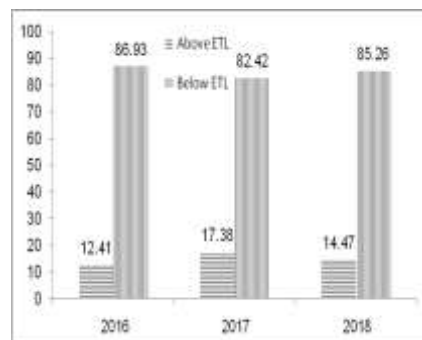


## **PEST SITUATION ON COTTON CROP IN PUNJAB** **DURING 1<sup>ST</sup> WEEK OF AUGUST, 2018**

### **Whitefly:**

On overall Punjab basis 14.47% spots above ETL have been observed during current week as compared to 11.73% % in last week and 17.38% during the same corresponding period of last year & 85.26% spots below ETL have been observed during current week as compared to 88.19% in last week and 82.42% during the same corresponding period of last year.

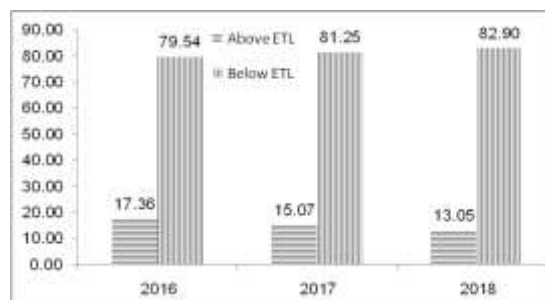


### **Tehsil wise percentage of hot spots of whitefly**

Sr.	TEHSIL	%AGE	AREA	S.NO.	TEHSIL	%AGE	AREA
1	MULTAN	15.7	52	28	CHISHTIAN	22.0	95
2	SHUJABAD	14.9	63	29	R.Y.KHAN	6.0	14
3	JALAL PUR P.W	7.0	17	30	KHAN PUR	10.6	52
4	KHANEWAL	5.0	10	31	LIAQUAT PUR	8.0	28
5	JAHANIAN	8.9	66	32	SADIQ ABAD	6.0	24
6	KABIR WALA	14.0	35	33	D.G.KHAN	35.0	58
7	MIAN CHANNU	14.0	89	34	TAUNSA	13.8	54
8	VEHARI	14.0	42	35	MUZUFAR GARH	9.8	10
9	MAILSI	30.0	94	36	KOT ADDU	13.6	57
10	BURE WALA	8.0	10	37	ALI PUR	11.1	26
11	LODHRAN	16.7	57	38	JATOI	5.6	7
12	DUYAPUR	17.3	136	39	LAYYAH	14.6	40
13	KEHROR PACCA	16.7	54	40	CHOBARA	17.0	14
14	SAHIWAL	5.0	26	41	KAROR L.E.	11.1	13
15	CHICHA WATNI	15.1	52	42	RAJAN PUR	16.0	71
16	PAK PATTAN	24.0	34	43	JAM PUR	11.7	62
17	ARIF WALA	18.8	10	44	ROJHAN	16.0	45
18	OKARA	21.9	19	45	JHANG	20.0	30
19	DEPALPUR	12.9	8	46	SHORKOT	17.1	11
20	BAHAWAL PUR	29.6	145	47	T.T.SINGH	18.5	45
21	A.P.EAST	10.0	28	48	GOJRA	10.0	13
22	YAZMAN	31.7	179	49	KAMALIA	19.2	17
23	HASILPUR	24.0	85	50	SUMUNDRI, TANDLIANWALA	12.9	41
24	BAHAWAL NAGAR	17.5	63	51	MIANWALI	6.7	18
25	HAROON ABAD	15.0	23	52	PIPLAN	5.0	14
26	FORT ABBAS	17.5	53	53	BHAKKAR	12.5	3
27	MINCHAN ABAD	12.2	19	54	MANKERA	13.3	4
				55	DARYA KHAN	12.5	3

**Jassid:**

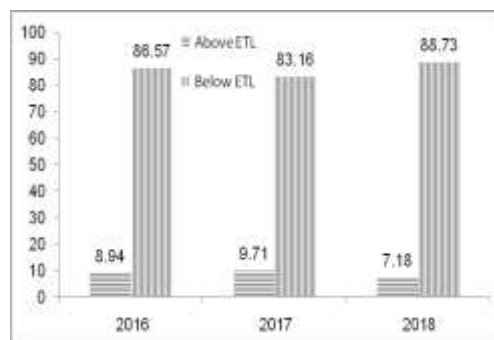
On overall Punjab basis 13.05% ABETL has been observed as compared to 13.61% in last week and same week of last year 15.07% & BETL 82.90% spots have been observed during current week as compared to 88.19% in last week and 81.25% during the same corresponding period of last year.

**Tehsil wise percentage of hot spots of jassid**

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	13.7	43	28	R.Y.KHAN	24.0	125
2	SHUJABAD	23.4	117	29	KHAN PUR	17.0	74
3	JALAL PUR P.W	30.2	64	30	LIAQUAT PUR	16.0	60
4	KHANEWAL	7.5	30	31	SADIQ ABAD	20.0	86
5	JAHANIAN	11.1	22	32	D.G.KHAN	20.0	37
6	KABIR WALA	6.0	13	33	TAUNSA	12.5	47
7	MIAN CHANNU	16.0	89	34	MUZUFAR GARH	2.4	4
8	VEHARI	10.0	50	35	KOT ADDU	13.6	50
9	BURE WALA	10.0	22	36	ALI PUR	13.0	38
10	LODHRAN	6.7	11	37	JATOI	11.1	46
11	DUYAPUR	7.7	25	38	LAYYAH	8.3	22
12	KEHROR PACCA	5.0	7	39	CHOBARA	12.8	14
13	SAHIWAL	6.7	13	40	KAROR L.E.	13.3	17
14	CHICHA WATNI	8.2	37	41	RAJAN PUR	2.0	7
15	PAK PATTAN	20.0	33	42	JAM PUR	5.0	16
16	ARIF WALA	18.8	5	43	ROJHAN	2.0	5
17	OKARA	18.8	17	44	JHANG	7.5	9
18	DEPALPUR	6.5	5	45	SHORKOT	5.7	8
19	BAHAWAL PUR	14.8	68	46	T.T.SINGH	16.9	37
20	A.P.EAST	40.0	138	47	GOJRA	8.0	8
21	YAZMAN	30.0	146	48	KAMALIA	11.5	9
22	HASILPUR	20.0	76	49	SUMUNDRI, TANDLIANWALA	2.9	8
23	BAHAWAL NAGAR	20.0	79	50	SARGODHA	75.0	16
24	HARON ABAD	7.5	9	51	MIANWALI	16.7	45
25	FORT ABBAS	15.0	59	52	PIPLAN	11.7	31
26	MINCHAN ABAD	14.6	24	53	BHAKKAR	37.5	12
27	CHISHTIAN	20.0	90	54	DARYA KHAN	12.5	3

## Thrips:

On overall Punjab basis 7.18% AETL has been observed as compared to 4.38% in last week and same week of last year i.e. 9.71% & BETL 88.73% spots have been observed during current week as compared to 89.99% in last week and 83.16% during the same corresponding period of last year.

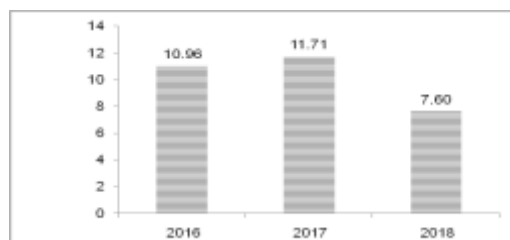


## Tehsil wise percentage of hot spots of thrips

Sr. NO.	TEHSIL	%AGE	AREA EFFECTED	S.NO.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	5.9	27.0	25	CHISHTIAN	8.0	45.0
2	SHUJABAD	2.1	6.0	26	R.Y.KHAN	2.0	10.0
3	JALAL PUR P.W	16.3	31.0	27	KHAN PUR	4.3	12.0
4	KHANEWAL	7.5	11.0	28	SADIQ ABAD	6.0	19.0
5	JAHANIAN	4.4	17.0	29	D.G.KHAN	15.0	36.0
6	KABIR WALA	8.0	17.0	30	TAUNSA	5.0	12.0
7	MIAN CHANNU	6.0	31.0	31	MUZUFAR GARH	9.8	17.0
8	VEHARI	12.0	47.0	32	KOT ADDU	9.1	35.0
9	MAILSI	6.0	13.0	33	ALI PUR	11.1	18.0
10	BURE WALA	16.0	41.0	34	JATOI	7.4	20.0
11	LODHAN	1.7	5.0	35	LAYYAH	8.3	24.0
12	DUYAPUR	11.5	69.0	36	CHOBARA	4.3	5.0
13	KEHROR PACCA	11.7	64.0	37	KAROR L.E.	4.4	10.0
14	SAHIWAL	1.7	4.0	38	RAJAN PUR	26.0	78.0
15	CHICHA WATNI	2.7	4.0	39	JAM PUR	25.0	107.0
16	PAK PATTAN	4.0	17.0	40	ROJHAN	20.0	62.0
17	BAHAWAL PUR	14.8	75.0	41	JHANG	5.0	6.0
18	A.P.EAST	2.5	5.0	42	SHORKOT	8.6	12.0
18	YAZMAN	6.7	72.0	43	T.T.SINGH	3.1	7.0
20	HASILPUR	6.0	24.0	44	KAMALIA	3.8	2.0
21	BAHAWAL NAGAR	5.0	19.0	45	MIANWALI	6.7	18.0
22	HAROON ABAD	7.5	15.0	46	PIPLAN	10.0	29.0
23	FORT ABBAS	5.0	13.0	47	MANKERA	3.3	2.0
24	MINCHAN ABAD	4.9	9.0				

### Mealy Bug:

On overall Punjab basis 7.60% spots of Mealy Bug have been observed as compared to 5.01% in last week and 11.71% spots during the same corresponding period of the last year.

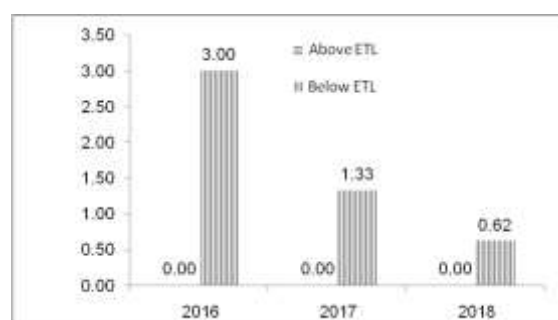


### Tehsil wise percentage of hot spots of mealy bug

S. NO.	TEHSIL	%AGE	AREA EFFECTED	S.NO.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	39.2	123	21	BAHAWAL NAGAR	2.5	5
2	SHUJABAD	17.0	76	22	HAROON ABAD	5.0	9
3	JALAL PUR P.W	14.0	31	23	MINCHAN ABAD	4.9	6
4	KHANEWAL	7.5	17	24	CHISHTIAN	16.0	69
5	JAHANIAN	8.9	70	25	R.Y.KHAN	20.0	83
6	KABIR WALA	6.0	10	26	KHAN PUR	21.3	70
7	MIAN CHANNU	4.0	21	27	LIAQUAT PUR	6.0	16
8	VEHARI	2.0	4	28	SADIQ ABAD	10.0	47
9	MAILSI	14.0	49	29	D.G.KHAN	12.5	22
10	BURE WALA	6.0	25	30	MUZUFAR GARH	4.9	12
11	LODHRAN	8.3	22	31	KOT ADDU	4.5	12
12	DUYAPUR	9.6	51	32	ALI PUR	5.6	9
13	KEHROR PACCA	8.3	21	33	JATOI	7.4	18
14	SAHIWAL	1.7	6	34	CHOBARA	2.1	1
15	CHICHA WATNI	4.1	23	35	RAJAN PUR	12.0	22
16	PAK PATTAN	4.0	10	36	JAM PUR	1.7	2
17	BAHAWAL PUR	11.1	62	37	ROJHAN	2.0	6
18	A.P.EAST	20.0	62	38	T.T.SINGH	10.8	33
19	YAZMAN	26.7	149	39	KAMALIA	7.7	9
20	HASILPUR	26.0	81	40	MIANWALI	1.7	4
				41	PIPLAN	1.7	4

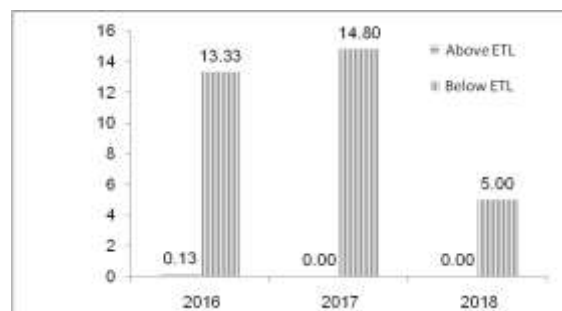
### Mites:

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 & 0.62% spots below ETL have been observed during current week as compared to 0.39% in last week and 1.33%



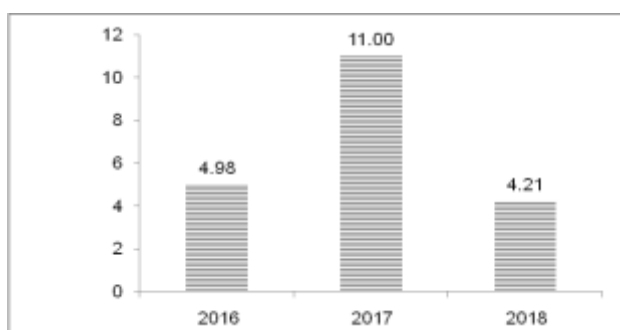
during the same corresponding period of last year. The decrease in its population is due to ban on early sown cotton by implementing Sec. 144 and effective measures taken by farmers for seed treatment.

**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 & 5.0% spots below ETL have been observed during current week as compared to 4.4% in last week and 14.8% 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 4.21% spots of Armyworm have been observed as compared to 1.92% in last week and 11.00% 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.

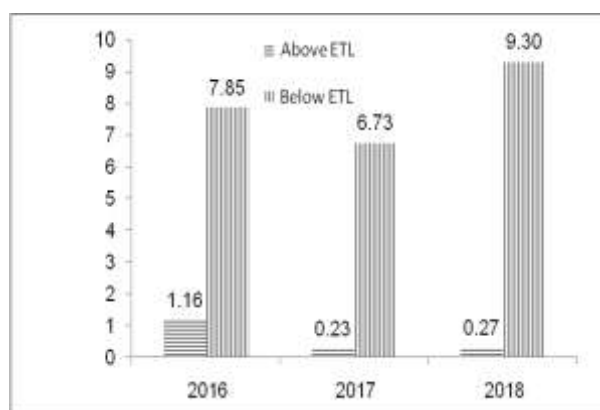


### Tehsil wise percentage of hot spots of army worm

S. NO.	TEHSIL	%AGE	AREA EFFECTED	S.NO.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	13.7	60	19	DEPALPUR	3.2	5
2	SHUJABAD	4.3	21	20	BAHAWAL PUR	5.6	35
3	JALAL PUR P.W	7.0	14	21	A.P.EAST	5.0	15
4	KHANEWAL	5.0	39	22	YAZMAN	1.7	25
5	JAHANIAN	6.7	54	23	HASILPUR	12.0	39
6	KABIR WALA	2.0	3	24	BAHAWAL NAGAR	7.5	28
7	MIAN CHANNU	4.0	21	25	MINCHAN ABAD	4.9	8
8	VEHARI	4.0	16	26	CHISHTIAN	6.0	45
9	MAILSI	4.0	6	27	R.Y.KHAN	16.0	95
10	LODHRAN	3.3	18	28	KHAN PUR	2.1	10
11	DUYAPUR	5.8	10	29	LIAQUAT PUR	6.0	19

12	KEHROR PACCA	1.7	6	30	SADIQ ABAD	6.0	34
13	SAHIWAL	5.0	26	31	TAUNSA	1.3	0
14	CHICHA WATNI	4.1	9	32	MUZUFAR GARH	14.6	41
15	JATOI	3.7	17	33	KOT ADDU	6.8	30
16	RAJAN PUR	2.0	3	34	ROJHAN	2.0	5
17	KAMALIA	7.7	6	35	JHANG	2.5	0
18	SUMUNDRI, TANDLIANWALA	10.0	30	36	SHORKOT	2.9	0
				37	T.T.SINGH	18.5	37

**Pink Bollworm:** On overall Punjab basis 0.27% spots of PBW Above ETL have been observed as compared to 0.04% in last week and 0.23% same corresponding period of the last year & 9.30% spots of PBW below ETL have been observed as compared to 7.90% in last week and 6.73% 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.



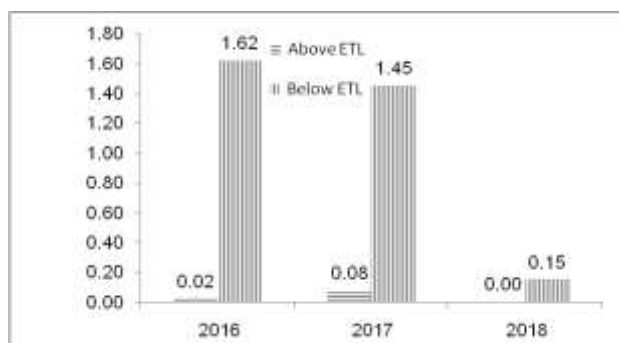
### Tehsil wise percentage of hot spots of pink boll worm

S. NO.	TEHSIL	%AGE	AREA	S.NO.	TEHSIL	%AGE	AREA EFFECTED
1	SHUJABAD	2.1	17	4	SHORKOT	2.9	2
2	BAHAWAL NAGAR	2.5	6	5	T.T.SINGH	4.6	19
3	MIANWALI	1.7	5				

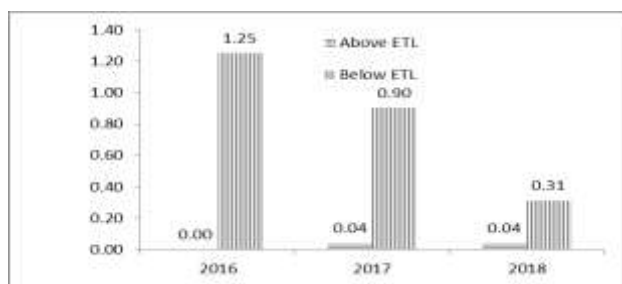
## Tehsil wise percentage of spots of pink boll worm below economic threshold level

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	YAZMAN	40.0	22	PAK PATTAN	8.0
2	FORT ABBAS	30.0	23	KAMALIA	7.7
3	BAHAWAL PUR	29.6	24	JHANG	7.5
4	PIPLAN	28.3	25	ALI PUR	7.4
5	MIAN CHANNU	28.0	26	JAHANIAN	6.7
6	HASILPUR	26.0	27	OKARA	6.3
7	MIANWALI	25.0	28	BHAKKAR	6.3
8	DARYA KHAN	25.0	29	T.T.SINGH	6.2
9	JALAL PUR P.W	20.9	30	KABIR WALA	6.0
10	BAHAWAL NAGAR	20.0	31	VEHARI	6.0
11	SUMUNDRI, TANDLIANWALA	18.6	32	LIAQUAT PUR	6.0
12	KHANEWAL	12.5	33	DUYAPUR	5.8
13	CHISHTIAN	12.0	34	MUZUFAR GARH	4.9
14	KEHROR PACCA	11.7	35	KOT ADDU	4.5
15	SHUJABAD	10.6	36	KHAN PUR	4.3
16	LODHRAN	10.0	37	CHICHA WATNI	4.1
17	GOJRA	10.0	38	R.Y.KHAN	4.0
18	MANKERA	10.0	39	SADIQ ABAD	4.0
19	SHORKOT	8.6	40	MULTAN	3.9
20	MAILSI	8.0	41	JATOI	1.9
21	BURE WALA	8.0	42	SAHIWAL	1.7

**American Bollworm:** On overall Punjab basis 0.00% spots of ABW above ETL have been observed as compared to 0.00% in last week and 0.08% during same corresponding period of last year & 0.15% spots of ABW below ETL have been observed as compared to 0.16% in last week and 1.45% 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.



**Spotted Bollworm:** On overall Punjab basis 0.04% 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 & 0.31% spots of SBW below ETL have been observed as compared to 0.04% in last week and 0.90% 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.

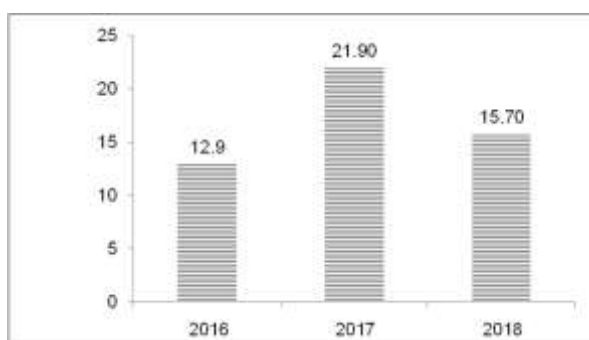


### Tehsil wise percentage of hot spots of Spotted Bollworm

S. NO.	TEHSIL	%AGE	AREA
1	RAJAN PUR	2.0	3

### CLCuV:

On overall Punjab basis 15.7% spots of CLCV have been observed as compared to 12.7% in last week and 21.9% 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

S. NO.	TEHSIL	%AGE	AREA EFFECTED	S.NO.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	25.5	55	26	FORT ABBAS	10.0	30
2	SHUJABAD	25.5	104	27	MINCHAN ABAD	2.4	3
3	JALAL PUR P.W	25.6	55	28	CHISHTIAN	8.0	28
4	KHANEWAL	20.0	71	29	R.Y.KHAN	14.0	68
5	JAHANIAN	28.9	211	30	KHAN PUR	8.5	7
6	KABIR WALA	26.0	42	31	LIAQUAT PUR	18.0	98
7	MIAN CHANNU	20.0	89	32	SADIQ ABAD	8.0	32
8	VEHARI	28.0	69	33	D.G.KHAN	35.0	50
9	MAILSI	58.0	171	34	TAUNSA	3.8	11
10	BURE WALA	32.0	117	35	MUZUFAR GARH	36.6	81
11	LODHRAN	40.0	145	36	KOT ADDU	11.4	34
12	DUYAPUR	13.5	47	37	ALI PUR	13.0	29
13	KEHROR PACCA	28.3	106	38	JATOI	27.8	74
14	SAHIWAL	0.0	0	39	LAYYAH	4.2	7
15	CHICHA WATNI	13.7	47	40	CHOBARA	2.1	1
16	PAK PATTAN	20.0	34	41	KAROR L.E.	4.4	5
17	ARIF WALA	12.5	4	42	RAJAN PUR	18.0	45
18	DEPALPUR	6.5	12	43	JAM PUR	1.7	6
19	BAHAWAL PUR	13.0	69	44	ROJHAN	4.0	10
20	A.P.EAST	15.0	64	45	JHANG	22.5	21
21	YAZMAN	10.0	31	46	SHORKOT	22.9	34
22	HASILPUR	30.0	120	47	T.T.SINGH	15.4	22
23	BAHAWAL NAGAR	5.0	23	48	GOJRA	30.0	24
24	MIANWALI	6.7	17	49	KAMALIA	15.4	11
25	PIPLAN	5.0	10	50	SUMUNDRI, TANDLIANWALA	4.3	18
				51	SARGODHA	25.0	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	34.88	29.50	71.38	0.0	35.63	30.13	42.81	0.0
Khanewal	38.34	29.96	51.50	0.0	39.21	30.16	61.57	0.0
Vehari	37.00	29.67	56.39	0.0	39.00	28.00	56.89	0.0
Lodhran	38.14	27.86	39.71	0.0	36.86	27.71	60.14	0.0
Sahiwal	36.60	27.40	64.90	45.0	37.00	27.00	68.10	0.0
Pakpattan	38.71	27.43	65.71	0.0	37.71	27.14	64.57	0.0
Okara	37.70	27.90	72.00	6.0	36.40	27.40	76.00	0.0
Bahawalpur	38.23	28.45	59.94	40.0	38.29	28.09	65.63	9.0
Bahawalnagar	40.00	29.06	54.63	0.0	39.38	29.63	58.31	0.0
R.Y.Khan	40.19	27.62	0.00	0.0	38.37	28.63	66.33	0.0
D.G.Khan	41	28.00	51.86	0.00	40.14	39.86	53.85	0.00
M.Garh	39.30	28.90	55.20	0.00	38.48	29.60	61.21	0.00
Rajanpur	38.97	27.29	44.50	0.00	35.92	28.72	59.12	0.00
Layyah	41.20	29.00	43.20	0.00	39.80	28.00	40.60	0.00
<b>AVERAGE</b>	<b>38.59</b>	<b>28.43</b>	<b>52.21</b>	<b>91.00</b>	<b>38.01</b>	<b>29.29</b>	<b>59.65</b>	<b>9.00</b>

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

Division	Dated	06/08	07/08	08/08	09/08	10/08	11/08	12/08
Multan	Max.Temp.	40	40	37	37	40	42	36
	Min.Temp.	31	31	30	30	31	27	27
	Humidity %	39	37	50	48	39	35	27
Sahiwal	Max.Temp.	38	36	32	35	38	40	35
	Min.Temp.	30	29	28	28	29	30	27
	Humidity %	45	54	69	60	48	41	31
Bahawalpur	Max.Temp.	40	39	36	36	39	40	36
	Min.Temp.	31	30	30	30	30	30	26
	Humidity %	36	38	49	50	41	37	28
D.G. Khan	Max.Temp.	39	39	38	37	40	42	37
	Min.Temp.	30	31	30	31	32	31	26
	Humidity %	42	40	47	43	38	35	26
Average	Max.Temp.	38.00						
Cotton	Min.Temp.	29.50						
Region	Humidity %	41.89						

### Summary of weather forecast

There is forecast of mostly more sunny than cloudy 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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 27-30 °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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. Keeping in view above all, it is predicted that population of this pest may increase 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

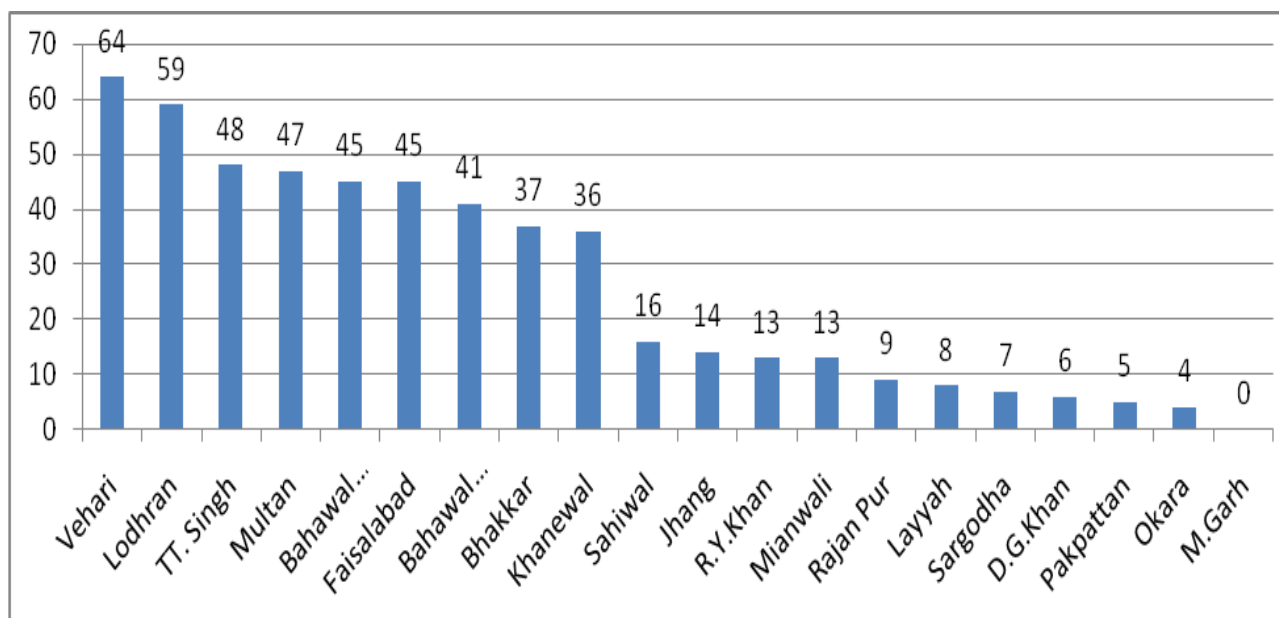
**Pink Bollworm:** Although PBW moths catches have been observed in pheromone and light traps in various cotton districts as given in the table. Pest situation reveals that its population has increased AETL as compared to last week and same week of last year on cotton crop. This pest flourish best at 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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 will increase in the next week on cotton.

### Moth Catches in Pheromone Traps during 1<sup>st</sup> Week of August, 2018

<b>Moth Catches in Pheromone Traps During 1<sup>st</sup> Week of August, 2018</b>			
<b>District</b>	<b>Traps Installed</b>	<b>Moth catches/Trap/week</b>	<b>Av. Moth catches/Trap/night</b>
Multan	6	47	1.12
Khanewal	8	36	0.64
Vehari	6	64	1.52
Lodhran	6	59	1.40
Sahiwal	5	16	0.57
Pakpattan	4	5	0.18
Okara	4	4	0.14
Bahawalpur	8	45	0.80
Bahawalnagar	10	41	0.59
R.Y.Khan	8	13	0.23
D.G.Khan	4	6	0.21
M.Garh	8	0	0.00
Rajan Pur	6	9	0.21
Layyah	6	8	0.19
Sargodha	1	7	0.50
Mianwali	2	13	0.46
Bhakkar	4	37	0.66
Faisalabad	5	45	1.29
TT. Singh	6	48	1.14
Jhang	4	14	0.50
<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:** Moth catches in light traps show the emergence of ABW, however, the pest may breed, increase on vegetables and other host plants. Its moths have been observed in Multan, Khanewal, Lodhran, Sahiwal, Bahawalpur, Bahawalnagar, R.Y.Khan, Muzaffar Garh. Pest situation reveals that attack of ABW BETL on cotton decrease as compared to last week and same period of last year. 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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 1<sup>st</sup> week of August, 2018

Moth Catches on Light Traps/Trap/week During 1 <sup>st</sup> Week of August, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	3.3	0.0	4.3
Khanewal	4	0.3	0.0	3.3
Vehari	3	0.0	0.0	2.0
Lodhran	3	1.3	1.3	3.3
Sahiwal	2	1.0	0.0	2.0
Pakpattan	2	0.0	0.0	3.0
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.8	0.5	1.0
Bahawalnagar	5	1.4	0.4	5.0
R.Y.Khan	4	2.3	2.0	3.8
D.G.Khan	2	0.0	0.0	1.5
M.Garh	4	0.8	0.3	3.3
Rajan Pur	3	0.0	0.0	1.0
Layyah	3	0.0	0.0	2.0
Note. 3 moth catches of a pest on 3 consecutive nights in a trap is considered as ETL				

**Spotted Bollworm:** Light traps data shows its emergence but it may not be a problem on cotton at initial stage, since hot & dry weather does not favor its multiplication it can breed and increase on Okra crop. Its appearance has been observed in districts Lodhran, Bahawalpur, Bahawalnagar, R.Y.Khan, Muzaffar Garh. Pest situation reveals that its population has increased BETL as compared to last week and decrease when compared with same week of last year on cotton crop. 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. 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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 increase on cotton crop in the coming week.

**Armyworm:** Its moth population have been observed on light traps in districts Multan, Khanewal, Vehari, Lodhran, Sahiwal, Pakpattan, Bahawalpur, Bahawalnagar, R.Y.Khan, D.G.Khan, Muzaffar Garh, Rajanpur and Layyah. Pest situation reveals that attack of Armyworm has increased as compared to last week & decrease when compared with same week of last year. 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 38.59 °C, Min. 28.43 °C with R. humidity 52.21%) & forecast for the next week temp. Max. 38.00 °C, Min. 29.50°C with humidity 41.89%. 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.
4. Use Yellow Sticky Traps.

## 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	Mulberry		
	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	Profenofos 50%+ 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 Itsit 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.

**Table 18 Pesticides recommended for Army worm**

S#	Common Name	Brand Name	Dose/Acre
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**

1. Keep Cotton fields free from all kinds of weeds.
2. Eradicate other alternate host plants of CLCuV and dispose them off carefully.
3. Thinning out and destruction of Virus affected plants.
4. Remove CLCuV effected plants in less than 60 DAS (Days after sowing) crop.
5. Hoeing after each irrigation or rain at wattar condition till canopies permit.
6. Apply post emergence Glyphosate for both broad and narrow leaved weeds and Glyphosate for grassy weeds with shield and use Flat Fan Nozzle, if needed.
7. Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
8. Balanced use of Fertilizer i.e. N.P.K.
9. Keep transmission vector (whitefly) at the low ebb

### Alternate host plants of CLCuV

Crops	Vegetables	Ornamentals	Weeds
Sunflower	Okra	Gurhal	Leh
Melon	Brinjal	Chambeli	Lehli
Tobacco	Chillies		Mako
	Tomato		Maina
	Potato		Karund/Bathu
	Cucumber		Gardenia
			Hazardani
			Rattanjot
			Sun Kukra

### Economic threshold levels of cotton pests

Insect pests	Economic threshold levels
Jassid	1 Adult or Nymph per leaf
Whitefly	5 Adults or Nymphs or both per Leaf
Thrips	8-10 Adults or Nymphs per Leaf
Mealy bug	0 (on appearance)
Mites	On damage appearance
Spotted Boll worm	3 Larvae/ 25 plants.
Pink Boll worm	5 Larvae /100 bolls.
American boll worm	5 brown eggs or 3 small larvae or both 5 per 25 plants on non Bt varieties. 2 larvae of 2 <sup>nd</sup> instar per 25 plants on Bt varieties.
Army worm	0 (On appearance)
Aphid	Spray on visible damage on top terminals.
Dusky Cotton bug	10 per leaf/bud