

PEST SITUATION ON COTTON CROP IN PUNJAB DURING 1st WEEK OF JULY, 2021

Whitefly: On overall Punjab basis 2.31 above ETL spots have been observed during current week as compared to 0.38% % in last week and 5.21% during the same corresponding period of last year. And 83.54% below ETL spots have been observed during current week as compared to 67.39% in last week and 76.67% 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	MANKERA	25.0	13	GOJRA	4.2
2	LAYYAH	17.8	14	PAK PATTAN	4.0
3	CHICHA WATNI	17.5	15	HAROON ABAD	2.5
4	SAHIWAL	15.6	16	CHOBARA	2.3
5	ARIF WALA	8.6	17	KEHROR PACCA	2.0
6	KAROR L.E.	6.8	18	HASILPUR	2.0
7	JAM PUR	5.6	19	JATOI	2.0
8	MAILSI	5.0	20	SADIQ ABAD	2.0
9	T.T.SINGH	4.7	21	MUZUFAR GARH	2.0
10	RENALA KHURD	4.5	22	KOT CHUTTA	1.8
11	BAHAWAL NAGAR	4.5	23	TAUNSA	1.8
12	CHISHTIAN	4.3			

Jassid: On overall Punjab basis 18.12% above ETL spots has been observed as compared to 11.47% in last week and same week of last year 11.18%. And 74.16% below ETL spots have been observed during current week as compared to 68.66% in last week and 71.79% 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	KOT CHUTTA	56.4	25	KABIR WALA	16.2
2	D.G.KHAN	52.0	26	SAHIWAL	15.6
3	TAUNSA	42.9	27	RAJAN PUR	15.6
4	18-HAZARI	37.5	28	PIR MAHAL	15.2
5	BHAKKAR	33.3	29	KHANEWAL	14.3
6	DUYAPUR	32.4	30	A.P SIAL	14.3
7	MULTAN	30.8	31	LIAQUAT PUR	14.0
8	BAHAWAL PUR	30.8	32	SHORKOT	12.5
9	CHICHA WATNI	30.0	33	GOJRA	12.5
10	MUZUFAR GARH	30.0	34	MANKERA	12.5
11	KAROR L.E.	27.3	35	HASILPUR	12.2
12	VEHARI	25.9	36	PAK PATTAN	12.0
13	SHUJABAD	25.6	37	YAZMAN	12.0
14	LAYYAH	24.4	38	SADIQ ABAD	12.0
15	KOT ADDU	23.8	39	A.P.EAST	11.7
16	LODHRAN	23.4	40	BURE WALA	11.1
17	JATOI	22.4	41	JAM PUR	11.1

18	MAILSI	20.0	42	MIAN CHANNU	10.3
19	ARIF WALA	20.0	43	OKARA	10.0
20	DARYA KHAN	20.0	44	ROJHAN	10.0
21	JAHANIAN	19.5	45	SUMUNDRI	10.0
22	KEHROR PACCA	18.4	46	KHAN PUR	9.8
23	CHOBARA	18.2	47	ALI PUR	9.8
24	CHISHTIAN	17.4	48	RENALA KHURD	9.1

Thrips: On overall Punjab basis 4.22% above ETL spots has been observed as compared to 1.26% in last week and same week of last year i.e. 4.33%. And 81.60% below ETL spots have been observed during current week as compared to 71.34% in last week and 75.07% 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	ISA KHEL	25.0	18	MIAN CHANNU	6.9
2	CHISHTIAN	15.2	19	CHOBARA	6.8
3	JAM PUR	14.8	20	MIANWALI	6.7
4	KOT CHUTTA	14.5	21	PIR MAHAL	6.1
5	MUZUFAR GARH	14.0	22	KEHROR PACCA	4.1
6	LAYYAH	13.3	23	D.G.KHAN	4.0
7	BAHAWAL NAGAR	11.4	24	BURE WALA	3.7
8	VEHARI	11.1	25	TAUNSA	3.6
9	MAILSI	10.0	26	RAJAN PUR	3.1
10	ROJHAN	10.0	27	DUYAPUR	2.7
11	KAROR L.E.	9.1	28	JALAL PUR P.W	2.5
12	JHANG	9.1	29	FORT ABBAS	2.3
13	KABIR WALA	8.1	30	MINCHAN ABAD	2.3
14	PIPLAN	7.7	31	LODHRAN	2.1
15	HAROON ABAD	7.5	32	KHANEWAL	2.0
16	JAHANIAN	7.3	33	HASILPUR	2.0
17	A.P SIAL	7.1	34	JATOI	2.0

Mealy Bug: On overall Punjab basis 1.72% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.71% in last week and 1.01% 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	18-HAZARI	12.5	13	YAZMAN	4.0
2	CHISHTIAN	8.7	14	BAHAWAL PUR	3.8
3	DUYAPUR	8.1	15	VEHARI	3.7
4	KHAN PUR	7.8	16	RAJAN PUR	3.1
5	SHORKOT	6.3	17	ARIF WALA	2.9
6	JAM PUR	5.6	18	CHICHA WATNI	2.5
7	SHUJABAD	5.1	19	FORT ABBAS	2.3
8	MAILSI	5.0	20	T.T.SINGH	2.3
9	OKARA	5.0	21	R.Y.KHAN	2.1
10	KAROR L.E.	4.5	22	KEHROR PACCA	2.0

11	LODHRAN	4.3	23	MUZUFAR GARH	2.0
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Mites: On overall Punjab basis no prevalence of AETL has been observed during current week and last week against 0.01% spots during the same corresponding period of last year. However, 1.45% below ETL spots have been observed during current week as compared to 0.80% in last week and 2.52% during the same corresponding period of last year.

Dusky Cotton Bug: On overall Punjab basis no prevalence of AETL has been observed during current week and last week against during the same corresponding period of last year. However, 6.57% below ETL spots have been observed during current week as compared to 5.08% in last week and 19.42 % during the same corresponding period of last year.

Armyworm: On overall Punjab basis 0.68% spots (all considered above ETL) of Armyworm have been observed as compared to 0.29% in last week and 1.47% 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	DEPALPUR	12.5	8	JAHANIAN	2.4
2	MAILSI	5.0	9	KAROR L.E.	2.3
3	VEHARI	3.7	10	LODHRAN	2.1
4	BURE WALA	3.7	11	R.Y.KHAN	2.1
5	KABIR WALA	2.7	12	KHANEWAL	2.0
6	DUYAPUR	2.7	13	LIAQUAT PUR	2.0
7	CHICHA WATNI	2.5	14	JAM PUR	1.9

Pink Boll Worm: On overall Punjab basis 0.41% above ETL spots have been observed as compared to 0.46% in last week and 0.25% same corresponding period of the last year. And 7.80% below ETL spots have been observed as compared to 5.38% in last week and 10.42% during same corresponding period of last year.

Tehsil wise percentage of hot spots of PBW

S. NO.	TEHSIL	%AGE	S.NO.	TEHSIL	%AGE
1	SHUJABAD	10.3	4	KHAN PUR	2.0
2	YAZMAN	2.0	5	BAHAWAL PUR	1.9
3	LIAQUAT PUR	2.0	6	JAM PUR	1.9

American Bollworm: On overall Punjab basis 0.09% above ETL spots have been observed as compared to 0.04 in last week and 0.00% during same corresponding period of last year. And 0.50% below ETL spots have been observed as compared to 0.71% in last week and 1.43% during same corresponding period of last year.

Tehsil wise percentage of hot spots of ABW

S. NO.	TEHSIL	%AGE
1	R.Y.KHAN	4.3

Spotted Bollworm: On overall Punjab basis 0.05% above ETL spots have been observed as compared to 0.00% in last week and 0.00% during same corresponding period of last year & 0.45% below ETL spots have been observed as compared to 0.04% in last week and 0.04% during same corresponding period of last year.

CLCuV: On overall Punjab basis 1.00% spots (all considered above ETL) of CLCV have been observed as compared to 0.13% in last week and 0.13% 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	VEHARI	11.1	5	PIR MAHAL	6.1
2	CHICHA WATNI	10.0	6	DUYAPUR	5.4
3	SAHIWAL	9.4	7	KAROR L.E.	4.5
4	TAUNSA	8.9	8	T.T.SINGH	2.3

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	39.86	30.57	74.00	0.00	41.00	29.80	69.00	21.00
KHANEWAL	41.57	30.71	65.00	0.00	41.00	31.33	52.33	2.00
VEHARI	39.71	29.71	69.64	0.00	40.86	29.86	67.14	2.00
LODHRAN	40	29.44	73.94	0.00	41.33	29.77	65.5	1.00
Sahiwal	41.00	28.00	49.00	0.00	39.80	29.60	56.00	38.00
Pakpattan	42.00	30.00	53.00	6.00	44.80	31.20	52.80	0.00
Okara	39.00	24.00	47.00	5.00	41.00	29.51	56.00	7.00
Bahawalpur	41.53	29.00	47.78	0.00	41.83	29.92	49.33	0.00
Bahawalnagar	42.00	29.29	47.50	7.00	41.79	28.36	48.71	0.00
R.Y.Khan	41.20	26.30	43.00	0.00	43.60	31.00	45.70	0.00
D.G. Khan	43.00	29.86	57.07	0.00	43.29	30.43	55.57	11.00
M.Garh	42.17	30.83	31.50	0.00	43.00	31.57	54.21	5.00
Rajanpur	42.9	29.85	39.37	0.00	41.65	32.1	41.12	0.00
Layyah	48.63	29.75	40.75	0.00	40.63	28.00	40.50	1.13
TOT/AVG	41.75	29.09	52.75	18.00	41.83	30.18	53.85	88.13

Weather forecast for next 7 day in cotton zone

Division	Dated	6/7	7/7	8/7	9/7	10/7	11/7	12/7
Multan	Max.Temp.	43	44	44	44	44	46	39
	Min.Temp.	32	34	34	4	34	34	31
	Humidity %	25	25	24	25	26	22	20
Sahiwal	Max.Temp.	41	41	41	40	40	44	38
	Min.Temp.	30	32	31	31	31	32	27
	Humidity %	30	32	35	45	34	28	37
Bahawalpur	Max.Temp.	42	43	43	43	43	44	40
	Min.Temp.	31	33	32	32	32	33	31
	Humidity %	28	26	26	25	25	23	23
D.G. Khan	Max.Temp.	44	45	46	45	45	46	39
	Min.Temp.	32	34	33	34	34	34	32
	Humidity %	24	23	23	24	24	22	20
Average Cotton Region	Max.Temp.	42.75						
	Min.Temp.	31.21						
	Humidity %	26.57						

Source: timeanddate.com

Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain Hot, Sunny & 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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view the climatic conditions, **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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view the prevailing conditions, **it is predicted that population of this pest may 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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view the climatic

conditions, 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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view, it is predicted that population of this pest may 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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view, it is predicted that population of this pest will increase 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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. Keeping in view, it is predicted that population of this pest may increase during coming week.

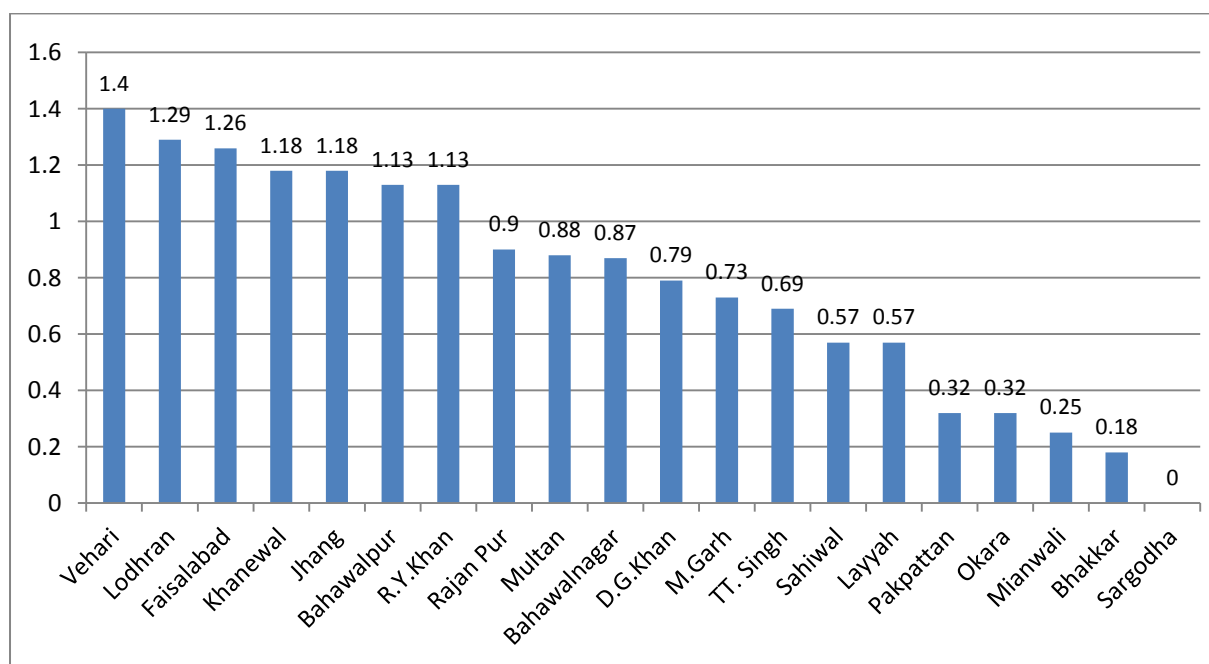
Pink Bollworm: This pest flourishes best at moderate climate with optimum temperature 32-40 °C with relative humidity above 60-80%. Maximum lethal temperature for this pest is 45-53 °C. The current weather conditions on overall Punjab basis (temp. Max. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%.

It is predicted that population of this pest may increase on cotton during the coming week & mostly will be observed in flowers.

Moth Catches in Pheromone Traps during 1st Week of July, 2021

Moth Catches in Pheromone Traps During 1st Week of July 2021			
District	Traps Installed	Moth catches/Trap/week	Av. Moth catches/Trap/night
Multan	6	37	0.88
Khanewal	8	66	1.18
Vehari	6	59	1.40
Lodhran	6	54	1.29
Sahiwal	4	16	0.57
Pakpattan	4	9	0.32
Okara	4	9	0.32
Bahawalpur	8	63	1.13
Bahawalnagar	10	61	0.87
R.Y.Khan	8	63	1.13
D.G.Khan	6	33	0.79
M.Garh	8	41	0.73
Rajan Pur	6	38	0.90
Layyah	6	24	0.57
Sargodha	0	0	0
Mianwali	4	7	0.25
Bhakkar	8	10	0.18
Faisalabad	6	53	1.26
TT. Singh	6	29	0.69
Jhang	4	33	1.18

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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. It is predicted that population of this pest will sustain on cotton crop during the coming week.

Moth catches on light traps during 1st week of July, 2021

Moth Catches on Light Traps/Trap/week During 1st Week of July, 2021				
District	Traps Installed	A.B.W	S.B.W	Armyworm
Multan	3	1	0	4
Khanewal	4	7	0	22
Vehari	3	2	0	7
Lodhran	3	12	0	23
Sahiwal	2	3	0	4
Pakpattan	2	3	0	3
Okara	3	4	0	4
Bahawalpur	4	7	2	7
Bahawalnagar	5	7	2	8
R.Y.Khan	4	12	9	10
D.G.Khan	3	2	0	7
M.Garh	4	13	9	11
Rajan Pur	3	1	1	2
Layyah	3	0	0	1
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. 41.75 °C, Min. 29.09 °C with R. humidity 52.75%) & forecast for the next week temp. Max. 42.75 °C, Min. 31.21°C with humidity 26.57%. 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 predicted that population of this pest will sustain on cotton crop during the coming week. Keeping in view, it is predicted that population of this pest may 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