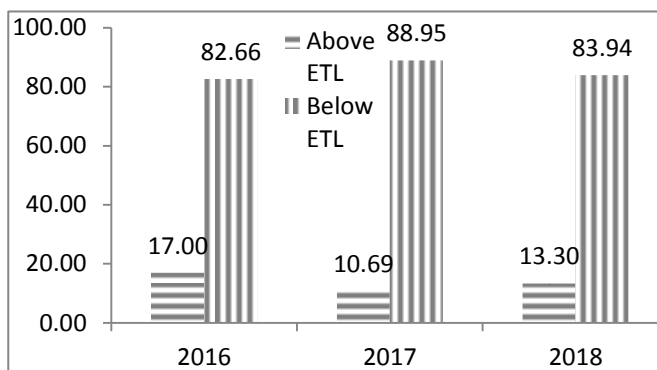


## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 2<sup>ND</sup> WEEK OF OCTOBER, 2018

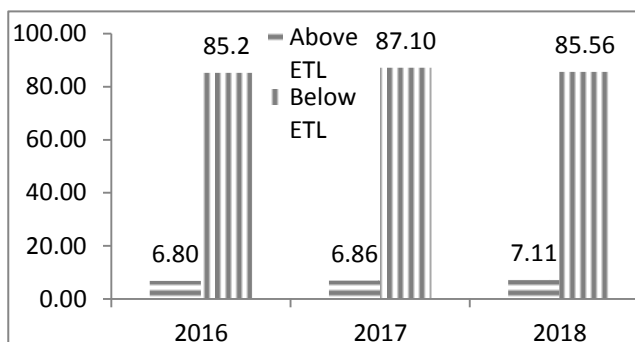
**Whitefly:** On overall Punjab basis 13.30% spots above ETL have been observed during current week as compared to 18.10% % in last week and 10.69% during the same corresponding period of last year & 83.94% spots below ETL have been observed during current week as compared to 80.58% in last week and 88.95% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of whitefly

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	KOT CHUTTA	48.6	27	LODHRAN	12.5
2	A.P.EAST	48.3	28	KHANEWAL	12.0
3	BAHAWAL PUR	36.9	29	KEHROR PACCA	10.0
4	MAILSI	30.2	30	LIAQUAT PUR	10.0
5	HASILPUR	29.4	31	PIPLAN	9.3
6	D.G.KHAN	26.9	32	SHUJABAD	9.3
7	TAUNSA	26.3	33	A.P.SIAL	9.3
8	ROJHAN	23.2	34	MULTAN	8.8
9	MIAN CHANNU	22.8	35	PAK PATTAN	8.3
10	YAZMAN	20.3	36	ARIF WALA	8.3
11	KAROR L.E.	20.0	37	SHORKOT	7.5
12	VEHARI	19.2	38	JHANG	6.6
13	SADIQ ABAD	18.6	39	CHISHTIAN	5.7
14	ALI PUR	18.3	40	JAHANIAN	5.3
15	LAYYAH	17.9	41	BAHAWAL NAGAR	5.0
16	RAJAN PUR	17.3	42	HAROOON ABAD	5.0
17	R.Y.KHAN	16.7	43	MINCHAN ABAD	4.9
18	JATOI	16.1	44	OKARA	4.5
19	JAM PUR	16.1	45	MIANWALI	4.0
20	MUZUFAR GARH	16.0	46	BHAKKAR	3.0
21	JALAL PUR P.W	15.9	47	KABIR WALA	2.9
22	KHAN PUR	15.5	48	FORT ABBAS	2.5
23	BURE WALA	15.2	49	DEPALPUR	2.1
24	KOT ADDU	15.2	50	CHICHA WATNI	2.1
25	DUYAPUR	14.1	51	GOJRA	1.5
26	CHOBARA	13.4	52	T.T.SINGH	1.1

**Jassid:** On overall Punjab basis 7.11% ABETL has been observed as compared to 6.86% in last week and same week of last year 6.86% & BETL 85.56% spots have been observed during current week as compared to 79.95% in last week and 87.10%

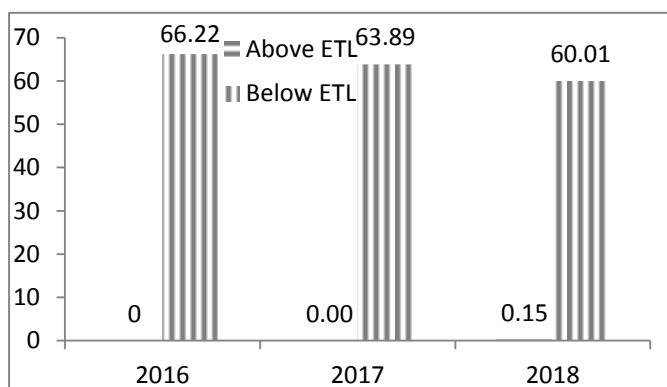


during the same corresponding period of last year.

### Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	43.1	24	HAROOON ABAD	6.0
2	JALAL PUR P.W	26.4	25	FORT ABBAS	5.8
3	KHANEWAL	25.0	26	MINCHAN ABAD	5.7
4	JAHANIAN	18.8	27	CHISHTIAN	5.6
5	KABIR WALA	17.7	28	R.Y.KHAN	5.0
6	MIAN CHANNU	17.0	29	KHAN PUR	5.0
7	VEHARI	15.0	30	LIAQUAT PUR	4.6
8	MAILSI	14.3	31	SADIQ ABAD	4.4
9	BURE WALA	13.8	32	D.G.KHAN	4.3
10	LODHRAN	12.5	33	TAUNSA	4.3
11	DUYAPUR	12.5	34	KOT CHUTTA	4.3
12	KEHROR PACCA	12.2	35	MUZUFAR GARH	4.2
13	SAHIWAL	11.8	36	KOT ADDU	4.2
14	CHICHA WATNI	10.3	37	ALI PUR	4.0
15	PAK PATTAN	9.8	38	JATOI	3.7
16	ARIF WALA	9.4	39	LAYYAH	3.7
17	OKARA	9.3	40	CHOBARA	3.3
18	DEPALPUR	9.3	41	KAROR L.E.	3.1
19	BAHAWAL PUR	8.0	42	RAJAN PUR	3.0
20	A.P.EAST	8.0	43	JAM PUR	2.7
21	YAZMAN	7.5	44	ROJHAN	1.7
22	HASILPUR	6.8	45	JHANG	1.4
23	BAHAWAL NAGAR	6.4			

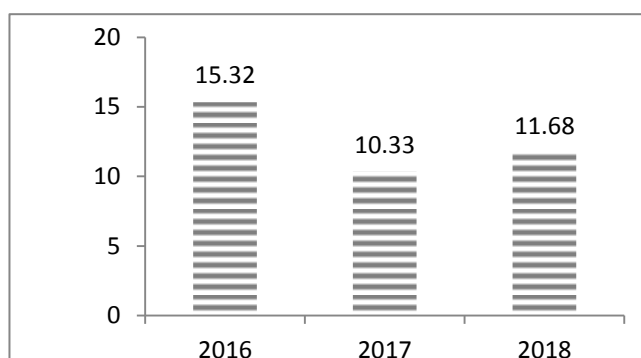
**Thrips:** On overall Punjab basis 0.15% above ETL spots has been observed as compared to 0.31% in last week and same week of last year i.e. 0.00% & BETL 60.01% spots have been observed during current week as compared to 79.70% in last week and 63.89% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	4.5	3	KHANEWAL	1.9
2	JALAL PUR P.W	2.3			

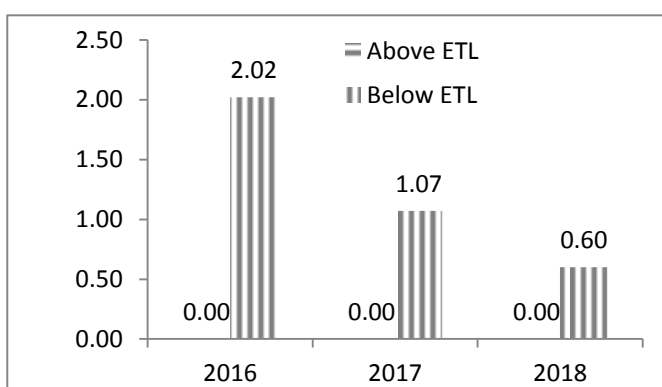
**Mealy Bug:** On overall Punjab basis 11.68% spots of Mealy Bug have been observed as compared to 13.18% in last week and 10.33% spots during the same corresponding period of the last year.



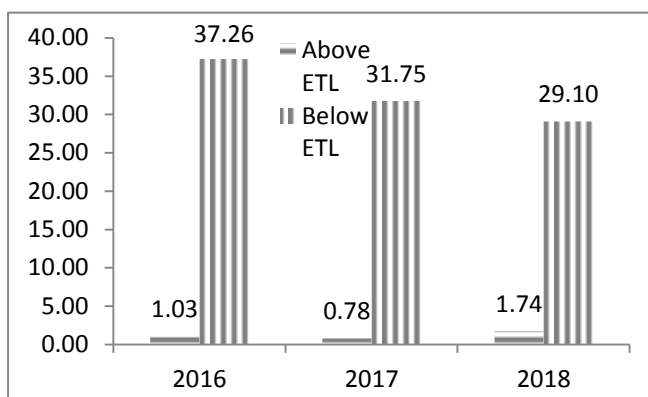
### Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	64.7	28	R.Y.KHAN	7.7
2	JALAL PUR P.W	36.9	29	KHAN PUR	7.5
3	KHANEWAL	32.4	30	LIAQUAT PUR	7.5
4	JAHANIAN	32.1	31	SADIQ ABAD	7.3
5	KABIR WALA	30.9	32	D.G.KHAN	7.1
6	MIAN CHANNU	27.6	33	TAUNSA	6.3
7	VEHARI	27.6	34	KOT CHUTTA	6.3
8	MAILSI	27.3	35	MUZUFAR GARH	6.0
9	BURE WALA	26.7	36	KOT ADDU	6.0
10	LODHRAN	20.4	37	ALI PUR	5.9
11	DUYAPUR	18.6	38	JATOI	5.7
12	KEHROR PACCA	16.5	39	LAYYAH	5.4
13	SAHIWAL	16.3	40	CHOBARA	4.9
14	CHICHA WATNI	15.1	41	KAROR L.E.	4.3
15	PAK PATTAN	14.1	42	RAJAN PUR	4.0
16	ARIF WALA	14.1	43	JAM PUR	4.0
17	OKARA	13.6	44	ROJHAN	4.0
18	DEPALPUR	12.5	45	JHANG	3.8
19	BAHAWAL PUR	12.5	46	SHORKOT	3.6
20	A.P.EAST	12.1	47	A.P.SIAL	3.3
21	YAZMAN	10.7	48	T.T.SINGH	3.1
22	HASILPUR	10.0	49	GOJRA	3.0
23	BAHAWAL NAGAR	9.0	50	KAMALIA	2.2
24	HAROON ABAD	8.7	51	FAISAL ABAD	2.1
25	FORT ABBAS	8.3	52	SUMUNDRI, TANDLIANWALA	1.9
26	MINCHAN ABAD	8.3	53	SARGODHA	1.8
27	CHISHTIAN	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 & 0.60% spots below ETL have been observed during current week as compared to 1.47% in last week and 1.07% during the same corresponding period of last year.

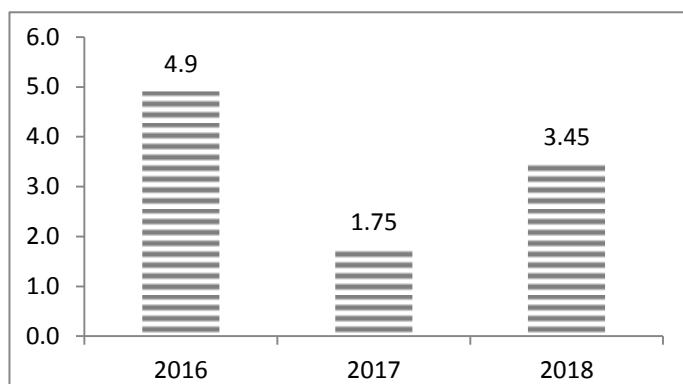


**Dusky Cotton Bug:** On overall Punjab basis 1.74% spots above ETL have been observed during current week as compared to 0.97% in last week and 0.78% during the same corresponding period of last year & 29.1% spots below ETL have been observed during current week as compared to 22.2% in last week and 31.8% during the same corresponding period of last year.



Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	26.2	4	JAHANIAN	9.0
2	JALAL PUR P.W	23.5	5	KABIR WALA	8.8
3	KHANEWAL	10.4	6	MIAN CHANNU	6.8

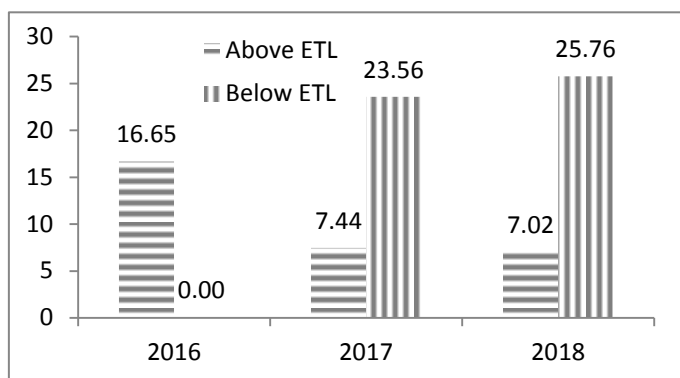
**Armyworm:** On overall Punjab basis 3.45% spots of Armyworm have been observed as compared to 4.20% in last week and 1.75% spots during the same corresponding period of the last year.



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

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	15.6	18	DEPALPUR	4.5
2	JALAL PUR P.W	14.9	19	BAHAWAL PUR	4.4
3	KHANEWAL	12.3	20	A.P.EAST	4.3
4	JAHANIAN	9.4	21	YAZMAN	4.0
5	KABIR WALA	9.0	22	HASILPUR	3.9
6	MIAN CHANNU	8.9	23	BAHAWAL NAGAR	3.8
7	VEHARI	8.5	24	HAROON ABAD	3.6
8	MAILSI	7.4	25	FORT ABBAS	3.0
9	BURE WALA	6.8	26	MINCHAN ABAD	2.9
10	LODHRAN	6.6	27	CHISHTIAN	2.7
11	DUYAPUR	6.3	28	R.Y.KHAN	2.1
12	KEHROR PACCA	6.0	29	KHAN PUR	2.0
13	SAHIWAL	5.6	30	LIAQUAT PUR	2.0
14	CHICHA WATNI	5.2	31	SADIQ ABAD	1.7
15	PAK PATTAN	5.1	32	D.G.KHAN	1.7
16	ARIF WALA	5.0	33	TAUNSA	1.7
17	OKARA	4.7	34	KOT CHUTTA	1.4

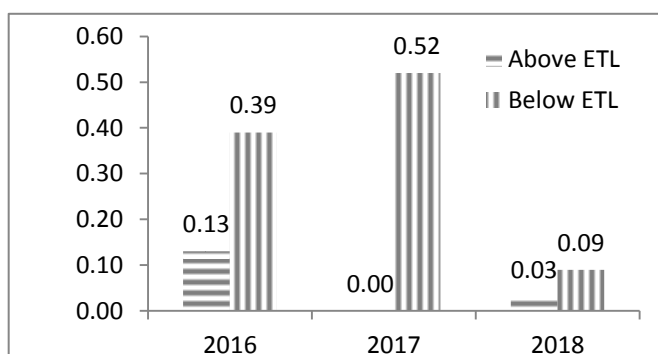
**Pink Boll Worm:** On overall Punjab basis 7.02% spots of PBW above ETL have been observed as compared to 6.84% in last week and 7.44% same corresponding period of the last year & 25.76% spots of PBW below ETL have been observed as compared to 26.29% in last week and 23.56% during same corresponding period of last year.



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

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SHUJABAD	28.8	25	FORT ABBAS	8.0
2	JALAL PUR P.W	23.5	26	MINCHAN ABAD	8.0
3	KHANEWAL	18.5	27	CHISHTIAN	7.5
4	JAHANIAN	18.2	28	R.Y.KHAN	7.5
5	KABIR WALA	17.7	29	KHAN PUR	7.1
6	MIAN CHANNU	16.7	30	LIAQUAT PUR	5.6
7	VEHARI	15.2	31	SADIQ ABAD	5.6
8	MAILSI	14.3	32	D.G.KHAN	5.0
9	BURE WALA	13.6	33	TAUNSA	5.0
10	LODHRAN	13.2	34	KOT CHUTTA	5.0
11	DUYAPUR	13.0	35	MUZUFAR GARH	4.5
12	KEHROR PACCA	13.0	36	KOT ADDU	4.3
13	SAHIWAL	12.1	37	ALI PUR	4.2
14	CHICHA WATNI	11.9	38	JATOI	3.4
15	PAK PATTAN	11.8	39	LAYYAH	3.3
16	ARIF WALA	11.8	40	CHOBARA	3.1
17	OKARA	10.4	41	KAROR L.E.	2.7
18	DEPALPUR	10.3	42	RAJAN PUR	2.6
19	BAHAWAL PUR	10.0	43	JAM PUR	2.4
20	A.P.EAST	9.3	44	ROJHAN	2.2
21	YAZMAN	9.3	45	JHANG	2.1
22	HASILPUR	8.6	46	SHORKOT	1.4
23	BAHAWAL NAGAR	8.3	47	A.P.SIAL	1.3
24	HAROON ABAD	8.0			

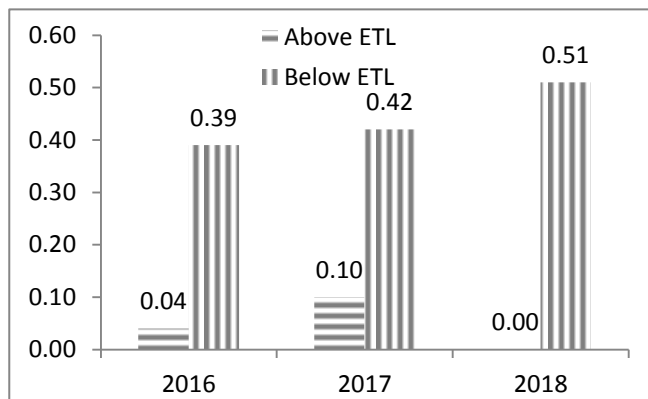
**American Bollworm:** On overall Punjab basis 0.03% spots of ABW above ETL have been observed as compared to 0.03% in last week and 0.00% during same corresponding



period of last year & 0.09% spots of ABW below ETL have been observed as compared to 0.16% in last week and 0.52% during same corresponding period of last year.

Sr.	TEHSIL	%AGE
1	Shujabad	2.3

**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 0.10% during same corresponding period of last year & 0.51% spots of SBW below ETL have been observed as compared to 0.53% in last week and 0.42% during same corresponding period of last year.



**CLCuV:** On overall Punjab basis 13.0% spots of CLCV have been observed as compared to 15.4% in last week and 16.7% 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	SHUJABAD	44.2	27	CHISHTIAN	13.8
2	JALAL PUR P.W	35.3	28	R.Y.KHAN	13.3
3	KHANEWAL	33.3	29	KHAN PUR	12.8
4	JAHANIAN	33.3	30	LIAQUAT PUR	12.2
5	KABIR WALA	32.4	31	SADIQ ABAD	12.0
6	MIAN CHANNU	31.3	32	D.G.KHAN	11.9
7	VEHARI	31.0	33	TAUNSA	11.3
8	MAILSI	26.8	34	KOT CHUTTA	11.1
9	BURE WALA	26.3	35	MUZUFAR GARH	10.7
10	LODHRAN	25.0	36	KOT ADDU	10.4
11	DUYAPUR	25.0	37	ALI PUR	10.3
12	KEHROR PACCA	22.5	38	JATOI	10.0
13	SAHIWAL	21.7	39	LAYYAH	8.6
14	CHICHA WATNI	21.5	40	CHOBARA	8.2
15	PAK PATTAN	20.8	41	KAROR L.E.	8.0

16	ARIF WALA	19.6	42	RAJAN PUR	7.5
17	OKARA	18.5	43	JAM PUR	7.5
18	DEPALPUR	18.3	44	ROJHAN	5.7
19	BAHAWAL PUR	17.7	45	JHANG	5.7
20	A.P.EAST	17.6	46	SHORKOT	5.0
21	YAZMAN	17.4	47	A.P.SIAL	4.9
22	HASILPUR	16.9	48	T.T.SINGH	4.8
23	BAHAWAL NAGAR	16.7	49	GOJRA	4.7
24	HAROON ABAD	15.5	50	KAMALIA	3.8
25	FORT ABBAS	15.2	51	FAISAL ABAD	3.0
26	MINCHAN ABAD	15.2	52	SUMUNDRI, TANDLIANWALA	1.1

## 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	Above 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 September	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 September	Mild & Humid	30-40	70-100	Squaring to Harvest
10	Cotton Boll Worm	July to September	Dry & Moderate	32-40	50-70	Flowering to Maturity
11	SBW	July to September	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	27.14	18.57	76.64	0.00	35.57	21.29	78.50	0.00
Khanewal	34.71	23.23	60.57	0.00	36.86	27.26	56.43	0.00
Vehari	31.38	22.50	48.81	0.00	39.00	28.00	51.94	0.00
Lodhran	33.86	21.00	53.86	0.00	36.43	23.00	48.57	0.00
Sahiwal	33.07	19.50	61.14	0.00	37.20	20.17	50.90	0.00
Pakpattan	33.00	20.43	85.14	0.00	33.43	21.57	83.71	0.00
Okara	33.50	19.20	79.00	0.00	36.10	21.70	82.00	0.00
Bahawalpur	34.94	20.88	60.31	Traces	37.68	22.15	55.00	0.00
Bahawalnagar	37.54	25.08	55.69	0.00	38.50	23.08	49.04	0.00
R.Y.Khan	37.21	20.86	55.43	0.00	39.30	20.67	56.71	0.00
D.G.Khan	34.29	21.71	48.71	0.00	37.29	21.86	51.21	0.00
M.Garh	34.14	21.64	55.66	0.00	33.64	26.20	55.35	0.00
Rajanpur	34.40	21.66	45.10	0.00	38.08	22.60	47.80	0.00
Layyah	34.37	19.12	41.50	0.00	32.75	17.75	41.50	0.00
<b>AVERAGE</b>	<b>33.83</b>	<b>21.10</b>	<b>59.11</b>	<b>0.00</b>	<b>36.56</b>	<b>22.66</b>	<b>57.76</b>	<b>0.00</b>



## Weather forecast for next 7 day in cotton zone

Division	Dated	15/10	16/10	17/10	18/10	19/10	20/10	21/10
<b>Multan</b>	Max.Temp.	35	32	31	32	32	33	30
	Min.Temp.	20	20	19	18	19	19	19
	Humidity %	19	23	25	23	23	19	10
<b>Sahiwal</b>	Max.Temp.	34	33	32	32	32	33	30
	Min.Temp.	19	18	18	18	17	17	19
	Humidity %	25	25	26	27	27	21	11
<b>Bahawalpur</b>	Max.Temp.	36	33	32	32	33	34	30
	Min.Temp.	20	19	19	18	18	18	16
	Humidity %	18	21	23	23	22	19	11
<b>D.G. Khan</b>	Max.Temp.	34	34	32	32	32	32	29
	Min.Temp.	20	20	21	19	19	18	19
	Humidity %	18	18	22	20	19	17	11
<b>Average</b>	<b>Max.Temp.</b>	<b>32.36</b>						
<b>Cotton</b>	<b>Min.Temp.</b>	<b>18.71</b>						
<b>Region</b>	<b>Humidity %</b>	<b>20.21</b>						

### 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max.

32.36 °C, Min. 18.71°C with humidity 20.21%. 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max.

32.36 °C, Min. 18.71°C with humidity 20.21%. Keeping in view above all, it is predicted that population of this pest will decrease during the coming week.

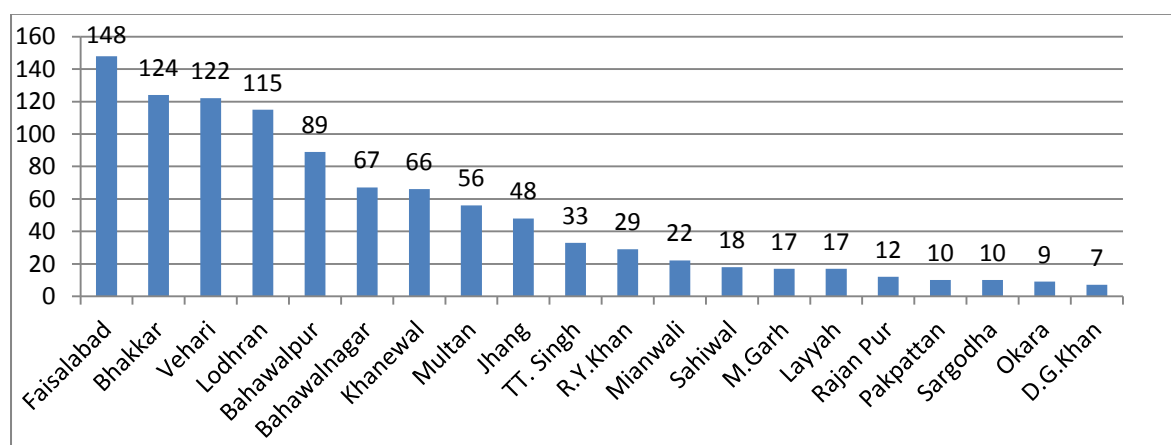
**Dusky Cotton Bug:** This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. It is predicted that population of this pest will increase on cotton.

### Moth Catches in Pheromone Traps during 2<sup>nd</sup> Week of October, 2018

Moth Catches in Pheromone Traps During 2 <sup>nd</sup> Week of October, 2018					
District	Traps Installed	2018		2017	
		Moth catches/Trap /week	Av. Moth catches/Trap/night	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	56	1.33	84	2.00
Khanewal	8	66	1.18	127	2.27
Vehari	6	122	2.90	123	2.93
Lodhran	6	115	2.74	69	1.64
Sahiwal	5	18	0.64	23	0.66
Pakpattan	4	10	0.36	24	0.86
Okara	4	9	0.32	24	0.86
Bahawalpur	8	89	1.59	54	0.96
Bahawalnagar	10	67	0.96	76	1.09
R.Y.Khan	8	29	0.52	41	0.73
D.G.Khan	4	7	0.25	5	0.18
M.Garh	8	17	0.30	5	0.09
Rajan Pur	6	12	0.29	12	0.29
Layyah	6	17	0.40	10	0.24
Sargodha	1	10	0.71	11	1.57
Mianwali	2	22	0.79	48	3.43
Bhakkar	4	124	2.21	66	2.36
Faisalabad	5	148	4.23	76	2.17
TT. Singh	6	33	0.79	49	1.17
Jhang	4	48	1.71	15	0.54
<b>TOTAL/AVG</b>	<b>111</b>	<b>1019</b>	<b>1.31</b>	<b>942</b>	<b>1.21</b>
		<i>Note. 3 moth catches on 3 consecutive nights in a trap is considered as ETL</i>			

### 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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. It is predicted that population of this pest will decrease on cotton crop.

### **Moth catches on light traps during 2<sup>nd</sup> week of October, 2018**

<b>Moth Catches on Light Traps/Trap/week During 2<sup>nd</sup> Week of October, 2018</b>				
<b>District</b>	<b>Traps Installed</b>	<b>A.B.W</b>	<b>S.B.W</b>	<b>Armyworm</b>
Multan	3	0.0	0.0	2.1
Khanewal	4	0.0	0.0	2.1
Vehari	3	0.0	0.0	0.1
Lodhran	3	0.3	0.0	3.6
Sahiwal	2	0.3	0.0	0.6
Pakpattan	2	0.0	0.0	0.4
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.6	0.4	1.1
Bahawalnagar	5	0.3	0.4	0.4
R.Y.Khan	4	0.7	0.0	0.9
D.G.Khan	2	0.0	0.0	0.0
M.Garh	4	0.0	0.0	0.6
Rajan Pur	3	0.0	0.3	0.3
Layyah	3	0.0	0	1.3
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. 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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 33.83 °C, Min. 21.10°C with R. humidity 59.11%) & forecast for the next week temp. Max. 32.36 °C, Min. 18.71°C with humidity 20.21%. 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	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.



- 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**

<b>S#</b>	<b>Common Name</b>	<b>Brand Name</b>	<b>Dose/Acre</b>
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**

- Keep Cotton fields free from all kinds of weeds.
- Eradicate other alternate host plants of CLCuV and dispose them off carefully.
- Thinning out and destruction of Virus affected plants.
- Remove CLCuV effected plants in less than 60 DAS (Days after sowing) crop.
- Hoeing after each irrigation or rain at wattar condition till canopies permit.
- 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.
- Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
- Balanced use of Fertilizer i.e. N.P.K.
- 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