

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

Whitefly: On overall Punjab basis 0.27% above ETL spots have been observed during current week as compared to 0.24% % in last week and 1.26% during the same corresponding period of last year. And 48.47% below ETL spots have been observed during current week as compared to 40.38% in last week and 51.13% 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 | Renala Khurd | 12.5 | 3 | Sahiwal | 3.3 |
| 2 | Okara | 11.1 | | | |

Jassid: On overall Punjab basis 4.68% above ETL spots has been observed as compared to 3.03% in last week and same week of last year 3.92%. And 56.52% below ETL spots have been observed during current week as compared to 43.42% in last week and 48.82% 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 | 18 Hazari | 20.0 | 21 | Gojra | 5.6 |
| 2 | Okara | 16.7 | 22 | Choubara | 5.0 |
| 3 | Renala Khurd | 16.7 | 23 | Kallar Kot | 5.0 |
| 4 | Multan | 16.3 | 24 | Yazman | 4.9 |
| 5 | Chichawatni | 15.0 | 25 | Karor Lal Esun | 4.7 |
| 6 | Mian Channu | 13.8 | 26 | Kotaddu | 4.1 |
| 7 | Arif Wala | 13.6 | 27 | Chishtian | 4.0 |
| 8 | Sahiwal | 13.3 | 28 | Khan Pur | 4.0 |
| 9 | Jhang | 13.3 | 29 | Burewala | 3.8 |
| 10 | M.Garh | 12.0 | 30 | T T Singh | 3.8 |
| 11 | Shujabad | 11.4 | 31 | Vehari | 3.3 |
| 12 | Alipur | 11.4 | 32 | Mailsi | 3.2 |
| 13 | Pakpattan | 10.5 | 33 | Lodhran | 3.0 |
| 14 | Jahania | 10.0 | 34 | Haroon abad | 2.5 |
| 15 | Layyah | 9.6 | 35 | Minchnabad | 2.4 |
| 16 | Khanewal | 6.5 | 36 | Bahawalnagar | 2.3 |
| 17 | R Y Khan | 6.5 | 37 | Kotchutta | 2.3 |
| 18 | Kabir Wala | 6.3 | 38 | Dunyapur | 2.2 |
| 19 | Liaqat Pur | 6.0 | 39 | Kehror pacca | 2.1 |
| 20 | Sadiqabad | 6.0 | | | |

Thrips: On overall Punjab basis 0.58% above ETL spots has been observed as compared to 0.73% in last week and same week of last year i.e. 1.44%. And 56.56% below ETL spots have been observed during current week as compared to 51.49% in last week and 56.62% 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 | Chishtia | 4.0 | 7 | Minchanabad | 2.4 |
| 2 | M.Gar | 4.0 | 8 | Karor Lal Esun | 2.3 |
| 3 | Sahiwal | 3.3 | 9 | Kot Chutta | 2.3 |
| 4 | Kabir wala | 3.1 | 10 | Multan | 2.0 |
| 5 | Haroon Abad | 2.5 | 11 | Layyah | 1.9 |
| 6 | Choubara | 2.5 | | | |

Mealy Bug: On overall Punjab basis 0.09% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.05% in last week and 0.04% 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 | Kabir Wala | 3.1 | 2 | Gojra | 2.8 |

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 0.27% below ETL spots have been observed during current week as compared to 0.15% in last week and 0.96% during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Mites

No hot spot find yet.

Dusky Cotton Bug: On overall Punjab basis 0.00% above ETL spots have been observed during current week as compared to 0.00% in last week and 0.83% during the same corresponding period of last year. And 4.45% below ETL spots have been observed during current week as compared to 2.79% in last week and 18.16 % during the same corresponding period of last year.

Tehsil wise percentage of hot spots of Dusky Cotton bug

No hot spot find yet

Armyworm: On overall Punjab basis 0.45% spots (all considered above ETL) of Armyworm have been observed as compared to 0.78% in last week and 3.01% 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 | Jahania | 11.1 | 5 | Gojra | 3.3 |
| 2 | Kabir Wala | 8.3 | 6 | Sillanwali | 2.5 |
| 3 | Shujabad | 7.5 | 7 | Arif Wala | 2.2 |

Pink Boll Worm: On overall Punjab basis 0.31% above ETL spots have been observed as compared to 0.24% in last week and 0.87% same corresponding period of the last year. And 5.94% below ETL spots have been observed as compared to 4.11% in last week and 7.40% 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 | 4.5 | 4 | Khan Pur | 2.0 |
| 2 | Khanewal | 4.3 | 5 | Bahawalpur | 1.7 |
| 3 | Multan | 2.0 | | | |

American Boll Worm: On overall Punjab basis 0.00% above ETL spots have been observed as compared to 0.05% in last week and 0.13% during same corresponding period of last year. And 0.76% below ETL spots have been observed as compared to 1.42% in last week and 2.96% during same corresponding period of last year.

Tehsil wise percentage of hot spots of American Boll Worm

No Hot spot Find Yet

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 & 0.04% below ETL spots have been observed as compared to 0.00% in last week and 0.09% during same corresponding period of last year.

Tehsil wise percentage of hot spots of Spotted Boll Worm

No hot spot find yet.

CLCuV: On overall Punjab basis 0.09% spots (all considered above ETL) of CLCV have been observed as compared to 0.00% in last week and 0.04% 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 | Shujabad | 2.3 | 2 | Dunya pur | 2.2 |

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 | 35.75 | 26.00 | 76.38 | 23.40 | 41.90 | 31.40 | 71.30 | 0.00 |
| KHANEWAL | 37.57 | 28.00 | 62.29 | 16.00 | 42.71 | 30.86 | 60.14 | 0.00 |
| VEHARI | 36.00 | 26.29 | 61.57 | 37.00 | 42.57 | 31.71 | 66.36 | 0.00 |
| LODHRAN | 36 | 24.42 | 74.643 | 33.00 | 43.14 | 31.2857 | 65.57 | 0.00 |
| Sahiwal | 36.00 | 26.00 | 57.00 | 7.00 | 42.00 | 28.00 | 57.00 | 0.00 |
| Pakpattan | 39.00 | 29.00 | 51.00 | 19.00 | 41.80 | 30.80 | 49.60 | 0.00 |
| Okara | 37.00 | 25.00 | 48.00 | 9.50 | 42.00 | 29.00 | 68.00 | 0.00 |
| Bahawalpur | 37.35 | 27.23 | 57.00 | 11.40 | 43.19 | 29.85 | 43.94 | 12.56 |
| Bahawalnagar | 36.14 | 25.93 | 57.50 | 24.00 | 45.29 | 28.93 | 40.36 | 0.00 |
| R.Y.Khan | 39.50 | 26.62 | 43.75 | 23.00 | 44.50 | 29.75 | 51.88 | 0.00 |
| D.G. Khan | 40.71 | 27.43 | 59.57 | 12.00 | 40.29 | 30.57 | 55.21 | 2.00 |
| M. Garh | 41.50 | 28.00 | 41.08 | 11.00 | 45.71 | 32.71 | 26.79 | 0.00 |
| Rajanpur | 40.14 | 29.02 | 40.80 | 9.00 | 41.34 | 28.24 | 39.00 | 0.00 |
| Layyah | 41.63 | 27.75 | 52.23 | 0.00 | 42.13 | 27.25 | 42.50 | 0.00 |
| TOT/AVG | 38.16 | 26.91 | 55.91 | 235.30 | 42.75 | 30.03 | 52.69 | 14.56 |

Weather forecast for next 7 day in cotton zone

| Division | Dated | 21/6 | 22/6 | 23/6 | 24/6 | 25/6 | 26/6 | 27/6 |
|-----------------------|------------|--------------|------|------|------|------|------|------|
| Multan | Max.Temp. | 37 | 40 | 43 | 42 | 45 | 43 | 37 |
| | Min.Temp. | 26 | 28 | 30 | 30 | 32 | 33 | 29 |
| | Humidity % | 40 | 28 | 22 | 24 | 18 | 18 | 18 |
| Sahiwal | Max.Temp. | 38 | 41 | 43 | 42 | 41 | 43 | 40 |
| | Min.Temp. | 27 | 38 | 30 | 28 | 29 | 29 | 30 |
| | Humidity % | 32 | 24 | 21 | 24 | 30 | 25 | 17 |
| Bahawalpur | Max.Temp. | 38 | 41 | 42 | 42 | 44 | 42 | 37 |
| | Min.Temp. | 26 | 28 | 30 | 29 | 30 | 31 | 27 |
| | Humidity % | 39 | 42 | 25 | 27 | 21 | 23 | 21 |
| D.G. Khan | Max.Temp. | 38 | 42 | 44 | 44 | 46 | 44 | 37 |
| | Min.Temp. | 26 | 29 | 32 | 32 | 32 | 32 | 29 |
| | Humidity % | 36 | 22 | 20 | 20 | 15 | 22 | 18 |
| Average Cotton Region | Max.Temp. | 41.29 | | | | | | |
| | Min.Temp. | 29.71 | | | | | | |
| | Humidity % | 24.71 | | | | | | |

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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. Keeping in view above all, it is predicted that population of this pest will maintain at same level.

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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. Keeping in view above all, it is predicted that population of this pest may rapidly 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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. Keeping in view above all, it is predicted that population of this pest will maintain at same level.

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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. Keeping in view above all, it is predicted that population of this pest will sustain on cotton crop.

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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. Keeping in view above all, it is predicted that population of this pest will sustain during the coming week.

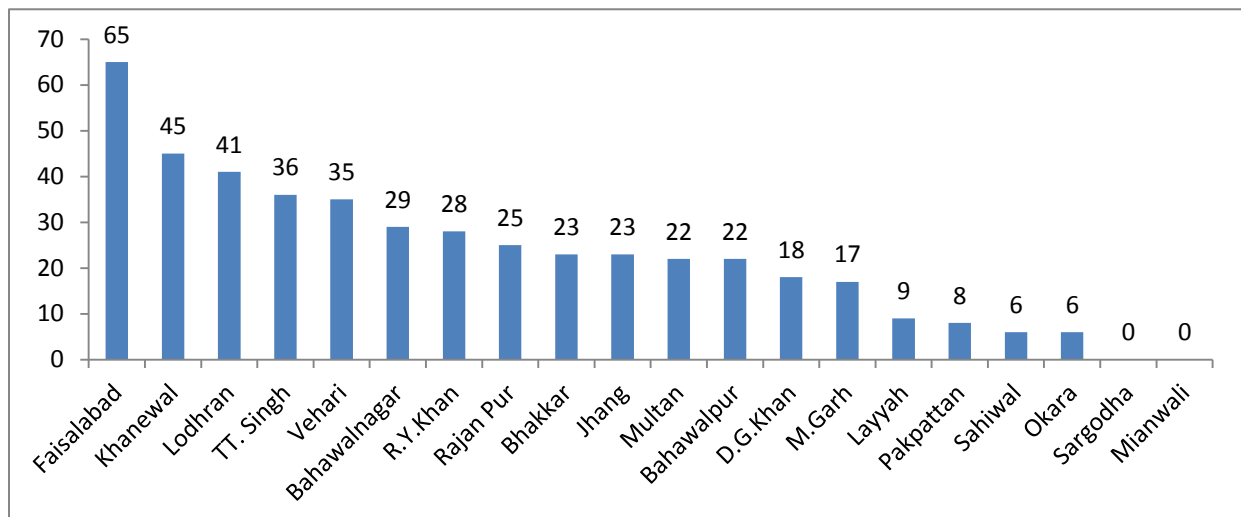
Dusky Cotton Bug: This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. 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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. It is predicted that population of this pest will increase on cotton during the coming week & mostly will be observed in flowers.

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

| Moth Catches in Pheromone Traps During 3rd Week of June 2021 | | | |
|--|-----------------|------------------------|-----------------------------|
| District | Traps Installed | Moth catches/Trap/week | Av. Moth catches/Trap/night |
| Multan | 6 | 22 | 0.52 |
| Khanewal | 8 | 45 | 0.80 |
| Vehari | 6 | 35 | 0.83 |
| Lodhran | 6 | 41 | 0.98 |
| Sahiwal | 4 | 6 | 0.21 |
| Pakpattan | 4 | 8 | 0.29 |
| Okara | 4 | 6 | 0.21 |
| Bahawalpur | 8 | 22 | 0.39 |
| Bahawalnagar | 10 | 29 | 0.41 |
| R.Y.Khan | 8 | 28 | 0.50 |
| D.G.Khan | 6 | 18 | 0.43 |
| M.Garh | 8 | 17 | 0.30 |
| Rajan Pur | 6 | 25 | 0.60 |
| Layyah | 6 | 9 | 0.21 |
| Sargodha | 0 | 0 | 0 |
| Mianwali | 4 | 0 | 0.00 |
| Bhakkar | 8 | 23 | 0.41 |
| Faisalabad | 6 | 65 | 1.55 |
| TT. Singh | 6 | 36 | 0.86 |
| Jhang | 4 | 23 | 0.82 |

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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. 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 June, 2021

| Moth Catches on Light Traps/Trap/week During 3rd Week of June, 2021 | | | | |
|---|------------------------|--------------|--------------|-----------------|
| District | Traps Installed | A.B.W | S.B.W | Armyworm |
| Multan | 3 | 7 | 3 | 9 |
| Khanewal | 4 | 11 | 0 | 21 |
| Vehari | 3 | 1 | 0 | 6 |
| Lodhran | 3 | 10 | 0 | 25 |
| Sahiwal | 2 | 6 | 0 | 7 |
| Pakpattan | 2 | 5 | 0 | 6 |
| Okara | 3 | 7 | 0 | 8 |
| Bahawalpur | 4 | 6 | 0 | 9 |
| Bahawalnagar | 5 | 7 | 3 | 9 |
| R.Y.Khan | 4 | 4 | 3 | 6 |
| D.G.Khan | 3 | 0 | 0 | 4 |
| M.Garh | 4 | 8 | 8 | 15 |
| Rajan Pur | 3 | 0 | 0 | 1 |
| Layyah | 3 | 0 | 0 | 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. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. 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. The current weather conditions on overall Punjab basis (temp. Max. 38.16 °C, Min. 26.91 °C with R. humidity 55.91%) & forecast for the next week temp. Max. 41.29 °C, Min. 29.71°C with humidity 24.71%. 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 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 |
| | | | 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 |