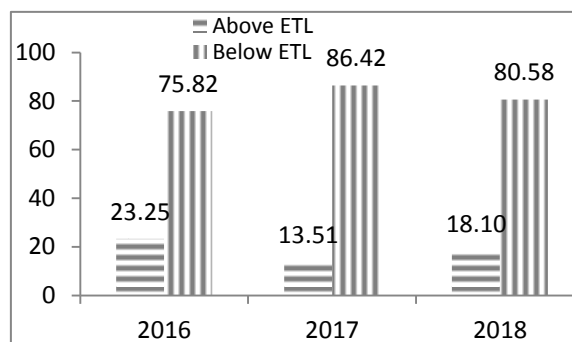


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 1ST WEEK OF OCTOBER, 2018

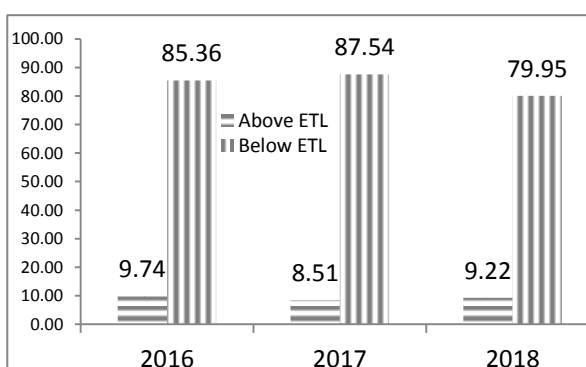
Whitefly: On overall Punjab basis 18.10% spots above ETL have been observed during current week as compared to 21.73% % in last week and 13.51% during the same corresponding period of last year & 80.58% spots below ETL have been observed during current week as compared to 76.89% in last week and 86.42% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of whitefly

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	A.P.EAST	67.3	28	BAHAWAL NAGAR	18.0
2	MAILSI	58.0	29	SHORKOT	17.2
3	TAUNSA	40.0	30	KHANEWAL	15.5
4	JALAL PUR P.W	39.5	31	A.P.SIAL	15.0
5	JATOI	36.6	32	KAMALIA	14.6
6	BAHAWAL PUR	35.0	33	CHOBARA	14.5
7	KOT CHUTTA	33.3	34	MUZUFAR GARH	14.3
8	SHUJABAD	31.6	35	JHANG	14.0
9	RAJAN PUR	30.9	36	MIANWALI	12.8
10	R.Y.KHAN	30.5	37	PAK PATTAN	12.5
11	D.G.KHAN	29.6	38	BURE WALA	12.2
12	YAZMAN	29.4	39	LIAQUAT PUR	12.0
13	HASILPUR	27.3	40	KABIR WALA	11.1
14	ROJHAN	25.0	41	MINCHAN ABAD	10.2
15	KOT ADDU	24.1	42	FAISAL ABAD	10.0
16	JAM PUR	22.2	43	FORT ABBAS	9.6
17	VEHARI	22.0	44	ALI PUR	8.5
18	KHAN PUR	22.0	45	CHISHTIAN	7.0
19	SADIQ ABAD	21.6	46	HAROON ABAD	6.7
20	MIAN CHANNU	21.2	47	SARGODHA	5.6
21	PIPLAN	20.8	48	SAHIWAL	4.9
22	MULTAN	20.6	49	JAHANIAN	4.8
23	KEHROR PACCA	19.7	50	T.T.SINGH	4.7
24	KAROR L.E.	18.8	51	ARIF WALA	4.2
25	LODHRAN	18.6	52	CHICHA WATNI	3.3
26	LAYYAH	18.6	53	GOJRA	1.7
27	DUYAPUR	18.3			

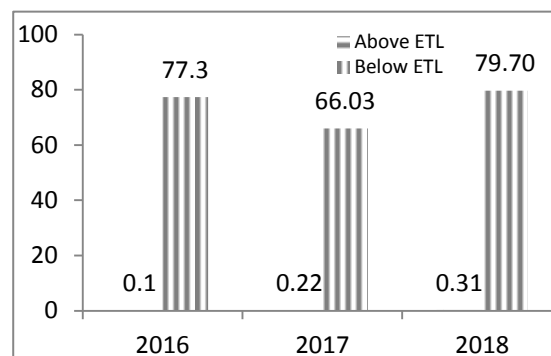
Jassid: On overall Punjab basis 9.22% ABETL has been observed as compared to 8.69% in last week and same week of last year 8.51% & BETL 79.95% spots have been observed during current week as compared to 81.77% in last week and 87.54% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	38.6	24	HAROON ABAD	9.9
2	JALAL PUR P.W	28.8	25	FORT ABBAS	8.6
3	KHANEWAL	27.1	26	MINCHAN ABAD	8.3
4	JAHANIAN	22.4	27	CHISHTIAN	8.0
5	KABIR WALA	21.8	28	R.Y.KHAN	7.9
6	MIAN CHANNU	20.9	29	KHAN PUR	7.8
7	VEHARI	20.0	30	LIAQUAT PUR	7.1
8	MAILSI	17.5	31	SADIQ ABAD	6.8
9	BURE WALA	17.1	32	D.G.KHAN	6.5
10	LODHAN	16.5	33	TAUNSA	6.0
11	DUYAPUR	15.5	34	KOT CHUTTA	6.0
12	KEHROR PACCA	15.2	35	MUZUFAR GARH	5.7
13	SAHIWAL	15.0	36	KOT ADDU	5.6
14	CHICHA WATNI	14.9	37	ALI PUR	5.6
15	PAK PATTAN	13.0	38	JATOI	4.8
16	ARIF WALA	12.3	39	LAYYAH	4.8
17	OKARA	12.3	40	CHOBARA	4.2
18	DEPALPUR	11.7	41	KAROR L.E.	4.2
19	BAHAWAL PUR	11.1	42	RAJAN PUR	4.1
20	A.P.EAST	10.6	43	JAM PUR	4.0
21	YAZMAN	10.3	44	ROJHAN	3.3
22	HASILPUR	10.2	45	JHANG	1.7
23	BAHAWAL NAGAR	10.0	46	SHORKOT	1.3

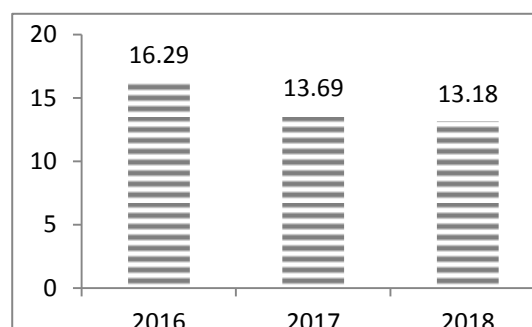
Thrips: On overall Punjab basis 0.31% above ETL spots has been observed as compared to 0.79% in last week and same week of last year i.e. 0.22% & BETL 79.70% spots have been observed during current week as compared to 80.42% in last week and 66.03% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	5.6	4	JAHANIAN	3.2
2	JALAL PUR P.W	4.0	5	KABIR WALA	1.8
3	KHANEWAL	3.9			

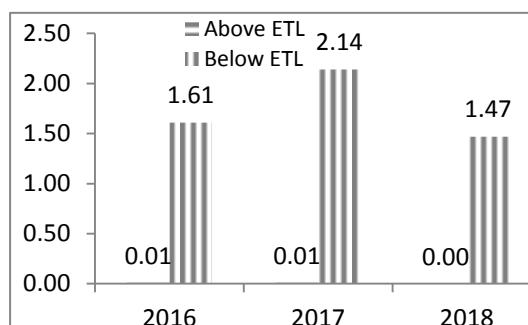
Mealy Bug: On overall Punjab basis 13.18% spots of Mealy Bug have been observed as compared to 14.07% in last week and 13.69% spots during the same corresponding period of the last year.



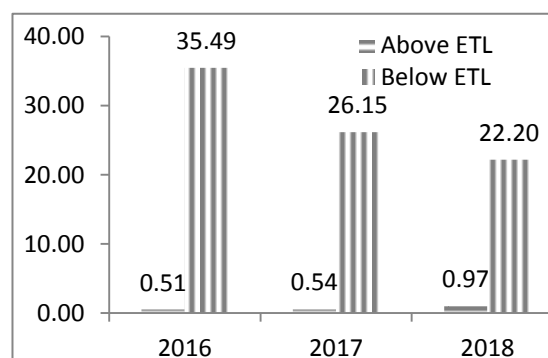
Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	59.1	27	CHISHTIAN	11.9
2	JALAL PUR P.W	56.4	28	R.Y.KHAN	11.8
3	KHANEWAL	43.3	29	KHAN PUR	11.7
4	JAHANIAN	41.3	30	LIAQUAT PUR	10.2
5	KABIR WALA	36.0	31	SADIQ ABAD	10.0
6	MIAN CHANNU	32.0	32	D.G.KHAN	8.7
7	VEHARI	26.5	33	TAUNSA	8.3
8	MAILSI	24.6	34	KOT CHUTTA	8.0
9	BURE WALA	22.0	35	MUZUFAR GARH	6.7
10	LODHRAN	21.2	36	KOT ADDU	5.8
11	DUYAPUR	21.1	37	ALI PUR	5.7
12	KEHROR PACCA	20.9	38	JATOI	4.9
13	SAHIWAL	20.0	39	LAYYAH	4.8
14	CHICHA WATNI	18.8	40	CHOBARA	4.8
15	PAK PATTAN	17.5	41	KAROR L.E.	4.2
16	ARIF WALA	16.7	42	RAJAN PUR	4.1
17	OKARA	16.7	43	JAM PUR	4.0
18	DEPALPUR	15.9	44	ROJHAN	3.7
19	BAHAWAL PUR	14.3	45	JHANG	3.5
20	A.P.EAST	14.1	46	SHORKOT	2.8
21	YAZMAN	14.1	47	A.P.SIAL	2.1
22	HASILPUR	12.9	48	T.T.SINGH	2.1
23	BAHAWAL NAGAR	12.5	49	GOJRA	1.9
24	HAROON ABAD	12.5	50	KAMALIA	1.7
25	FORT ABBAS	12.2	51	FAISAL ABAD	1.7
26	MINCHAN ABAD	12.0	52	SUMUNDRI, TANDLIANWALA	1.3

Mites: On overall Punjab basis 0.00% spots above ETL have been observed during current week as compared to 0.03% in last week and 0.01% during the same corresponding period of last year & 1.47% spots below ETL have been observed during current week as compared to 1.79% in last week and 2.14% during the same corresponding period of last year.

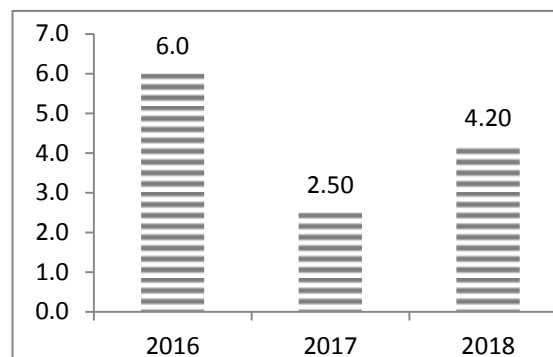


Dusky Cotton Bug: On overall Punjab basis 0.97% spots above ETL have been observed during current week as compared to 0.16% in last week and 0.54% during the same corresponding period of last year & 22.2% spots below ETL have been observed during current week as compared to 17.9% in last week and 26.1% during the same corresponding period of last year.



Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	15.0	4	JAHANIAN	6.8
2	JALAL PUR P.W	14.7	5	KABIR WALA	2.9
3	KHANEWAL	10.0	6	MIAN CHANNU	1.4

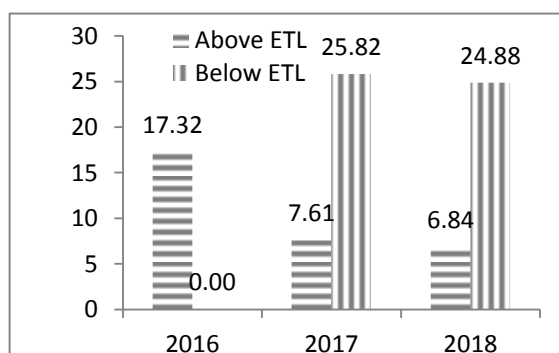
Armyworm: On overall Punjab basis 4.20% spots of Armyworm have been observed as compared to 3.90% in last week and 2.50% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	20.0	18	DEPALPUR	5.6
2	JALAL PUR P.W	16.3	19	BAHAWAL PUR	5.3
3	KHANEWAL	15.3	20	A.P.EAST	5.0
4	JAHANIAN	15.0	21	YAZMAN	4.8
5	KABIR WALA	12.2	22	HASILPUR	4.1
6	MIAN CHANNU	11.3	23	BAHAWAL NAGAR	4.0
7	VEHARI	8.8	24	HAROON ABAD	3.4
8	MAILSI	8.6	25	FORT ABBAS	3.3
9	BURE WALA	8.5	26	MINCHAN ABAD	3.2
10	LODHRAN	8.5	27	CHISHTIAN	3.0
11	DUYAPUR	7.9	28	R.Y.KHAN	2.8
12	KEHROR PACCA	7.1	29	KHAN PUR	2.4
13	SAHIWAL	7.0	30	LIAQUAT PUR	2.3
14	CHICHA WATNI	6.9	31	SADIQ ABAD	2.1
15	PAK PATTAN	6.3	32	D.G.KHAN	2.0
16	ARIF WALA	5.8	33	TAUNSA	1.6
17	OKARA	5.6	34	KOT CHUTTA	1.4

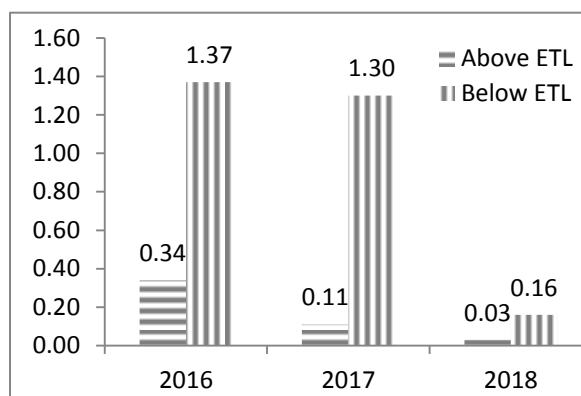
Pink Boll Worm: On overall Punjab basis 6.84% spots of PBW above ETL have been observed as compared to 6.17% in last week and 7.61% same corresponding period of the last year & 24.88% spots of PBW below ETL have been observed as compared to 22.95% in last week and 25.82% during same corresponding period of last year.



Tehsil wise percentage of hot spots of pink boll worm

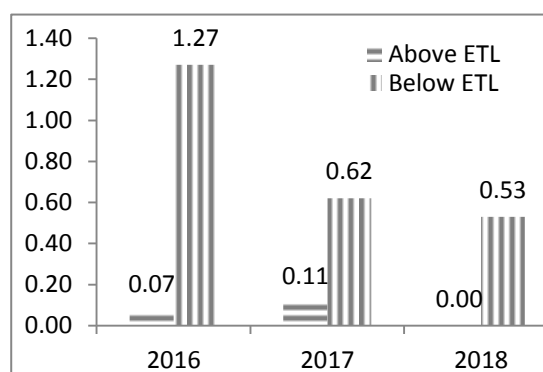
Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	27.1	24	HAROON ABAD	7.8
2	JALAL PUR P.W	22.0	25	FORT ABBAS	7.0
3	KHANEWAL	20.0	26	MINCHAN ABAD	6.8
4	JAHANIAN	16.7	27	CHISHTIAN	6.3
5	KABIR WALA	16.3	28	R.Y.KHAN	6.3
6	MIAN CHANNU	16.0	29	KHAN PUR	6.0
7	VEHARI	15.2	30	LIAQUAT PUR	5.2
8	MAILSI	15.0	31	SADIQ ABAD	5.0
9	BURE WALA	14.3	32	D.G.KHAN	4.8
10	LODHRAN	14.3	33	TAUNSA	4.2
11	DUYAPUR	14.0	34	KOT CHUTTA	4.1
12	KEHROR PACCA	13.8	35	MUZUFAR GARH	4.0
13	SAHIWAL	12.7	36	KOT ADDU	3.8
14	CHICHA WATNI	11.9	37	ALI PUR	3.7
15	PAK PATTAN	11.4	38	JATOI	3.6
16	ARIF WALA	8.8	39	LAYYAH	3.5
17	OKARA	8.6	40	CHOBARA	3.3
18	DEPALPUR	8.5	41	KAROR L.E.	2.4
19	BAHAWAL PUR	8.5	42	RAJAN PUR	2.4
20	A.P.EAST	8.3	43	JAM PUR	1.8
21	YAZMAN	8.3	44	ROJHAN	1.7
22	HASILPUR	8.0	45	JHANG	1.4
23	BAHAWAL NAGAR	8.0	46	SHORKOT	1.4

American Bollworm: On overall Punjab basis 0.03% spots of ABW above ETL have been observed as compared to 0.09% in last week and 0.11% during same corresponding period of last year & 0.16% spots of ABW below ETL have been observed as compared to 0.06% in last week and 1.30% during same corresponding period of last year.



Sr.	TEHSIL	%AGE
1	SHUJABAD	2.1

Spotted Bollworm: On overall Punjab basis 0.00% spots of SBW above ETL have been observed as compared to 0.03% in last week and 0.11% during same corresponding period of last year & 0.53% spots of SBW below ETL have been observed as compared to 0.13% in last week and 0.62% during same corresponding period of last year.



CLCuV: On overall Punjab basis 15.4% spots of CLCV have been observed as compared to 16.4% in last week and 20.6% 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	58.3	29	KHAN PUR	15.0
2	JALAL PUR P.W	58.2	30	LIAQUAT PUR	14.9
3	KHANEWAL	50.0	31	SADIQ ABAD	14.1
4	JAHANIAN	40.0	32	D.G.KHAN	13.8
5	KABIR WALA	37.1	33	TAUNSA	13.6
6	MIAN CHANNU	34.1	34	KOT CHUTTA	12.9
7	VEHARI	31.7	35	MUZUFAR GARH	12.1
8	MAILSI	30.0	36	KOT ADDU	11.8
9	BURE WALA	30.0	37	ALI PUR	11.1
10	LODHRAN	29.3	38	JATOI	10.6
11	DUYAPUR	25.6	39	LAYYAH	10.4
12	KEHROR PACCA	23.2	40	CHOBARA	10.2
13	SAHIWAL	22.2	41	KAROR L.E.	10.0
14	CHICHA WATNI	22.0	42	RAJAN PUR	9.8
15	PAK PATTAN	22.0	43	JAM PUR	8.1
16	ARIF WALA	21.1	44	ROJHAN	7.0
17	OKARA	20.0	45	JHANG	6.8
18	DEPALPUR	20.0	46	SHORKOT	6.3
19	BAHAWAL PUR	19.5	47	A.P.SIAL	6.3
20	A.P.EAST	19.1	48	T.T.SINGH	6.3
21	YAZMAN	17.5	49	GOJRA	5.6
22	HASILPUR	17.2	50	KAMALIA	5.0
23	BAHAWAL NAGAR	16.9	51	FAISAL ABAD	4.7
24	HARON ABAD	16.7	52	SUMUNDRI, TANDLIANWALA	4.1
25	FORT ABBAS	16.0	53	SARGODHA	4.1
26	MINCHAN ABAD	15.8	54	SILLANWALI	3.7
27	CHISHTIAN	15.4	55	MIANWALI	3.2
28	R.Y.KHAN	15.0	56	PIPLAN	2.4

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2018-2017

Districts	2018				2017			
	Temperature		R.H%	Rainfall (mm)	Temperature		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	29.71	20.71	68.14	0.00	35.43	21.57	76.57	0.00
Khanewal	37.34	24.54	48.57	0.00	37.01	23.77	51.43	0.00
Vehari	32.43	25.29	48.43	0.00	39.00	28.00	53.14	0.00
Lodhran	39.00	24.71	49.21	0.00	36.57	23.57	43.29	0.00
Sahiwal	36.80	21.90	57.30	0.00	37.30	20.50	56.50	0.00
Pakpattan	34.57	24.00	83.43	0.00	34.29	23.86	83.14	0.00
Okara	36.00	25.20	84.00	0.00	35.40	25.30	89.00	18.00
Bahawalpur	37.33	23.14	53.93	Traces	37.29	22.26	48.64	0.00
Bahawalnagar	38.64	27.07	58.36	0.00	38.43	22.79	60.07	0.00
R.Y.Khan	41.44	23.06	61.94	0.00	36.75	25.38	64.31	0.00
D.G.Khan	37.14	24.14	50.64	0.00	37.71	22.71	52.43	0.00
M.Garh	36.36	23.57	54.93	0.00	36.28	25.11	55.49	0.00
Rajanpur	35.84	24.06	46.60	0.00	37.84	25.34	48.10	0.00
Layyah	37.42	27.85	44.40	0.00	36.57	25.85	45.71	0.00
TOT/AVG	36.43	24.23	57.85	0.00	36.85	24.00	59.13	18.00

Weather forecast for next 7 day in cotton zone

Division	Dated	8/10	11/10	12/10	13/10	14/10	15/10	16/10
Multan	Max.Temp.	37	32	33	34	34	36	33
	Min.Temp.	22	21	20	20	19	19	20
	Humidity %	19	31	28	25	25	19	11
Sahiwal	Max.Temp.	36	35	33	33	34	35	32
	Min.Temp.	20	20	18	18	19	17	20
	Humidity %	25	26	29	30	30	23	12
Bahawalpur	Max.Temp.	38	34	34	35	35	37	34
	Min.Temp.	21	22	20	19	19	19	17
	Humidity %	18	27	27	23	24	18	11
D.G. Khan	Max.Temp.	37	33	34	34	34	36	32
	Min.Temp.	20	23	22	21	21	21	20
	Humidity %	18	29	25	22	23	18	11
Average Cotton Region	Max.Temp.	34.43						
	Min.Temp.	19.93						
	Humidity %	22.39						

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain sunny. So, it is forecasted that temperature will decrease about 1°C for next week in cotton zone (Southern Punjab).

Forecast of 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. 36.43 °C, Min. 24.23 °C with R. humidity 57.85%) & forecast for the next week temp. Max. 34.43 °C, Min. 19.93°C with humidity 22.39%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week.

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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week.

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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Keeping in view above all, it is predicted that population of this pest will further 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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. 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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Keeping in view above all, it is predicted that population of this pest will decrease 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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Keeping in view above all, it is predicted that population of this pest may increase during the coming week.

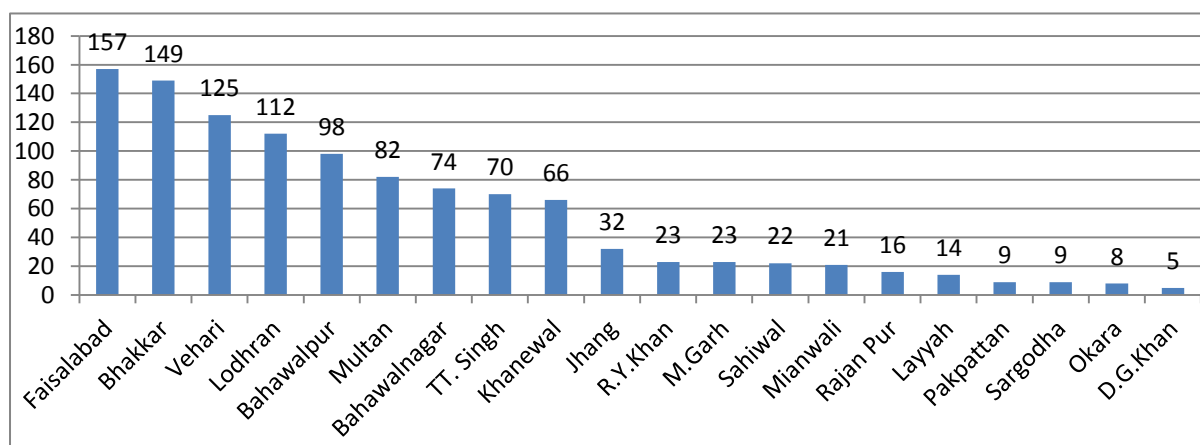
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. It is predicted that population of this pest will increase on cotton.

Moth Catches in Pheromone Traps during 1ST Week of October, 2018 District

Moth Catches in Pheromone Traps During 1 st Week of October, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	82	1.95
Khanewal	8	66	1.18
Vehari	6	125	2.98
Lodhran	6	112	2.67
Sahiwal	5	22	0.79
Pakpattan	4	9	0.32
Okara	4	8	0.29
Bahawalpur	8	98	1.75
Bahawalnagar	10	74	1.06
R.Y.Khan	8	23	0.41
D.G.Khan	4	5	0.18
M.Garh	8	23	0.41
Rajan Pur	6	16	0.38
Layyah	6	14	0.33
Sargodha	1	9	0.64
Mianwali	2	21	0.75
Bhakkar	4	149	2.66
Faisalabad	5	157	4.49
TT. Singh	6	70	1.67
Jhang	4	32	1.14

Note. 3 moth catches on 3 consecutive nights in a trap is considered as ETL

District wise PBW moth catches graph



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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. It is predicted that population of this pest will decrease on cotton crop.

Moth Catches on light traps during 1st week of October, 2018

Moth Catches on Light Traps/Trap/week During 1 st Week of October, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0	0	13
Khanewal	4	0	0	16
Vehari	3	0	0	2
Lodhran	3	4	0	21
Sahiwal	2	3	0	5
Pakpattan	2	0	0	3
Okara	2	0	0	5
Bahawalpur	4	1	1	3
Bahawalnagar	5	4	1	8
R.Y.Khan	4	5	1	4
D.G.Khan	2	0	0	0
M.Garh	4	0	0	5
Rajan Pur	3	0	0	4
Layyah	3	0	0	10
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. 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Due to cultivation of more BT varieties, it is predicted that population of this pest will decrease 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 36.18 °C, Min. 24.02 °C with R. humidity 60.03%) & forecast for the next week temp. Max. 38.07 °C, Min. 23.93°C with humidity 19.50%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week.

CLCuV:

On overall Punjab basis spots of CLCV have been decreased as compared to in last week and same corresponding period of the last year. The incidence of this disease is expected to decrease on cotton crop the next week.

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.

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	Mulbery		
	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 on each card which are available at AARI Faisalabad, Sahiwal, Okara and Vehari.
(Repeat this process after every two weeks).

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.

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.

Pesticides recommended for mealy bug

S#	Common Name	Brand Name	Dose/Acre
1	Dimethoate 40% + Diver (Mineral oil) 97%	Denadim, Progress, Casper	200 ml + 1000 ml
2	Profenofos 50%+ Diver (Mineral oil) 97%	Curacron, Blast	200ml + 1000 ml
3	Chlorpyrifos 40 EC+ Diver (Mineral oil) 97%	Lorsban, Larvae	200ml+ 1000 ml
4	Profenofos 50EC		800 ml
5	Chlorpyrifos 40 EC		1000 ml
6	Carbosulfan 20EC	Advantage	500 ml
7	Methidathion 40 EC	Supracide	400 ml
8	Methomyl 42SP	Lannate	300 gm
9	Profenofos + Lambda 61.5 EC	Border	500 ml

Alternate host plants of cotton mealy bug

Crops	Vegetables	Ornamentals	Weeds	Orchards
Sunflower	Okra	China Rose	Hazar Dani	Citrus
Tobacco	Brinjal	Huddle	Amarantus	Mulbery
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 DUSKY COTTON BUG

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Remove alternate host plants

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.

Pesticides recommended for army worm

S#	Common Name	Brand Name	Dose/Acre
1	Lufenuron 5 EC	Match, Drone, Catch, Rozol, Snatch, Track, Ardent	200 ml
2	Emamectin Benzoate 1.9%EC	Proclaim, Timer, Victory, Smash, Tycon, Wel Star, Wright, Rider	250 ml
3	Tebufenazide 20%WP	Falcon, Top Gun	350 gm
4	Flubendamide 480 SC	Belt	25-50 ml
5	Methoxyfenozide 240 SC	Runner	200 ml
6	Chlorantraniliprole 20 SC	Coragen	50 ml
7	Spintoram 120 SC	Radiant	100 ml

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	0 (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	0 (On appearance)
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud