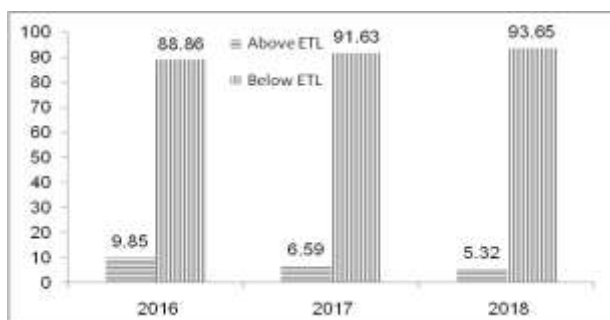


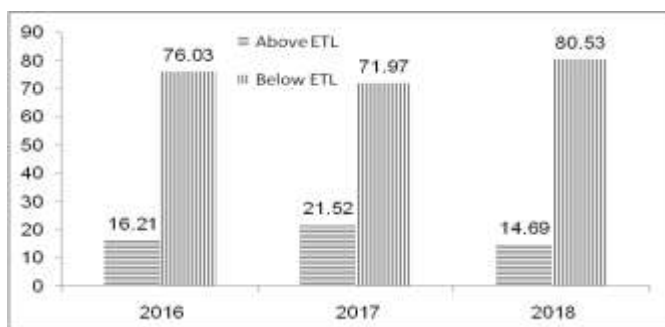
## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 2<sup>ND</sup> WEEK OF JULY, 2018

**Whitefly:** On overall Punjab basis 5.32% spots above ETL have been observed during current week as compared to 2.98% % in last week and 6.59% during the same corresponding period of last year & 93.65% spots below ETL have been observed during current week as compared to 88.51% in last week and 91.63% during the same corresponding period of last year.



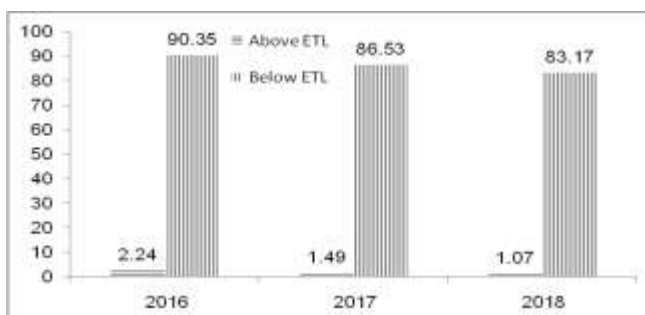
Sr.	TEHSIL	%AGE	AREA	S.NO.	TEHSIL	%AGE	AREA
1	FAISAL ABAD	30.0	4	25	RAJAN PUR	5.0	11
2	DEPALPUR	22.6	38	26	BHAKKAR	5.0	5
3	HASILPUR	16.3	44	27	KABIR WALA	4.5	14
4	MAILSI	12.0	59	28	KHAN PUR	4.3	11
5	DUYAPUR	11.5	92	29	LIAQUAT PUR	4.3	14
6	MULTAN	10.9	44	30	GOJRA	4.3	3
7	KOT ADDU	10.9	11	31	JATOI	4.0	4
8	JHANG	10.4	23	32	LODHRAN	3.8	31
9	LAYYAH	9.8	17	33	D.G.KHAN	3.8	20
10	KAROR L.E.	9.1	15	34	YAZMAN	3.5	28
11	CHICHA WATNI	8.3	22	35	SUMUNDRI, TANDLIANWALA	3.0	5
12	BAHAWAL NAGAR	8.0	24	36	JAHANIAN	2.5	7
13	CHOBARA	8.0	21	37	OKARA	2.5	5
14	SHORKOT	7.9	11	38	R.Y.KHAN	2.5	3
15	PAK PATTAN	7.5	50	39	TAUNSA	2.5	14
16	FORT ABBAS	7.5	20	40	MIANWALI	2.5	4
17	CHISHTIAN	7.5	44	41	PIPLAN	2.5	5
18	BAHAWAL PUR	7.1	41	42	KHANEWAL	2.2	4
19	JALAL PUR P.W	6.8	17	43	MUZUFAR GARH	2.2	2
20	KAMALIA	6.7	9	44	BURE WALA	2.2	3
21	VEHARI	6.0	10	45	KEHROR PACCA	2.0	4
22	SAHIWAL	5.5	45	46	ROJHAN	2.0	5
23	HAROON ABAD	5.0	3	47	SHUJABAD	2.0	2
24	MINCHAN ABAD	5.0	8	48	T.T.SINGH	1.6	3

**Jassid:** On overall Punjab basis 14.69% ABETL has been observed as compared to 12.42% in last week and same week of last year 21.52% & BETL 80.53% spots have been observed during current week as compared to 71.10% in last week and 71.97% during the same corresponding period of last year.



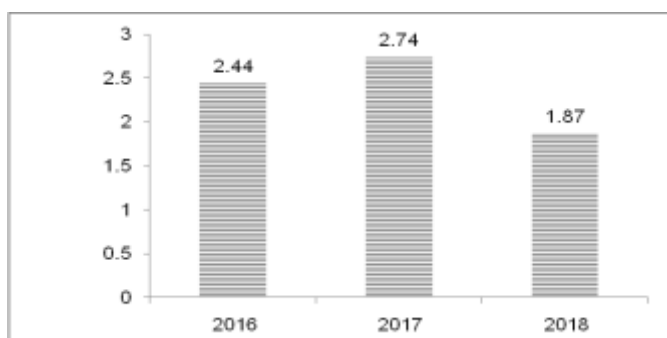
Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	OKARA	25.0	22	28	VEHARI	14.0	70
2	BHAKKAR	25.0	13	29	JATOI	14.0	52
3	DARYA KHAN	25.0	4	30	JALAL PUR P.W	13.6	28
4	SHORKOT	23.7	26	31	LIAQUAT PUR	13.0	30
5	MULTAN	23.4	94	32	GOJRA	13.0	12
6	CHICHA WATNI	23.3	42	33	JAHANIAN	12.5	60
7	BAHAWAL PUR	23.2	95	34	R.Y.KHAN	12.5	21
8	YAZMAN	22.8	101	35	CHOBARA	12.0	16
9	SAHIWAL	21.8	41	36	SUMUNDRI, TANDLIANWALA	11.9	41
10	KOT ADDU	21.7	42	37	A.P.EAST	11.4	15
11	HASILPUR	20.9	40	38	KABIR WALA	11.4	27
12	MAILSI	20.0	110	39	KAROR L.E.	11.4	15
13	KAMALIA	20.0	24	40	BURE WALA	10.9	36
14	FAISAL ABAD	20.0	6	41	KEHROR PACCA	10.0	54
15	SHUJABAD	19.6	41	42	BAHAWAL NAGAR	10.0	31
16	DEPALPUR	19.4	25	43	MINCHAN ABAD	10.0	15
17	DUYAPUR	19.2	123	44	CHISHTIAN	10.0	55
18	ALI PUR	19.2	47	45	JAM PUR	10.0	56
19	JHANG	18.8	50	46	MIANWALI	10.0	18
20	SADIQ ABAD	18.2	64	47	MANKERA	10.0	5
21	LODHRAN	17.9	95	48	TAUNSA	8.8	52
22	T.T.SINGH	17.7	40	49	KHAN PUR	8.7	15
23	MIAN CHANNU	16.0	95	50	LAYYAH	7.3	22
24	D.G.KHAN	15.1	25	51	KHANEWAL	6.7	33
25	PAK PATTAN	15.0	53	52	MUZUFAR GARH	6.7	8
26	RAJAN PUR	15.0	28	53	ROJHAN	6.0	16
27	PIPLAN	15.0	21	54	ARIF WALA	5.9	10

**Thrips:** On overall Punjab basis 1.07 AETL has been observed as compared to 0.71% in last week and same week of last year i.e. 1.49% & BETL 83.17% spots have been observed during current week as compared to 71.48% in last week and 86.53% during the same corresponding period of last year.



Sr,	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	VEHARI	8.0	29	11	MUZUFAR GARH	2.2	2
2	CHISHTIAN	5.0	7	12	BURE WALA	2.2	4
3	MIANWALI	5.0	6	13	ROJHAN	2.0	6
4	MAILSI	4.0	25	14	ALI PUR	1.9	1
5	KEHROR PACCA	3.0	34	15	LODHRAN	1.9	12
6	HAROON ABAD	2.5	2	16	D.G.KHAN	1.9	5
7	RAJAN PUR	2.5	2	17	SAHIWAL	1.8	1
8	PIPLAN	2.5	5	18	DUYAPUR	1.3	4
9	HASILPUR	2.3	4	19	TAUNSA	1.3	5
10	KABIR WALA	2.3	5				

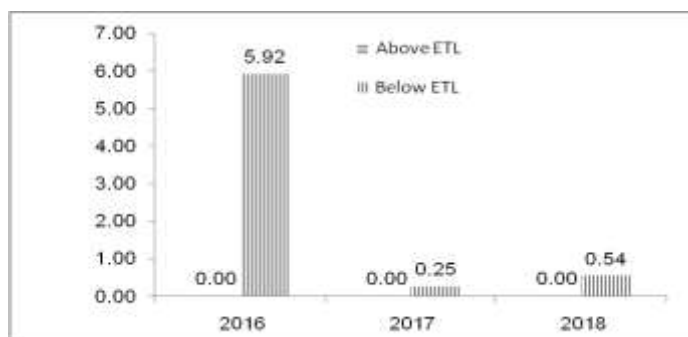
**Mealy Bug:** On overall Punjab basis 1.87% spots of Mealy Bug have been observed as compared to 0.84% in last week and 2.74% spots during the same corresponding period of the last year.



Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	KHAN PUR	10.9	35	14	MUZUFAR GARH	2.2	2
2	HASILPUR	9.3	34	15	BURE WALA	2.2	3
3	R.Y.KHAN	7.5	26	16	KOT ADDU	2.2	1
4	LODHRAN	5.7	55	17	GOJRA	2.2	3
5	YAZMAN	5.3	32	18	VEHARI	2.0	10
6	HAROON ABAD	5.0	4	19	MAILSI	2.0	4
7	MULTAN	4.7	11	20	BAHAWAL NAGAR	2.0	10

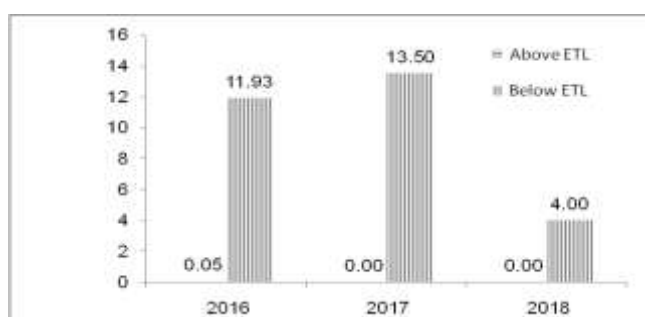
<b>8</b>	SADIQ ABAD	4.5	15	<b>21</b>	JAM PUR	2.0	<b>3</b>
<b>9</b>	DUYAPUR	3.8	26	<b>22</b>	ROJHAN	2.0	<b>1</b>
<b>10</b>	BAHAWAL PUR	3.6	11	<b>23</b>	SHUJABAD	2.0	<b>50</b>
<b>11</b>	CHISHTIAN	2.5	25	<b>24</b>	SAHIWAL	1.8	<b>1</b>
<b>12</b>	RAJAN PUR	2.5	1	<b>25</b>	T.T.SINGH	1.6	<b>2</b>
<b>13</b>	LAYYAH	2.4	5	<b>26</b>	KEHROR PACCA	1.0	<b>4</b>

**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 & 0.54% spots below ETL have been observed during current week as compared to 0.04% in last week and 0.25% during the same corresponding period of last year. The decrease in its population is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers for seed treatment.

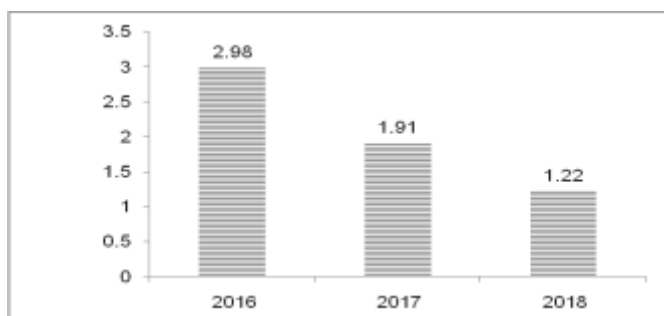


**Aphid:** On overall Punjab basis 0.0% spots below ETL have been observed during current week as compared to 0.0% in last week and 0.00% during the same corresponding period of last year. As this pest flourish best on the early cotton in comparatively cooler months of March and April so the decrease in its population is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers for seed treatment.

**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 0.00% during the same corresponding period of last year & 4.0% spots below ETL have been observed during current week as compared to 2.6% in last week and 13.5% during the same corresponding period of last year. The decrease in its population as compared to the same corresponding period of last year is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers for seed treatment.



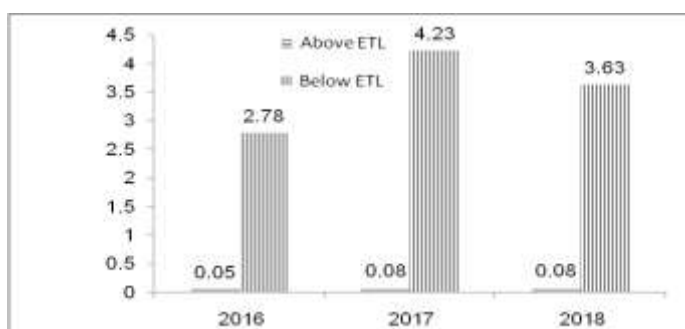
**Armyworm:** On overall Punjab basis 1.22% spots of Armyworm have been observed as compared to 1.09% in last week and 1.91% spots during the same corresponding period of the last year. The decrease in its population as compared to the same corresponding period of last year is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers.



**Its infestation above ETL has been witnessed Tehsil wise as under:-**

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	SADIQ ABAD	13.6	49	9	GOJRA	2.2	1
2	R.Y.KHAN	12.5	23	10	VEHARI	2.0	2
3	LIAQUAT PUR	8.7	37	11	JATOI	2.0	10
4	MIAN CHANNU	8.0	19	12	JAM PUR	2.0	10
5	KHAN PUR	4.3	49	13	BAHAWAL PUR	1.8	10
6	CHISHTIAN	2.5	25	14	T.T.SINGH	1.6	3
7	RAJAN PUR	2.5	5	15	MULTAN	1.6	2
8	KOT ADDU	2.2	1	16	SUMUNDRI, TANDLIANWALA	1.5	7

**Pink Boll Worm:** On overall Punjab basis 0.08% spots of PBW Above ETL have been observed as compared to 0.03% in last week and 0.08% same corresponding period of the last year & 3.63% spots of PBW below ETL have been observed as compared to 2.64% in last week and 4.23% 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.



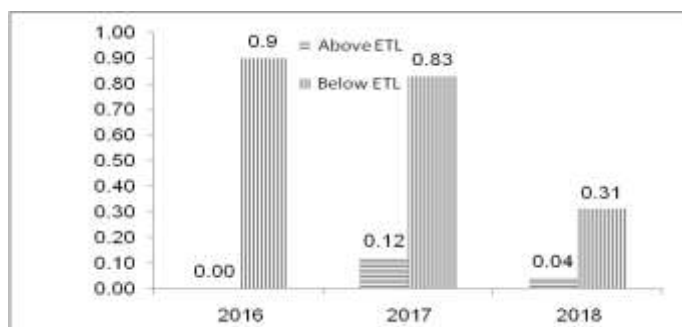
**Its infestation below ETL has been witnessed Tehsil wise as under**

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	SHUJABAD	2.0	3	2	DUYAPUR	1.3	3

**Its infestation below ETL has been witnessed Tehsil wise as under**

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	BAHAWAL PUR	21.4		17	KHANEWAL	4.4	
2	FORT ABBAS	12.5		18	GOJRA	4.3	
3	BURE WALA	10.9		19	KEHROR PACCA	4.0	
4	SHORKOT	10.5		20	JATOI	4.0	
5	DUYAPUR	10.3		21	SHUJABAD	3.9	
6	CHISHTIAN	10.0		22	LODHRAN	3.8	
7	MIANWALI	10.0		23	KAMALIA	3.3	
8	PIPLAN	10.0		24	JAHANIAN	2.5	
9	MIAN CHANNU	8.0		25	HAROON ABAD	2.5	
10	BAHAWAL NAGAR	8.0		26	KABIR WALA	2.3	
11	R.Y.KHAN	7.5		27	LIAQUAT PUR	2.2	
12	KOT ADDU	6.5		28	VEHARI	2.0	
13	T.T.SINGH	6.5		29	MAILSI	2.0	
14	JHANG	6.3		30	ALI PUR	1.9	
15	MINCHAN ABAD	5.0		31	MULTAN	1.6	
16	MANKERA	5.0					

**American Bollworm:** On overall Punjab basis 0.04% spots of ABW above ETL have been observed as compared to 0.04% in last week and 0.12% during same corresponding period of last year & 0.31% spots of ABW below ETL have been observed as compared to 0.13% in last week and



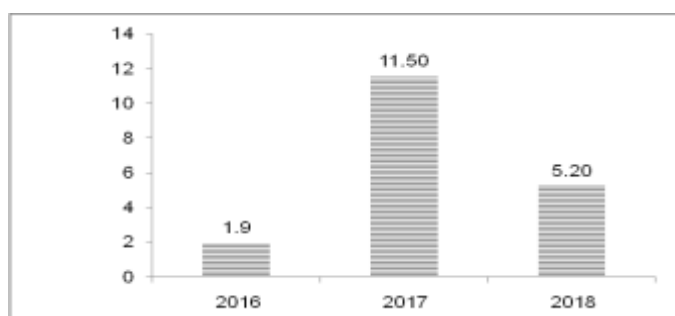
0.83% during same corresponding period of last year. The decrease in its population as compared to same period of last year is mainly due to sowing of Bt cultivars and due to ban on early sown of cotton by implementing Sec. 144.

**Its infestation below ETL has been witnessed Tehsil wise as under**

Sr,	TEHSIL	%AGE	AREA
1	KHAN PUR	2.2	12

**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 0.00% during same corresponding period of last year & 0.08% spots of SBW below ETL have been observed as compared to 0.00% in last week and 0.29% during same corresponding period of last year. The decrease in its population below ETL as compared to same period of last year is mainly due to sowing of Bt cultivars and ban on early sown of cotton by implementing Sec. 144.

**CLCUV:** On overall Punjab basis 5.2% spots of CLCV have been observed as compared to 2.2% in last week and 11.5% 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.

**Its infestation above ETL has been witnessed Tehsil wise as under:-**

Sr,	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	KHANEWAL	37.8	198	16	JHANG	6.3	13
2	KABIR WALA	29.5	49	17	DUYAPUR	5.1	51
3	BAHAWAL PUR	19.6	77	18	HASILPUR	4.7	9
4	MIAN CHANNU	16.0	69	19	SADIQ ABAD	4.5	25
5	BURE WALA	15.2	28	20	LIAQUAT PUR	4.3	19
6	R.Y.KHAN	15.0	22	21	GOJRA	4.3	4
7	SHORKOT	13.2	12	22	VEHARI	4.0	4
8	KEHROR PACCA	12.0	64	23	SHUJABAD	3.9	4
9	ALI PUR	9.6	8	24	SAHIWAL	3.6	2
10	MAILSI	8.0	51	25	KAMALIA	3.3	5
11	MULTAN	7.8	21	26	T.T.SINGH	3.2	4
12	JAHANIAN	7.5	24	27	A.P.EAST	2.9	10
13	CHICHA WATNI	6.7	17	28	MUZUFAR GARH	2.2	4
14	LODHRAN	6.6	30	29	SUMUNDRI, TANDLIANWALA	1.5	3
15	KHAN PUR	6.5	13				

**METEOROLOGICAL DATA OF THE CURRENT WEEK 2017-2018**

Districts	2018				2017			
	Temperature		R.H%	Rainfall (mm)	Temperature		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	37.29	30.14	68.71	0.00	37.57	29.71	79.07	12.50
Khanewal	41.13	30.41	46.43	0.00	40.11	29.86	74.86	5.00
Vehari	40.88	31.13	38.63	0.00	39.00	28.00	51.07	1.00
Lodhran	41.00	25.57	38.79	0.00	38.71	27.86	53.29	6.00
Sahiwal	39.50	30.00	61.50	0.00	37.10	25.70	65.60	0.00
Pakpattan	39.38	29.88	60.50	0.00	39.88	29.75	56.75	0.00
Okara	40.20	30.20	82.00	0.00	39.70	27.40	78.00	23.00
Bahawalpur	40.33	26.64	51.63	0.00	45.34	29.34	56.44	Drizzling
Bahawalnagar	43.17	29.83	52.58	0.00	40.75	27.50	52.33	3.33
R.Y.Khan	38.29	26.00	0.00	0.00	41.23	27.97	58.36	0.00
D.G.Khan	43.29	31.29	48.50	0.00	40.14	29.71	54.21	16.00
M.Garh	38.30	27.30	56.30	0.00	38.07	29.84	57.14	10.00
Rajanpur	39.10	27.80	44.90	0.00	39.32	28.86	58.50	10.00
Layyah	45.40	33.40	34/2	0.00	42.00	30.20	40.60	0.00
<b>AVERAGE</b>	<b>40.52</b>	<b>29.26</b>	<b>50.04</b>	<b>0.00</b>	<b>39.92</b>	<b>28.69</b>	<b>59.73</b>	<b>86.83</b>

**WEATHER FORECAST FOR NEXT 7 DAY IN COTTON ZONE**

Division	Dated	16/7	17/7	18/7	19/7	20/7	21/7	22/7
Multan	Max.Temp.	41	41	40	39	39	42	38
	Min.Temp.	33	33	33	32	31	32	29
	Humidity %	38	37	42	45	43	36	25
Sahiwal	Max.Temp.	38	39	38	38	38	40	35
	Min.Temp.	31	32	32	30	32	31	30
	Humidity %	48	48	54	47	46	39	26
Bahawalpur	Max.Temp.	40	41	41	39	40	40	37
	Min.Temp.	32	34	34	32	31	31	29
	Humidity %	39	39	41	43	41	37	27
D.G. Khan	Max.Temp.	41	43	42	40	40	42	38
	Min.Temp.	32	34	35	33	32	31	29
	Humidity %	38	33	36	42	41	36	27
Average Cotton Region	Max.Temp.	39.64						
	Min.Temp.	31.79						
	Humidity %	39.07						



There is forecast of mostly sunny 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 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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. 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 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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. 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 35-50 °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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07% 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 35-50 °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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. 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. 40.52 °C, Min.

29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. Keeping in view above all, it is predicted that population of this pest may increase during the coming week.

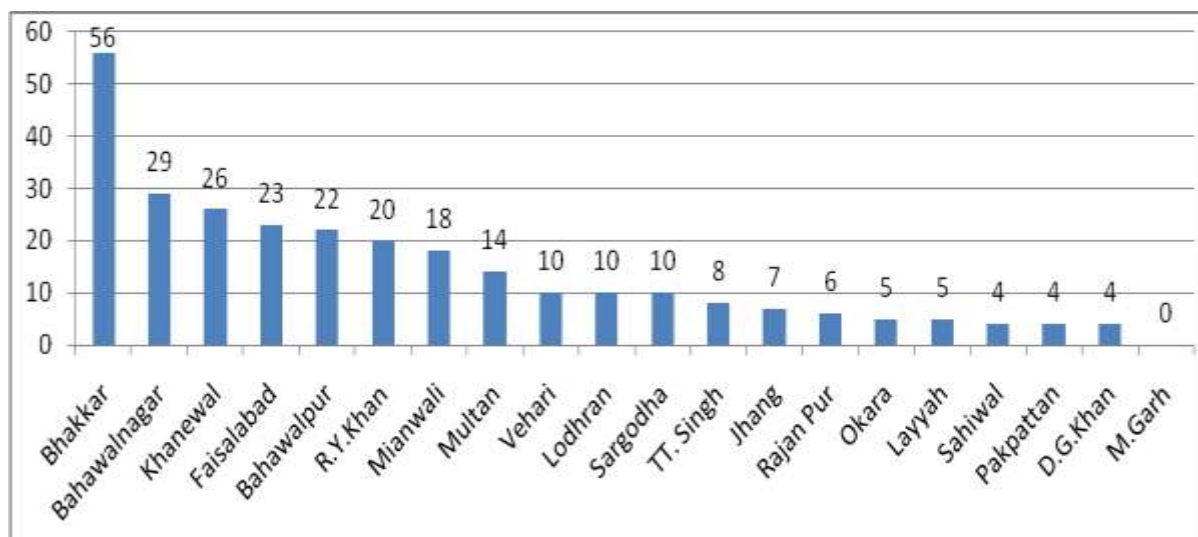
**Aphid:** This pest flourish best moderate climate with optimum temperature 15-33°C with relative humidity above 50-80%. Maximum lethal temperature for this pest is 45-51 °C. The current weather conditions on overall Punjab basis (temp. Max. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. Keeping in view above all, it is predicted that attack of this pest is expected to 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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. Keeping in view above all, it is predicted that population of this pest may 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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. Refer to expected climatic conditions and stage of the crop it is predicted that population of this pest may increase in the next week on cotton.

Moth Catches in Pheromone Traps During 2 <sup>nd</sup> Week of July, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	<b>14</b>	<b>0.33</b>
Khanewal	8	<b>26</b>	<b>0.46</b>
Vehari	6	<b>10</b>	<b>0.24</b>
Lodhran	6	<b>10</b>	<b>0.24</b>
Sahiwal	5	<b>4</b>	<b>0.14</b>
Pakpattan	4	<b>4</b>	<b>0.14</b>
Okara	4	<b>5</b>	<b>0.18</b>
Bahawalpur	8	<b>22</b>	<b>0.39</b>
Bahawalnagar	10	<b>29</b>	<b>0.41</b>
R.Y.Khan	8	<b>20</b>	<b>0.36</b>
D.G.Khan	4	<b>4</b>	<b>0.14</b>
M.Garh	8	<b>0</b>	<b>0.00</b>
Rajan Pur	6	<b>6</b>	<b>0.14</b>
Layyah	6	<b>5</b>	<b>0.12</b>
Sargodha	1	<b>10</b>	<b>0.71</b>
Mianwali	2	<b>18</b>	<b>0.64</b>
Bhakkar	4	<b>56</b>	<b>1.00</b>
Faisalabad	5	<b>23</b>	<b>0.66</b>
TT. Singh	6	<b>8</b>	<b>0.19</b>
Jhang	4	<b>7</b>	<b>0.25</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 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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. 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 may sustain on cotton crop.

Moth Catches on Light Traps/Trap/week During 2nd Week of July, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	3.7	0.0	4.3
Khanewal	4	1.3	0.0	2.3
Vehari	3	0.0	0.0	0.0
Lodhran	3	0.0	0.0	1.0
Sahiwal	2	1.5	0.0	1.5
Pakpattan	2	0.0	0.0	1.0
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.5	0.0	0.8
Bahawalnagar	5	0.0	0.2	0.4
R.Y.Khan	4	2.3	1.8	3.8
D.G.Khan	2	0.0	0.0	0.0
M.Garh	4	2.3	2.0	2.5
Rajan Pur	3	0.0	0.0	0.0
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. 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. 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 at low position 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 40.52 °C, Min. 29.26 °C with R. humidity 50.04%) & forecast for the next week temp. Max. 39.64 °C, Min. 31.79°C with humidity 39.07%. Keeping in view above all, it is predicted that population of this pest may 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.

### 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 ARMYWORM**

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 CLCV**

Crops	Vegetables	Ornamentals	Weeds
Sunflower	Okra	Gurhal	Leh
Melon	Brinjal	Chambeli	Lehli
Tobacco	Chillies		Mako
	Tomato		Maina
	Potato		Karund/Bathu
	Cucumber		Gardenia
			Hazardani
			Rattan jot
			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
Cotton mealybug	On appearance
Mites	On damage appearance
Spotted Bollworm	3 Larvae/ 25 plants.
Pink Bollworm	5 Larvae /100 bolls.
<i>Helicoverpa</i>	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.
Armyworm	On appearance
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud