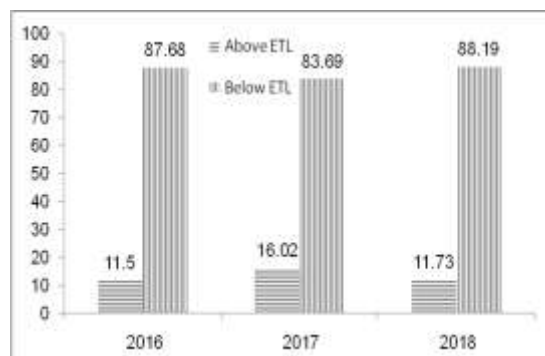


## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4<sup>TH</sup> WEEK OF JULY, 2018

**Whitefly:** On overall Punjab basis 11.73% spots above ETL have been observed during current week as compared to 9.34% % in last week and 16.02% during the same corresponding period of last year & 88.19% spots below ETL have been observed during current week as compared to 90.39% in last week and 83.69% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of whitefly

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	15.0	39	28	R.Y.KHAN	5.9	26
2	SHUJABAD	17.6	58	29	KHAN PUR	16.3	24
3	JALAL PUR P.W	10.0	14	30	LIAQUAT PUR	12.0	47
4	KHANEWAL	9.1	38	31	SADIQ ABAD	5.8	25
5	JAHANIAN	7.5	32	32	D.G.KHAN	22.5	36
6	KABIR WALA	6.3	13	33	TAUNSA	7.5	39
7	MIAN CHANNU	10.0	67	34	MUZUFAR GARH	5.0	6
8	VEHARI	12.0	37	35	KOT ADDU	10.0	18
9	MAILSI	10.0	58	36	ALI PUR	6.0	12
10	BURE WALA	6.7	7	37	JATOI	12.0	35
11	LODHRAN	17.5	55	38	LAYYAH	4.9	5
12	DUYAPUR	13.8	96	39	CHOBARA	8.0	13
13	KEHROR PACCA	11.5	45	40	KAROR L.E.	11.4	16
14	SAHIWAL	10.5	34	41	RAJAN PUR	20.0	49
15	CHICHA WATNI	20.5	83	42	JAM PUR	8.3	41
16	PAK PATTAN	16.2	75	43	ROJHAN	2.5	5
17	ARIF WALA	16.0	8	44	JHANG	14.9	28
18	OKARA	8.1	7	45	SHORKOT	8.1	8
19	DEPALPUR	16.1	211	46	T.T.SINGH	18.6	25
20	BAHAWAL PUR	31.0	156	47	GOJRA	2.0	2
21	A.P.EAST	26.2	76	48	KAMALIA	6.7	2
22	YAZMAN	16.0	69	49	FAISAL ABAD	0.0	0
23	HASILPUR	17.1	61	50	SUMUNDRI, TANDLIANWALA	8.9	40
24	BAHAWAL NAGAR	12.5	38	51	MIANWALI	5.0	20
25	HARON ABAD	12.5	22	52	PIPLAN	3.3	10
26	FORT ABBAS	7.5	24	53	BHAKKAR	11.1	4
27	MINCHAN ABAD	12.2	15	54	CHISHTIAN	18.2	88

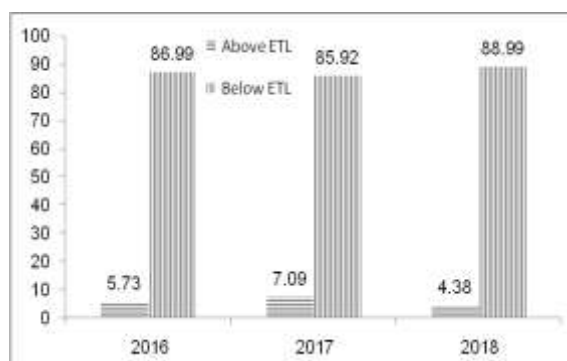
**Jassid:** On overall Punjab basis 13.61% ABETL has been observed as compared to 15.41% in last week and same week of last year 18.31% & BETL 88.19% spots have been observed during current week as compared to 81.02% in last week and 83.69% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	18.3	46	28	LIAQUAT PUR	16.0	48
2	SHUJABAD	25.5	70	29	SADIQ ABAD	17.3	76
3	JALAL PUR P.W	22.5	34	30	D.G.KHAN	12.5	26
4	KHANEWAL	11.4	42	31	TAUNSA	11.3	55
5	JAHANIAN	7.5	50	32	MUZUFAR GARH	7.5	18
6	KABIR WALA	4.2	12	33	KOT ADDU	6.0	8
7	MIAN CHANNU	20.0	96	34	ALI PUR	14.0	49
8	VEHARI	10.0	24	35	JATOI	12.0	24
9	BURE WALA	13.3	43	36	LAYYAH	4.9	5
10	LODHRAN	10.5	38	37	CHOBARA	8.0	13
11	DUYAPUR	9.2	67	38	KAROR L.E.	13.6	20
12	KEHROR PACCA	6.6	37	39	RAJAN PUR	11.7	23
13	SAHIWAL	17.5	60	40	JAM PUR	10.0	42
14	CHICHA WATNI	21.9	87	41	ROJHAN	5.0	14
15	PAK PATTAN	13.5	72	42	JHANG	12.8	34
16	ARIF WALA	16.0	9	43	SHORKOT	8.1	8
17	OKARA	13.5	17	44	T.T.SINGH	16.9	37
18	DEPALPUR	6.5	5	45	GOJRA	12.0	13
19	BAHAWAL PUR	25.9	113	46	KAMALIA	10.0	8
20	A.P.EAST	35.7	134	47	FAISAL ABAD	11.1	1
21	YAZMAN	20.0	87	48	SUMUNDRI, TANDLIANWALA	6.7	9
22	HASILPUR	26.8	72	49	SARGODHA	60.0	9
23	BAHAWAL NAGAR	20.0	56	50	MIANWALI	13.3	35
24	HAROON ABAD	5.0	7	51	PIPLAN	13.3	32
25	MINCHAN ABAD	9.8	13	52	BHAKKAR	22.2	7
26	CHISHTIAN	20.5	93	53	MANKERA	17.6	6
27	R.Y.KHAN	21.6	122	54	KHAN PUR	14.0	21

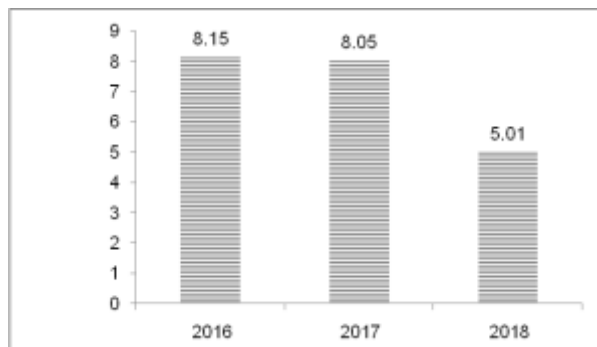
**Thrips:** On overall Punjab basis 4.38% AETL has been observed as compared to 3.11% in last week and same week of last year i.e. 7.09% & BETL 89.99% spots have been observed during current week as compared to 86.94% in last week and 86.52% during the same corresponding period of last year.



### Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	5.0	14.0	22	YAZMAN	2.0	8.0
2	SHUJABAD	5.9	18.0	23	HASILPUR	4.9	10.0
3	JALAL PUR P.W	10.0	17.0	24	BAHAWAL NAGAR	7.5	16.0
4	JAHANIAN	5.0	20.0	25	HAROON ABAD	2.5	1.0
5	KABIR WALA	4.2	14.0	26	FORT ABBAS	5.0	10.0
6	MIAN CHANNU	14.0	80.0	27	MINCHAN ABAD	2.4	3.0
7	VEHARI	12.0	27.0	28	CHISHTIAN	6.8	39.0
8	MAILSI	6.0	5.0	29	KHAN PUR	4.7	25.0
9	BURE WALA	6.7	7.0	30	D.G.KHAN	10.0	19.0
10	LODHRAN	3.5	6.0	31	TAUNSA	2.5	19.0
11	DUYAPUR	6.2	31.0	32	MUZUFAR GARH	2.5	8.0
12	KEHROR PACCA	4.9	23.0	33	ALI PUR	4.0	9.0
13	CHICHA WATNI	2.7	10.0	34	CHOBARA	2.0	2.0
14	PAK PATTAN	2.7	3.0	35	RAJAN PUR	13.3	28.0
15	BAHAWAL PUR	6.9	23.0	36	JAM PUR	10.0	41.0
16	A.P.EAST	4.8	14.0	37	ROJHAN	5.0	13.0
17	GOJRA	2.0	5.0	38	JHANG	4.3	9.0
18	KAMALIA	3.3	4.0	39	SHORKOT	16.2	18.0
18	SUMUNDRI, TANDLIANWALA	2.2	7.0	40	MIANWALI	5.0	20.0
20	BHAKKAR	5.6	2.0	41	PIPLAN	5.0	13.0
21	MANKERA	11.8	5.0				

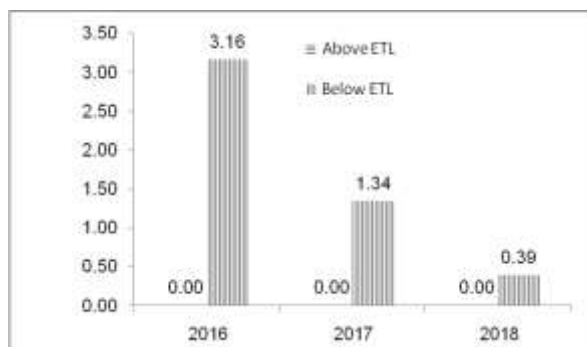
**Mealy Bug:** On overall Punjab basis 5.01% spots of Mealy Bug have been observed as compared to 4.25% in last week and 8.05% spots during the same corresponding period of the last year.



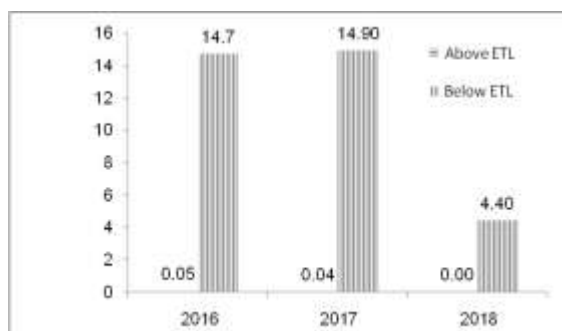
### Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	21.7	79	18	YAZMAN	18.0	59
2	SHUJABAD	7.8	29	19	HASILPUR	14.6	71
3	JALAL PUR P.W	12.5	21	20	HAROON ABAD	5.0	6
4	KHANEWAL	4.5	13	21	MINCHAN ABAD	2.4	3
5	JAHANIAN	5.0	31	22	CHISHTIAN	15.9	76
6	KABIR WALA	2.1	1	23	R.Y.KHAN	17.6	112
7	MIAN CHANNU	10.0	63	24	KHAN PUR	16.3	49
8	VEHARI	6.0	16	25	LIAQUAT PUR	6.0	28
9	MAILSI	4.0	17	26	SADIQ ABAD	3.8	25
10	BURE WALA	6.7	31	27	KOT ADDU	2.0	2
11	LODHRAN	8.8	38	28	LAYYAH	2.4	25
12	DUYAPUR	9.2	80	29	CHOBARA	2.0	2
13	KEHROR PACCA	1.6	3	30	RAJAN PUR	5.0	10
14	CHICHA WATNI	2.7	25	31	JAM PUR	1.7	5
15	PAK PATTAN	2.7	15	32	T.T.SINGH	1.7	2
16	BAHAWAL PUR	17.2	88	33	SUMUNDRI, TANDLIANWALA	2.2	4
17	A.P.EAST	16.7	36	34	MIANWALI	1.7	4

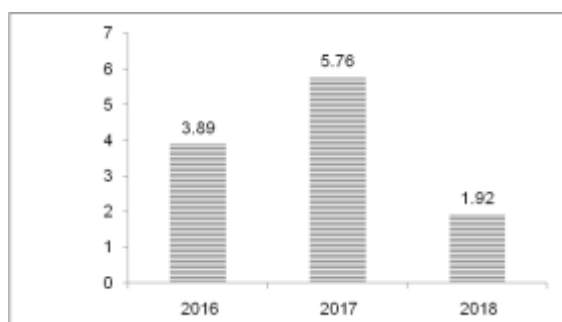
**Mites:** On overall Punjab basis 0.00% spots above ETL have been observed during current week as compared to 0.00% in last week and 0.00% during the same corresponding period of last year & 0.39% spots below ETL have been observed during current week as compared to 0.49% in last week and 1.34% during the same corresponding period of last year.



**Dusky Cotton Bug:** On overall Punjab basis 0.00% spots above ETL have been observed during current week as compared to 0.00% in last week and 0.04% during the same corresponding period of last year & 4.4% spots below ETL have been observed during current week as compared to 4.5% in last week and 14.9% during the same corresponding period of last year. The decrease in its population as compared to the same corresponding period of last year.



**Armyworm:** On overall Punjab basis 1.92% spots of Armyworm have been observed as compared to 1.06% in last week and 5.76% spots during the same corresponding period of the last year. The decrease in its population as compared to the same corresponding period of last year.

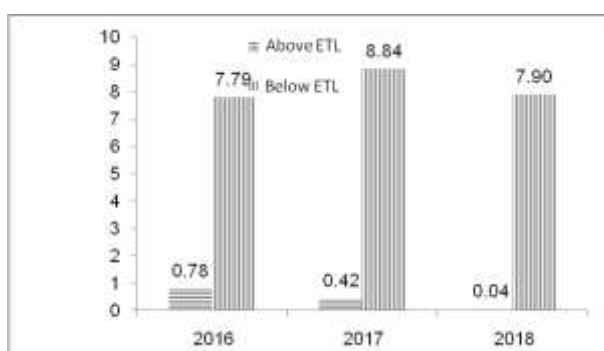


### Tehsil wise percentage of hot spots of army worm

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	10.0	23	10	CHISHTIAN	2.3	5
2	SHUJABAD	3.9	19	11	R.Y.KHAN	13.7	0
3	JALAL PUR P.W	7.5	14	12	KHAN PUR	4.7	0
4	MIAN CHANNU	2.0	20	13	LIAQUAT PUR	2.0	0
5	VEHARI	2.0	10	14	SADIQ ABAD	11.5	0

6	BAHAWAL PUR	6.9	41	15	KOT ADDU	2.0	2
7	A.P.EAST	7.1	16	16	T.T.SINGH	10.2	12
8	HASILPUR	2.4	25	17	KAMALIA	3.3	3
9	BAHAWAL NAGAR	7.5	13				

**Pink Boll Worm:** On overall Punjab basis 0.04% spots of PBW Above ETL have been observed as compared to 0.19% in last week and 0.42% same corresponding period of the last year & 7.90% spots of PBW below ETL have been observed as compared to 5.73% in last week and 8.84% during same corresponding period of last year. The decrease in its population above ETL is mainly due to sowing of Bt cultivars, ban on early sown of cotton by implementing Sec. 144 and effective measures taken by farmers for off season management of PBW by turning heaps of cotton sticks, collection & disposal of PBW effected bolls, disposal of cotton ginning wastes in ginning factories, oil mills, brick/ kilns etc.



**Table 6 Tehsil wise percentage of hot spots of pink boll worm**

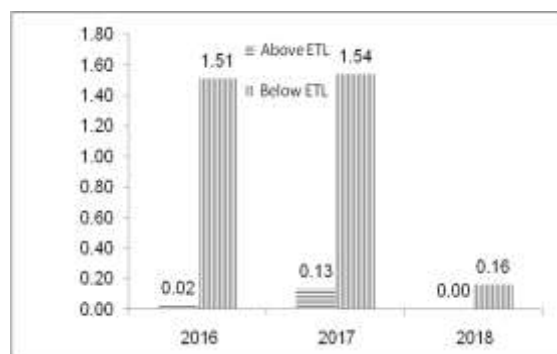
Sr.	TEHSIL	%AGE	AREA
1	BAHAWAL PUR	1.7	8

### Tehsil wise percentage of spots of pink boll worm below economic threshold level

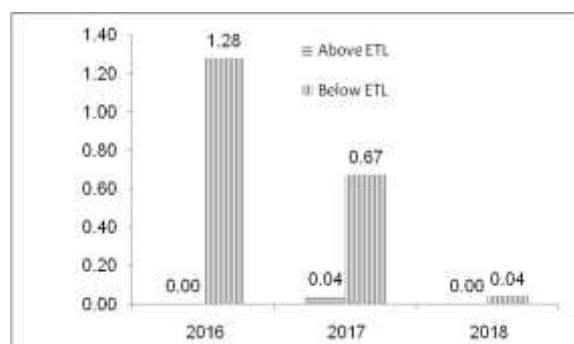
Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	YAZMAN	40.0		20	KHAN PUR	7.0	
2	HASILPUR	39.0		21	KAMALIA	6.7	
3	BAHAWAL PUR	32.8		22	KABIR WALA	6.3	
4	FORT ABBAS	27.5		23	MAILSI	6.0	
5	PIPLAN	23.3		24	ALI PUR	6.0	
6	MIAN CHANNU	20.0		25	GOJRA	6.0	
7	JALAL PUR P.W	15.0		26	SHUJABAD	5.9	
8	CHISHTIAN	13.6		27	SADIQ ABAD	5.8	
9	SHORKOT	13.5		28	OKARA	5.4	
10	BURE WALA	13.3		29	T.T.SINGH	5.1	

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	YAZMAN	40.0		20	KHAN PUR	7.0	
11	MIANWALI	13.3		30	MULTAN	5.0	
12	LODHRAN	12.3		31	VEHARI	4.0	
13	R.Y.KHAN	11.8		32	LIAQUAT PUR	4.0	
14	KEHROR PACCA	9.8		33	HAROON ABAD	2.5	
15	DUYAPUR	9.2		34	KHANEWAL	2.3	
16	JHANG	8.5		35	SUMUNDRI, TANDLIANWALA	2.2	
17	CHICHA WATNI	8.2		36	KOT ADDU	2.0	
18	PAK PATTAN	8.1		37	JATOI	2.0	
19	MUZUFAR GARH	7.5					

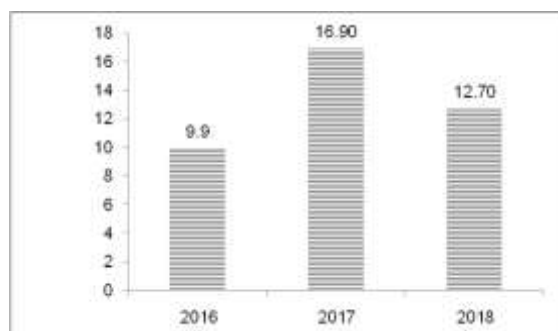
**American Bollworm:** On overall Punjab basis 0.00% spots of ABW above ETL have been observed as compared to 0.04% in last week and 0.13% during same corresponding period of last year & 0.16% spots of ABW below ETL have been observed as compared to 0.00% in last week and 1.54% during same corresponding 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 0.04% during same corresponding period of last year & 0.04% spots of SBW below ETL have been observed as compared to 0.08% in last week and 0.67% during same corresponding period of last year.



**CLCuV:** On overall Punjab basis 12.7% spots of CLCV have been observed as compared to 10.2% in last week and 16.3% during the same corresponding period of the last year. The increase in its incidence as compared to last week & same week of last year is due to favorable condition.



### Tehsil wise percentage of hot spots of cotton leaf curl virus

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	15.0	38	24	BAHAWAL NAGAR	5.0	8
2	SHUJABAD	7.8	16	25	FORT ABBAS	5.0	18
3	JALAL PUR P.W	17.5	29	26	MINCHAN ABAD	2.4	3
4	KHANEWAL	31.8	175	27	CHISHTIAN	4.5	10
5	JAHANIAN	27.5	99	28	R.Y.KHAN	11.8	38
6	KABIR WALA	20.8	35	29	KHAN PUR	14.0	15
7	MIAN CHANNU	24.0	142	30	LIAQUAT PUR	16.0	59
8	VEHARI	50.0	195	31	SADIQ ABAD	9.6	53
9	MAILSI	18.0	62	32	D.G.KHAN	12.5	20
10	BURE WALA	37.8	113	33	TAUNSA	5.0	32
11	LODHRAN	28.1	93	34	MUZUFAR GARH	15.0	20
12	DUYAPUR	12.3	50	35	KOT ADDU	6.0	12
13	KEHROR PACCA	13.1	53	36	ALI PUR	12.0	27
14	SAHIWAL	3.5	13	37	JATOI	4.0	8
15	CHICHA WATNI	26.0	75	38	LAYYAH	2.4	4
16	PAK PATTAN	16.2	54	39	KAROR L.E.	2.3	2
17	ARIF WALA	8.0	8	40	RAJAN PUR	6.7	14
18	BAHAWAL PUR	20.7	102	41	JHANG	14.9	30
19	A.P.EAST	11.9	51	42	SHORKOT	13.5	22
20	YAZMAN	12.0	42	43	T.T.SINGH	13.6	22
21	HASILPUR	31.7	89	44	GOJRA	26.0	25
22	MIANWALI	6.7	18	45	KAMALIA	13.3	10
23	PIPLAN	3.3	8	46	SUMUNDRI, TANDLIANWALA	4.4	9



**Table 11 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	37.13	30.13	70.06	5.0	37.38	30.63	66.44	0.3
Khanewal	39.71	29.84	62.14	3.0	39.50	29.86	61.57	0.0
Vehari	37.13	31.38	49.06	0.0	39.00	28.00	57.56	16.0
Lodhran	37.86	29.57	38.86	0.0	37.71	28.71	60.57	0.0
Sahiwal	37.50	28.20	77.50	39.0	37.53	26.80	68.00	44.0
Pakpattan	38.38	27.38	62.75	0.0	38.75	28.50	63.00	0.0
Okara	36.50	26.90	82.00	144.0	40.10	26.60	79.00	23.0
Bahawalpur	38.44	28.89	62.44	40.0	45.40	29.31	56.13	0.0
Bahawalnagar	39.04	27.92	36.00	4.8	39.15	27.04	60.77	1.5
R.Y.Khan	40.50	28.21	0.00	0.0	40.11	29.70	67.00	0.0
D.G.Khan	41.43	28.57	52.07	0.00	39.86	30.57	53.43	0.00
M.Garh	37.87	30.00	46.43	0.00	38.48	29.60	61.21	0.00
Rajanpur	39.40	27.90	46.50	8.00	38.48	28.10	70.10	15.00
Layyah	43.20	32.40	43.00	0.00	37.40	29.40	42.00	0.00
<b>AVERAGE</b>	<b>38.86</b>	<b>29.09</b>	<b>52.06</b>	<b>243.72</b>	<b>39.20</b>	<b>28.77</b>	<b>61.91</b>	<b>99.84</b>

**Table 12 Weather forecast for next 7 day in cotton zone**

Division	Dated	30/7	31/7	1/8	2/8	3/8	4/8	5/8
Multan	Max.Temp.	40	41	41	41	41	42	36
	Min.Temp.	30	31	31	30	29	29	26
	Humidity %	36	32	31	30	30	31	25
Sahiwal	Max.Temp.	37	40	40	40	39	40	36
	Min.Temp.	28	29	30	29	28	28	27
	Humidity %	48	38	36	38	40	36	29
Bahawalpur	Max.Temp.	39	40	40	40	40	41	36
	Min.Temp.	31	30	29	29	28	29	25
	Humidity %	38	33	32	31	33	32	26
D.G. Khan	Max.Temp.	40	40	41	41	41	43	37
	Min.Temp.	30	31	30	30	29	29	26
	Humidity %	37	34	33	31	31	29	25
Average	Max.Temp.	39.75						
Cotton	Min.Temp.	28.96						
Region	Humidity %	33.04						

**Summary of weather forecast**

There is forecast of mostly More sun than clouds weather for seven days in cotton zone during next week. So, it is forecasted that increased temperature for next week in cotton zone (Southern Punjab) may provide the favorable environment for proliferation of some insect pests on cotton crop.

**Forecast of Sucking Pests:**

**Whitefly:** This pest flourish best in hot dry climate with optimum temperature 27-32 °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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

**Jassid:** This pest flourish best in hot humid climate with optimum temperature 27-32 °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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

**Thrips:** This pest flourish 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest may increase during the coming week.

**Mealy Bug:** This pest flourish best 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is

predicted that population of this pest may increase on cotton crop during the coming week.

**Mites:** This pest flourish 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest may sustain during the coming week.

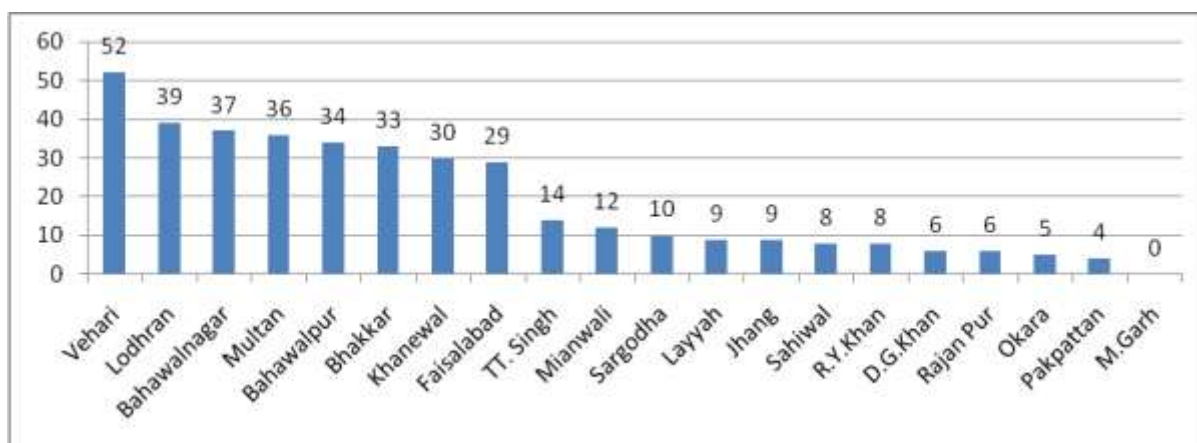
**Dusky Cotton Bug:** This pest flourish best moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

**Pink Bollworm:** This pest flourish 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. As early cotton sowing was banned in the Punjab by implementing Section 144 and due to early stage of crop it is predicted that population of this pest may increase in the next week on cotton.

## Moth Catches in Pheromone Traps During 3<sup>rd</sup> Week of July, 2018

<b>Moth Catches in Pheromone Traps During 3<sup>rd</sup> Week of July, 2018</b>			
<b>District</b>	<b>Traps Installed</b>	<b>Moth catches/Trap/week</b>	<b>Av. Moth catches/Trap/night</b>
Multan	6	13	0.31
Khanewal	8	27	0.48
Vehari	6	22	0.52
Lodhran	6	15	0.36
Sahiwal	5	4	0.14
Pakpattan	4	4	0.14
Okara	4	4	0.14
Bahawalpur	8	30	0.54
Bahawalnagar	10	39	0.56
R.Y.Khan	8	15	0.27
D.G.Khan	4	4	0.14
M.Garh	8	0	0.00
Rajan Pur	6	6	0.14
Layyah	6	5	0.12
Sargodha	1	7	0.50
Mianwali	2	9	0.32
Bhakkar	4	44	0.79
Faisalabad	5	29	0.83
TT. Singh	6	13	0.31
Jhang	4	8	0.29
<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 flourish 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. 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 sustain on cotton crop.

## Moth catches on light traps during 4<sup>th</sup> week of July, 2018

Moth Catches on Light Traps/Trap/week During 4th Week of July, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	4.3	0.0	6.3
Khanewal	4	1.0	0.0	2.3
Vehari	3	0.0	0.0	1.0
Lodhran	3	1.3	0.7	2.0
Sahiwal	2	1.5	0.0	1.0
Pakpattan	2	0.0	0.0	3.0
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.8	0.5	1.3
Bahawalnagar	5	0.2	0.6	1.2
R.Y.Khan	4	2.0	1.5	4.3
D.G.Khan	2	0.0	0.0	0.5
M.Garh	4	3.3	1.3	2.5
Rajan Pur	3	0.0	0.0	1.0
Layyah	3	0.0	0.0	2.3
Note. 3 moth catches of a pest on 3 consecutive nights in a trap is considered as ETL				

**Spotted Bollworm:** This pest flourish 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. 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. As early cotton sowing was banned in the Punjab by implementing Section 144 and due to cultivation of more BT varieties, it is predicted that population of this pest may sustain 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 38.86 °C, Min. 29.09 °C with R. humidity 52.06%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.96°C with humidity 33.04%. Keeping in view above all, it is predicted that population of this pest will increase during the coming 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.

**Table 17 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.

**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**

<b>Crops</b>	<b>Vegetables</b>	<b>Ornamentals</b>	<b>Weeds</b>
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