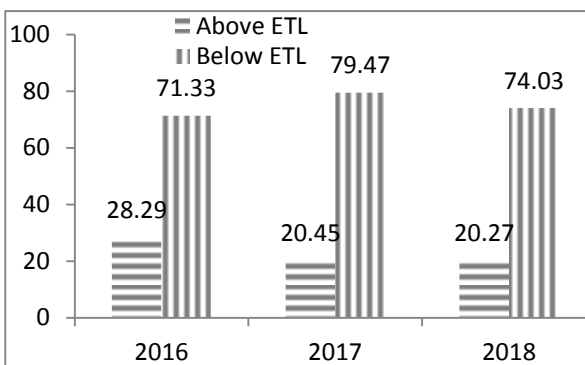


## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3<sup>RD</sup> WEEK OF SEPTEMBER, 2018

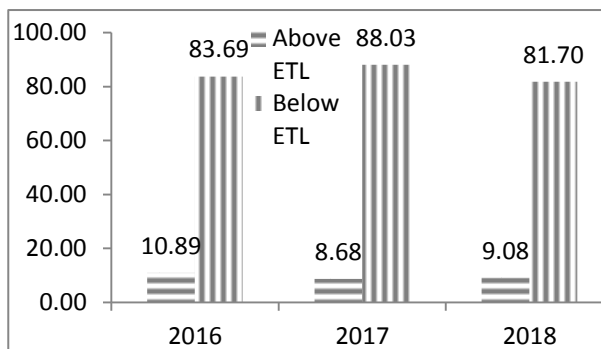
**Whitefly:** On overall Punjab basis 20.27% spots above ETL have been observed during current week as compared to 23.53% % in last week and 20.45% during the same corresponding period of last year & 74.03% spots below ETL have been observed during current week as compared to 71.56% in last week and 79.47% 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	65.6	30	YAZMAN	17.3
2	RAJAN PUR	56.1	31	KEHROR PACCA	16.3
3	HASILPUR	51.2	32	SADIQ ABAD	16.0
4	JAM PUR	40.9	33	PAK PATTAN	15.6
5	JATOI	38.9	34	LAYYAH	15.5
6	ROJHAN	33.8	35	LIAQUAT PUR	15.4
7	BAHAWAL PUR	33.7	36	DUYAPUR	15.1
8	KOT CHUTTA	33.3	37	JHANG	14.9
9	D.G.KHAN	31.8	38	TAUNSA	14.6
10	KHAN PUR	28.1	39	SUMUNDRI, TANDLIANWALA	13.8
11	MULTAN	26.7	40	LODHRAN	12.8
12	JALAL PUR P.W	26.2	41	KABIR WALA	12.0
13	KOT ADDU	26.1	42	CHOBARA	11.8
14	MAILSI	23.1	43	SARGODHA	11.1
15	SHUJABAD	22.1	44	GOJRA	10.9
16	CHICHA WATNI	21.5	45	MINCHAN ABAD	10.2
17	VEHARI	21.1	46	JAHANIAN	9.7
18	A.P.SIAL	21.1	47	FORT ABBAS	9.6
19	R.Y.KHAN	21.0	48	BHAKKAR	9.5
20	KAMALIA	20.9	49	SAHIWAL	8.5
21	ARIF WALA	20.0	50	KHANEWAL	8.5
22	BURE WALA	19.7	51	OKARA	8.0
23	MIAN CHANNU	19.6	52	KAROR L.E.	8.0
24	MIANWALI	19.0	53	CHISHTIAN	7.0
25	SHORKOT	18.6	54	HAROON ABAD	6.7
26	PIPLAN	18.3	55	T.T.SINGH	6.3
27	BAHAWAL NAGAR	18.0	56	MANKERA	6.3
28	MUZUFAR GARH	17.9	57	DEPALPUR	5.4
29	ALI PUR	17.6			

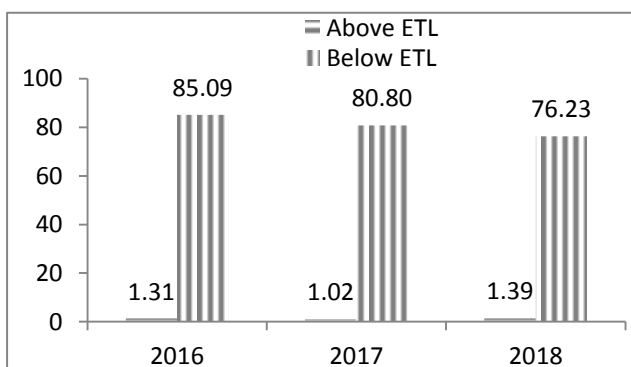
**Jassid:** On overall Punjab basis 9.08% ABETL has been observed as compared to 10.27% in last week and same week of last year 8.68% & BETL 81.70% spots have been observed during current week as compared to 78.93% in last week and 88.03% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	FORT ABBAS	28.8	26	CHOBARA	9.2
2	HASILPUR	26.8	27	CHICHA WATNI	8.5
3	A.P.EAST	24.6	28	VEHARI	8.5
4	KAMALIA	23.3	29	PIPLAN	8.5
5	MINCHAN ABAD	22.4	30	SHUJABAD	8.1
6	ARIF WALA	20.0	31	MULTAN	8.0
7	BAHAWAL NAGAR	20.0	32	DEPALPUR	7.6
8	SADIQ ABAD	18.0	33	KEHROR PACCA	7.5
9	CHISHTIAN	17.5	34	D.G.KHAN	7.3
10	SUMUNDRI, TANDLIANWALA	16.1	35	DUYAPUR	7.1
11	SAHIWAL	15.9	36	ALI PUR	6.8
12	KHAN PUR	15.8	37	LODHRAN	6.4
13	JALAL PUR P.W	15.4	38	GOJRA	6.3
14	BURE WALA	14.8	39	MANKERA	6.3
15	MIANWALI	13.8	40	OKARA	5.3
16	R.Y.KHAN	12.9	41	KAROR L.E.	5.3
17	T.T.SINGH	12.7	42	A.P.SIAL	5.3
18	PAK PATTAN	12.5	43	JAHANIAN	4.8
19	HAROON ABAD	11.7	44	KOT ADDU	4.3
20	SHORKOT	11.6	45	KABIR WALA	3.3
21	MAILSI	11.5	46	TAUNSA	2.3
22	LIAQUAT PUR	11.5	47	KHANEWAL	1.9
23	MIAN CHANNU	10.7	48	BAHAWAL PUR	1.2
24	LAYYAH	10.7	49	RAJAN PUR	1.0
25	JHANG	10.4			

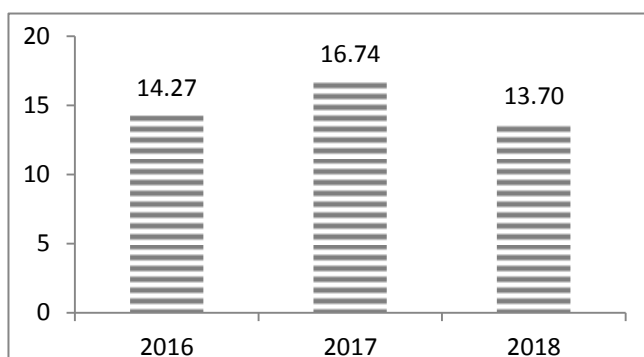
**Thrips:** On overall Punjab basis 1.39% above ETL spots has been observed as compared to 2.38% in last week and same week of last year i.e. 1.02% & BETL 76.23% spots have been observed during current week as compared to 83.60% in last week and 80.80% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	JALAL PUR P.W	12.3	8	D.G.KHAN	4.5
2	SADIQ ABAD	12.0	9	LIAQUAT PUR	3.8
3	A.P.EAST	9.8	10	LAYYAH	3.6
4	R.Y.KHAN	9.7	11	PIPLAN	2.8
5	KHAN PUR	8.8	12	MIANWALI	1.7
6	MULTAN	8.0	13	CHOBARA	1.3
7	SHUJABAD	7.0	14	TAUNSA	0.8

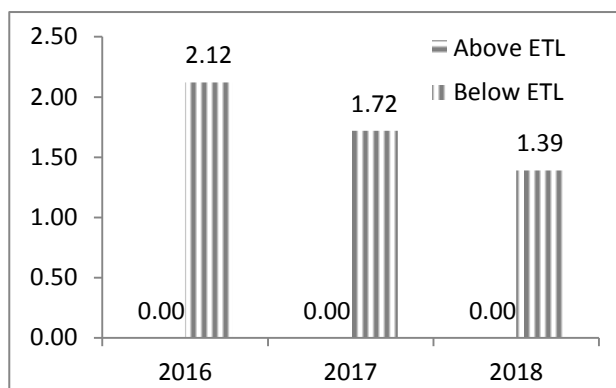
**Mealy Bug:** On overall Punjab basis 13.70% spots of Mealy Bug have been observed as compared to 14.88% in last week and 16.74% spots during the same corresponding period of the last year.



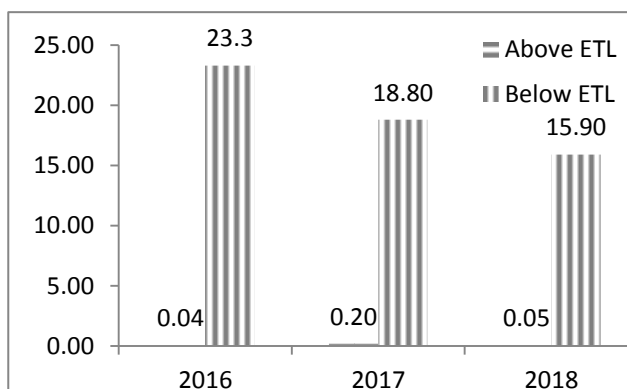
### Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	HASILPUR	56.9	28	BHAKKAR	9.5
2	A.P.EAST	52.5	29	HAROON ABAD	8.3
3	MULTAN	37.3	30	ALI PUR	8.1
4	KHAN PUR	36.8	31	JAM PUR	8.0
5	R.Y.KHAN	33.9	32	KAMALIA	7.0
6	BAHAWAL PUR	33.7	33	KAROR L.E.	6.7
7	YAZMAN	29.3	34	CHOBARA	6.6
8	T.T.SINGH	25.3	35	JAHANIAN	6.5
9	MIAN CHANNU	25.0	36	DUYAPUR	6.3
10	CHISHTIAN	24.6	37	MUZUFAR GARH	6.3
11	ROJHAN	23.8	38	PAK PATTAN	6.3
12	JALAL PUR P.W	23.1	39	LAYYAH	6.0
13	SARGODHA	22.2	40	FORT ABBAS	5.8
14	GOJRA	20.3	41	VEHARI	5.6
15	BAHAWAL NAGAR	20.0	42	MIANWALI	5.2
16	RAJAN PUR	19.4	43	KEHROR PACCA	5.0
17	LIAQUAT PUR	19.2	44	LODHRAN	5.0
18	SHUJABAD	18.6	45	OKARA	4.7
19	JATOI	17.8	46	SHORKOT	4.7
20	MAILSI	17.3	47	DEPALPUR	4.3
21	BURE WALA	14.8	48	MINCHAN ABAD	4.1
22	KHANEWAL	13.2	49	JHANG	3.0
23	SADIQ ABAD	12.0	50	PIPLAN	2.8
24	KABIR WALA	12.0	51	SAHIWAL	2.4
25	CHICHA WATNI	11.5	52	D.G.KHAN	1.8
26	SUMUNDRI, TANDLIANWALA	10.3	53	A.P.SIAL	1.8
27	ARIF WALA	10.0	54	BHAKKAR	9.5

**Mites:** On overall Punjab basis 0.00% spots above ETL have been observed during current week as compared to 0.12% in last week and 0.00% during the same corresponding period of last year & 1.39% spots below ETL have been observed during current week as compared to 1.03% in last week and 1.72% during the same corresponding period of last year.

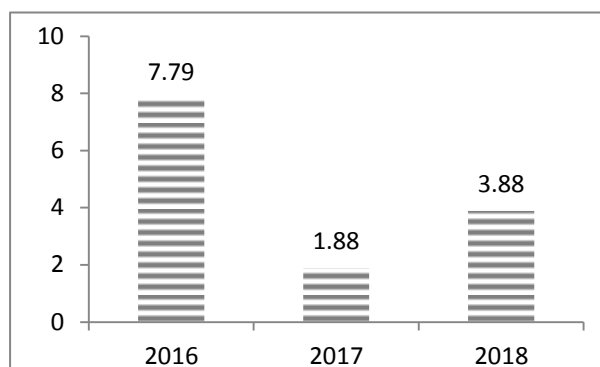


**Dusky Cotton Bug:** On overall Punjab basis 0.05% spots above ETL have been observed during current week as compared to 0.00% in last week and 0.20% during the same corresponding period of last year & 15.9% spots below ETL have been observed during current week as compared to 12.8% in last week and 18.8% during the same corresponding period of last year.



Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	YAZMAN	1.3	2	BAHAWAL PUR	1.2

**Armyworm:** On overall Punjab basis 3.88% spots of Armyworm have been observed as compared to 4.22% in last week and 1.88% spots during the same corresponding period of the last year.

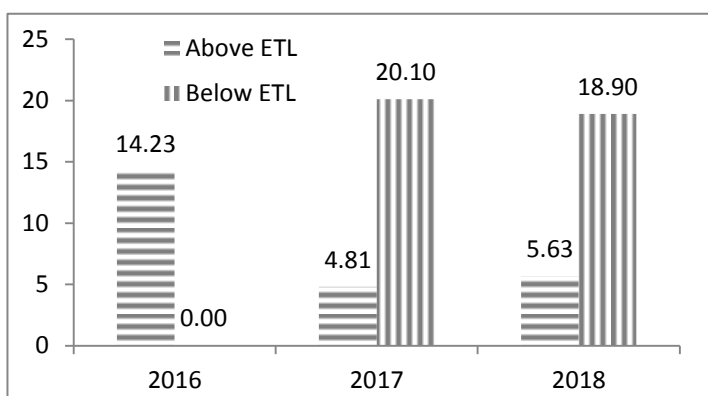


### Tehsil wise percentage of hot spots of army worm

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	T.T.SINGH	19.0	21	MINCHAN ABAD	4.1
2	BAHAWAL PUR	16.9	22	KHAN PUR	3.5
3	JATOI	15.6	23	BURE WALA	3.3
4	JALAL PUR P.W	15.4	24	DEPALPUR	3.3
5	ALI PUR	12.2	25	JAHANIAN	3.2
6	SADIQ ABAD	10.0	26	KOT ADDU	2.9

7	KAMALIA	9.3	27	LODHRAN	2.8
8	A.P.SIAL	8.8	28	PIPLAN	2.8
9	MULTAN	8.0	29	CHICHA WATNI	2.3
10	CHISHTIAN	7.0	30	MUZUFAR GARH	2.1
11	GOJRA	6.3	31	OKARA	2.0
12	SHUJABAD	5.8	32	MAILSI	1.9
13	FORT ABBAS	5.8	33	LIAQUAT PUR	1.9
14	KHANEWAL	5.7	34	MIAN CHANNU	1.8
15	DUYAPUR	5.6	35	R.Y.KHAN	1.6
16	MIANWALI	5.2	36	PAK PATTAN	1.6
17	KEHROR PACCA	5.0	37	YAZMAN	1.3
18	SHORKOT	4.7	38	RAJAN PUR	1.0
19	JHANG	4.5	39	HASILPUR	0.8
20	KABIR WALA	4.3			

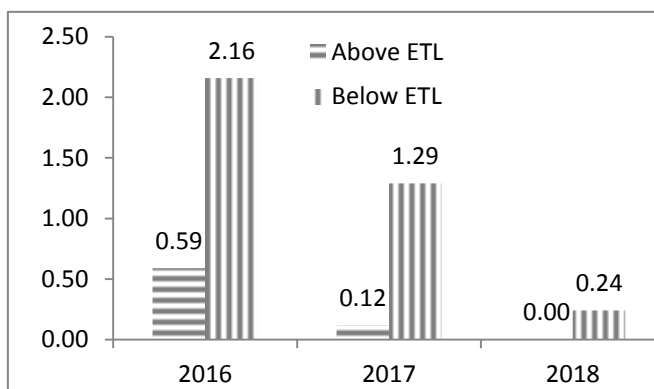
**Pink Bollworm:** On overall Punjab basis 5.63% spots of PBW above ETL have been observed as compared to 4.27% in last week and 4.81% same corresponding period of the last year & 18.90% spots of PBW below ETL have been observed as compared to 16.77% in last week and 20.10% during same corresponding period of last year.



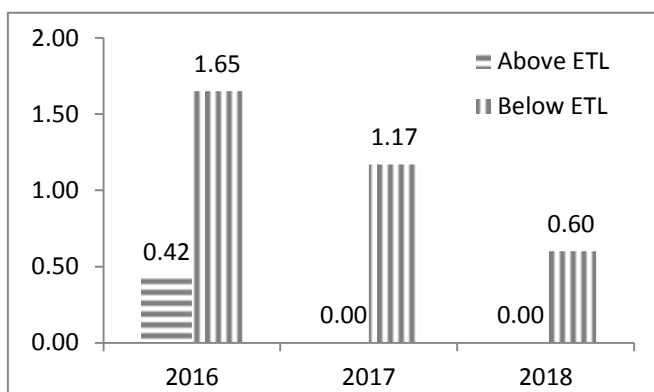
### Tehsil wise percentage of hot spots of pink boll worm

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	MAILSI	15.4	24	CHICHA WATNI	6.9
2	BHAKKAR	14.3	25	A.P.EAST	6.6
3	KAMALIA	14.0	26	JAHANIAN	6.5
4	SUMUNDRI, TANDLIANWALA	13.8	27	MANKERA	6.3
5	VEHARI	12.7	28	LIAQUAT PUR	5.8
6	GOJRA	10.9	29	DUYAPUR	5.6
7	JALAL PUR P.W	10.8	30	KHAN PUR	5.3
8	MULTAN	10.7	31	A.P.SIAL	5.3
9	OKARA	10.7	32	KHANEWAL	4.7
10	YAZMAN	10.7	33	MINCHAN ABAD	4.1
11	KEHROR PACCA	10.0	34	BAHAWAL NAGAR	4.0
12	SADIQ ABAD	10.0	35	FORT ABBAS	3.8
13	BURE WALA	9.8	36	MIANWALI	3.4
14	PAK PATTAN	9.4	37	KABIR WALA	3.3
15	RAJAN PUR	9.2	38	JHANG	3.0
16	MIAN CHANNU	8.9	39	KOT ADDU	2.9
17	CHISHTIAN	8.8	40	ALI PUR	2.7
18	DEPALPUR	8.7	41	T.T.SINGH	2.5
19	BAHAWAL PUR	8.4	42	ARIF WALA	2.5
20	R.Y.KHAN	8.1	43	LODHRAN	2.1
21	SAHIWAL	7.3	44	MUZUFAR GARH	2.1
22	HASILPUR	7.3	45	PIPLAN	1.4
23	SHUJABAD	7.0	46	JATOI	1.1

**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 0.12% during same corresponding period of last year & 0.24% spots of ABW below ETL have been observed as compared to 0.20% in last week and 1.29% 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 0.07% in last week and 0.00% during same corresponding period of last year & 0.60% spots of SBW below ETL have been observed as compared to 0.44% in last week and 1.17% during same corresponding period of last year.



**CLCuV:** On overall Punjab basis 16.7% spots of CLCV have been observed as compared to 17.6 % in last week and 23.7% 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	MAILSI	57.7	30	KEHROR PACCA	15.0
2	A.P.EAST	52.5	31	KAROR L.E.	14.7
3	VEHARI	50.7	32	MIAN CHANNU	14.3
4	KOT ADDU	43.5	33	DUYAPUR	14.3
5	DARYA KHAN	40.0	34	BHAKKAR	14.3
6	MUZUFAR GARH	36.8	35	T.T.SINGH	13.9
7	MULTAN	33.3	36	HASILPUR	13.8
8	SARGODHA	33.3	37	LAYYAH	13.1
9	ARIF WALA	32.5	38	SUMUNDRI, TANDLIANWALA	12.6

10	SHORKOT	25.6	39	DEPALPUR	12.0
11	CHICHA WATNI	24.6	40	OKARA	10.7
12	BURE WALA	24.6	41	BAHAWAL NAGAR	10.0
13	KHAN PUR	24.6	42	SADIQ ABAD	10.0
14	JATOI	23.3	43	KABIR WALA	8.7
15	A.P.SIAL	22.8	44	KHANEWAL	7.5
16	LODHRAN	22.7	45	CHISHTIAN	7.0
17	R.Y.KHAN	22.6	46	KAMALIA	7.0
18	PAK PATTAN	21.9	47	JAM PUR	6.8
19	ALI PUR	21.6	48	JAHANIAN	6.5
20	JALAL PUR P.W	21.5	49	GOJRA	6.3
21	YAZMAN	21.3	50	SAHIWAL	6.1
22	JHANG	19.4	51	HAROON ABAD	5.0
23	LIAQUAT PUR	19.2	52	TAUNSA	4.6
24	MANKERA	18.8	53	D.G.KHAN	4.5
25	BAHAWAL PUR	18.1	54	PIPLAN	4.2
26	SHUJABAD	17.4	55	MINCHAN ABAD	4.1
27	CHOBARA	15.8	56	MIANWALI	3.4
28	FORT ABBAS	15.4	57		

## 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	35.50	24.88	78.69	0.00	35.75	25.88	76.44	0.00
Khanewal	37.26	28.09	62.86	0.00	36.46	27.26	60.00	0.00
Vehari	33.00	28.00	49.45	0.00	39.00	28.00	51.35	0.00
Lodhran	36.71	25.00	64.57	0.00	37.29	26.00	48.14	0.00
Sahiwal	36.70	24.90	62.90	0.00	37.18	22.68	60.62	0.00
Pakpattan	34.60	24.50	84.00	0.00	34.40	24.90	83.00	0.00
Okara	36.00	25.20	84.00	0.00	35.40	25.30	89.00	18.00
Bahawalpur	36.16	25.22	60.11	0.00	38.94	24.77	57.65	8 mm
Bahawalnagar	36.75	26.75	46.75	0.00	39.56	26.06	53.81	0.00
R.Y.Khan	38.00	25.50	59.81	0.00	39.78	24.88	61.88	0.00
D.G.Khan	39.00	25.86	51.86	0.00	39.14	25.57	54.28	0.00
M.Garh	35.36	25.29	56.14	0.00	37.24	26.21	52.21	0.00
Rajanpur	37.18	25.70	51.40	0.00	38.94	27.58	53.50	0.00
Layyah	40.62	27.75	42.25	0.00	39.12	26.62	41.75	0.00
<b>AVERAGE</b>	<b>36.63</b>	<b>25.90</b>	<b>61.06</b>	<b>0.00</b>	<b>37.73</b>	<b>25.84</b>	<b>60.26</b>	<b>18.00</b>

## Weather forecast for next 7 day in cotton zone

Division	Dated	24/9	25/9	26/9	27/9	28/9	29/9	30/9
Multan	Max.Temp.	35	37	38	38	37	39	35
	Min.Temp.	24	24	25	25	25	24	26
	Humidity %	42	33	27	25	23	28	14
Sahiwal	Max.Temp.	33	36	38	39	38	37	36
	Min.Temp.	23	22	23	22	22	22	26
	Humidity %	50	37	24	22	35	29	18
Bahawalpur	Max.Temp.	35	38	38	38	37	38	35
	Min.Temp.	24	25	25	24	24	26	22
	Humidity %	41	29	26	31	31	27	16
D.G. Khan	Max.Temp.	35	37	38	38	37	39	35
	Min.Temp.	24	23	24	25	26	25	27
	Humidity %	41	29	25	24	26	21	13
Average	Max.Temp.	36.93						
Cotton	Min.Temp.	24.18						
Region	Humidity %	28.11						

### Summary of weather forecast

There is forecast of mostly sunny with isolated storms and high level clouds in some areas. Overall weather for seven days in cotton zone during next week will remain shiny. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%.. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%.. 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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

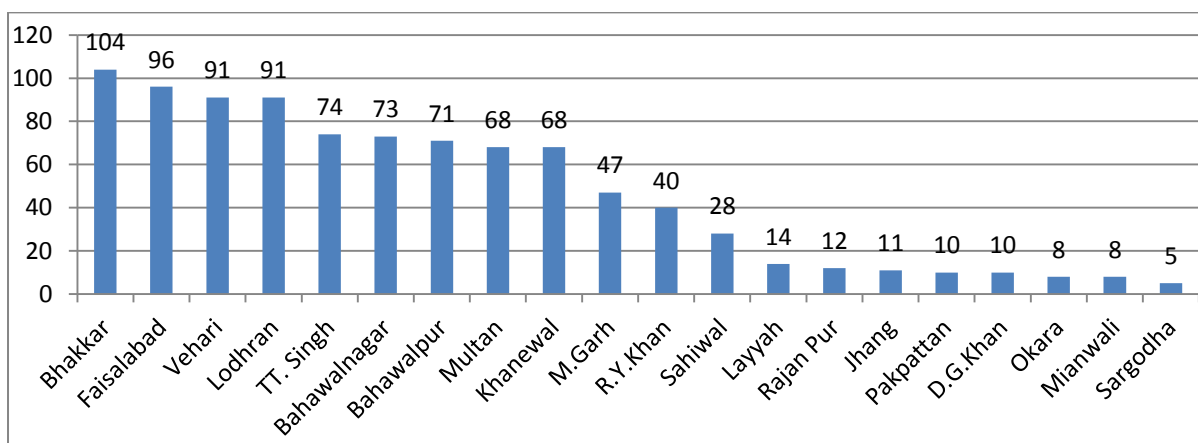
**Pink Bollworm:** This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. It is predicted that population of this pest will increase on cotton.

### Moth Figure 11 District wise PBW moth catches graph

Moth Catches in Pheromone Traps During 3 <sup>rd</sup> Week of September, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	68	1.62
Khanewal	8	68	1.21
Vehari	6	91	2.17
Lodhran	6	91	2.17
Sahiwal	5	28	1.00
Pakpattan	4	10	0.36
Okara	4	8	0.29
Bahawalpur	8	71	1.27
Bahawalnagar	10	73	1.04
R.Y.Khan	8	40	0.71
D.G.Khan	4	10	0.36
M.Garh	8	47	0.84
Rajan Pur	6	12	0.29
Layyah	6	14	0.33
Sargodha	1	5	0.36
Mianwali	2	8	0.29
Bhakkar	4	104	1.86
Faisalabad	5	96	2.74
TT. Singh	6	74	1.76
Jhang	4	11	0.39

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

### Catches in Pheromone Traps during 3<sup>rd</sup> Week of September, 2018



**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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%.

As early cotton sowing was banned in the Punjab by implementing Section 144 and cultivation of more BT varieties, so keeping in view above all, it is predicted that population of this pest will decrease on cotton crop.

### Moth catches on light traps during 3<sup>rd</sup> week of September, 2018

Moth Catches on Light Traps/Trap/week During 3 <sup>rd</sup> Week of September, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	0.7	0.0	6.7
Khanewal	4	0.0	0.0	3.8
Vehari	3	0.0	0.0	3.0
Lodhran	3	2.3	1.0	4.7
Sahiwal	2	2.0	0.0	2.5
Pakpattan	2	0.0	0.0	3.0
Okara	2	0.0	0.0	2.5
Bahawalpur	4	0.3	0.0	1.0
Bahawalnagar	5	0.0	0.8	2.2
R.Y.Khan	4	0.0	0.5	2.5
D.G.Khan	2	0.0	0.0	2.5
M.Garh	4	0.0	0.0	5.5
Rajan Pur	3	0.0	0.3	1.3
Layyah	3	0.0	0.0	3.0
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. 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%. 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 36.63 °C, Min. 25.90 °C with R. humidity 61.06%) & forecast for the next week temp. Max. 36.93 °C, Min. 24.18°C with humidity 28.11%.

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 sustain 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.

## 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.

### 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 <sup>nd</sup> 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