

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3rd WEEK OF AUGUST, 2021

Whitefly: On overall Punjab basis 31.12 above ETL spots have been observed during current week as compared to 24.98% in last week and 32.50% during the same corresponding period of last year. And 68.83% below ETL spots have been observed during current week as compared to 74.73% in last week and 66.21% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of whitefly

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MAILSI	68.8	32	PAK PATTAN	25.0
2	JAM PUR	64.2	33	HASILPUR	24.4
3	JALAL PUR P.W	57.5	34	CHISHTIAN	24.0
4	RAJAN PUR	56.2	35	KAROR L.E.	22.7
5	ALI PUR	56.0	36	CHOBARA	22.6
6	BAHAWAL PUR	51.2	37	HAROON ABAD	22.5
7	CHICHA WATNI	47.5	38	R.Y.KHAN	22.0
8	KHANEWAL	46.9	39	YAZMAN	21.2
9	VEHARI	43.8	40	SAHIWAL	21.1
10	KOT CHUTTA	42.9	41	BAHAWAL NAGAR	20.8
11	D.G.KHAN	41.7	42	A.P.EAST	20.7
12	ROJHAN	39.0	43	LAYYAH	19.1
13	BURE WALA	38.5	44	PIPLAN	19.0
14	TAUNSA	38.0	45	LIAQUAT PUR	18.0
15	MIAN CHANNU	36.4	46	KOT ADDU	18.0
16	FORT ABBAS	36.0	47	JHANG	16.7
17	JAHANIAN	35.3	48	GOJRA	16.7
18	JATOI	35.0	49	MIANWALI	16.7
19	ARIF WALA	33.3	50	SADIQ ABAD	16.0
20	BHAKKAR	33.3	51	MINCHAN ABAD	15.9
21	KALLOR KOT	33.3	52	RENALA KHURD	15.8
22	DARYA KHAN	33.3	53	DEPALPUR	14.3
23	MULTAN	32.1	54	A.P SIAL	14.3
24	SHUJABAD	30.3	55	OKARA	12.5
25	18-HAZARI	30.0	56	ISA KHEL	12.5
26	KHAN PUR	29.2	57	PIR MAHAL	12.0
27	MUZUFAR GARH	27.7	58	T.T.SINGH	10.0
28	KABIR WALA	27.5	59	SHORKOT	8.3
29	DUYAPUR	26.5	60	SUMUNDRI	5.3
30	KEHROR PACCA	25.6	61	TANDLIANWALA	4.3
31	LODHRAN	25.0			

Jassid: On overall Punjab basis 10.00% above ETL spots has been observed as compared to 14.18% in last week and same week of last year 11.91%. And 89.33% below ETL spots have been observed during current week as compared to 85.33% in last week and 83.39% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Jassid

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	A.P SIAL	38.1	27	HAROON ABAD	12.5
2	ARIF WALA	33.3	28	KHAN PUR	12.5
3	DARYA KHAN	33.3	29	JATOI	12.5
4	ALI PUR	32.0	30	MINCHAN ABAD	11.4
5	SHUJABAD	27.3	31	CHOBARA	11.3
6	PAK PATTAN	25.0	32	RENALA KHURD	10.5
7	KALLOR KOT	25.0	33	SUMUNDRI	10.5
8	PIPLAN	23.8	34	SADIQ ABAD	10.0
9	LAYYAH	21.3	35	KOT ADDU	10.0
10	MIANWALI	20.8	36	18-HAZARI	10.0
11	KAROR L.E.	20.5	37	T.T.SINGH	10.0
12	SAHIWAL	18.4	38	CHICHA WATNI	7.5
13	A.P.EAST	17.2	39	D.G.KHAN	6.3
14	JHANG	16.7	40	R.Y.KHAN	6.0
15	SHORKOT	16.7	41	KOT CHUTTA	5.1
16	GOJRA	16.7	42	JAM PUR	4.9
17	BHAKKAR	16.7	43	BAHAWAL PUR	4.9
18	CHISHTIAN	16.0	44	PIR MAHAL	4.0
19	BURE WALA	15.4	45	MULTAN	3.8
20	YAZMAN	15.2	46	VEHARI	3.1
21	DEPALPUR	14.3	47	MAILSI	3.1
22	FORT ABBAS	14.0	48	MIAN CHANNU	3.0
23	LIAQUAT PUR	14.0	49	JALAL PUR P.W	2.5
24	TANDLIANWALA	13.0	50	HASILPUR	2.2
25	OKARA	12.5	51	MUZUFAR GARH	2.1
26	BAHAWAL NAGAR	12.5	52	TAUNSA	2.0

Thrips: On overall Punjab basis 7.44% above ETL spots has been observed as compared to 11.71% in last week and same week of last year i.e.14.73%. And 90.76% below ETL spots have been observed during current week as compared to 86.30% in last week and 82.86% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Thrips

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	A.P.EAST	25.9	22	KOT ADDU	10.0
2	SADIQ ABAD	22.0	23	18-HAZARI	10.0
3	BAHAWAL PUR	22.0	24	KEHROR PACCA	9.3
4	MULTAN	18.9	25	D.G.KHAN	8.3
5	KHAN PUR	18.8	26	JHANG	8.3
6	DARYA KHAN	16.7	27	R.Y.KHAN	8.0
7	VEHARI	15.6	28	TAUNSA	6.0
8	SHUJABAD	15.2	29	LODHRAN	4.5
9	YAZMAN	15.2	30	MINCHAN ABAD	4.5
10	JATOI	15.0	31	PAK PATTAN	4.2
11	PIPLAN	14.3	32	OKARA	4.2
12	LIAQUAT PUR	14.0	33	BAHAWAL NAGAR	4.2
13	ALI PUR	14.0	34	CHOBARA	3.8
14	MUZUFAR GARH	12.8	35	KHANEWAL	3.1
15	LAYYAH	12.8	36	MAILSI	3.1
16	MIANWALI	12.5	37	MIAN CHANNU	3.0
17	MANKERA	12.5	38	JALAL PUR P.W	2.5
18	FORT ABBAS	12.0	39	KABIR WALA	2.5
19	BURE WALA	11.5	40	JAM PUR	1.2
20	KAROR L.E.	11.4	41	KOT CHUTTA	1.0
21	HAROON ABAD	10.0			

Mealy Bug: On overall Punjab basis 32.29% spots (all considered above ETL) of Mealy Bug have been observed as compared to 24.53% in last week and 16.75% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of Mealy bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MAILSI	81.3	27	BAHAWAL NAGAR	25.0
2	MIAN CHANNU	75.8	28	D.G.KHAN	25.0
3	BURE WALA	73.1	29	JATOI	25.0
4	MULTAN	67.9	30	CHICHA WATNI	22.5
5	VEHARI	65.6	31	LIAQUAT PUR	22.0
6	JAHANIAN	64.7	32	TAUNSA	22.0
7	KHANEWAL	62.5	33	GOJRA	20.8
8	SHUJABAD	60.6	34	KAROR L.E.	20.5
9	DUYAPUR	55.9	35	LAYYAH	19.1
10	BAHAWAL PUR	53.7	36	TANDLIANWALA	17.4
11	KABIR WALA	52.5	37	PIR MAHAL	16.0
12	RAJAN PUR	52.1	38	ROJHAN	14.6
13	YAZMAN	51.5	39	OKARA	12.5
14	JAM PUR	46.9	40	KOT CHUTTA	12.2
15	KEHROR PACCA	46.5	41	CHOBARA	11.3
16	FORT ABBAS	42.0	42	RENALA KHURD	10.5
17	A.P.EAST	41.4	43	HAROON ABAD	10.0
18	LODHRAN	40.9	44	PIPLAN	9.5
19	CHISHTIAN	40.0	45	JHANG	8.3
20	MUZUFAR GARH	38.3	46	MIANWALI	8.3
21	R.Y.KHAN	36.0	47	SUMUNDRI	5.3
22	HASILPUR	35.6	48	PAK PATTAN	4.2
23	KHAN PUR	33.3	49	SAHIWAL	2.6
24	SADIQ ABAD	30.0	50	MINCHAN ABAD	2.3
25	T.T.SINGH	30.0	51	BAHAWAL NAGAR	25.0
26	ALI PUR	26.0			

Mites: On overall Punjab basis 0.00% above ETL spots 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. And 4.13% below ETL spots have been observed during current week as compared to 5.61% in last week and 3.59% during the same corresponding period of last year.

Dusky Cotton Bug: On overall Punjab basis 0.04% above ETL spots have been observed during current week as compared to 0.29% in last week and 0.10% during the same corresponding period of last year. And 25.52% below ETL spots have been observed during current week as compared to 18.55% in last week and 17.80% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Dusky cotton Bug

S. NO.	TEHSIL	%AGE
1	GOJRA	4.2

Armyworm: On overall Punjab basis 1.84% spots (all considered above ETL) of Armyworm have been observed as compared to 1.24% in last week and 3.10% spots during the same corresponding period of the last year.

Tehsil wise percentage of hot spots of Army worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MAILSI	12.5	11	PIPLAN	4.8
2	SHUJABAD	12.1	12	MIANWALI	4.2
3	18-HAZARI	10.0	13	LIAQUAT PUR	4.0
4	JATOI	7.5	14	VEHARI	3.1
5	BAHAWAL PUR	7.3	15	MIAN CHANNU	3.0
6	A.P.EAST	6.9	16	JAHANIAN	2.9
7	MUZUFAR GARH	6.4	17	DUYAPUR	2.9
8	KHANEWAL	6.3	18	R.Y.KHAN	2.0
9	ALI PUR	6.0	19	SADIQ ABAD	2.0
10	MULTAN	5.7	20	KOT CHUTTA	1.0

Pink Boll Worm: On overall Punjab basis 6.68% above ETL spots have been observed as compared to 4.16% in last week and 1.57% same corresponding period of the last year. And 29.91% below ETL spots have been observed as compared to 24.73% in last week and 16.75% during same corresponding period of last year.

Tehsil wise percentage of hot spots of PBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	CHICHA WATNI	25.0	20	MAILSI	9.4
2	KABIR WALA	22.5	21	YAZMAN	9.1
3	DUYAPUR	20.6	22	MUZUFAR GARH	8.5
4	ALI PUR	20.0	23	BAHAWAL NAGAR	8.3
5	BURE WALA	19.2	24	KHAN PUR	8.3
6	KEHROR PACCA	16.3	25	GOJRA	8.3
7	CHISHTIAN	16.0	26	LIAQUAT PUR	6.0
8	LODHRAN	15.9	27	SADIQ ABAD	6.0
9	KHANEWAL	15.6	28	MULTAN	5.7
10	A.P.EAST	13.8	29	HAROON ABAD	5.0
11	MIAN CHANNU	12.1	30	HASILPUR	4.4
12	JAHANIAN	11.8	31	PAK PATTAN	4.2
13	ARIF WALA	11.1	32	OKARA	4.2
14	SAHIWAL	10.5	33	RAJAN PUR	4.1
15	JALAL PUR P.W	10.0	34	FORT ABBAS	4.0
16	R.Y.KHAN	10.0	35	SHUJABAD	3.0
17	BAHAWAL PUR	9.8	36	JATOI	2.5
18	VEHARI	9.4	20	LAYYAH	2.1

American Bollworm: On overall Punjab basis 0.009% above ETL spots have been observed as compared to 0.00 in last week and 0.00% during same corresponding period of last year. And 0.18% below ETL spots have been observed as compared to 0.12% in last week and 0.73% during same corresponding period of last year.

Tehsil wise percentage of hot spots of ABW

S. NO.	TEHSIL	%AGE
1	KOT CHUTTA	2.0

Spotted Bollworm: On overall Punjab basis 0.27% above ETL spots have been observed as compared to 0.29% in last week and 0.00% during same corresponding period of last year & 0.81% below ETL spots have been observed as compared to 0.87% in last week and 0.59% during same corresponding period of last year.

Tehsil wise percentage of hot spots of SBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	KOT CHUTTA	4.1	3	MUZUFAR GARH	2.1
2	SHUJABAD	3.0			

CLCuV: On overall Punjab basis 24.62% spots (all considered above ETL) of CLCV have been observed as compared to 19.37% in last week and 9.51% during the same corresponding period of the last year.

Tehsil wise percentage of hot spots CLCuV

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	KOT ADDU	100.0	25	JAM PUR	23.5
2	VEHARI	78.1	26	LAYYAH	23.4
3	MUZUFAR GARH	74.5	27	A.P.EAST	19.0
4	MAILSI	71.9	28	DUYAPUR	17.6
5	JATOI	62.5	29	JALAL PUR P.W	17.5
6	BURE WALA	61.5	30	ARIF WALA	16.7
7	ALI PUR	58.0	31	JHANG	16.7
8	KABIR WALA	55.0	32	MIANWALI	16.7
9	KEHROR PACCA	46.5	33	LIAQUAT PUR	16.0
10	T.T.SINGH	45.0	34	LODHRAN	15.9
11	MIAN CHANNU	39.4	35	KOT CHUTTA	14.3
12	CHICHA WATNI	37.5	36	PAK PATTAN	12.5
13	SHUJABAD	33.3	37	MANKERA	12.5
14	D.G.KHAN	33.3	38	18-HAZARI	10.0
15	GOJRA	33.3	39	PIPLAN	9.5
16	MULTAN	32.1	40	BAHAWAL NAGAR	8.3
17	PIR MAHAL	32.0	41	SHORKOT	8.3
18	KHANEWAL	31.3	42	CHISHTIAN	8.0
19	TAUNSA	30.0	43	SADIQ ABAD	8.0
20	KAROR L.E.	29.5	44	KHAN PUR	6.3
21	JAHANIAN	29.4	45	SAHIWAL	5.3
22	HASILPUR	26.7	46	HAROON ABAD	5.0
23	CHOBARA	26.4	47	RAJAN PUR	2.7
24	R.Y.KHAN	24.0			

FORECAST FOR THE NEXT WEEK**Meteorological data of the current week 2020-2021**

Districts	2021				2020			
	Temperature		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
MULTAN	37.43	29.00	62.57	0.00	38.14	32.00	67.26	2.40
KHANEWAL	38.00	28.50	58.50	0.00	39.71	30.71	58.14	0.00
VEHARI	38.00	29.57	57.14	0.00	39.71	31.00	69.00	0.00
LODHRAN	38.45	29.00	67.88	0.00	38.51	28.29	72.29	7.00
Sahiwal	40.00	28.00	55.00	0.00	37.90	28.75	71.31	20.00
Pakpattan	41.00	30.00	50.00	0.00	34.63	28.13	61.75	25.00
Okara	39.00	28.00	54.00	0.00	40.00	30.16	76.50	34.00
Bahawalpur	39.00	27.68	57.44	0.00	39.95	30.61	61.13	Traces
Bahawalnagar	40.56	28.94	53.75	0.00	40.56	26.38	59.56	0.00
R.Y.Khan	38.22	26.33	54.00	0.00	39.67	28.78	43.44	0.00
D.G. Khan	40.00	27.14	50.71	0.00	41.57	20.71	69.21	0.00
Muzaffar Garh	40.83	30.50	39.75	3.00	40.25	29.75	62.50	2.00
Rajanpur	40.26	29.9	46.60	0.00	40.70	31.51	50.10	0.00
Layyah	47.86	32.57	50.07	0.00	35.57	26.00	47.14	0.00
TOT/AVG	39.90	28.94	54.10	3.00	39.06	28.77	62.10	90.40

Weather forecast for next 7 day in cotton zone

Division	Dated	22/8	23/8	24/8	25/8	26/8	27/8	28/8
Multan	Max.Temp.	40	41	38	40	40	39	40
	Min.Temp.	30	29	28	26	27	31	30
	Humidity %	34	35	39	31	26	26	25
Sahiwal	Max.Temp.	39	39	37	38	42	40	37
	Min.Temp.	29	26	27	26	26	23	29
	Humidity %	35	37	47	40	28	20	16
B. pur	Max.Temp.	39	40	37	39	42	41	40
	Min.Temp.	29	26	28	23	30	26	24
	Humidity %	33	34	40	34	27	18	16
D.G.Khan	Max.Temp.	42	42	38	41	43	39	40
	Min.Temp.	31	30	28	30	31	32	30
	Humidity %	30	30	40	32	25	15	16
Average Cotton Region	Max.Temp.	39.75						
	Min.Temp.	28.04						
	Humidity %	29.61						

Source: timeanddate.com**Summary of weather forecast**

Overall weather for seven days in cotton zone during next week will remain hot, dry & shiny also.

Forecast of Sucking Pests:

Whitefly: This pest flourishes 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. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view, it is predicted that population of this pest will increase rapidly during the coming week.

Jassid: This pest flourishes best in hot and humid climate with optimum temperature 35-40 °C with relative humidity above 70%. Maximum lethal The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

Thrips: This pest flourishes 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. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

Mealy Bug: This pest flourishes best in 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. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest will increase on cotton crop.

Mites: This pest flourishes best in dry climate with optimum temperature 28-40 °C with relative humidity above 40-50 . The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

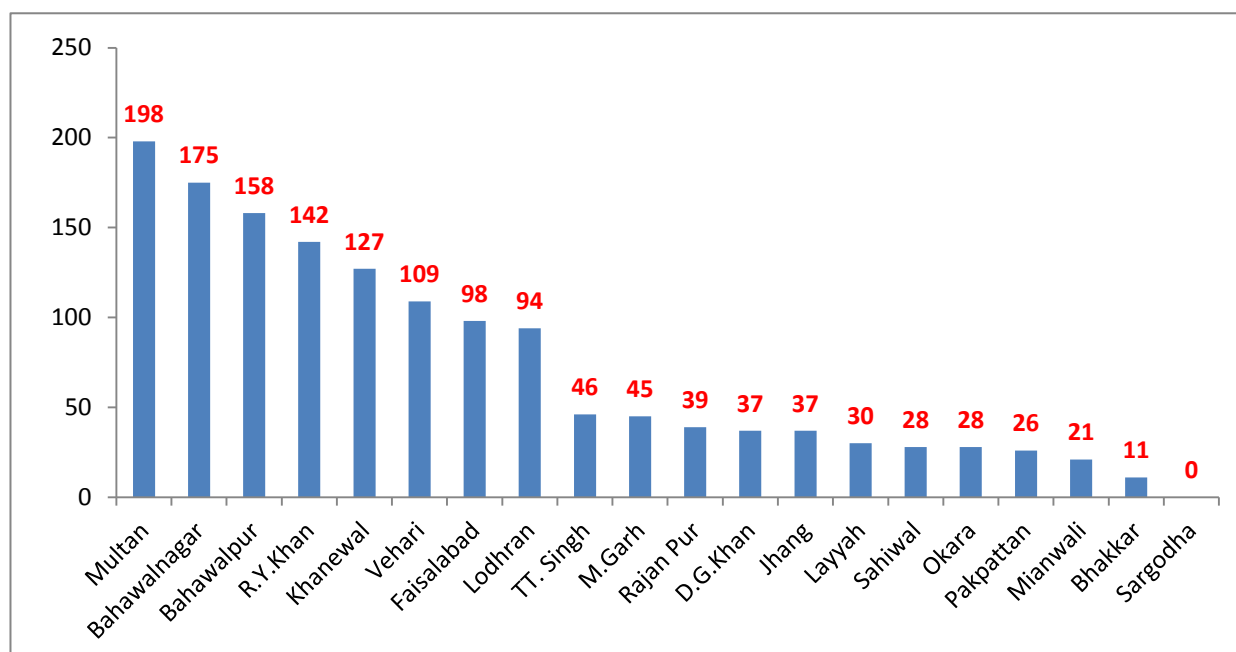
Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest may sustain during coming week.

Pink Bollworm: This pest flourishes 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. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. It is predicted that population of this pest will increase rapidly on cotton during the coming week .

Moth Catches in Pheromone Traps during 3rd Week of August, 2021

Moth Catches in Pheromone Traps During 3rd Week of August 2021			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	198	4.71
Khanewal	8	127	2.27
Vehari	6	109	2.60
Lodhran	6	94	2.24
Sahiwal	4	28	1.00
Pakpattan	4	26	0.93
Okara	4	28	1.00
Bahawalpur	8	158	2.82
Bahawalnagar	10	175	2.50
R.Y.Khan	8	142	2.54
D.G.Khan	6	37	0.88
M.Garh	8	45	0.80
Rajan Pur	6	39	0.93
Layyah	6	30	0.71
Sargodha	0	0	0.00
Mianwali	4	21	0.75
Bhakkar	8	11	0.20
Faisalabad	6	98	2.33
TT. Singh	6	46	1.10
Jhang	4	37	1.32

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



American Bollworm: This pest flourishes best at dry & moderate climate with optimum temperature 32-40 °C with relative humidity above 50-70%. humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. It is predicted that population of this pest will sustain on cotton crop during the coming week.

Moth catches on light traps during 3rd week of August, 2021

Moth Catches on Light Traps/Trap/week During 3rd Week of August, 2021				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	4	0	13
Khanewal	4	13	0	28
Vehari	3	0	0	16
Lodhran	3	4	0	14
Sahiwal	2	1	0	1
Pakpattan	2	1	0	1
Okara	3	2	0	2
Bahawalpur	4	7	2	12
Bahawalnagar	5	3	6	11
R.Y.Khan	4	5	4	5
D.G.Khan	3	3	5	2
M.Garh	4	4	7	7
Rajan Pur	3	0	0	0
Layyah	3	0	0	2
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. Maximum lethal temperature for this pest is 45-53 °C. %. humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Due to cultivation of more BT

varieties, it is predicted that population of this pest will remain as such 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. It is %. humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 39.90 °C, Min. 28.94 °C with R. humidity 54.10%) & forecast for the next week temp. Max. 39.75 °C, Min. 28.04°C with humidity 29.51%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

CLCuV: The incidence of this disease is expected to increase on cotton crop to 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	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.

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