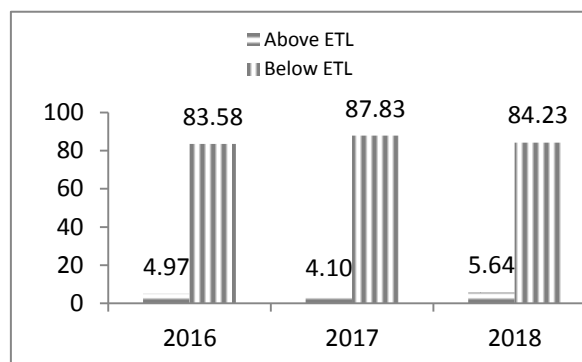


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4TH WEEK OF OCTOBER, 2018

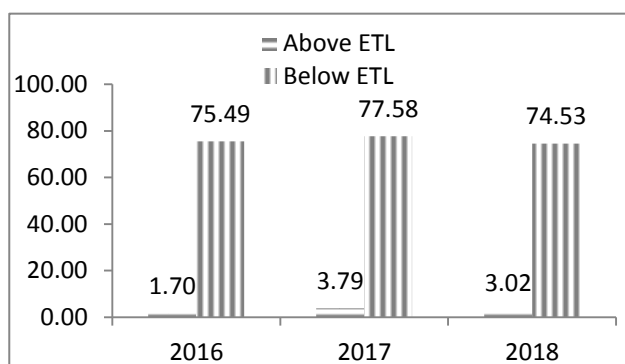
Whitefly: On overall Punjab basis 5.64% spots above ETL have been observed during current week as compared to 9.82% in last week and 4.10% during the same corresponding period of last year & 84.23% spots below ETL have been observed during current week as compared to 85.93% in last week and 87.83% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of whitefly

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	MAILSI	28.0	19	KAROR L.E.	7.3
2	A.P.EAST	27.3	20	SHUJABAD	7.1
3	HASILPUR	24.1	21	LAYYAH	6.6
4	TAUNSA	22.5	22	PIPLAN	6.3
5	KOT CHUTTA	19.6	23	MIAN CHANNU	5.8
6	BAHAWAL PUR	16.4	24	KHAN PUR	4.4
7	D.G.KHAN	12.9	25	MUZUFAR GARH	4.0
8	MIANWALI	10.4	26	KOT ADDU	3.6
9	KEHROR PACCA	10.0	27	RAJAN PUR	3.6
10	LODHRAN	9.5	28	JATOI	3.3
11	JALAL PUR P.W	9.3	29	SADIQ ABAD	3.1
12	MULTAN	8.8	30	LIAQUAT PUR	2.9
13	BURE WALA	8.7	31	KHANEWAL	2.2
14	CHOBARA	8.6	32	JAM PUR	2.1
15	R.Y.KHAN	8.6	33	ALI PUR	2.0
16	DUYAPUR	8.4	34	JAHANIAN	1.8
17	VEHARI	8.0	35	ROJHAN	1.8
18	YAZMAN	7.7			

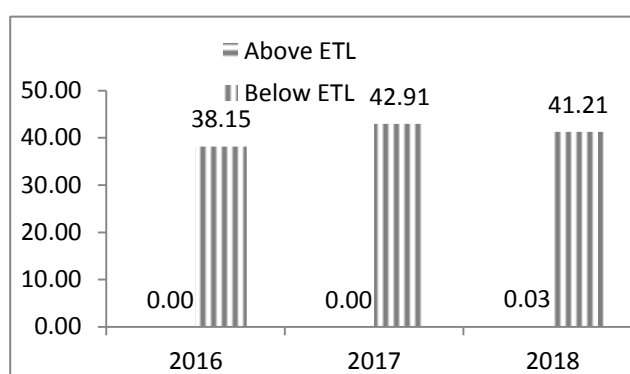
Jassid: On overall Punjab basis 3.02% ABETL has been observed as compared to 4.89% in last week and same week of last year 3.79% & BETL 74.53% spots have been observed during current week as compared to 81.43% in last week and 77.58% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	29.6	15	PAK PATTAN	4.8
2	JALAL PUR P.W	14.3	16	ARIF WALA	4.2
3	KHANEWAL	12.5	17	OKARA	3.7
4	JAHANIAN	12.5	18	DEPALPUR	3.7
5	KABIR WALA	10.9	19	BAHAWAL PUR	3.6
6	MIAN CHANNU	10.0	20	A.P.EAST	2.6
7	VEHARI	8.3	21	YAZMAN	2.5
8	MAILSI	7.2	22	HASILPUR	2.3
9	BURE WALA	7.1	23	BAHAWAL NAGAR	2.2
10	LODHRAN	6.8	24	HAROOON ABAD	1.9
11	DUYAPUR	6.3	25	FORT ABBAS	1.7
12	KEHROR PACCA	6.3	26	MINCHAN ABAD	1.5
13	SAHIWAL	6.0	27	CHISHTIAN	1.2
14	CHICHA WATNI	5.2	28	R.Y.KHAN	1.1

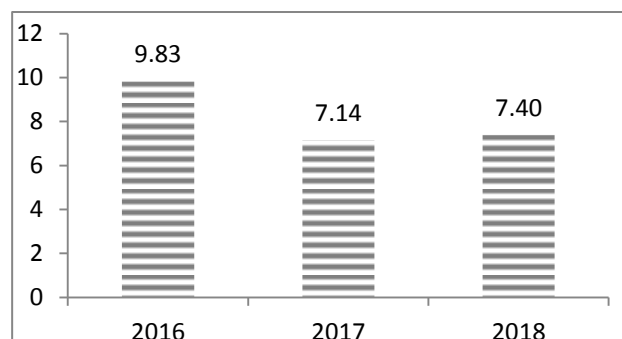
Thrips: On overall Punjab basis 0.03% above ETL spots has been observed as compared to 0.06% in last week and same week of last year i.e. 0.00% & BETL 41.21% spots have been observed during current week as compared to 48.59% in last week and 42.91% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE
1	SHUJABAD	1.1

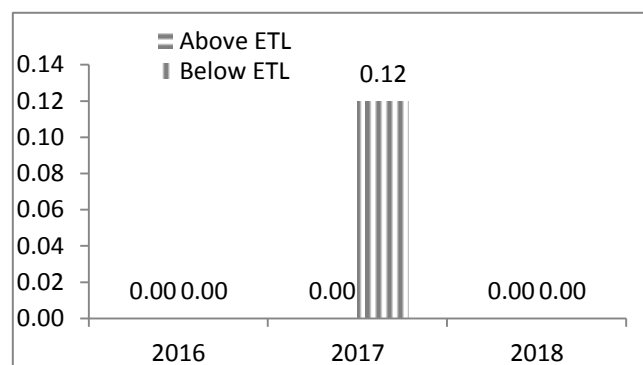
Mealy Bug: On overall Punjab basis 7.40% spots of Mealy Bug have been observed as compared to 9.76% in last week and 7.14% spots during the same corresponding period of the last year.



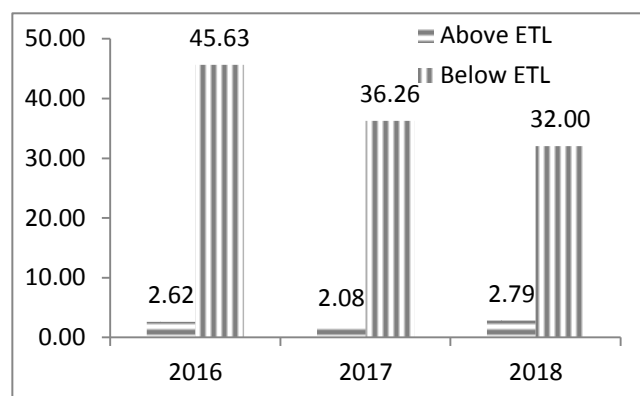
Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	40.7	25	FORT ABBAS	7.5
2	JALAL PUR P.W	22.4	26	MINCHAN ABAD	7.4
3	KHANEWAL	21.1	27	CHISHTIAN	6.3
4	JAHANIAN	19.6	28	R.Y.KHAN	6.2
5	KABIR WALA	19.1	29	KHAN PUR	5.6
6	MIAN CHANNU	18.5	30	LIAQUAT PUR	4.5
7	VEHARI	18.4	31	SADIQ ABAD	4.3
8	MAILSI	18.2	32	D.G.KHAN	4.2
9	BURE WALA	16.7	33	TAUNSA	4.2
10	LODHRAN	15.7	34	KOT CHUTTA	4.2
11	DUYAPUR	14.0	35	MUZUFAR GARH	4.2
12	KEHROR PACCA	13.3	36	KOT ADDU	3.8
13	SAHIWAL	13.3	37	ALI PUR	3.3
14	CHICHA WATNI	13.2	38	JATOI	2.5
15	PAK PATTAN	13.1	39	LAYYAH	2.5
16	ARIF WALA	12.0	40	CHOBARA	2.4
17	OKARA	11.5	41	KAROR L.E.	2.2
18	DEPALPUR	11.4	42	RAJAN PUR	1.8
19	BAHAWAL PUR	10.8	43	JAM PUR	1.8
20	A.P.EAST	10.7	44	ROJHAN	1.8
21	YAZMAN	10.0	45	JHANG	1.6
22	HASILPUR	10.0	46	SHORKOT	1.3
23	BAHAWAL NAGAR	8.4	47	A.P.SIAL	1.1
24	HAROON ABAD	8.0			

Mites: On overall Punjab basis 0.00% spots above ETL 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 & 0.00% spots below ETL have been observed during current week as compared to 0.00% in last week and 0.12% during the same corresponding period of last year.



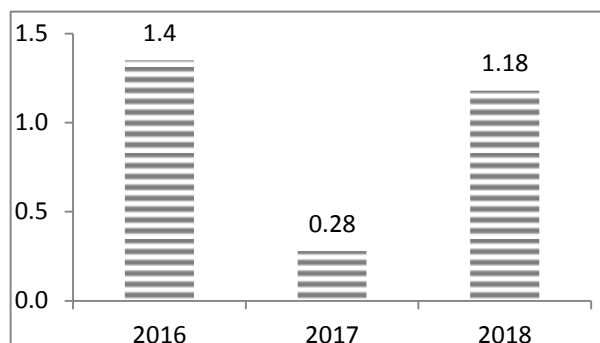
Dusky Cotton Bug: On overall Punjab basis 2.79% spots above ETL have been observed during current week as compared to 1.88% in last week and 2.08% during the same corresponding period of last year & 32.0% spots below ETL have been observed during current week as compared to 28.9% in last week and 36.3% during the same corresponding period of last year.



Tehsil wise percentage of hot spots of Dusky Cotton Bug

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	38.9	5	KABIR WALA	15.9
2	JALAL PUR P.W	37.3	6	MIAN CHANNU	12.3
3	KHANEWAL	21.4	7	VEHARI	4.0
4	JAHANIAN	18.1	8	MAILSI	2.2

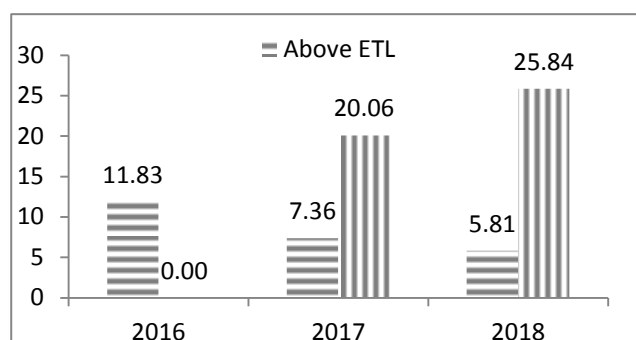
Armyworm: On overall Punjab basis 1.18% spots of Armyworm have been observed as compared to 2.33% in last week and 0.28% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	7.2	9	BURE WALA	3.6
2	JALAL PUR P.W	7.1	10	LODHRAN	3.1
3	KHANEWAL	6.6	11	DUYAPUR	3.0
4	JAHANIAN	6.1	12	KEHROR PACCA	2.5
5	KABIR WALA	5.3	13	SAHIWAL	2.1
6	MIAN CHANNU	4.0	14	CHICHA WATNI	2.1
7	VEHARI	3.8	15	PAK PATTAN	1.6
8	MAILSI	3.7	16	ARIF WALA	1.2

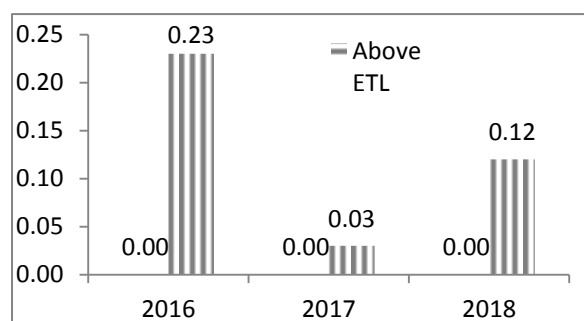
Pink Boll Worm: On overall Punjab basis 5.81% spots of PBW above ETL have been observed as compared to 5.71% in last week and 7.36% same corresponding period of the last year & 25.84% spots of PBW below ETL have been observed as compared to 25.06% in last week and 20.06% during same corresponding period of last year.



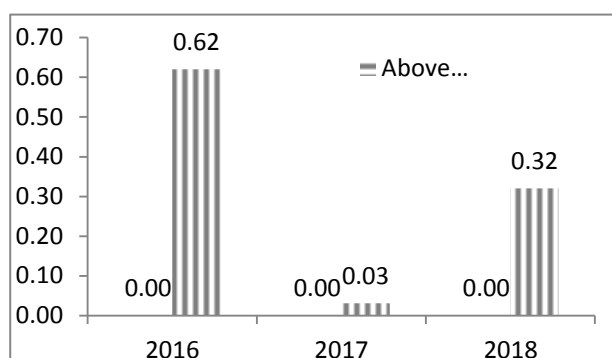
Tehsil wise percentage of hot spots of pink boll worm

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	32.0	23	BAHAWAL NAGAR	6.7
2	JALAL PUR P.W	20.4	24	HAROON ABAD	6.7
3	KHANEWAL	19.3	25	FORT ABBAS	6.5
4	JAHANIAN	16.7	26	MINCHAN ABAD	6.3
5	KABIR WALA	14.0	27	CHISHTIAN	6.3
6	MIAN CHANNU	13.4	28	R.Y.KHAN	6.3
7	VEHARI	13.3	29	KHAN PUR	6.1
8	MAILSI	12.5	30	LIAQUAT PUR	5.6
9	BURE WALA	11.4	31	SADIQ ABAD	5.0
10	LODHRAN	10.0	32	D.G.KHAN	4.4
11	DUYAPUR	10.0	33	TAUNSA	4.2
12	KEHROR PACCA	10.0	34	KOT CHUTTA	4.2
13	SAHIWAL	9.4	35	MUZUFAR GARH	3.7
14	CHICHA WATNI	9.2	36	KOT ADDU	3.7
15	PAK PATTAN	9.1	37	ALI PUR	2.6
16	ARIF WALA	8.3	38	JATOI	2.2
17	OKARA	7.7	39	LAYYAH	2.1
18	DEPALPUR	7.7	40	CHOBARA	1.8
19	BAHAWAL PUR	7.5	41	KAROR L.E.	1.8
20	A.P.EAST	7.4	42	RAJAN PUR	1.1
21	YAZMAN	7.1	43	JAM PUR	0.6
22	HASILPUR	6.8			

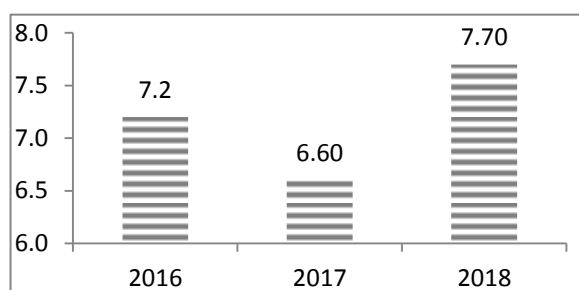
American Bollworm: On overall Punjab basis 0.00% spots of ABW above ETL have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.12% spots of ABW below ETL have been observed as compared to 0.29% in last week and 0.03% during same corresponding period of last year.



Spotted Bollworm: On overall Punjab basis 0.00% spots of SBW above ETL have been observed as compared to 0.00% in last week and 0.0% during same corresponding period of last year & 0.32% spots of SBW below ETL have been observed as compared to 0.19% in last week and 0.03% during same corresponding period of last year.



CLCuV: On overall Punjab basis 7.7% spots of CLCV have been observed as compared to 10.5% in last week and 6.6% 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	50.0	27	CHISHTIAN	7.1
2	JALAL PUR P.W	30.4	28	R.Y.KHAN	7.1
3	KHANEWAL	28.1	29	KHAN PUR	6.5
4	JAHANIAN	27.8	30	LIAQUAT PUR	6.1
5	KABIR WALA	27.8	31	SADIQ ABAD	5.7
6	MIAN CHANNU	26.7	32	D.G.KHAN	5.0
7	VEHARI	22.7	33	TAUNSA	5.0
8	MAILSI	20.6	34	KOT CHUTTA	4.8
9	BURE WALA	20.0	35	MUZUFAR GARH	4.6
10	LODHRAN	16.0	36	KOT ADDU	4.5
11	DUYAPUR	14.8	37	ALI PUR	4.2
12	KEHROR PACCA	13.0	38	JATOI	4.0
13	SAHIWAL	12.9	39	LAYYAH	3.8
14	CHICHA WATNI	12.5	40	CHOBARA	3.6
15	PAK PATTAN	12.3	41	KAROR L.E.	3.3
16	ARIF WALA	11.8	42	RAJAN PUR	2.5
17	OKARA	10.4	43	JAM PUR	2.5
18	DEPALPUR	10.0	44	ROJHAN	2.4
19	BAHAWAL PUR	10.0	45	JHANG	2.3
20	A.P.EAST	9.5	46	SHORKOT	2.1
21	YAZMAN	9.2	47	A.P.SIAL	2.1
22	HASILPUR	9.1	48	T.T.SINGH	2.1
23	BAHAWAL NAGAR	8.6	49	GOJRA	1.6
24	HAROON ABAD	8.3	50	KAMALIA	1.1
25	FORT ABBAS	8.3	51	FAISAL ABAD	1.0
26	MINCHAN ABAD	7.7			

FORECAST FOR THE NEXT WEEK

Cotton insect pest occurrence, ecology and susceptible stages

SR.	INSECT	SEASONAL OCCURANCE	FAVOURABLE CONDITIONS			SUSECPTIBLE CROP STAGES
			WEATHER	TEMP.c	R. H %	
1	Whitefly	June to September	Hot & Dry	35-42	Below 50	Seedling to Maturity
2	Jassid	April to October	Hot & Humid	35-40	Above 70	Seedling to Boll opening
3	Thrips	March to September	Hot & Dry	35-50	Below 60	Seedling to Maturity
4	Aphid	May to September	Moderate	25-35	60-80	Seedling to Maturity
5	Dusky Cotton Bug	April to November	Moderate	28-40	50-80	Squaring to Harvest
6	Red Cotton Bug	September to November	Moderate	25-40	60-80	Boll opening to Maturity
7	Mealy Bug	April to Septmber	Hot & Dry	35-40	60-80	Seedling to Maturity
8	Mites	May to September	Hot & Dry	28-40	20-60	Squaring to Harvest
9	Army worm	April to Septmber	Mild & Humid	30-40	70-100	Squaring to Harvest
10	Cotton Boll Worm	July to Septmebr	Dry & Moderate	32-40	50-70	Flowering to Maturity
11	SBW	July to Septmebr	Mild & Humid	30-40	60-100	Flowering to Maturity
12	PBW	August to October	Moderate	32-40	60-80	Flowering to Maturity
13	Cut Worm	April to May	Moderate	35-40	60-80	Seedling

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	30.88	14.50	77.19	0.00	32.29	19.14	76.43	0.00
Khanewal	46.86	24.09	73.19	0.00	31.50	20.94	57.00	0.00
Vehari	27.89	19.89	50.56	0.00	39.00	28.00	53.39	0.00
Lodhran	35.86	20.57	51.14	1.00	33.71	18.14	52.14	0.00
Sahiwal	31.70	17.11	60.35	0.00	33.91	16.78	59.57	0.00
Pakpattan	32.29	19.57	84.57	0.00	32.14	20.57	84.00	0.00
Okara	32.50	17.90	76.00	0.00	34.50	19.00	86.00	0.00
Bahawalpur	32.79	16.89	54.44	Traces	34.99	17.22	59.72	0.00
Bahawalnagar	29.70	15.29	48.71	0.00	36.00	18.14	52.29	0.00
R.Y.Khan	36.00	17.71	52.58	0.00	35.15	15.51	54.75	0.00
D.G.Khan	34.71	18.71	47.14	0.00	35.29	20.29	47.93	0.00
M.Garh	33.60	21.52	47.60	0.00	33.88	19.77	52.13	0.00
Rajanpur	24.04	13.26	46.70	0.00	37.48	22.72	47.72	0.00
Layyah	29.57	14.71	41.85	1.00	26.85	13.14	41.50	0.00
TOT/AVG	32.74	17.98	58.00	2.00	34.05	19.24	58.90	0.00

Weather forecast for next 7 day in cotton zone

Division	Dated	30/10	31/10	1/11	2/11	3/11	4/11	5/11
Multan	Max.Temp.	34	33	33	29	28	30	28
	Min.Temp.	19	19	20	20	18	16	17
	Humidity %	26	25	27	36	34	20	13
Sahiwal	Max.Temp.	32	32	32	32	28	28	30
	Min.Temp.	17	18	19	17	18	17	15
	Humidity %	32	32	31	37	37	26	11
Bahawalpur	Max.Temp.	34	34	34	31	29	31	29
	Min.Temp.	21	21	20	19	18	16	15
	Humidity %	24	23	24	32	31	25	15
D.G. Khan	Max.Temp.	34	33	32	29	28	29	28
	Min.Temp.	20	20	20	21	18	17	17
	Humidity %	26	26	26	34	28	19	13
Average Cotton Region	Max.Temp.	30.86						
	Min.Temp.	18.32						
	Humidity %	26.18						

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 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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week owing to harvesting of crop.

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp.

Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week owing to harvesting 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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will further decrease during the coming week owing to harvesting of crop.

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will decrease on cotton crop during the coming week owing to harvesting of crop.

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will sustain at zero during the coming week owing to harvesting of crop.

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest may increase during the coming week as its population remain on picked cotton and alternate host plants and trees.

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. It is predicted that population of this pest will increase on cotton in the left over bolls on the cotton sticks. However this population will go into diapause on the onset of winter.

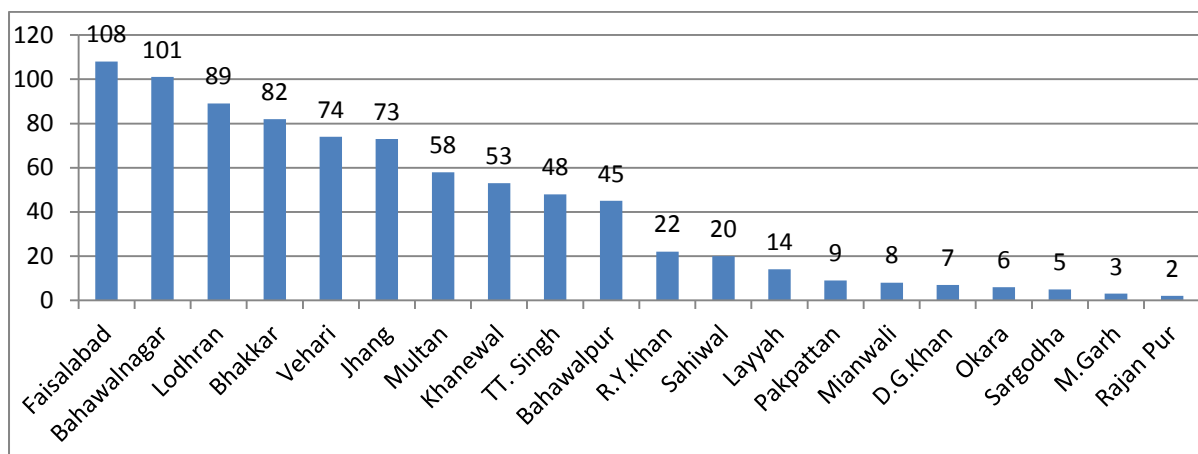
Moth Catches in Pheromone Traps During 4TH Week of October, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	58	1.38
Khanewal	8	53	0.95
Vehari	6	74	1.76
Lodhran	6	89	2.12
Sahiwal	5	20	0.71
Pakpattan	4	9	0.32
Okara	4	6	0.21
Bahawalpur	8	45	0.80
Bahawalnagar	10	101	1.44
R.Y.Khan	8	22	0.39
D.G.Khan	4	7	0.25
M.Garh	8	3	0.05
Rajan Pur	6	2	0.05
Layyah	6	14	0.33
Sargodha	1	5	0.36
Mianwali	2	8	0.29

Bhakkar	4	82	1.46
Faisalabad	5	108	3.09
TT. Singh	6	48	1.14
Jhang	4	73	2.61

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

Moth Catches in Pheromone Traps during 4TH Week of October, 2018

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. It is predicted that population of this pest will decrease on cotton crop owing to harvesting of crop.

Moth catches on light traps during 4th week of October, 2018

Spotted Bollworm: This pest flourishes best at mild & humid climate with optimum

Moth Catches on Light Traps/Trap/week During 4 th Week of October, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0	0	7
Khanewal	4	0	0	3
Vehari	3	0	0	1
Lodhran	3	1	0	8
Sahiwal	2	2	0	4
Pakpattan	2	0	0	0
Okara	2	0	0	0
Bahawalpur	4	2	2	5
Bahawalnagar	5	6	3	4
R.Y.Khan	4	3	0	4
D.G.Khan	2	0	0	0
M.Garh	4	1	1	5
Rajan Pur	3	0	0	0
Layyah	3	0	0	2

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

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. 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Due to cultivation of more BT varieties, it is predicted that population of this pest will decrease on cotton crop in the coming week owing to harvesting of crop.

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 32.74 °C, Min. 17.98°C with R. humidity 58.00%) & forecast for the next week temp. Max. 30.86 °C, Min. 18.32°C with humidity 26.18%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week owing to harvesting of crop.

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

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	Profenofos50%+ 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	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 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
			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	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