70	37.74	27.83	62.75	131.60

Weather forecast for next 7 day in cotton zone

Division	Dated	29/8	30/8	31/8	1/9	2/9	3/9	4/9
Multan	Max.Temp.	39	40	41	41	41	42	39
	Min.Temp.	27	31	32	32	30	31	31
	Humidity %	39	36	36	35	36	33	20
Sahiwal	Max.Temp.	39	38	40	39	40	41	37
	Min.Temp.	28	28	29	29	28	29	30
	Humidity %	42	43	37	38	38	34	22
Bahawalpur	Max.Temp.	39	40	40	40	39	40	38
	Min.Temp.	30	30	32	31	30	30	29
	Humidity %	39	37	40	37	39	36	24
D.G. Khan	Max.Temp.	41	41	43	42	42	42	39
	Min.Temp.	31	31	32	32	32	32	31
	Humidity %	36	35	30	31	32	32	19
Average Cotton Region	Max.Temp.	40.11						
	Min.Temp.	30.29						
	Humidity %	34.14						

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 Cotton 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

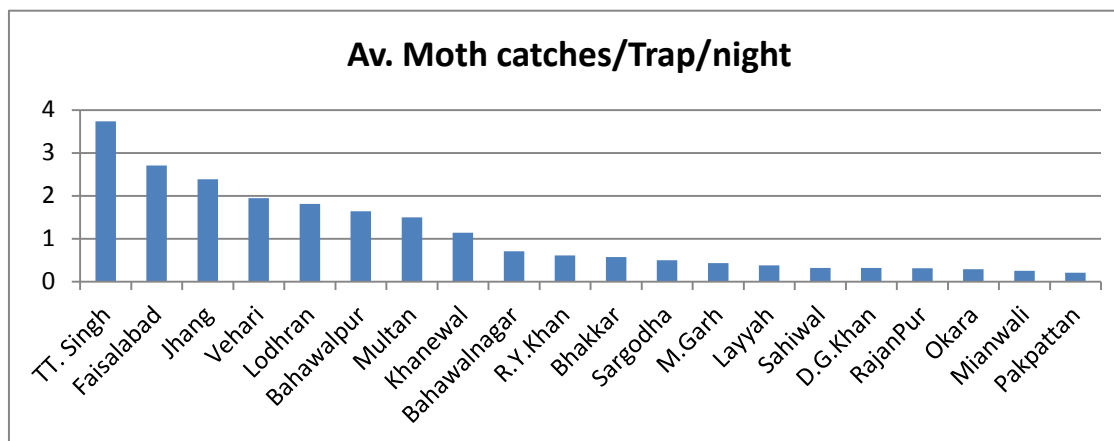
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40°C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (Max temp. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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 August,2019

Moth Catches in Pheromone Traps During 4th Week of August, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	1.50	0.0
Khanewal	8	1.14	0.00
Vehari	6	1.95	0.00
Lodhran	6	1.81	0.29
Sahiwal	4	0.32	0.00
Pakpattan	4	0.21	0.00
Okara	4	0.29	0.00
Bahawalpur	8	1.64	0.11
Bahawalnagar	10	0.71	0.13
R.Y.Khan	8	0.61	0.11
D.G.Khan	4	0.32	0.00
M.Garh	8	0.43	0.00
RajanPur	6	0.31	0.00
Layyah	6	0.38	0.00
Sargodha	2	0.50	0.00
Mianwali	4	0.25	0.00
Bhakkar	8	0.57	0.00
Faisalabad	5	2.71	0.00
TT. Singh	6	3.74	0.00
Jhang	4	2.39	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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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 August, 2019

Moth Catches on Light Traps/Trap/week During 4th Week of August, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1	0	12
Khanewal	4	0	0	18
Vehari	3	0	0	11
Lodhnan	3	6	4	6
Sahiwal	2	0	0	0
Pakpattan	2	0	0	0
Okara	3	0	0	0
Bahawalpur	4	2	0	6
Bahawalnagar	5	3	3	11
R.Y.Khan	4	6	4	7
D.G.Khan	3	0	0	0
M.Garh	4	2	0	11
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. 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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 37.87°C, Min. 27.81°C with R. humidity 67.06%) & forecast for the next week temp. Max. 40.11°C, Min. 30.29°C with humidity 34.14%. 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 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
- Flunicamid 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;
 - Flunicamid 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