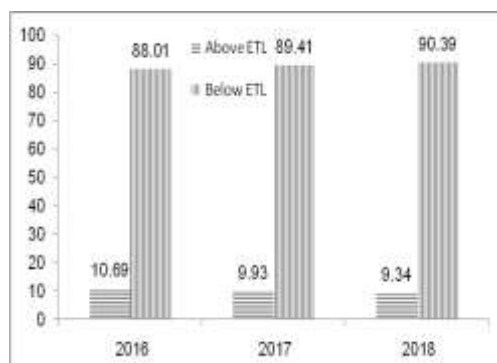


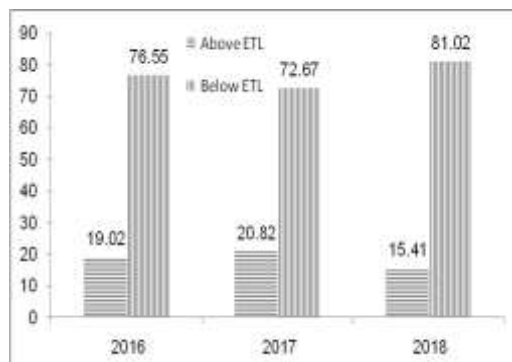
## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3<sup>RD</sup> WEEK OF JULY, 2018

**Whitefly:** On overall Punjab basis 9.34% spots above ETL have been observed during current week as compared to 5.32% % in last week and 9.53% during the same corresponding period of last year & 90.39% spots below ETL have been observed during current week as compared to 93.65% in last week and 89.41% during the same corresponding period of last year.



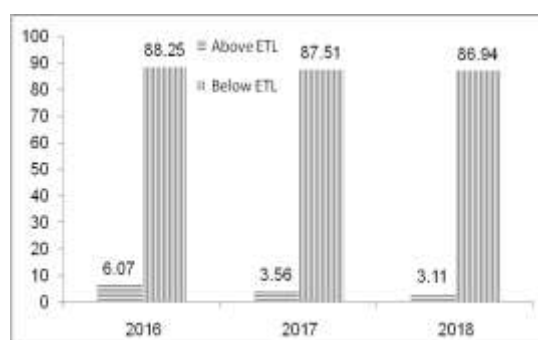
Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	8.5	34	28	LIAQUAT PUR	6.8	9
2	SHUJABAD	3.9	12	29	SADIQ ABAD	7.5	38
3	JALAL PUR P.W	8.5	20	30	D.G.KHAN	10.0	39
4	KHANEWAL	2.5	2	31	TAUNSA	5.0	64
5	JAHANIAN	2.5	8	32	MUZUFAR GARH	2.2	1
6	KABIR WALA	4.4	9	33	KOT ADDU	9.1	24
7	MIAN CHANNU	4.0	31	34	ALI PUR	6.0	9
8	VEHARI	4.0	5	35	JATOI	12.0	24
9	MAILSI	8.0	47	36	LAYYAH	11.1	15
10	BURE WALA	8.0	9	37	CHOBARA	12.0	21
11	LODHRAN	12.3	38	38	KAROR L.E.	11.5	24
12	DUYAPUR	11.7	94	39	RAJAN PUR	8.0	12
13	KEHROR PACCA	16.7	54	40	JAM PUR	2.5	8
14	SAHIWAL	7.8	20	41	ROJHAN	6.0	17
15	CHICHA WATNI	5.6	23	42	JHANG	12.8	22
16	PAK PATTAN	9.4	24	43	SHORKOT	22.2	36
17	ARIF WALA	8.7	22	44	T.T.SINGH	5.2	7
18	OKARA	5.1	4	45	GOJRA	6.8	11
19	DEPALPUR	29.0	55	46	KAMALIA	9.1	11
20	BAHAWAL PUR	24.0	102	47	SUMUNDRI, TANDLIANWALA	5.4	19
21	A.P.EAST	9.8	45	48	MIANWALI	7.5	14
22	YAZMAN	17.6	133	49	PIPLAN	5.0	8
23	HASILPUR	23.8	71	50	BHAKKAR	10.3	9
24	BAHAWAL NAGAR	17.1	85	51	MANKERA	10.0	3
25	HAROON ABAD	10.0	14	52	CHISHTIAN	18.0	79
26	FORT ABBAS	7.5	16	53	R.Y.KHAN	4.1	18
27	MINCHAN ABAD	15.4	41	54	KHAN PUR	10.6	38

**Jassid:** On overall Punjab basis 15.41% ABETL has been observed as compared to 14.69% in last week and same week of last year 20.82% & BETL 81.02% spots have been observed during current week as compared to 80.53% in last week and 72.67% during the same corresponding period of last year.



Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	20.3	75	29	LIAQUAT PUR	20.5	60
2	SHUJABAD	21.6	72	30	SADIQ ABAD	27.5	144
3	JALAL PUR P.W	14.9	35	31	D.G.KHAN	21.3	120
4	KHANEWAL	20.0	95	32	TAUNSA	8.8	74
5	JAHANIAN	5.0	0	33	MUZUFAR GARH	15.6	22
6	KABIR WALA	8.9	16	34	KOT ADDU	18.2	36
7	MIAN CHANNU	8.0	54	35	ALI PUR	8.0	9
8	VEHARI	14.0	36	36	JATOI	14.0	43
9	MAILSI	8.0	38	37	LAYYAH	8.9	13
10	BURE WALA	14.0	20	38	CHOBARA	14.0	15
11	LODHRAN	15.4	51	39	KAROR L.E.	7.7	19
12	DUYAPUR	13.3	71	40	RAJAN PUR	8.0	36
13	KEHROR PACCA	15.0	53	41	JAM PUR	10.0	20
14	SAHIWAL	13.0	29	42	ROJHAN	12.0	33
15	CHICHA WATNI	23.6	78	43	JHANG	19.1	37
16	PAK PATTAN	18.8	63	44	SHORKOT	16.7	17
17	ARIF WALA	13.0	26	45	T.T.SINGH	13.8	18
18	OKARA	20.5	13	46	GOJRA	10.2	11
19	DEPALPUR	29.0	44	47	KAMALIA	15.2	9
20	BAHAWAL PUR	22.0	72	48	SUMUNDRI, TANDLIANWALA	9.7	22
21	A.P.EAST	36.6	139	49	SARGODHA	16.7	4
22	YAZMAN	35.3	231	50	MIANWALI	12.5	20
23	HASILPUR	33.3	60	51	PIPLAN	17.5	31
24	BAHAWAL NAGAR	17.1	94	52	BHAKKAR	17.9	13
25	HAROON ABAD	5.0	6	53	MANKERA	10.0	5
26	FORT ABBAS	2.5	4	54	R.Y.KHAN	18.4	63
27	MINCHAN ABAD	10.3	17	55	KHAN PUR	14.9	15
28	CHISHTIAN	16.0	73				

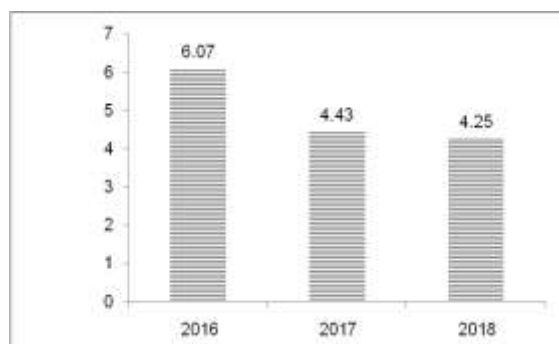
**Thrips:** On overall Punjab basis 3.11% AETL has been observed as compared to 0.71% in last week and same week of last year i.e. 3.56% & BETL 86.94% spots have been observed during current week as compared to 71.48% in last week and



87.51% during the same corresponding period of last year.

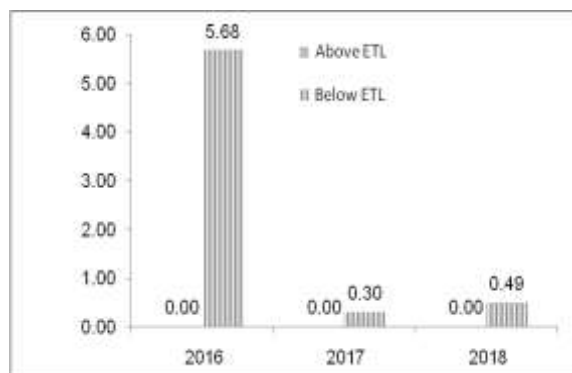
Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	3.4	11.0	17	LODHRAN	1.5	5.0
2	JALAL PUR P.W	6.4	16.0	18	DUYAPUR	5.0	28.0
3	KHANEWAL	2.5	20.0	19	KEHROR PACCA	5.0	31.0
4	JAHANIAN	7.5	0.0	20	SAHIWAL	5.2	15.0
5	KABIR WALA	4.4	8.0	21	CHICHA WATNI	4.2	16.0
6	MIAN CHANNU	6.0	62.0	22	YAZMAN	2.0	15.0
7	VEHARI	14.0	55.0	23	HASILPUR	4.8	14.0
8	MAILSI	4.0	25.0	24	BAHAWAL NAGAR	2.4	15.0
9	BURE WALA	2.0	2.0	25	CHISHTIAN	8.0	28.0
10	D.G.KHAN	7.5	30.0	26	RAJAN PUR	12.0	21.0
11	TAUNSA	2.5	10.0	27	JAM PUR	7.5	21.0
12	MUZUFAR GARH	4.4	8.0	28	ROJHAN	8.0	26.0
13	KOT ADDU	2.3	3.0	29	KAMALIA	3.0	4.0
14	ALI PUR	8.0	22.0	30	MIANWALI	7.5	11.0
15	MANKERA	5.0	3.0	31	PIPLAN	5.0	8.0
16	BHAKKAR	2.6	3.0				

**Mealy Bug:** On overall Punjab basis 4.25% spots of Mealy Bug have been observed as compared to 1.87% in last week and 4.43% spots during the same corresponding period of the last year.



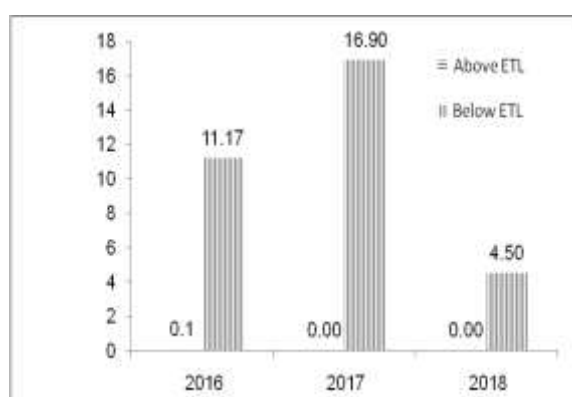
Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	15.3	42.0	16	KHANEWAL	7.5	57.0
2	SHUJABAD	2.0	7.0	17	JAHANIAN	2.5	5.0
3	MIAN CHANNU	2.0	9.0	18	DUYAPUR	10.0	54.0
4	VEHARI	2.0	8.0	19	KEHROR PACCA	1.7	5.0
5	MAILSI	2.0	3.0	20	SAHIWAL	3.9	19.0
6	BURE WALA	4.0	5.0	21	CHICHA WATNI	1.4	4.0
7	LODHRAN	1.5	2.0	22	BAHAWAL PUR	62.0	0.0
8	YAZMAN	23.5	148	23	HAROON ABAD	2.5	3
9	HASILPUR	7.1	28	24	FORT ABBAS	2.5	10
10	CHISHTIAN	16.0	74	25	ALI PUR	2.0	3
11	R.Y.KHAN	12.2	61	26	LAYYAH	2.2	2
12	KHAN PUR	12.8	43	27	T.T.SINGH	3.4	7
13	LIAQUAT PUR	2.3	2	28	KAMALIA	3.0	4
14	SADIQ ABAD	10.0	67	29	SUMUNDRI, TANDLIANWALA	1.1	7
15	MIANWALI	2.5	5	30	BHAKKAR	2.6	2

**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 & 0.49% spots below ETL have been observed during current week as compared to 0.54% in last week and 0.30% during the same corresponding period of last year.



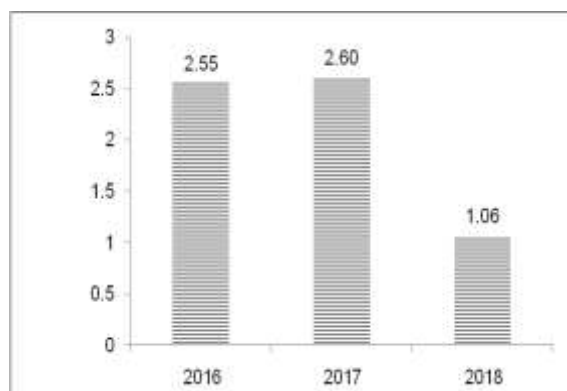
The decrease in its population is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers for seed treatment.

**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 & 4.5% spots below ETL have been observed during current week as compared to 4.0% in last week and 16.9% 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.

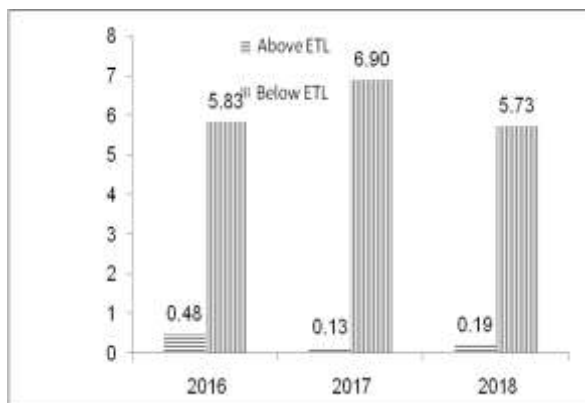
**Armyworm:** On overall Punjab basis 1.06% spots of Armyworm have been observed as compared to 1.22% in last week and 2.60% spots during the same corresponding period of the last year. The decrease in its population as compared to the same corresponding period of last year is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers.



Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	3.4	7	9	BAHAWAL PUR	2.0	3
2	SHUJABAD	2.0	2	10	A.P.EAST	7.3	28

3	JALAL PUR P.W	2.1	3	11	YAZMAN	2.0	5
4	BURE WALA	2.0	25	12	CHISHTIAN	2.0	25
5	ALI PUR	2.0	3	13	R.Y.KHAN	10.2	49
6	RAJAN PUR	2.0	0	14	KHAN PUR	4.3	15
7	T.T.SINGH	3.4	9	15	LIAQUAT PUR	4.5	19
8	SUMUNDRI, TANDLIANWALA	1.1	2	16	SADIQ ABAD	7.5	41

**Pink Boll Worm:** On overall Punjab basis 0.19% spots of PBW Above ETL have been observed as compared to 0.08% in last week and 0.13% same corresponding period of the last year & 5.73% spots of PBW below ETL have been observed as compared to 3.63% in last week and 6.90% 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



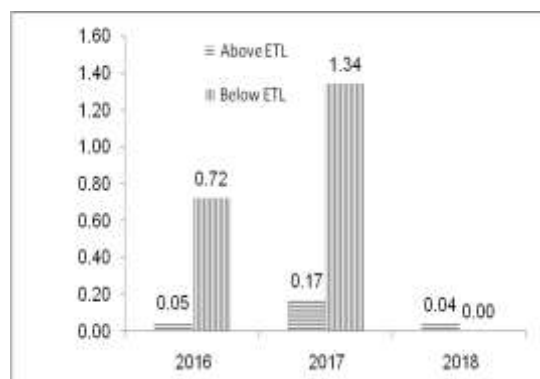
turning heaps of cotton sticks, collection & disposal of PBW effected bolls, disposal of cotton ginning wastes in ginning factories, oil mills, brick/ kilns etc. **Tehsil wise percentage of hot spots of pink boll worm**

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	1.7	8	3	YAZMAN	2.0	13
2	HASILPUR	2.4	1	4	RAJAN PUR	4.0	10

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

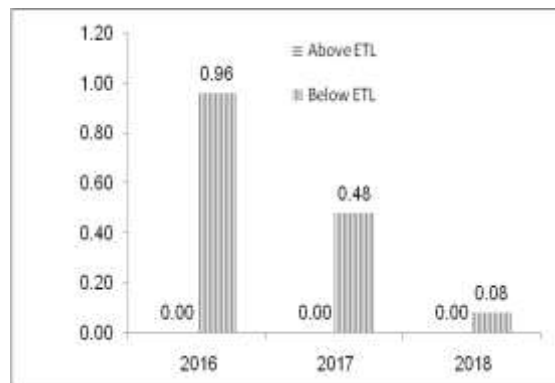
Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	BAHAWAL PUR	32.0		20	ALI PUR	6.0	
2	SHORKOT	22.2		21	JATOI	6.0	
3	HASILPUR	21.4		22	SHUJABAD	5.9	
4	FORT ABBAS	20.0		23	BHAKKAR	5.1	
5	MIANWALI	20.0		24	MULTAN	5.1	
6	PIPLAN	20.0		25	SADIQ ABAD	5.0	
7	YAZMAN	19.6		26	LIAQUAT PUR	4.5	
8	BURE WALA	14.0		27	OKARA	2.6	
9	KEHROR PACCA	13.3		28	KHANEWAL	2.5	
10	JHANG	12.8		29	D.G.KHAN	2.5	
11	KAMALIA	9.1		30	KOT ADDU	2.3	
12	MUZUFAR GARH	8.9		31	KABIR WALA	2.2	
13	T.T.SINGH	8.6		32	KHAN PUR	2.1	
14	MIAN CHANNU	8.0		33	VEHARI	2.0	
15	LODHRAN	7.7		34	MAILSI	2.0	
16	DUYAPUR	6.7		35	GOJRA	1.7	
17	JALAL PUR P.W	6.4		36	CHICHA WATNI	1.4	
18	PAK PATTAN	6.3		37	SUMUNDRI, TANDLIANWALA	1.1	
19	R.Y.KHAN	6.1					

**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 0.17% during same corresponding period of last year & 0.00% spots of ABW below ETL have been observed as compared to 0.31% in last week and 1.34% 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.



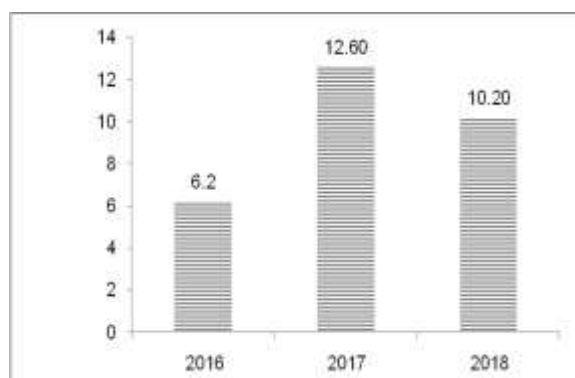
Sr.	TEHSIL	%AGE	AREA
1	YAZMAN	2.0	6.0

**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 0.08% in last week and 0.48% 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 10.2% spots of CLCV have been observed as compared to 5.2% in last week and 12.6% 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.



Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	15.3	47	22	BAHAWAL PUR	26.0	103
2	SHUJABAD	3.9	19	23	A.P.EAST	12.2	47
3	KHANEWAL	22.5	91	24	YAZMAN	13.7	75
4	JAHANIAN	15.0	139	25	HASILPUR	21.4	42
5	KABIR WALA	31.1	63	26	FORT ABBAS	2.5	12
6	MIAN CHANNU	8.0	43	27	CHISHTIAN	4.0	19
7	VEHARI	38.0	131	28	R.Y.KHAN	12.2	16
8	MAILSI	32.0	128	29	KHAN PUR	10.6	12
9	BURE WALA	30.0	81	30	LIAQUAT PUR	4.5	4
10	LODHRAN	40.0	127	31	SADIQ ABAD	5.0	20
11	DUYAPUR	16.7	95	32	D.G.KHAN	5.0	13
12	KEHROR PACCA	16.7	71	33	TAUNSA	1.3	2
13	SAHIWAL	7.8	23	34	MUZUFAR GARH	4.4	10
14	CHICHA WATNI	18.1	67	35	ALI PUR	6.0	9
15	PAK PATTAN	3.1	10	36	JATOI	4.0	16
16	ARIF WALA	4.3	20	37	RAJAN PUR	6.0	10
17	ROJHAN	2.0	3	38	T.T.SINGH	8.6	15
18	JHANG	8.5	11	39	GOJRA	10.2	10
19	SHORKOT	13.9	23	40	KAMALIA	27.3	52

20	MIANWALI	10.0	16	41	SUMUNDRI, TANDLIANWALA	2.2	38
21	PIPLAN	7.5	11	42	SARGODHA	16.7	2

### 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	37.75	30.13	69.06	5.00	36.88	29.25	39.25	3.00
Khanewal	39.99	31.09	45.29	0.00	38.79	29.86	72.43	8.00
Vehari	37.00	30.00	47.71	40.00	39.00	28.00	52.00	18.00
Lodhran	39.43	27.43	35.79	0.00	38.71	27.14	60.57	8.00
Sahiwal	38.40	28.10	68.50	0.00	37.53	27.18	68.18	41.00
Pakpattan	39.57	29.14	59.14	30.00	39.86	29.86	56.57	0.00
Okara	37.90	28.50	80.00	0.00	37.90	27.90	82.00	0.00
Bahawalpur	39.64	30.34	56.00	0.00	39.00	27.84	64.29	35.00
Bahawalnagar	40.64	27.86	12.00	0.43	39.29	26.14	61.79	0.00
R.Y.Khan	40.75	30.12	0.00	0.00	39.33	28.05	68.56	40.00
D.G.Khan	40.14	29.86	54.14	10.00	40.00	29.86	53.85	0.00
M.Garh	35.93	28.71	50.61	3.00	36.60	29.00	73.20	3.00
Rajanpur	39.40	27.90	46.50	8.00	38.48	28.10	70.10	15.00
Layyah	39.20	32.60	40.00	0.00	36.00	26.40	43.20	12.00
AVERAGE	38.98	29.41	47.48	96.43	38.38	28.18	61.86	183.00



### Weather forecast for next 7 day in cotton zone

Division	Dated	21/7	22/7	23/7	24/7	25/7	26/7	27/7
Multan	Max.Temp.	42	43	42	43	42	41	37
	Min.Temp.	33	32	33	33	32	30	29
	Humidity %	37	31	34	34	34	37	27
Sahiwal	Max.Temp.	38	41	40	39	40	39	34
	Min.Temp.	30	32	32	31	32	30	28
	Humidity %	45	36	43	43	40	40	33
Bahawalpur	Max.Temp.	41	41	41	41	40	39	36
	Min.Temp.	32	30	31	32	31	29	28
	Humidity %	38	36	37	38	37	40	30
D.G. Khan	Max.Temp.	43	43	43	44	43	42	36
	Min.Temp.	34	33	33	34	33	30	27
	Humidity %	32	31	30	30	32	36	28
Average	Max.Temp.	<b>40.50</b>						
Cotton	Min.Temp.	<b>31.21</b>						
Region	Humidity %	<b>35.32</b>						

### 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 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32% 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. Keeping in view above all, it is predicted that population of this pest may sustain 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. As early

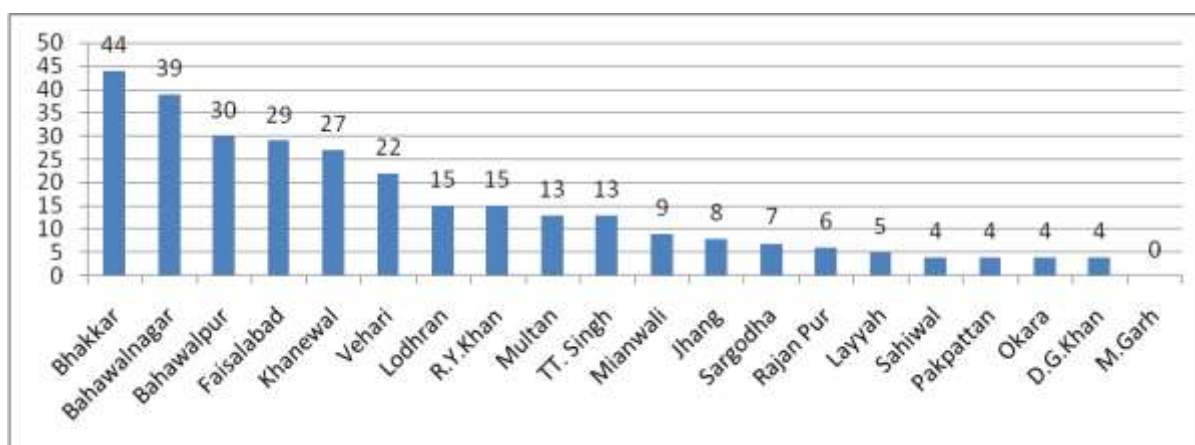
cotton sowing was banned in the Punjab by implementing Section 144 and due to early stage of crop it is predicted that population of this pest may increase in the next week on cotton.

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

Moth Catches in Pheromone Traps During 3 <sup>rd</sup> Week of July, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
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

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

### 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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 3rd week of July, 2018

Moth Catches on Light Traps/Trap/week During 3rd Week of July, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	2.7	0.0	5.0
Khanewal	4	0.5	0.0	2.3
Vehari	3	0.0	0.0	0.0
Lodhran	3	0.3	0.0	0.7
Sahiwal	2	0.5	0.0	1.5
Pakpattan	2	0.0	0.0	1.5
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.8	0.5	1.3
Bahawalnagar	5	0.8	0.8	1.4
R.Y.Khan	4	2.0	1.5	4.3
D.G.Khan	2	0.0	0.0	0.5
M.Garh	4	2.0	1.5	3.0
Rajan Pur	3	0.0	0.0	0.0
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 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. 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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 38.98 °C, Min. 29.41 °C with R. humidity 47.48%) & forecast for the next week temp. Max. 40.50 °C, Min. 31.21°C with humidity 35.32%. 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.

## 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 watter 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
			Rattan jot
			Sun Kukra

**Table 20 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