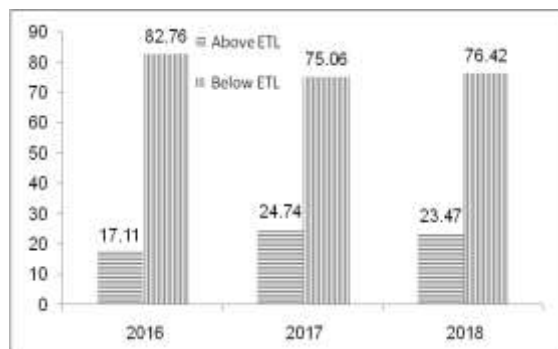


PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3RD WEEK OF AUGUST, 2018

Whitefly: On overall Punjab basis 23.47% spots above ETL have been observed during current week as compared to 22.53% % in last week and 24.74% during the same corresponding period of last year & 76.42% spots below ETL have been observed during current week as compared to 77.26% in last week and 75.06% during the same corresponding period of last year.

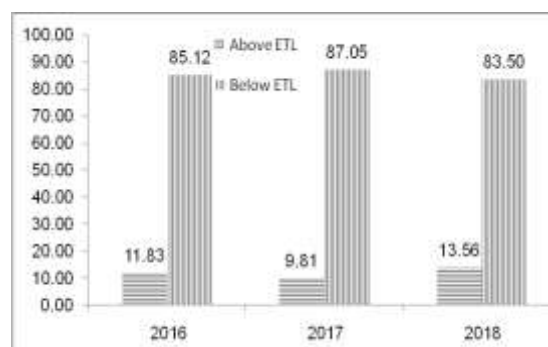


Tehsil wise percentage of hot spots of whitefly

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	41.4	185	30	KHAN PUR	21.8	77
2	SHUJABAD	29.7	117	31	LIAQUAT PUR	16.0	53
3	JALAL PUR P.W	39.4	235	32	SADIQ ABAD	13.8	86
4	KHANEWAL	17.0	162	33	D.G.KHAN	22.1	111
5	JAHANIAN	14.6	87	34	TAUNSA	15.0	83
6	KABIR WALA	9.4	18	35	MUZUFAR GARH	7.4	26
7	MIAN CHANNU	16.4	116	36	KOT ADDU	16.1	45
8	VEHARI	18.6	78	37	ALI PUR	14.6	71
9	MAILSI	38.1	108	38	JATOI	14.8	40
10	BURE WALA	21.1	90	39	LAYYAH	16.7	38
11	LODHRAN	20.9	99	40	CHOBARA	16.7	20
12	DUYAPUR	19.1	106	41	KAROR L.E.	14.3	26
13	KEHROR PACCA	18.0	128	42	RAJAN PUR	39.6	231
14	SAHIWAL	28.3	116	43	JAM PUR	31.1	174
15	CHICHA WATNI	24.8	150	44	ROJHAN	37.2	192
16	PAK PATTAN	30.0	40	45	JHANG	14.3	27
17	ARIF WALA	28.6	40	46	SHORKOT	16.2	50
18	OKARA	24.0	130	47	T.T.SINGH	15.2	35
19	DEPALPUR	20.0	49	48	GOJRA	8.8	11

20	BAHAWAL PUR	50.0	207	49	KAMALIA	26.3	33
21	A.P.EAST	56.6	218	50	FAISAL ABAD	5.3	2
22	YAZMAN	27.7	110	51	SUMUNDRI, TANDLIANWALA	6.8	13
23	HASILPUR	50.4	380	52	SARGODHA	27.8	23
24	BAHAWAL NAGAR	25.6	102	53	MIANWALI	15.7	60
25	HAROON ABAD	27.3	70	54	PIPLAN	12.1	36
26	FORT ABBAS	42.2	121	55	BHAKKAR	12.8	14
27	MINCHAN ABAD	23.4	39	56	MANKERA	27.8	10
28	CHISHTIAN	27.3	115	57			
29	R.Y.KHAN	13.2	58				

Jassid: On overall Punjab basis 13.56% ABETL has been observed as compared to 14.95% in last week and same week of last year 9.81% & BETL 83.50% spots have been observed during current week as compared to 82.13% in last week and 87.05% during the same corresponding period of last year.

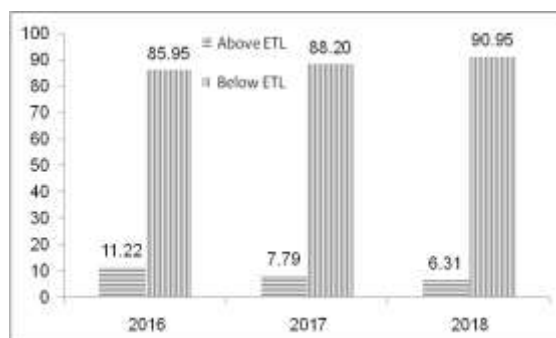


Tehsil wise percentage of hot spots of jassid

Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA
1	MULTAN	17.1	50	28	CHISHTIAN	25.5	96
2	SHUJABAD	9.4	32	29	R.Y.KHAN	18.9	65
3	JALAL PUR P.W	21.2	112	30	KHAN PUR	16.4	53
4	KHANEWAL	4.5	24	31	LIAQUAT PUR	14.0	63
5	JAHANIAN	6.3	17	32	SADIQ ABAD	17.2	110
6	KABIR WALA	1.6	2	33	D.G.KHAN	9.6	51
7	MIAN CHANNU	12.7	63	34	TAUNSA	6.3	31
8	VEHARI	1.7	2	35	MUZUFAR GARH	4.4	16
9	MAILSI	4.8	15	36	KOT ADDU	8.9	37
10	BURE WALA	7.0	17	37	ALI PUR	6.1	16
11	LODHRAN	4.4	20	38	JATOI	14.8	51

12	DUYAPUR	8.8	64	39	LAYYAH	15.0	33
13	KEHROR PACCA	4.0	24	40	CHOBARA	18.8	25
14	SAHIWAL	25.0	68	41	KAROR L.E.	10.7	19
15	CHICHA WATNI	8.5	35	42	RAJAN PUR	0.9	4
16	PAK PATTAN	13.3	31	43	JAM PUR	2.9	13
17	ARIF WALA	17.9	8	44	JHANG	9.1	19
18	OKARA	24.0	92	45	SHORKOT	7.4	15
19	DEPALPUR	20.0	169	46	T.T.SINGH	16.7	29
20	BAHAWAL PUR	24.1	90	47	GOJRA	10.5	17
21	A.P.EAST	45.3	182	48	KAMALIA	15.8	10
22	YAZMAN	19.1	101	49	SARGODHA	94.4	63
23	HASILPUR	49.6	435	50	MIANWALI	8.6	39
24	BAHAWAL NAGAR	20.9	85	51	PIPLAN	13.6	49
25	HAROON ABAD	15.9	36	52	BHAKKAR	12.8	13
26	FORT ABBAS	28.9	95	53	MANKERA	44.4	14
27	MINCHAN ABAD	23.4	39	54	DARYA KHAN	11.1	3

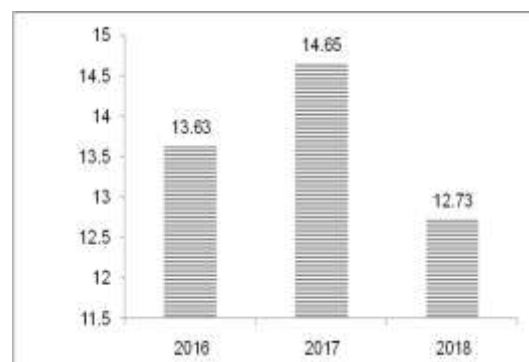
Thrips: On overall Punjab basis **6.31%** AETL has been observed as compared to **8.38%** in last week and same week of last year i.e. **7.79%** & BETL **90.95%** spots have been observed during current week as compared to **88.30%** in last week and **88.22%** during the same corresponding period of last year.



Tehsil wise percentage of hot spots of thrips

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	11.4	43.0	25	KHAN PUR	16.4	63.0
2	SHUJABAD	10.9	55.0	26	LIAQUAT PUR	4.0	78.0
3	JALAL PUR P.W	8.1	57.0	27	SADIQ ABAD	12.1	12.0
4	KHANEWAL	1.1	3.0	28	D.G.KHAN	9.6	64.0
5	JAHANIAN	4.2	12.0	29	TAUNSA	2.5	17.0
6	KABIR WALA	1.6	2.0	30	MUZUFAR GARH	4.4	11.0
7	MIAN CHANNU	12.7	75.0	31	ALI PUR	7.3	28.0
8	MAILSI	2.4	5.0	32	JATOI	7.4	16.0
9	BURE WALA	7.0	20.0	33	LAYYAH	8.3	18.0
10	LODHRAN	2.2	7.0	34	CHOBARA	4.2	6.0
11	DUYAPUR	5.9	32.0	35	KAROR L.E.	3.6	8.0
12	KEHROR PACCA	3.0	20.0	36	RAJAN PUR	1.8	8.0
13	CHICHA WATNI	0.7	2.0	37	JAM PUR	4.9	23.0
14	PAK PATTAN	13.3	14.0	38	ROJHAN	1.2	4.0
15	ARIF WALA	17.9	36.0	39	JHANG	2.6	7.0
16	BAHAWAL PUR	20.4	101.0	40	SHORKOT	4.4	24.0
17	A.P.EAST	13.2	79.0	41	GOJRA	1.8	2.0
18	YAZMAN	8.5	51.0	42	KAMALIA	2.6	1.0
18	HASILPUR	24.3	202.0	43	SARGODHA	5.6	1.0
20	BAHAWAL NAGAR	11.6	71.0	44	MIANWALI	8.6	35.0
21	HAROOON ABAD	6.8	6.0	45	PIPLAN	12.1	35.0
22	FORT ABBAS	28.9	90.0	46	BHAKKAR	2.1	2.0
23	MINCHAN ABAD	4.3	5.0				
24	CHISHTIAN	5.5	22.0				
25	R.Y.KHAN	18.9	86.0				

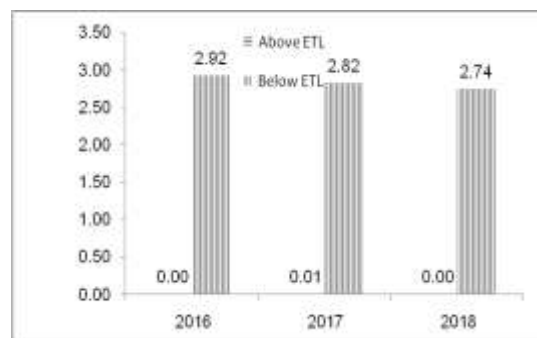
Mealy Bug: On overall Punjab basis 12.73% spots of Mealy Bug have been observed as compared to 9.90% in last week and 14.65% spots during the same corresponding period of the last year.



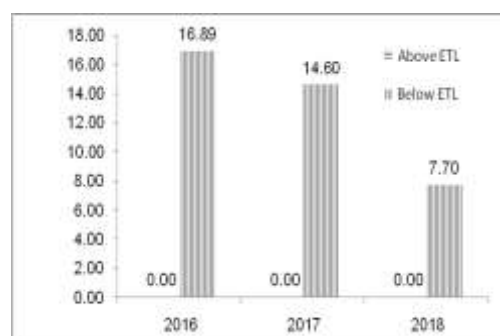
Tehsil wise percentage of hot spots of mealy bug

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	57.1	271	24	KHAN PUR	25.5	91
2	SHUJABAD	17.2	98	25	LIAQUAT PUR	8.0	44
3	JALAL PUR P.W	12.1	54	26	SADIQ ABAD	10.3	77
4	KHANEWAL	3.4	20	27	D.G.KHAN	2.9	12
5	JAHANIAN	12.5	61	28	TAUNSA	3.8	20
6	KABIR WALA	10.9	23	29	MUZUFAR GARH	5.9	11
7	MIAN CHANNU	27.3	172	30	KOT ADDU	5.4	19
8	VEHARI	8.5	58	31	ALI PUR	2.4	17
9	MAILSI	19.0	42	32	JATOI	29.6	109
10	BURE WALA	12.7	68	33	LAYYAH	3.3	4
11	LODHRAN	7.7	38	34	CHOBARA	2.1	3
12	DUYAPUR	2.9	13	35	RAJAN PUR	30.6	192
13	KEHROR PACCA	9.0	42	36	JAM PUR	17.5	99
14	SAHIWAL	4.3	28	37	ROJHAN	29.1	124
15	CHICHA WATNI	11.3	89	38	JHANG	2.6	7
16	PAK PATTAN	10.0	10	39	T.T.SINGH	12.1	36
17	BAHAWAL PUR	33.3	123	40	GOJRA	1.8	2
18	A.P.EAST	41.5	164	41	KAMALIA	13.2	22
19	YAZMAN	38.3	121	42	SUMUNDRI, TANDLIANWALA	3.4	0
20	HASILPUR	40.9	350	43	MIANWALI	4.3	19
21	BAHAWAL NAGAR	9.3	26	44	MINCHAN ABAD	4.3	4
22	HAROOON ABAD	13.6	31	45	CHISHTIAN	29.1	107
23	FORT ABBAS	2.2	7	46	R.Y.KHAN	22.6	114

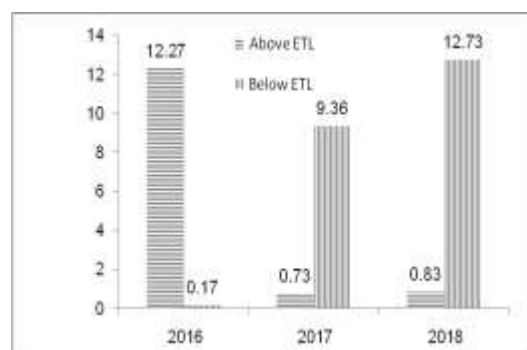
Mites: On overall Punjab basis 0.00% spots above ETL have been observed during current week as compared to 0.03% in last week and 0.01% during the same corresponding period of last year & 2.74% spots below ETL have been observed during current week as compared to 1.78% in last week and 2.82% during the 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 & 7.7% spots below ETL have been observed during current week as compared to 5.1% in last week and 14.6% during the same corresponding period of last year.



Pink Boll Worm (PBW): On overall Punjab basis 0.83% spots of PBW Above ETL have been observed as compared to 0.49% in last week and 0.73% same corresponding period of the last year & 12.73% spots of PBW below ETL have been observed as compared to 9.98% in last week and 9.36% during same corresponding period of last year.



Tehsil wise percentage of hot spots of pink boll worm

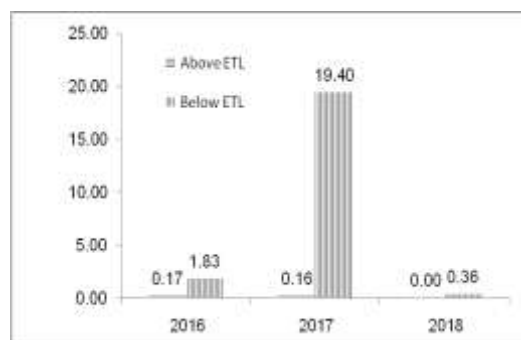
Sr.	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	JALAL PUR P.W	1.0	4	12	KEHROR PACCA	3.0	13
2	JAHANIAN	2.1	5	13	BAHAWAL PUR	3.7	11
3	MIAN CHANNU	1.8	18	14	A.P.EAST	1.9	4
4	VEHARI	1.7	2	15	YAZMAN	4.3	37
5	MAILSI	4.8	15	16	HASILPUR	0.9	2
6	BURE WALA	5.6	13	17	BAHAWAL NAGAR	2.3	3

7	FORT ABBAS	2.2	5	18	RAJAN PUR	0.9	5
8	MINCHAN ABAD	2.1	1	19	JHANG	1.3	0
9	CHISHTIAN	1.8	8	20	SHORKOT	1.5	0
10	LODHRAN	1.1	2	21	T.T.SINGH	3.0	5
11	MIANWALI	1.4	1				

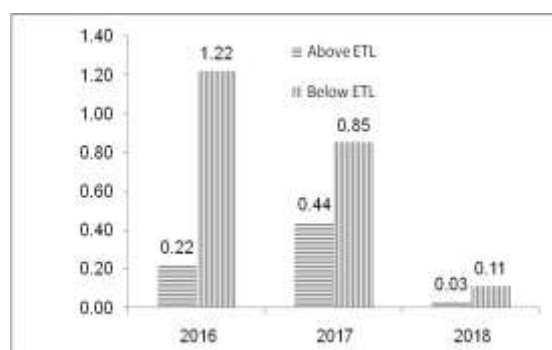
Tehsil wise percentage of spots of pink boll worm below economic thresh hold level

Sr..	TEHSIL	%AGE	AREA	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	SUMUNDRI, TANDLIANWALA	54.5		24	VEHARI	15.3	
2	MANKERA	44.4		25	JATOI	14.8	
3	SAHIWAL	41.3		26	CHICHA WATNI	14.2	
4	BHAKKAR	40.4		27	MINCHAN ABAD	12.8	
5	FAISAL ABAD	36.8		28	JAHANIAN	12.5	
6	SARGODHA	33.3		29	A.P.EAST	11.3	
7	FORT ABBAS	31.1		30	MIANWALI	10.0	
8	T.T.SINGH	28.8		31	LODHRAN	9.9	
9	BURE WALA	26.8		32	MAILSI	9.5	
10	HASILPUR	24.3		33	KHANEWAL	8.0	
11	PIPLAN	24.2		34	DUYAPUR	7.4	
12	MIAN CHANNU	23.6		35	MUZUFAR GARH	7.4	
13	PAK PATTAN	23.3		36	SHORKOT	7.4	
14	DARYA KHAN	22.2		37	HAROON ABAD	6.8	
15	GOJRA	21.1		38	KABIR WALA	6.3	
16	KEHROR PACCA	20.0		39	ALI PUR	6.1	
17	CHISHTIAN	20.0		40	JHANG	3.9	
18	BAHAWAL PUR	18.5		41	KHAN PUR	3.6	
19	KAMALIA	18.4		42	LIAQUAT PUR	2.0	
20	ARIF WALA	17.9		43	KOT ADDU	1.8	
21	BAHAWAL NAGAR	16.3		44	KAROR L.E.	1.8	
22	JALAL PUR P.W	16.2		45	OKARA	1.0	
23	SHUJABAD	15.6					

American Boll Worm (ABW): On overall Punjab basis 0.00% spots of ABW above ETL have been observed as compared to 0.00% in last week and 0.16% during same corresponding period of last year & 0.36% spots of ABW below ETL have been observed as compared to 0.13% in last week and 1.94% during same corresponding period of last year.

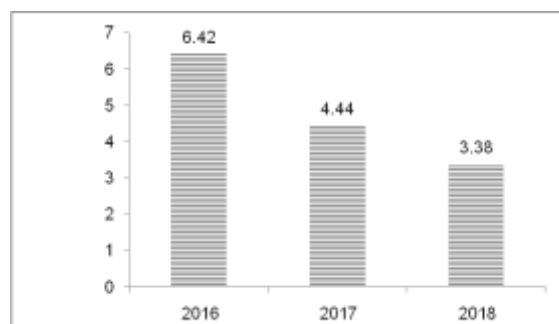


Spotted boll worm (SBW): On overall Punjab basis 0.03% spots of SBW above ETL have been observed as compared to 0.03% in last week and 0.44% during same corresponding period of last year & 0.11% spots of SBW below ETL have been observed as compared to 0.21% in last week and 0.85% during same corresponding period of last year.



Sr.	TEHSIL	%AGE	AREA
1	D.G.KHAN	1.0	3

Armyworm: On overall Punjab basis 3.38% spots of Armyworm have been observed as compared to 4.61% in last week and 4.44% spots during the same corresponding period of the last year.



Tehsil wise percentage of hot spots of army worm

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	7.1	23	19	R.Y.KHAN	7.5	44
2	SHUJABAD	4.7	11	20	KHAN PUR	3.6	14
3	JALAL PUR P.W	6.1	41	21	LIAQUAT PUR	4.0	19
4	KHANEWAL	2.3	13	22	SADIQ ABAD	10.3	46
5	JAHANIAN	4.2	11	23	D.G.KHAN	1.9	8

6	KABIR WALA	3.1	6	24	MUZUFAR GARH	2.9	6
7	MIAN CHANNU	3.6	17	25	KOT ADDU	8.9	21
8	BURE WALA	1.4	5	26	ALI PUR	3.7	12
9	LODHRAN	2.2	13	27	JATOI	11.1	28
10	KEHROR PACCA	1.0	2	28	JAM PUR	1.0	6
11	SAHIWAL	5.4	21	29	JHANG	2.6	0
12	CHICHA WATNI	2.1	6	30	SHORKOT	1.5	0
13	PAK PATTAN	3.3	5	31	T.T.SINGH	27.3	18
14	OKARA	2.0	3	32	GOJRA	1.8	1
15	BAHAWAL PUR	13.0	68	33	KAMALIA	10.5	12
16	A.P.EAST	3.8	13	34	SUMUNDRI, TANDLIANWALA	4.5	13
17	YAZMAN	4.3	10	35	MINCHAN ABAD	4.3	7
18	HASILPUR	4.3	70	36	CHISHTIAN	7.3	38

CLCuV: On overall Punjab basis 21.3% spots of CLCV have been observed as compared to 19.9% in last week and 24.7% during the same corresponding period of the last year.

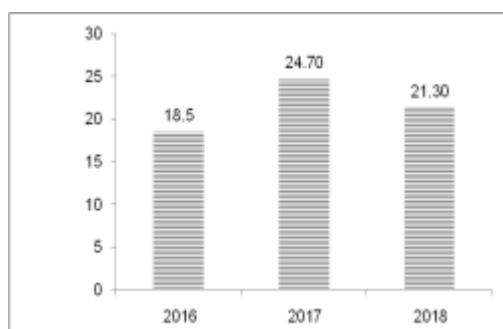


Table 9 Tehsil wise percentage of hot spots of cotton leaf curl virus

Sr.	TEHSIL	%AGE	AREA EFFECTED	Sr.	TEHSIL	%AGE	AREA EFFECTED
1	MULTAN	28.6	124	27	CHISHTIAN	9.1	27
2	SHUJABAD	28.1	130	28	R.Y.KHAN	17.0	80
3	JALAL PUR P.W	24.2	152	29	KHAN PUR	23.6	72
4	KHANEWAL	14.8	73	30	LIAQUAT PUR	24.0	116
5	JAHANIAN	18.8	69	31	SADIQ ABAD	12.1	73
6	KABIR WALA	20.3	71	32	D.G.KHAN	19.2	92
7	MIAN CHANNU	25.5	153	33	TAUNSA	5.0	33

8	VEHARI	32.2	162	34	MUZUFAR GARH	42.6	95
9	MAILSI	66.7	142	35	KOT ADDU	33.9	93
10	BURE WALA	38.0	135	36	ALI PUR	26.8	100
11	LODHRAN	31.9	165	37	JATOI	27.8	85
12	DUYAPUR	14.7	91	38	LAYYAH	11.7	24
13	KEHROR PACCA	33.0	205	39	CHOBARA	16.7	22
14	SAHIWAL	17.4	45	40	KAROR L.E.	3.6	8
15	CHICHA WATNI	31.2	189	41	RAJAN PUR	27.0	216
16	PAK PATTAN	36.7	52	42	JAM PUR	12.6	64
17	ARIF WALA	35.7	34	43	ROJHAN	15.1	80
18	BAHAWAL PUR	40.7	167	44	JHANG	18.2	42
19	A.P.EAST	34.0	124	45	SHORKOT	27.9	71
20	YAZMAN	23.4	75	46	T.T.SINGH	12.1	15
21	HASILPUR	36.5	325	47	GOJRA	33.3	48
22	BAHAWAL NAGAR	9.3	28	48	KAMALIA	21.1	23
23	HAROON ABAD	6.8	32	49	SUMUNDRI, TANDLIANWALA	13.6	24
24	FORT ABBAS	6.7	20	50	SARGODHA	33.3	33
25	MINCHAN ABAD	4.3	9	51	MIANWALI	7.1	31
26	BHAKKAR	2.1	3	52	PIPLAN	7.6	22

FORECAST FOR THE NEXT WEEK**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	36.50	29.17	76.42	2.0	35.17	27.00	71.67	0.0
Khanewal	38.56	28.70	56.00	0.0	38.91	29.49	54.86	0.0
Vehari	34.86	25.71	59.64	22.0	39.00	28.00	56.07	0.0
Lodhran	33.14	23.00	69.36	5.0	37.00	27.14	56.43	0.0
Sahiwal	34.50	24.90	63.00	2.0	36.40	27.00	66.00	0.0
Pakpattan	35.25	26.13	72.50	4.0	34.88	25.88	71.25	0.0
Okara	37.40	28.30	78.00	0.0	38.70	27.70	72.00	1.8
Bahawalpur	36.37	28.57	66.07	21	38.07	27.40	61.57	Traces
Bahawalnagar	38.64	28.64	59.07	0.6	40.29	27.36	55.57	0.0
R.Y.Khan	39.29	27.86	63.57	0.0	40.10	26.86	65.29	0.0
D.G.Khan	41.14	32.00	52.57	1.00	50.28	29.29	49.78	0.00
M.Garh	38.75	29.77	71.50	13.00	38.20	29.40	62.00	0.00
Rajanpur	39.16	29.16	44.60	15.00	40.20	26.70	62.90	0.00
Layyah	39.83	27.16	45.00	15.00	38.33	27.33	45.00	7.00
AVERAGE	37.39	27.79	62.66	100.57	38.97	27.61	60.74	8.80

Table 12 Weather forecast for next 7 day in cotton zone

Division	Dated	20/8	21/8	22/8	23/8	24/8	25/8	26/8
Multan	Max.Temp.	40	41	41	42	40	40	35
	Min.Temp.	31	32	32	31	30	29	26
	Humidity %	39	36	36	37	40	38	26
Sahiwal	Max.Temp.	39	38	38	40	40	39	35
	Min.Temp.	30	31	31	30	30	28	27
	Humidity %	43	48	46	40	41	37	27
Bahawalpur	Max.Temp.	39	40	40	40	40	38	34
	Min.Temp.	31	31	31	31	31	29	25
	Humidity %	41	38	36	36	39	38	29
D.G. Khan	Max.Temp.	41	42	42	42	40	40	35
	Min.Temp.	32	32	32	32	32	29	26
	Humidity %	37	32	30	33	37	37	28
Average	Max.Temp.	39.32						
Cotton	Min.Temp.	30.07						
Region	Humidity %	36.61						

Summary of weather forecast

There is forecast of mostly sunny weather for seven days in cotton zone during next week. So, slight increase in temperature is forecasted for next week in cotton zone (Southern Punjab) WHICH 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. Keeping in view above all, it is predicted that population of this pest may sustain during the coming week.

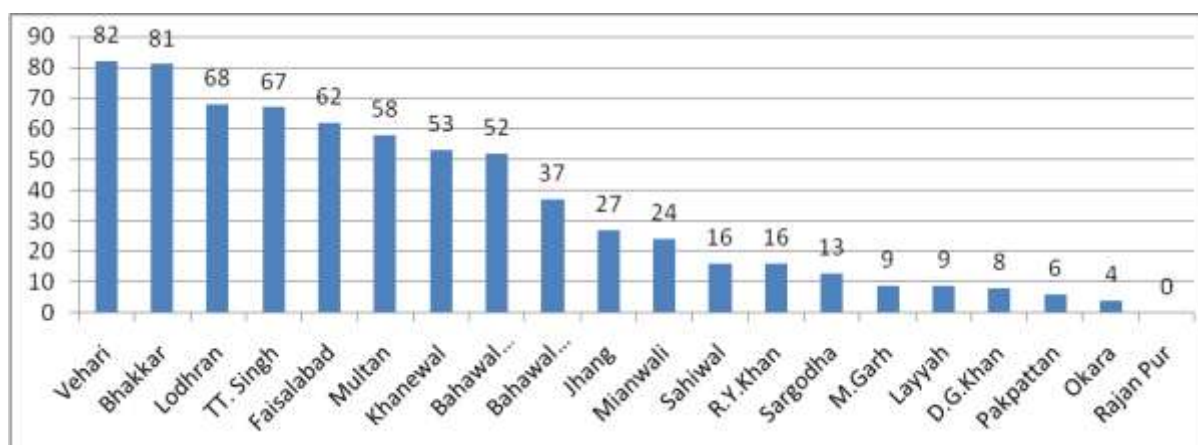
Dusky Cotton Bug: This pest flourish best moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. It is predicted that from midst of August population of this pest will increase in the next week on cotton.

Table 13 Moth Catches in Pheromone Traps During 3rd Week of August, 2018

Moth Catches in Pheromone Traps During 3rd Week of August, 2018			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	58	1.38
Khanewal	8	53	0.95
Vehari	6	82	1.95
Lodhran	6	68	1.62
Sahiwal	5	16	0.57
Pakpattan	4	6	0.21
Okara	4	4	0.14
Bahawalpur	8	52	0.93
Bahawalnagar	10	37	0.53
R.Y.Khan	8	16	0.29
D.G.Khan	4	8	0.29
M.Garh	8	9	0.16
Rajan Pur	6	0	0.00
Layyah	6	9	0.21
Sargodha	1	13	0.93
Mianwali	2	24	0.86
Bhakkar	4	81	1.45
Faisalabad	5	62	1.77
TT. Singh	6	67	1.60
Jhang	4	27	0.96
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. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. 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 August, 2018

Moth Catches on Light Traps/Trap/week During 3 rd Week of August, 2018				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	2.0	0.0	4.7
Khanewal	4	0.0	0.0	2.8
Vehari	3	0.0	0.0	3.7
Lodhran	3	2.3	1.7	5.3
Sahiwal	2	1.5	0.0	2.5
Pakpattan	2	0.0	0.0	2.5
Okara	2	0.0	0.0	0.0
Bahawalpur	4	0.8	0.0	1.5
Bahawalnagar	5	1.2	0.6	3.8
R.Y.Khan	4	1.5	1.5	2.8
D.G.Khan	2	0.0	0.0	2.0
M.Garh	4	0.0	0.0	3.3
Rajan Pur	3	0.0	0.3	0.7
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: This pest flourishes best at mild & humid climate with optimum temperature 30-40 °C with relative humidity above 60-100%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) & forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. Due to cultivation of more BT varieties, it is predicted that population of this pest will 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 37.39 °C, Min. 27.79 °C with R. humidity 62.66%) &

forecast for the next week temp. Max. 39.32 °C, Min. 30.07°C with humidity 36.61%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

Cotton Leaf Curl Virus (CLCuV): On overall Punjab basis spots of CLCuV have been increased as compared to in last week and decreased when compare with same corresponding period of the last year. The increase in its incidence as compared to last week is due to favorable condition and increase in whitefly population. The incidence of this disease is expected to increase on cotton crop the next week.

RECOMMENDATIONS

WHITEFLY MANAGEMENT

1. Conduct regular pest scouting of Whitefly.
2. Control the pest without delay when population reaches ETL i.e. nymphs or adults or both 5 per leaf.
3. Control weeds in and outside the field especially near water channels and fallow lands.

Alternate host plants of whitefly

Crops	Vegetables	Orchards	Weeds/ Ornamentals	Trees
Sunflower	Okra	Citrus	Gardenia	Shisham
Tobacco	Brinjal	Litchi	Mako	Shareen
	Cucurbits	Pomegranate	Maina	
	Tomato	Ber (<i>Zizyphus</i>)	Karund	
	Cabbage	Guava	Lehli	
	Cauliflower	Mulbery		
	Peas	Papaya		
	Potato			
	Onion			
	Spinach			

JASSID MANAGEMENT

1. Eradicate weeds.
2. Conduct Pest Scouting at least twice a week.
3. Use *Chrysoperla* Cards @ 80-90 cards per acre having 20-25 eggs on each card which are available at AARI Faisalabad, Sahiwal, Okara and Vehari.
(Repeat this process after every two weeks).

THRIPS MANAGEMENT

1. Conduct Pest Scouting regularly at least twice a week.
2. Avoid intercropping of cotton crop with vegetables.
3. Control weeds in and outside the field.

MEALY BUG MANAGEMENT

1. Visit the fields daily to detect the infestation for effective management of mealy bug well in time.
2. Keep field and water courses etc. free from weeds especially Itsit & Hazaardani.
3. To avoid its shifting from one place to another, keep the horticultural nurseries free from its infestation. Spray such infested nurseries before shifting the plants.
4. Uproot and keep the infested plants gently in plastic bags and bury in the soil outside the field.
5. Avoid water stress to the plants.
6. Avoid repeated visits of workers from infested fields to healthy fields.

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

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 nd 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