

## PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4<sup>th</sup> WEEK OF JUNE, 2022

**Whitefly:** On overall Punjab basis 9.93% above ETL spots have been observed during current week as compared to 12.18% % in last week and 0.38% during the same corresponding period of last year. And 87.84% below ETL spots have been observed during current week as compared to 80.30% in last week and 67.39% 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	SAHIWAL	36.1	28	T.T.SINGH	9.4
2	CHICHA WATNI	36.1	29	R.Y.KHAN	9.3
3	PAK PATTAN	27.3	30	D.G.KHAN	9.3
4	MIAN CHANNU	26.8	31	JHANG	9.1
5	18-HAZARI	25.0	32	JAHANIAN	8.7
6	HAROON ABAD	22.7	33	DEPALPUR	8.3
7	ARIF WALA	17.9	34	MUZUFAR GARH	8.3
8	VEHARI	17.8	35	KEHROR PACCA	8.1
9	KHANEWAL	17.0	36	RENALA KHURD	8.0
10	CHISHTIAN	16.1	37	KHAN PUR	8.0
11	HASILPUR	15.5	38	DARYA KHAN	8.0
12	BURE WALA	15.4	39	KAROR L.E.	7.5
13	OKARA	15.4	40	LIAQUAT PUR	7.1
14	FORT ABBAS	14.0	41	KABIR WALA	6.7
15	SHUJABAD	13.3	42	JALAL PUR P.W	6.5
16	MINCHAN ABAD	13.2	43	PIPLAN	6.5
17	KOT ADDU	12.5	44	TAUNSA	6.3
18	LAYYAH	12.5	45	ALI PUR	6.3
19	MULTAN	11.9	46	JATOI	6.3
20	RAJAN PUR	11.6	47	BAHAWAL PUR	5.4
21	MAILSI	11.1	48	KOT CHUTTA	4.3
22	PIR MAHAL	10.8	49	YAZMAN	4.2
23	BAHAWAL NAGAR	10.3	50	A.P SIAL	2.6
24	SADIQ ABAD	10.0	51	SUMUNDRI	2.2
25	ROJHAN	10.0	52	DUYAPUR	2.0
26	JARANWALA	10.0	53	A.P.EAST	2.0
27	CHOBARA	9.5	54	SHORKOT	1.9

**Jassid:** On overall Punjab basis 14.86% above ETL spots has been observed as compared to 10.25% in last week and same week of last year 11.47%. And 80.29% below ETL spots have been observed during current week as compared to 79.26% in last week and 68.66% 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	MULTAN	40.7	28	TAUNSA	14.6
2	MUZUFAR GARH	35.4	29	MIAN CHANNU	14.3
3	ALI PUR	33.3	30	MAILSI	13.9
4	JAHANIAN	32.6	31	KOT CHUTTA	13.0
5	SHUJABAD	31.1	32	18-HAZARI	12.5

6	CHICHA WATNI	30.6	33	RENALA KHURD	12.0
7	JATOI	29.2	34	KHAN PUR	12.0
8	PAK PATTAN	27.3	35	PIR MAHAL	10.8
9	VEHARI	26.7	36	LIAQUAT PUR	10.7
10	JALAL PUR P.W	26.1	37	BAHAWAL PUR	10.7
11	KOT ADDU	25.0	38	GOJRA	10.7
12	R.Y.KHAN	24.1	39	LODHRAN	10.4
13	D.G.KHAN	24.1	40	SHORKOT	9.6
14	KABIR WALA	23.3	41	KEHROR PACCA	8.1
15	LAYYAH	22.5	42	A.P SIAL	7.9
16	RAJAN PUR	21.7	43	CHISHTIAN	7.1
17	BURE WALA	20.5	44	SUMUNDRI	6.7
18	SADIQ ABAD	20.0	45	MANKERA	5.3
19	KAROR L.E.	20.0	46	TANDLIANWALA	5.0
20	SAHIWAL	19.4	47	DUYAPUR	4.1
21	JHANG	18.2	48	FORT ABBAS	4.0
22	ARIF WALA	17.9	49	DARYA KHAN	4.0
23	KHANEWAL	17.0	50	HASILPUR	3.4
24	CHOBARA	16.7	51	BAHAWAL NAGAR	3.4
25	FAISALABAD	16.7	52	YAZMAN	2.1
26	T.T.SINGH	15.6	53	A.P.EAST	2.0
27	OKARA	15.4	54	MINCHAN ABAD	1.9

**Thrips:** On overall Punjab basis 2.31% above ETL spots has been observed as compared to 3.12% in last week and same week of last year i.e. 1.26%. And 92.65% below ETL spots have been observed during current week as compared to 85.89% in last week and 71.34% 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	ROJHAN	20.0	14	PIR MAHAL	5.4
2	JATOI	16.7	15	CHISHTIAN	3.6
3	18-HAZARI	12.5	16	LAYYAH	2.5
4	RAJAN PUR	11.6	17	CHOBARA	2.4
5	JAM PUR	8.7	18	SUMUNDRI	2.2
6	BURE WALA	7.7	19	KHANEWAL	2.1
7	KAROR L.E.	7.5	20	TAUNSA	2.1
8	MIAN CHANNU	7.1	21	YAZMAN	2.1
9	VEHARI	6.7	22	FORT ABBAS	2.0
10	KABIR WALA	6.7	23	A.P.EAST	2.0
11	ALI PUR	6.3	24	MINCHAN ABAD	1.9
12	MIANWALI	5.9	25	BAHAWAL NAGAR	1.7
13	MAILSI	5.6	14	PIR MAHAL	5.4

**Mealy Bug:** On overall Punjab basis 1.72% spots (all considered above ETL) of Mealy Bug have been observed as compared to 1.89% in last week and 0.71% 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	JALAL PUR P.W	10.9	15	CHICHA WATNI	2.8
2	RAJAN PUR	5.8	16	PIR MAHAL	2.7
3	MAILSI	5.6	17	KEHROR PACCA	2.7

4	SAHIWAL	5.6	18	KAROR L.E.	2.5
5	MULTAN	5.1	19	LAYYAH	2.5
6	CHOBARA	4.8	20	SHUJABAD	2.2
7	HAROON ABAD	4.5	21	KOT CHUTTA	2.2
8	JAM PUR	4.3	22	JATOI	2.1
9	ALI PUR	4.2	23	YAZMAN	2.1
10	MIAN CHANNU	3.6	24	MUZUFAR GARH	2.1
11	BAHAWAL PUR	3.6	25	LODHRAN	2.1
12	HASILPUR	3.4	26	FORT ABBAS	2.0
13	KABIR WALA	3.3	27	CHISHTIAN	1.8
14	T.T.SINGH	3.1	28	BAHAWAL NAGAR	1.7

**Mites:** On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.08% in last week and 0.00% during the same corresponding period of last year. And 0.86% below ETL spots have been observed during current week as compared to 3.78% in last week and 0.80% during the same corresponding period of last year.

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

No hot Spot Found

**Dusky Cotton Bug:** On overall Punjab basis 0.04% above ETL spots have been observed during current week as compared to 0.12% in last week and 0.00% during the same corresponding period of last year. And 21.63% below ETL spots have been observed during current week as compared to 19.01% in last week and 5.08% during the same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of dusky cotton bug**

S. NO.	TEHSIL	%AGE
1	MULTAN	1.7

**Aphid:** On overall Punjab basis 0.00% above ETL spots has been observed during current week as compared to 0.10% in last week and 0.00% during the same corresponding period of last year. And 0.60% below ETL spots have been observed during current week as compared to 5.50% in last week and 0.00% during the same corresponding period of last year.

**Armyworm:** On overall Punjab basis 0.39% spots (all considered above ETL) of Armyworm have been observed as compared to 0.81% in last week and 0.29% 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	JAM PUR	4.3	6	KOT ADDU	2.1
2	SAHIWAL	2.8	7	MIAN CHANNU	1.8

3	LAYYAH	2.5	8	BAHAWAL PUR	1.8
4	KHANEWAL	2.1	9	CHISHTIAN	1.8
5	MUZUFAR GARH	2.1	10	RAJAN PUR	1.4

**Pink Boll Worm:** On overall Punjab basis 0.08% above ETL spots have been observed as compared to 0.19% in last week and 0.46% same corresponding period of the last year. And 2.70% below ETL spots have been observed as compared to 2.93% in last week and 5.38% during same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of Pink Boll Worm**

S. NO.	TEHSIL	%AGE
1	ALI PUR	4.2

**American Bollworm:** On overall Punjab basis 0.04% above ETL spots have been observed as compared to 0.00% in last week and 0.04% during same corresponding period of last year. And 0.35% below ETL spots have been observed as compared to 1.58% in last week and 0.71% during same corresponding period of last year.

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

S. NO.	TEHSIL	%AGE
1	JHANG	3.0

**Spotted Bollworm:** On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.12% in last week and 0.00% during same corresponding period of last year & 0.00% below ETL spots have been observed as compared to 0.58% in last week and 0.04% during same corresponding period of last year.

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

No hot spot observed

**CLCuV:** On overall Punjab basis 6.14% spots (all considered above ETL) of CLCV have been observed as compared to 1.50% in last week and 0.13% during the same corresponding period of the last year.

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

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	JALAL PUR P.W	37.0	17	MUZUFAR GARH	6.3
2	MULTAN	33.9	18	KALLOR KOT	5.9
3	KABIR WALA	30.0	19	JAM PUR	4.3
4	JATOI	27.1	20	JAHANIAN	4.3
5	R.Y.KHAN	22.2	21	KOT ADDU	4.2
6	RAJAN PUR	20.3	22	SADIQ ABAD	4.0
7	VEHARI	15.6	23	D.G.KHAN	3.7
8	BURE WALA	15.4	24	CHISHTIAN	3.6
9	MAILSI	13.9	25	HASILPUR	3.4
10	SHUJABAD	13.3	26	PIR MAHAL	2.7

11	TAUNSA	10.4	27	CHOBARA	2.4
12	ALI PUR	8.3	28	KHANEWAL	2.1
13	LODHRAN	8.3	29	FORT ABBAS	2.0
14	DUYAPUR	8.2	30	KHAN PUR	2.0
15	KEHROR PACCA	8.1	31	MINCHAN ABAD	1.9
16	LIAQUAT PUR	7.1			

## FORECAST FOR THE NEXT WEEK

### Meteorological data of the current week 2021-2022

Districts	2022				2021			
	Temperature °C		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall ( mm)
	Max.	Min.			Max.	Min.		
MULTAN	39.6	27.6	64.0	0.0	39.5	31.0	70.1	0.0
KHANEWAL	36.4	25.4	61.3	2.0	39.3	29.9	61.9	0.0
VEHARI	39.7	28.7	59.6	0.0	38.0	30.6	62.7	0.0
LODHRAN	36.0	24.6	68.0	7.0	40.4	29.7	70.1	0.0
Sahiwal	41.5	27.5	46.0	7.3	40.0	27.0	51.0	2.0
Pakpattan	41.4	27.2	48.0	2.6	42.0	29.0	52.0	0.0
Okara	41.2	27.0	54.0	15.5	39.0	27.0	49.0	0.0
Bahawalpur	33.6	23.6	63.8	16.8	40.7	27.8	49.1	Traces
Bahawalnagar	35.6	24.8	64.0	0.0	41.6	26.1	42.0	0.0
R.Y.Khan	35.4	24.0	57.3	0.0	42.3	28.1	51.3	0.0
D.G. Khan	44.00	33.00	24.00	0.00	44.50	31.00	30.00	0.00
Muzaffar Garh	37.20	23.10	70.00	18.00	42.33	32.50	31.50	0.00
Rajanpur	42.5	27.67	45.58	0.00	43.87	29.37	39.88	8.00
Layyah	46.00	23.00	52.00	0.00	40.00	26.00	63.00	0.00
<b>TOT/AVG</b>	<b>39.29</b>	<b>26.23</b>	<b>55.54</b>	<b>69.20</b>	<b>68.15</b>	<b>28.93</b>	<b>51.68</b>	<b>10.00</b>

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

Division	Dated	30/6	1/7	2/7	3/7	4/7	5/7	6/7
Multan	Max.Temp.	44	41	40	40	42	43	42
	Min.Temp.	35	33	32	34	33	34	34
	Humidity %	27	34	37	36	33	31	31
Sahiwal	Max.Temp.	43	36	37	39	40	42	41
	Min.Temp.	31	30	30	32	31	33	31
	Humidity %	29	55	49	41	39	33	34
Bahawalpur	Max.Temp.	43	40	40	40	41	41	41
	Min.Temp.	33	33	31	33	32	33	33
	Humidity %	29	37	37	36	36	33	33
D.G. Khan	Max.Temp.	45	42	41	42	42	43	42
	Min.Temp.	35	33	32	34	34	34	33
	Humidity %	25	33	36	34	33	32	33
Average Cotton Region	Max.Temp.	41.18						
	Min.Temp.	32.71						
	Humidity %	34.86						

Source: [timeanddate.com](http://timeanddate.com)

**Summary of weather forecast**

Overall weather for seven days in cotton zone during next week will remain moderate, sunny and shiny.

**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. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest will increase 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 temperature for this pest is 45-51 °C The current weather conditions on overall Punjab basis (temp. Max. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest will increase 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. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest will increase 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.

39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest can increase on cotton crop during the coming week.

**Mites:** This pest flourishes 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. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. 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. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

**Aphid:** This pest flourishes best in moderate climate with optimum temperature 25-35 °C with relative humidity above 60-80%. The current weather conditions on overall Punjab basis (temp. Max. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest may decrease during the 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

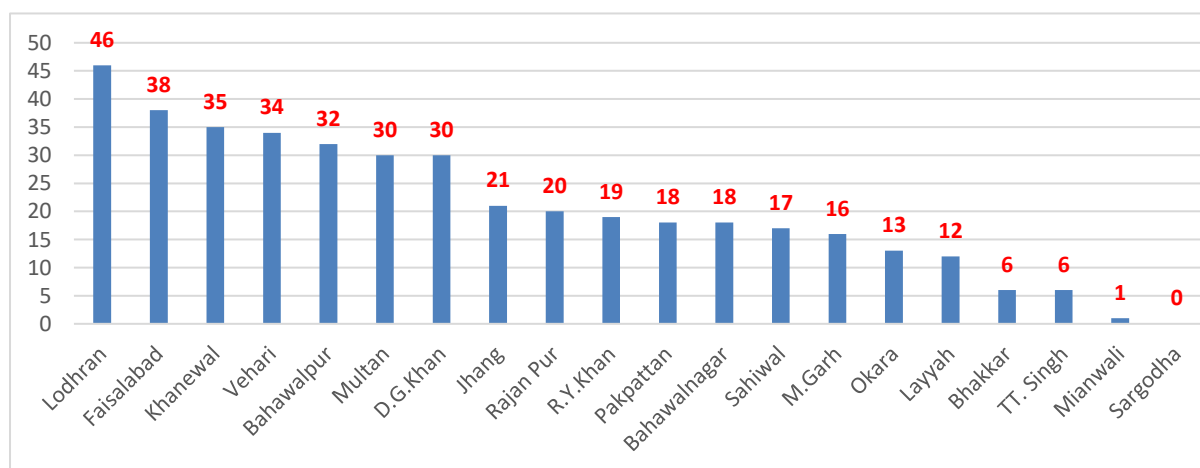
Punjab basis (temp. Max. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%.

It is predicted that population of this pest will increase on cotton during the coming week.

### Moth Catches in Pheromone Traps during 4rth Week of JUNE, 2022

Moth Catches in Pheromone Traps During 4rth Week of June, 2022			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	30	0.71
Khanewal	8	35	0.63
Vehari	6	34	0.81
Lodhran	6	46	1.10
Sahiwal	4	17	0.61
Pakpattan	4	18	0.64
Okara	4	13	0.46
Bahawalpur	8	32	0.57
Bahawalnagar	10	18	0.26
R.Y.Khan	8	19	0.34
D.G.Khan	6	30	0.71
M.Garh	8	16	0.29
Rajan Pur	6	20	0.48
Layyah	6	12	0.29
Sargodha	2	00	0.00
Mianwali	4	01	0.04
Bhakkar	8	06	0.11
Faisalabad	6	38	0.90
TT. Singh	6	06	0.14
Jhang	8	21	0.75

*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%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. It is predicted that population of this pest will remain same on cotton crop during the coming week.

### **Moth catches on light traps during 4rth week of June, 2022**

<b>Moth Catches on Light Traps/Trap/night During 4rth Week of June, 2022</b>				
<b>District</b>	<b>Traps Installed</b>	<b>A.B.W</b>	<b>S.B.W</b>	<b>Armyworm</b>
Multan	3	1.3	0.0	1.6
Khanewal	4	1.7	0.0	4.6
Vehari	3	1.3	0.4	1.3
Lodhran	3	2.4	0.0	2.6
Sahiwal	2	0.9	0.0	0.6
Pakpattan	2	0.6	0.0	0.3
Okara	3	0.7	0.0	0.4
Bahawalpur	4	1.0	0.6	1.2
Bahawalnagar	5	1.6	1.3	2.3
R.Y.Khan	4	0.7	0.9	1.2
D.G.Khan	3	0.3	0.6	1.2
M.Garh	4	0.4	0.7	0.7
Rajan Pur	3	1.7	1.0	4.6
Layyah	3	0.0	0.0	0.6
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. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity

34.86%. 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%. The current weather conditions on overall Punjab basis (temp. Max. 39.29 °C, Min. 26.23 °C with R. humidity 55.54%) & forecast for the next week temp. Max. 41.18 °C, Min. 32.71°C with humidity 34.86%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

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

### 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 2nd 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

