

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 3rd WEEK OF July, 2023

Whitefly: On overall Punjab basis 8.30% above ETL spots have been observed during current week as compared to 6.97 % % in last week and 28.63% during the same corresponding period of last year. And 89.32% below ETL spots have been observed during current week as compared to 88.41% in last week and 70.24% 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	MIAN CHANNU	44.6	30	TANDLIANWALA	8.0
2	VEHARI	35.2	31	JAHANIAN	7.7
3	SAHIWAL	33.3	32	A.P SIAL	7.5
4	CHICHA WATNI	27.0	33	CHOBARA	7.4
5	ARIF WALA	24.1	34	KEHROR PACCA	7.3
6	SAHIWAL	24.0	35	BHALWAL	6.7
7	KABIR WALA	22.6	36	SADIQ ABAD	6.5
8	BURE WALA	21.7	37	HASILPUR	5.0
9	MAILSI	20.0	38	LIAQUAT PUR	4.7
10	KHANEWAL	18.8	39	MULTAN	4.6
11	KHUSHAB	17.2	40	D.G.KHAN	4.5
12	RAJAN PUR	16.7	41	ISA KHEL	3.7
13	BHAKKAR	16.7	42	YAZMAN	3.3
14	GOJRA	14.5	43	BAHAWAL PUR	3.2
15	KOT CHUTTA	12.5	44	R.Y.KHAN	2.9
16	JAM PUR	12.5	45	SHORKOT	2.8
17	PAK PATTAN	12.1	46	MINCHAN ABAD	2.6
18	OKARA	12.0	47	JHANG	2.4
19	QUIDABAD	11.8	48	BHERA	2.1
20	RENALA KHURD	10.0	49	DUYAPUR	1.8
21	SUMUNDRI	10.0	50	FORT ABBAS	1.8
22	BHOWANA	10.0	51	CHISHTIAN	1.8
23	LAYYAH	9.9	52	KHAN PUR	1.5
24	PIR MAHAL	9.7	53	KOT ADDU	1.4
25	KAROR L.E.	8.9	54	JATOI	1.4
26	ROJHAN	8.7	55	TAUNSA	1.3
27	PIPLAN	8.6	56	ALI PUR	1.3
28	T.T.SINGH	8.1	57	MUZUFAR GARH	1.3
29	JARANWALA	8.0	58	LODHRAN	1.1

Jassid: On overall Punjab basis 15.8% above ETL spots have been observed as compared to 17.23% in last week and same week of last year 18.12% and 82.95% below ETL spots have been observed during current week as compared to 80.54% in last week and 80.23% 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	SAHIWAL	83.3	33	KOT ADDU	13.7
2	SHUJABAD	50.0	34	BHALWAL	13.3
3	JALAL PUR P.W	41.8	35	KABIR WALA	13.2
4	MULTAN	36.9	36	BURE WALA	13.0
5	LODHRAN	30.7	37	KHANEWAL	13.0
6	BAHAWAL PUR	30.6	38	VEHARI	13.0
7	CHISHTIAN	30.4	39	MIAN CHANNU	12.3

8	YAZMAN	29.5	40	PAK PATTAN	12.1
9	CHOBARA	27.9	41	OKARA	12.0
10	KEHROR PACCA	27.3	42	QUIDABAD	11.8
11	KOT CHUTTA	26.3	43	MIANWALI	11.8
12	SADIQ ABAD	24.2	44	A.P.EAST	10.7
13	KAROR L.E.	23.3	45	MINCHAN ABAD	10.5
14	MAILSI	22.2	46	BHERA	10.4
15	LIAQUAT PUR	21.9	47	RENALA KHURD	10.0
16	DUYAPUR	21.4	48	JHANG	8.2
17	FORT ABBAS	21.4	49	T.T.SINGH	8.1
18	TAUNSA	20.0	50	A.P SIAL	7.5
19	MUZUFAR GARH	20.0	51	GOJRA	7.3
20	JAHANIAN	19.2	52	JATOI	6.8
21	SAHIWAL	18.0	53	JARANWALA	5.7
22	LAYYAH	17.4	54	TANDLIANWALA	5.7
23	D.G.KHAN	16.9	55	RAJAN PUR	5.6
24	DARYA KHAN	16.7	56	CHAK JUMRAH	5.3
25	KHAN PUR	16.4	57	JAM PUR	5.2
26	ALI PUR	15.8	58	SUMUNDRI	5.0
27	R.Y.KHAN	15.7	59	ROJHAN	4.3
28	HASILPUR	15.0	60	SHORKOT	4.2
29	ISA KHEL	14.8	61	HAROON ABAD	4.2
30	PIPLAN	14.3	62	CHICHA WATNI	4.1
31	KHUSHAB	13.8	63	PIR MAHAL	1.4
32	BAHAWAL NAGAR	13.7			

Thrips: On overall Punjab basis 7.47% above ETL spots have been observed as compared to 7.07% in last week and same week of last year i.e. 4.07%. And 91.33% below ETL spots have been observed during current week as compared to 90.57% in last week and 92.47% 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	FORT ABBAS	25.0	24	KAROR L.E.	8.9
2	MAILSI	24.4	25	BURE WALA	8.7
3	SADIQ ABAD	24.2	26	RAJAN PUR	8.3
4	MUZUFAR GARH	20.0	27	YAZMAN	8.2
5	R.Y.KHAN	20.0	28	MINCHAN ABAD	7.9
6	VEHARI	18.5	29	JAHANIAN	7.7
7	MULTAN	18.5	30	ROJHAN	7.6
8	BAHAWAL NAGAR	17.6	31	ISA KHEL	7.4
9	MIANWALI	17.6	32	KOT ADDU	6.8
10	TAUNSA	17.3	33	KOT CHUTTA	6.3
11	SAHIWAL	16.7	34	CHOBARA	5.9
12	SHUJABAD	16.7	35	HASILPUR	5.0
13	CHISHTIAN	16.1	36	KHANEWAL	4.3
14	ALI PUR	13.2	37	HAROON ABAD	4.2
15	KEHROR PACCA	12.7	38	DUYAPUR	3.6
16	D.G.KHAN	12.4	39	LAYYAH	3.3
17	JATOI	12.2	40	MIAN CHANNU	3.1
18	BAHAWAL PUR	11.3	41	PIPLAN	2.9
19	KHAN PUR	10.4	42	SAHIWAL	2.0
20	LODHRAN	10.2	43	A.P.EAST	1.8
21	LIAQUAT PUR	9.4	44	JAM PUR	1.0
22	PAK PATTAN	9.1	45	T.T.SINGH	1.0
23	JALAL PUR P.W	9.0			

Mealy Bug: On overall Punjab basis 2.16% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.83% in last week and 5.36% 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	R.Y.KHAN	11.4	16	RAJAN PUR	2.8
2	ROJHAN	9.8	17	LODHRAN	2.3
3	VEHARI	9.3	18	MAILSI	2.2
4	MULTAN	7.7	19	KAROR L.E.	2.2
5	KHAN PUR	7.5	20	BAHAWAL NAGAR	2.0
6	JALAL PUR P.W	7.5	21	A.P.EAST	1.8
7	JATOI	6.8	22	HASILPUR	1.7
8	BHERA	6.3	23	YAZMAN	1.6
9	ALI PUR	5.3	24	BAHAWAL PUR	1.6
10	SADIQ ABAD	4.8	25	CHOBARA	1.5
11	SHUJABAD	4.2	26	KHANEWAL	1.4
12	JAM PUR	4.2	27	PIR MAHAL	1.4
13	KABIR WALA	3.8	28	TAUNSA	1.3
14	CHISHTIAN	3.6	29	KOT CHUTTA	1.3
15	DUYAPUR	3.6	30	D.G.KHAN	1.1

Mites: On overall Punjab basis 0.00% above ETL spots has been observed during current week as compared to 0.17% in last week and 0.00% during the same corresponding period of last year. And 5.28% below ETL spots have been observed during current week as compared to 3.22% in last week and 1.01% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of mites

No hot spot observed this week

Dusky Cotton Bug: On overall Punjab basis 0.24% above ETL spots have been observed during current week as compared to 0.03% in last week and 0.40% during the same corresponding period of last year. And 17.53% below ETL spots have been observed during current week as compared to 15.07% in last week and 24.57% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of dusky cotton bug

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	MULTAN	9.2	2	SHUJABAD	6.3

Armyworm: On overall Punjab basis 0.21% spots (all considered above ETL) of Armyworm have been observed as compared to 0.20% in last week and 0.28% 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	JATOI	5.4	4	YAZMAN	1.6
2	BAHAWAL NAGAR	2.0	5	JAM PUR	1.0
3	VEHARI	1.9			

Pink Boll Worm: On overall Punjab basis 0.43% above ETL spots have been observed as compared to 0.30% in last week and 0.16% same corresponding period of the last year. And 11.69% below ETL spots have been observed as compared to 8.60% in last week and 5.32% during same corresponding period of last year.

Tehsil wise percentage of hot spots of pink boll worm

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	JAM PUR	6.3	5	MAILSI	2.2
2	ROJHAN	3.3	6	BHERA	2.1
3	RAJAN PUR	2.8	7	BAHAWAL PUR	1.6
4	D.G.KHAN	2.2	8	JATOI	1.4

American Boll Worm: On overall Punjab basis 0.00% 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 0.53% below ETL spots have been observed as compared to 0.53% in last week and 0.52% during same corresponding period of last year.

Tehsil wise percentage of hot spots of American Boll worm

No hot spot observed this week

Spotted Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.21% below ETL spots have been observed as compared to 0.27% in last week and 0.08% during same corresponding period of last year.

Tehsil wise percentage of hot spots of Spotted Boll worm

No hot spot observed this week

CLCuV: On overall Punjab basis 0.43% spots (all considered above ETL) of CLCV have been observed as compared to 0.27% in last week and 27.35% 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	MAILSI	8.9	6	LODHRAN	2.2
2	VEHARI	7.4	5	KEHROR PACCA	1.8
3	SHUJABAD	4.2	7	BAHAWAL PUR	1.6
4	LIAQUAT PUR	3.1			

FORECAST FOR THE NEXT WEEK

Meteorological data of the current week 2022-2023

Districts	2023				2022			
	Temperature °C		R.H%	Rainfall (mm)	Temperature °C		RH%	Rainfall (mm)
	Max.	Min.			Max.	Min.		
Multan	40.4	30.3	61.6	1.4	35.7	26.3	61.8	6.4
Khanewal	38.3	30.3	51.6	0.4	37.1	27.7	74.4	1.5
Vehari	39.9	30.0	57.9	2.0	34.4	27.6	72.1	4.7
Lodhran	38.3	27.3	65.2	2.3	33.0	21.3	79.8	7.0
Sahiwal	36.7	27.6	73.0	18.0	34.5	26.7	78.5	28.0
Pakpattan	36.3	27.4	75.4	6.0	36.2	27.5	75.6	11.0
Okara	36.1	26.3	78.3	26.0	37.2	28.2	71.2	5.0
Bahawalpur	41.2	29.2	57.9	1.2	36.5	26.6	73.1	57.2 MM
Bahawalnagar	38.0	28.1	66.8	2.0	36.1	26.1	78.1	147.0
R.Y.Khan	39.5	28.8	52.5	0.0	36.9	27.4	70.8	0.0
D.G. Khan	39.4	30.9	58.3	5.0	42.1	25.5	30.0	6.0
M.Garh	41.2	29.5	58.6	12.0	40.5	29.5	46.8	5.0
Rajanpur	39.8	31.5	59.5	3.0	36.5	28.2	71.1	4.0
Layyah	42.0	29.0	50.0	4.0	48.0	23.0	72.0	14.0
TOT/AVG	39.08	29.01	61.89	83.3	37.48	26.54	68.23	296.8

Weather forecast for next 7 day in cotton zone

Division	Dated	25/7	26/7	27/7	28/7	29/7	30/7	31/7
Multan	Max.Temp.	35	32	36	37	37	39	40
	Min.Temp.	30	29	28	30	30	28	31
	Humidity %	61	63	59	49	52	49	42
Sahiwal	Max.Temp.	37	34	36	33	37	38	40
	Min.Temp.	29	28	28	28	29	30	31
	Humidity %	51	56	58	64	50	47	41
Bahawalpur	Max.Temp.	35	34	35	36	37	38	39
	Min.Temp.	31	29	28	29	29	27	30
	Humidity %	57	63	58	50	51	52	45
D.G. Khan	Max.Temp.	34	33	36	40	39	40	36
	Min.Temp.	30	28	27	28	32	32	30
	Humidity %	58	60	55	46	43	41	26
Average Cotton Region	Max.Temp.	36.54						
	Min.Temp.	29.25						
	Humidity %	51.68						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain hot, sunny & 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. Keeping in view above all, it is

predicted that population of this pest will sustain as such 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

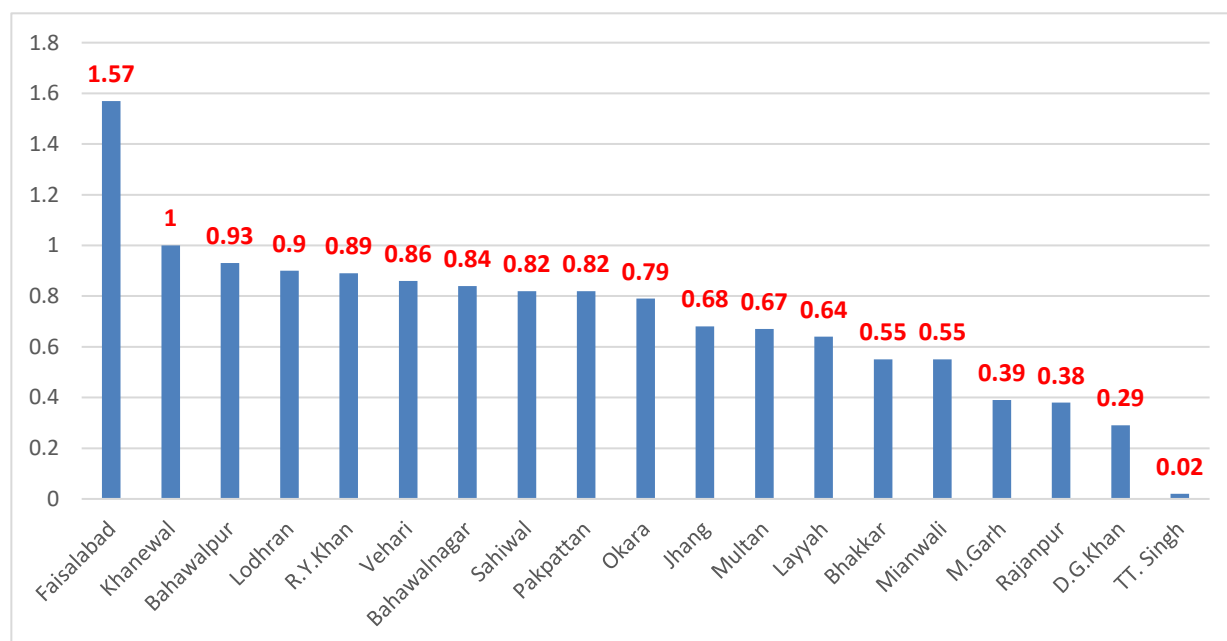
Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. In view above all, it is predicted that population of this pest may sustain 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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. It is predicted that population of this pest will increase on cotton during the coming week.

Moth Catches in Pheromone Traps during 3rd Week of July, 2023

Moth Catches in Pheromone Traps During 3rd Week of July, 2023			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	28	0.67
Khanewal	8	56	1.00
Vehari	6	36	0.86
Lodhran	6	38	0.90
Sahiwal	4	23	0.82
Pakpattan	4	23	0.82
Okara	4	22	0.79
Bahawalpur	8	52	0.93
Bahawalnagar	10	59	0.84
R.Y.Khan	8	50	0.89
D.G.Khan	6	12	0.29
Rajanpur	6	16	0.38
M.Garh	8	22	0.39
Layyah	6	27	0.64
Bhakkar	8	31	0.55
Mianwali	6	23	0.55
Faisalabad	6	66	1.57
TT. Singh	6	01	0.02
Jhang	4	19	0.68

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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%.

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

Moth catches on light traps during 3rd week of July, 2023

Moth Catches on Light Traps/Trap/night During 3rd Week of July, 2023				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	2.0	0.0	2.0
Khanewal	4	2.3	0.0	5.4
Vehari	3	1.6	0.0	2.0
Lodhran	3	2.9	0.0	3.3
Sahiwal	2	0.4	0.0	1.3
Pakpattan	2	0.4	0.0	1.1
Okara	3	0.6	0.0	1.6
Bahawalpur	4	0.9	0.7	1.6
Bahawalnagar	5	0.7	0.6	2.4
R.Y.Khan	4	0.4	0.4	1.4
D.G.Khan	3	0.7	0.3	0.9
M.Garh	4	0.0	0.0	1.6
Rajan Pur	3	0.4	0.4	1.3
Layyah	3	0.0	0.0	1.3
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. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. 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%. The current weather conditions on overall Punjab basis (temp. Max. 39.08 °C, Min. 29.01 °C with R. humidity 61.89%) & forecast for the next week temp. Max. 36.54 °C, Min. 29.25°C with humidity 51.68%. 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 sustain as such 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, kangji booti, aksin etc.
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. Avoid water stress to the plants.
5. Avoid repeated visits of workers from infested fields to healthy fields.
6. Apply the localized chemical spray on infected along with its 2 meter surrounding area.

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. Keep the special observation/ pest scouting when the boll opening starts.
2. Use of soft contact poison on the above ETL.

MANAGEMENT OF ARMY WORM

1. Keep the fields clean from weeds especially Its it which is a preferred host of armyworm.
2. Observe the field on regular basis and under close observation to assess its attack and treat the patch at earliest if necessary.
3. Avoid sowing of Jantar near cotton fields.
4. Regular pest scouting at least twice a week.
5. Hand picking and destruction of egg masses at initial stage as initially its attack starts in patches and is clearly visible.

CLCuV MANAGEMENT

1. Use CLCuV tolerant varieties for sowing.
2. Keep Cotton fields free from all kinds of weeds.
3. Eradicate other alternate host plants of CLCuV and dispose them off carefully.

4. Thinning out and destruction of Virus affected plants.
5. Remove CLCuV affected plants in less than 60 DAS (Days after sowing) crop.
6. Hoeing after each irrigation or rain at wattar condition till canopies permit.
7. 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.
8. Irrigate the fields when needed keeping in view weather conditions e.g. temperature, rainfall, soil water holding capacity and plant need.
9. Balanced use of Fertilizer i.e. N.P.K. along with foliar growth promoters if necessary.
10. Keep transmission vector (whitefly) at the low ebb

Alternate host plants of CLCuV vector (whitefly)

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 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