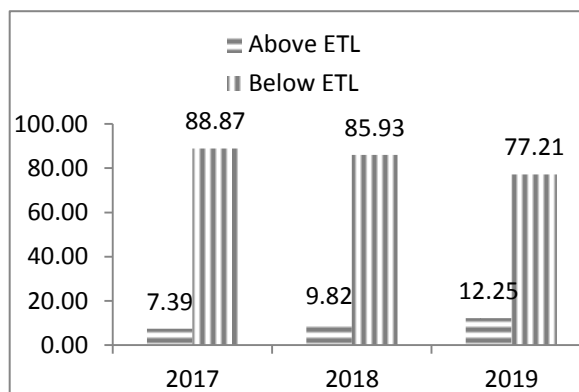


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3RD WEEK OF OCTOBER, 2019

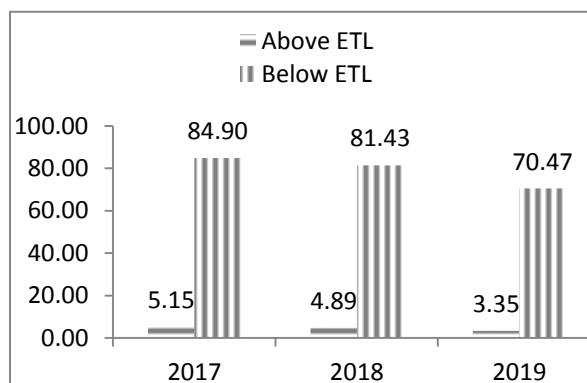
Whitefly: On overall Punjab basis 12.25% above ETL spots have been observed during current week as compared to 16.12% in last week and 9.82% during the same corresponding period of last year. And 77.21% below ETL spots have been observed during current week as compared 76.03% in last week and 85.93% 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	52.7	22	MIAN CHANNU	10.5
2	SHUJABAD	40.6	23	KEHROR PACCA	10.4
3	HASILPUR	38.3	24	LODHRAN	10.0
4	JALAL PUR P.W	37.5	25	HAROON ABAD	10.0
5	MULTAN	35.5	26	TAUNSA	10.0
6	JAM PUR	35.0	27	MIANWALI	10.0
7	YAZMAN	27.1	28	PIPLAN	10.0
8	LIAQUAT PUR	26.0	29	DARYA KHAN	10.0
9	KOT CHUTTA	25.6	30	ALI PUR	9.8
10	BAHAWAL NAGAR	25.0	31	KALLOR KOT	9.1
11	SADIQ ABAD	24.4	32	KABIR WALA	8.6
12	R.Y.KHAN	22.9	33	KHANEWAL	6.3
13	FORT ABBAS	22.7	34	JATOI	5.8
14	CHISHTIAN	22.0	35	MUZUFAR GARH	5.7
15	KHAN PUR	21.8	36	RENALA KHURD	4.5
16	A.P.EAST	21.7	37	ARIF WALA	4.3
17	MINCHAN ABAD	20.0	38	ISA KHEL	3.3
18	RAJAN PUR	17.5	39	JAHANIAN	2.7
19	DUYAPUR	12.5	40	JHANG	2.6
20	D.G.KHAN	12.5	41	A.P SIAL	2.4
21	ROJHAN	12.5	42	MAILSI	2.3

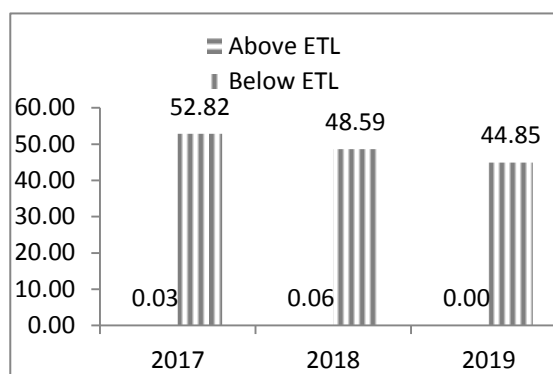
Jassid: On overall Punjab basis 3.35% above ETL spots has been observed as compared to 3.77% in last week and same week of last year 4.89%. And 70.47% below ETL spots have been observed during current week as compared to 75.99% in last week and 81.43% during the same corresponding period of last year.



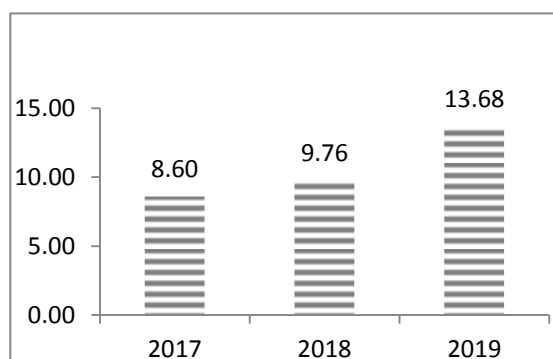
Tehsil wise percentage of hot spots of jassid

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	CHISHTIAN	22.0	17	PAK PATTAN	4.5
2	BAHAWAL NAGAR	20.0	18	RENALA KHURD	4.5
3	CHICHA WATNI	14.6	19	SADIQ ABAD	4.4
4	FORT ABBAS	13.6	20	TANDLIANWALA	3.4
5	DEPALPUR	12.5	21	PIPLAN	3.3
6	HAROON ABAD	10.0	22	ISA KHEL	3.3
7	MINCHAN ABAD	10.0	23	KHANEWAL	3.1
8	MIANWALI	10.0	24	KABIR WALA	2.9
9	SAHIWAL	9.5	25	JHANG	2.6
10	ARIF WALA	8.7	26	LODHRAN	2.5
11	KEHROR PACCA	8.3	27	PIR MAHAL	2.5
12	R.Y.KHAN	8.3	28	A.P SIAL	2.4
13	OKARA	7.1	29	LAYYAH	2.0
14	HASILPUR	6.4	30	CHOBARA	2.0
15	DUYAPUR	5.0	31	KHAN PUR	1.8
16	SUMUNDRI	5.0			

Thrips: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and same week of last year i.e. 0.06%. And 44.85% below ETL spots have been observed during current week as compared to 54.27% in last week and 48.59% during the same corresponding period of last year.



Mealy Bug: On overall Punjab basis 13.68% spots (all considered above ETL) of Mealy Bug have been observed as compared to 15.81% in last week and 9.76% spots during the same corresponding period of the last year.

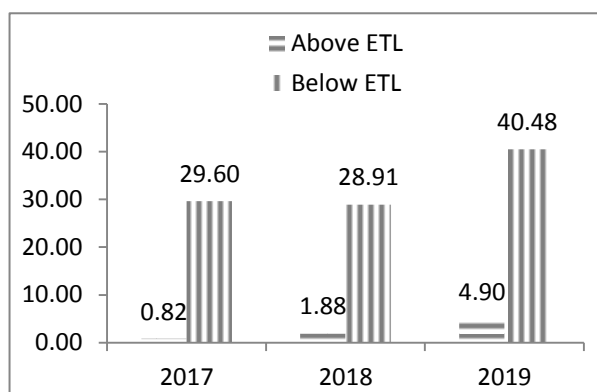


Tehsil wise percentage of hot spots of mealy bug

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	HASILPUR	72.3	26	DUYAPUR	10.0
2	KHAN PUR	38.2	27	HAROON ABAD	10.0
3	R.Y.KHAN	37.5	28	D.G.KHAN	10.0
4	BAHAWAL PUR	36.4	29	TAUNSA	10.0
5	MULTAN	35.5	30	JAM PUR	10.0
6	SHUJABAD	34.4	31	ROJHAN	10.0
7	BAHAWAL NAGAR	32.5	32	KEHROR PACCA	8.3
8	LIAQUAT PUR	28.0	33	LAYYAH	8.0
9	CHISHTIAN	26.0	34	OKARA	7.1
10	JALAL PUR P.W	25.0	35	BHAKKAR	7.1
11	FORT ABBAS	25.0	36	MIANWALI	6.7

12	PAK PATTAN	22.7	37	PIPLAN	6.7
13	RAJAN PUR	22.5	38	ISA KHEL	6.7
14	YAZMAN	22.0	39	KHANEWAL	6.3
15	MIAN CHANNU	21.1	40	CHOBARA	6.0
16	MINCHAN ABAD	20.0	41	MUZUFAR GARH	5.7
17	A.P.EAST	18.3	42	PIR MAHAL	5.0
18	KALLOR KOT	18.2	43	SAHIWAL	4.8
19	SADIQ ABAD	17.8	44	ARIF WALA	4.3
20	ALI PUR	17.6	45	KAROR L.E.	3.7
21	LODHRAN	17.5	46	JHANG	2.6
22	KOT CHUTTA	12.8	47	SHORKOT	2.5
23	BURE WALA	12.5	48	MAILSI	2.3
24	KABIR WALA	11.4	49	T.T.SINGH	2.1
25	VEHARI	10.0	50	CHICHA WATNI	2.1

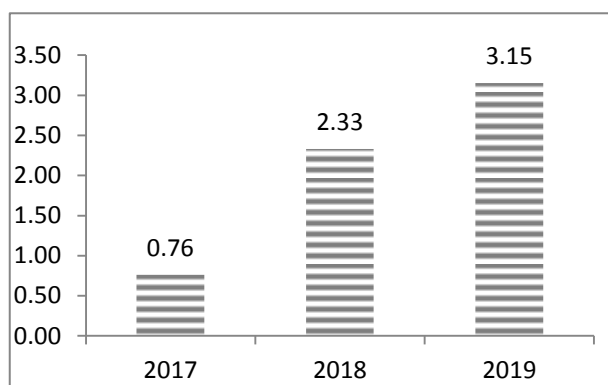
Dusky Cotton Bug: On overall Punjab basis 4.90% above ETL spots have been observed during current week as compared to 2.45% in last week and 1.88% during the same corresponding period of last year. And 40.48% below ETL spots have been observed during current week as compared to 36.91% in last week and 28.91% 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	HASILPUR	78.7	7	HAROON ABAD	10.0
2	BAHAWAL PUR	45.5	8	VEHARI	7.5
3	A.P.EAST	28.3	9	SHUJABAD	6.3
4	LODHRAN	25.0	10	YAZMAN	5.1
5	KEHROR PACCA	18.8	11	BURE WALA	5.0
6	DUYAPUR	17.5	12	MAILSI	2.3

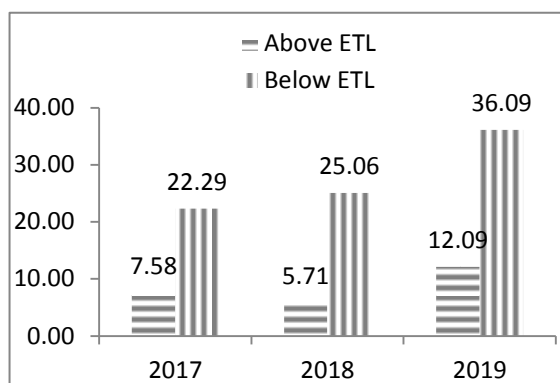
Armyworm: On overall Punjab basis 3.15% spots (all considered above ETL) of Armyworm have been observed as compared to 5.36% in last week and 2.33% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	BAHAWAL PUR	25.5	13	MUZUFAR GARH	5.7
2	KHAN PUR	14.5	14	LODHRAN	5.0
3	SADIQ ABAD	13.3	15	PIR MAHAL	5.0
4	MIAN CHANNU	10.5	16	SAHIWAL	4.8
5	DUYAPUR	10.0	17	LIAQUAT PUR	4.0
6	KEHROR PACCA	8.3	18	KAROR L.E.	3.7
7	R.Y.KHAN	8.3	19	KHANEWAL	3.1
8	ALI PUR	7.8	20	KABIR WALA	2.9
9	A.P.EAST	6.7	21	JAHANIAN	2.7
10	MULTAN	6.5	22	KOT ADDU	2.7
11	HASILPUR	6.4	23	JATOI	1.9
12	CHICHA WATNI	6.3			

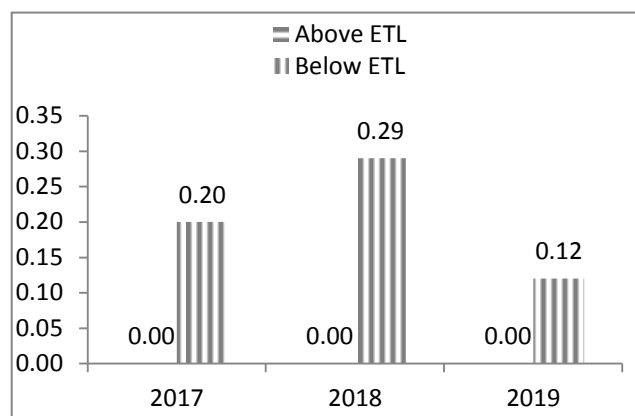
Pink Boll Worm: On overall Punjab basis 12.09% above ETL spots have been observed as compared to 13.13% in last week and 5.71% same corresponding period of the last year. And 35.09% below ETL spots have been observed as compared to 36.95% in last week and 25.06% during same corresponding period of last year.



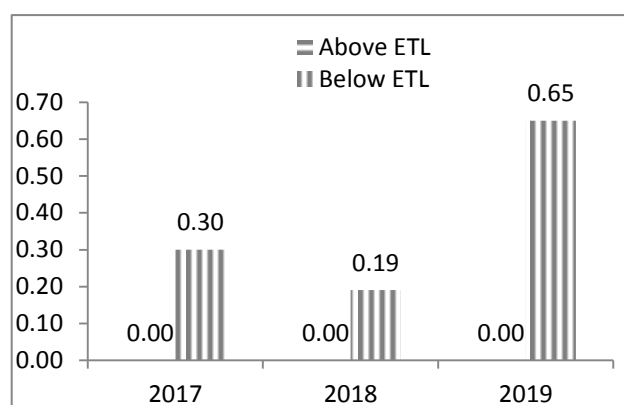
Tehsil wise percentage of hot spots of Pink Bollworm

Sr#	TEHSIL	%AGE	Sr#	TEHSIL	%AGE
1	HASILPUR	55.3	26	BURE WALA	12.5
2	BAHAWAL PUR	43.6	27	LODHRAN	12.5
3	MANKERA	31.3	28	DEPALPUR	12.5
4	SHUJABAD	28.1	29	ALI PUR	11.8
5	CHISHTIAN	28.0	30	DUYAPUR	10.0
6	MULTAN	25.8	31	HAROON ABAD	10.0
7	MAILSI	25.0	32	MINCHAN ABAD	10.0
8	CHICHA WATNI	25.0	33	PIPLAN	10.0
9	R.Y.KHAN	22.9	34	PAK PATTAN	9.1
10	VEHARI	22.5	35	MUZUFAR GARH	8.6
11	KHANEWAL	21.9	36	YAZMAN	8.5
12	SAHIWAL	21.4	37	A.P.EAST	8.3
13	MIAN CHANNU	21.1	38	CHOBARA	8.0
14	KHAN PUR	20.0	39	OKARA	7.1
15	LIAQUAT PUR	18.0	40	MIANWALI	6.7
16	JALAL PUR P.W	17.5	41	ISA KHEL	6.7
17	BAHAWAL NAGAR	17.5	42	TANDLIANWALA	5.1
18	KABIR WALA	17.1	43	RENALA KHURD	4.5
19	FORT ABBAS	15.9	44	LAYYAH	4.0
20	DARYA KHAN	15.0	45	KAROR L.E.	3.7
21	KEHROR PACCA	14.6	46	18-HAZARI	2.9
22	BHAKKAR	14.3	47	JHANG	2.6
23	JAHANIAN	13.5	48	PIR MAHAL	2.5
24	SADIQ ABAD	13.3	49	T.T.SINGH	2.1
25	ARIF WALA	13.0			

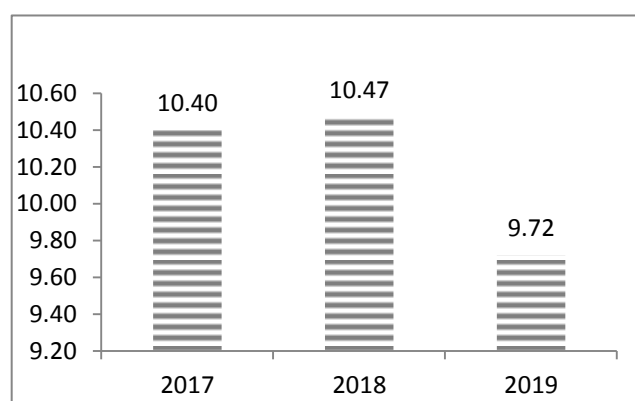
American Bollworm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year. And 0.12% below ETL spots have been observed as compared to 0.08% in last week and 0.29% during same corresponding period of last year.



Spotted Bollworm: 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 & 0.65% below ETL spots have been observed as compared to 0.00% in last week and 0.19% during same corresponding period of last year.



CLCuV: On overall Punjab basis 9.72% spots (all considered above ETL) of CLCV have been observed as compared to 12.59% in last week and 10.47% 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	VEHARI	65.0	20	A.P.EAST	10.0
2	KABIR WALA	54.3	21	DARYA KHAN	10.0
3	KHANEWAL	37.5	22	PAK PATTAN	9.1
4	MIAN CHANNU	36.8	23	BAHAWAL PUR	9.1
5	MULTAN	35.5	24	KEHROR PACCA	8.3
6	LIAQUAT PUR	26.0	25	CHOBARA	8.0
7	HASILPUR	25.5	26	BAHAWAL NAGAR	7.5
8	SHUJABAD	25.0	27	OKARA	7.1
9	SADIQ ABAD	24.4	28	FORT ABBAS	6.8
10	BURE WALA	22.5	29	CHISHTIAN	6.0
11	SILLANWALI/ SAHIWAL	22.2	30	KAROR L.E.	5.6

12	KHAN PUR	21.8	31	LODHRAN	5.0
13	MAILSI	20.5	32	DUYAPUR	5.0
14	JALAL PUR P.W	20.0	33	CHICHA WATNI	4.2
15	R.Y.KHAN	18.8	34	LAYYAH	4.0
16	ARIF WALA	17.4	35	YAZMAN	3.4
17	RENALA KHURD	13.6	36	MIANWALI	3.3
18	JAHANIAN	10.8	37	JHANG	2.6
19	BHAKKAR	10.7	38	MINCHAN ABAD	2.5

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	34.43	21.43	81.50	0.00	27.14	15.57	77.43	0.00
Khanewal	35.00	20.75	70.25	0.00	34.79	22.09	64.00	0.00
Vehari	34.00	21.71	67.64	0.00	29.57	21.29	50.57	0.00
Lodhran	36.00	22.29	68.71	0.00	33.43	20.29	53.29	0.00
Sahiwal	33.91	20.01	66.38	0.00	32.43	18.79	60.56	0.00
Pakpattan	33.43	25.29	64.00	5.00	34.71	25.14	62.00	0.00
Okara	37.50	27.00	78.00	3.00	37.00	26.50	86.00	0.00
Bahawalpur	33.66	20.50	59.14	0.00	35.44	18.53	55.57	41.60
Bahawalnagar	35.33	20.67	57.67	Trace	31.83	17.33	49.75	0.00
R.Y.Khan	37.28	21.39	78.56	0.00	36.55	18.89	80.44	0.00
D.G.Khan	34.14	21.86	49.71	0.00	35.43	18.29	49.14	0.00
M.Garh	34.14	21.15	45.93	0.00	34.14	21.69	49.54	0.00
Rajanpur	34.98	24.04	59.50	0.00	33.20	20.74	44.80	0.00
Layyah	33.00	19.80	61.16	3.00	36.83	22.00	53.33	0.00
TOT/AVG	34.77	21.99	64.87	11.00	33.75	20.51	59.74	41.60

Weather forecast for next 7 day in cotton zone

Division	Dated	22/10	23/10	24/10	25/10	26/10	27/10	28/10
Multan	Max.Temp.	35	34	33	34	34	33	33
	Min.Temp.	20	21	20	19	18	18	19
	Humidity %	23	24	25	25	23	22	14
Sahiwal	Max.Temp.	34	33	33	33	33	34	32
	Min.Temp.	14	18	17	18	16	16	18
	Humidity %	23	25	26	26	26	22	14
Bahawalpur	Max.Temp.	34	34	34	34	34	35	33
	Min.Temp.	18	21	20	19	17	18	16
	Humidity %	23	24	25	25	24	20	12
D.G. Khan	Max.Temp.	36	35	34	34	34	34	34
	Min.Temp.	21	20	20	19	18	20	19
	Humidity %	20	20	22	22	22	20	14
Average Cotton Region	Max. Temp.	33.82						
	Min. Temp.	18.50						
	Humidity %	21.82						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain moderate and temperature may slightly 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. 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 not 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp.

Max. 33.82°C, Min. 18.50°C with humidity 21.82%. Keeping in view above all, it is predicted that population of this pest will further 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. Keeping in view above all, it is predicted that population of this pest will further 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. 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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. 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.

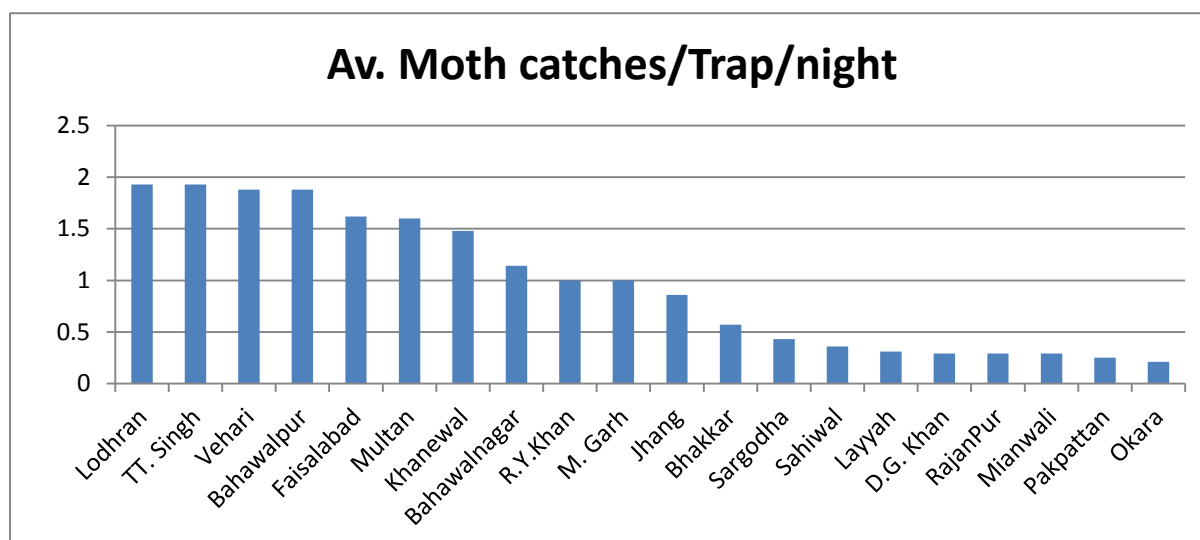
Moreover its increase in population than last year is due to:

- 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 October, 2019

Moth Catches in Pheromone Traps During 3 rd Week of October, 2019			
District	Traps Installed	Av. Moth catches/Trap/night	Av. No. of Moths other than PBW/ Trap/Night
Multan	6	1.60	0.0
Khanewal	8	1.48	0.00
Vehari	6	1.88	0.00
Lodhran	6	1.93	0.00
Sahiwal	4	0.36	0.00
Pakpattan	4	0.25	0.00
Okara	4	0.21	0.00
Bahawalpur	8	1.88	0.11
Bahawalnagar	10	1.14	0.16
R.Y.Khan	8	1.00	0.43
D.G. Khan	4	0.29	0.00
M. Garh	8	1.00	0.00
RajanPur	6	0.29	0.00
Layyah	6	0.31	0.00
Sargodha	2	0.43	0.00
Mianwali	4	0.29	0.00
Bhakkar	8	0.57	0.00
Faisalabad	5	1.62	0.00
TT. Singh	6	1.93	0.00
Jhang	4	0.86	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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. Due to cultivation of more BT varieties, it is predicted that population of this pest will remain on lower ebb on cotton crop in the coming week.

Moth catches on light traps during 3rd week of October, 2019

Moth Catches on Light Traps/Trap/week During 3 rd Week of October, 2019				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0	0	9
Khanewal	4	0	0	14
Vehari	3	0	0	0
Lodhran	3	3	0	10
Sahiwal	2	4	0	6
Pakpattan	2	0	0	5
Okara	3	0	0	4
Bahawalpur	4	3	2	5
Bahawalnagar	5	9	3	16
R.Y.Khan	4	5	10	14
D.G.Khan	3	0	0	0
M.Garh	4	0	0	8
RajanPur	3	0	0	2
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. 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. Due to cultivation of more BT varieties, it is predicted that above ETL population of this pest will remain such 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 34.77°C, Min. 21.99°C with R. humidity 64.87%) & forecast for the next week temp. Max. 33.82°C, Min. 18.50°C with humidity 21.82%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

CLCuV: CLCUV spots have decreased from last week and same week of last year on cotton crop. The incidence of this disease is expected to decrease on cotton crop in next week due to decrease in its potential vector i.e. whitefly.

RECOMMENDATIONS

WHITEFLY MANAGEMENT

1. Conduct regular pest scouting of Whitefly.

2. Control the pest without delay when population reaches ETL i.e. nymphs or adults or both 5 per leaf.
3. Control weeds in and outside the field especially near water channels and fallow lands.
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Spirotetramate 125 ml+ Biopower 250 ml per Acre
 - Pyriproxifen 400 ml per Acre
 - Buprofezin 600 gm per Acre
 - Flonicamid 80 gm per Acre
 - Diafenthuron 200 ml per Acre

Alternate host plants of whitefly

Crops	Vegetables	Orchards	Weeds/ Ornamentals	Trees
Sunflower	Okra	Citrus	Gardenia	Shisham
Tobacco	Brinjal	Litchi	Mako	Shareen
	Cucurbits	Pomegranate	Maina	
	Tomato	Ber (<i>Zizyphus</i>)	Karund	
	Cabbage	Guava	Lehli	
	Cauliflower	Mulberry		
	Peas	Papaya		
	Potato			
	Onion			
	Spinach			

JASSID MANAGEMENT

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Use *Chrysoperla* Cards @ 80-90 cards per acre having 20-25 eggs/card
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Flonicamid 60 gm per Acre
 - Fipronil+Imidacloprid 60 gm per Acre
 - Nitenpiram 200ml per Acre

THRIPS MANAGEMENT

1. Conduct Pest Scouting regularly at least twice a week.
2. Avoid intercropping of cotton crop with vegetables.

3. Control weeds in and outside the field.
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Fipronil+Imidacloprid 60 gm per Acre
 - Chlorfenpyr 125 ml per Acre

MEALY BUG MANAGEMENT

1. Visit the fields daily to detect the infestation for effective management of mealy bug well in time.
2. Keep field and water courses etc. free from weeds especially Itsit & Hazaardani.
3. To avoid its shifting from one place to another, keep the horticultural nurseries free from its infestation. Spray such infested nurseries before shifting the plants.
4. Uproot and keep the infested plants gently in plastic bags and bury in the soil outside the field.
5. Avoid water stress to the plants.
6. Avoid repeated visits of workers from infested fields to healthy fields.

Alternate host plants of cotton mealy bug

Crops	Vegetables	Ornamentals	Weeds	Orchards
Sunflower	Okra	China Rose	Hazar Dani	Citrus
Tobacco	Brinjal	Huddle	Amarantus	Mulberry
Jantar	Tomato	Cotton Rose	Bhakra	Ficus
Sesame	Chillies	Gulchain	Mako	Ber
	Pumpkin	Lantana	Sueda	
		Din Ka Raja	Itsit	
		Rat Ki Rani	Karund	
		Anthorium	Aksen	
		Gul-e-Daudi	Bathu	
		Gainda	Puth Kanda	
			Kanghi	

Management Of Pink Bollworm:

1. Use Sex Pheromone Traps for monitoring of PBW
2. Eradicate rosette flowers.
3. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Spintoram 120SC @ 80 ml per Acre

- Chlorantraniliprole@50ml per Acre
- Triazophos@1000ml per Acre
- Bifenthrin @250ml per Acre
- Gammacyhalothrin@100ml per Acre
- Lambdacyhalothrin@333ml per Acre

MANAGEMENT OF DUSKY COTTON BUG

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Remove alternate host plants
4. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Imidacloprid 250gm per Acre
 - Acetamaprid 125 gm per Acre
 - Chlorpyrifos 800-1000ml per Acre

MANAGEMENT OF ARMY WORM

1. Keep the fields clean from weeds especially Its it which is a preferred host of armyworm.
2. Avoid sowing of Jantar near cotton fields.
3. Regular pest scouting at least twice a week.
4. Hand picking and destruction of egg masses at initial stage as initially its attack starts in patches and is clearly visible.
5. Apply among the following recommended insecticide at ETL and repeat the spray with alternate insecticides if required;
 - Leufenuron 200ml per Acre
 - Flubendamide 50ml per Acr.

CLCuV MANAGEMENT

1. Keep Cotton fields free from all kinds of weeds.
2. Eradicate other alternate host plants of CLCuV and dispose them off carefully.
3. Thinning out and destruction of Virus affected plants.
4. Remove CLCuV effected plants in less than 60 DAS (Days after sowing) crop.
5. Hoeing after each irrigation or rain at wattar condition till canopies permit.

6. Apply post emergence Glyphosate for both broad and narrow leaved weeds and Glyphosate for grassy weeds with shield and use Flat Fan Nozzle, if needed.
7. Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
8. Balanced use of Fertilizer i.e. N.P.K.
9. Keep transmission vector (whitefly) at the low ebb.

Alternate host plants of CLCuV

Crops	Vegetables	Ornamentals	Weeds
Sunflower	Okra	Gurhal	Leh
Melon	Brinjal	Chambeli	Lehli
Tobacco	Chillies		Mako
	Tomato		Maina
	Potato		Karund/Bathu
	Cucumber		Gardenia
			Hazardani
			Rattanjot
			Sun Kukra

Economic threshold levels of cotton pests

Insect pests	Economic threshold levels
Jassid	1 Adult or Nymph per leaf
Whitefly	5 Adults or Nymphs or both per Leaf
Thrips	8-10 Adults or Nymphs per Leaf
Mealy bug	on appearance
Mites	On damage appearance
Spotted Boll worm	3 Larvae/ 25 plants.
Pink Boll worm	5 Larvae /100 bolls.
American boll worm	5 brown eggs or 3 small larvae or both 5 per 25 plants on non Bt varieties. 2 larvae of 2 nd instar per 25 plants on Bt varieties.
Army worm	On appearance
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud