

## **PEST SITUATION ON COTTON CROP IN PUNJAB DURING 4<sup>TH</sup> WEEK OF MAY, 2020**

**Whitefly:** 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 14.10% below ETL spots have been observed during current week as compared to 9.81% in last week and 21.38% during the same corresponding period of last year.

### **Tehsil wise percentage of hot spots of White Fly**

No hot spot find yet.

**Jassid:** On overall Punjab basis 0.07% above ETL spots has been observed as compared to 0.00% in last week and same week of last year 0.06%. And 8.71% below ETL spots have been observed during current week as compared to 5.55% in last week and 10.95% during the same corresponding period of last year.

**Thrips:** On overall Punjab basis 0.00% above ETL spots has been observed as compared to 0.00% in last week and same week of last year i.e. 0.07%. And 19.19% below ETL spots have been observed during current week as compared to 9.49% in last week and 17.98% during the same corresponding period of last year.

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

No hot spot find yet.

**Mealy Bug:** On overall Punjab basis 0.00% spots (all considered above ETL) of Mealy Bug have been observed as compared to 0.00% in last week and 0.06% spots during the same corresponding period of the last year.

### **Tehsil wise percentage of hot spots of Mealy Bug**

No hot spot find yet.

**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 0.30% below 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.

### **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 0.00% during the same corresponding period of last year. And 6.86% below ETL spots have been observed during current week as compared to 3.70% in last week and 0.68% during the same corresponding period of last year.

**Armyworm:** On overall Punjab basis 1.11% spots (all considered above ETL) of Armyworm have been observed as compared to 1.13% in last week and 0.85% spots during the same corresponding period of the last year.

**Pink Boll Worm:** On overall Punjab basis 0.07% above ETL spots have been observed as compared to 0.00% in last week and 0.06% same corresponding period of the last year. And 2.95% below ETL spots have been observed as compared to 1.69% in last week and 3.86% during same corresponding period of last year.

**American Bollworm:** 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. And 0.30% below ETL spots have been observed as compared to 0.08% in last week and 0.00% during same corresponding period of last year.

#### **Tehsil wise percentage of hot spots of American boll worm**

No hot spot find yet.

**Spotted Bollworm:** 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 & 0.00% below ETL spots have been observed as compared to 0.00% in last week and 0.00% 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 0.00% spots (all considered above ETL) of CLCV have been observed as compared to 0.00% in last week and 0.00% during the same corresponding period of the last year.

#### **Tehsil wise percentage of hot spots of cotton leaf curl virus**

No hot spot find yet.

**FORECAST FOR THE NEXT WEEK****Meteorological data of the current week 2019-2020**

| Districts      | 2020         |              |              |               | 2019           |              |              |                |
|----------------|--------------|--------------|--------------|---------------|----------------|--------------|--------------|----------------|
|                | Temperature  |              | R.H%         | Rainfall (mm) | Temperature °C |              | RH%          | Rainfall ( mm) |
|                | Max.         | Min.         |              |               | Max.           | Min.         |              |                |
| MULTAN         | 42.50        | 26.63        | 64.75        | 0.00          | 37.14          | 26.43        | 57.21        | 0.20           |
| KHANEWAL       | 44.33        | 28.89        | 60.89        | 0.00          | 37.89          | 24.61        | 67.43        | 7.70           |
| VEHARI         | 43.33        | 28.33        | 63.78        | 0.00          | 36.83          | 26.33        | 70.75        | 11.00          |
| LODHRAN        | 42.70        | 28.00        | 61.30        | 0.00          | 37.57          | 24.86        | 62.86        | 4.00           |
| Sahiwal        | 42.00        | 24.00        | 62.00        | 0.00          | 41.00          | 25.00        | 59.00        | 0.00           |
| Pakpattan      | 41.78        | 27.00        | 47.33        | 0.00          | 38.44          | 26.67        | 48.89        | 0.00           |
| Okara          | 45.50        | 24.00        | 78.00        | 0.00          | 43.00          | 26.50        | 65.00        | 0.00           |
| Bahawalpur     | 42.59        | 25.26        | 36.17        | 0.00          | 39.97          | 24.67        | 45.72        | 0.00           |
| Bahawalnagar   | 43.00        | 27.00        | 34.33        | 0.00          | 39.25          | 23.50        | 46.42        | 4.00           |
| R.Y.Khan       | 41.14        | 25.57        | 75.57        | 0.00          | 38.44          | 23.11        | 65.11        | 0.00           |
| D.G. Khan      | 46.00        | 29.50        | 66.63        | 0.00          | 41.43          | 28.43        | 73.00        | 17.00          |
| Muzaffar Garh  | 42.00        | 24.86        | 31.21        | 0.00          | 40.14          | 27.29        | 34.50        | 0.00           |
| Rajanpur       | 41.65        | 26.82        | 41.87        | 0.00          | 41.87          | 26.62        | 64.67        | 0.00           |
| Layyah         | 41.43        | 25.71        | 52.43        | 0.00          | 40.43          | 25.71        | 48.14        | 7.00           |
| <b>TOT/AVG</b> | <b>42.85</b> | <b>26.54</b> | <b>55.45</b> | <b>0.00</b>   | <b>39.53</b>   | <b>25.69</b> | <b>57.76</b> | <b>50.90</b>   |

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

| Division     | Dated      | 1/6   | 2/6 | 3/6 | 4/6 | 5/6 | 6/6 | 7/6 |
|--------------|------------|-------|-----|-----|-----|-----|-----|-----|
| Multan       | Max.Temp.  | 37    | 38  | 38  | 36  | 38  | 40  | 38  |
|              | Min.Temp.  | 26    | 28  | 26  | 26  | 26  | 28  | 29  |
|              | Humidity % | 32    | 31  | 32  | 34  | 29  | 36  | 16  |
| Sahiwal      | Max.Temp.  | 34    | 35  | 37  | 36  | 36  | 38  | 35  |
|              | Min.Temp.  | 25    | 25  | 23  | 24  | 26  | 27  | 28  |
|              | Humidity % | 38    | 36  | 34  | 35  | 35  | 29  | 21  |
| Bahawalpur   | Max.Temp.  | 38    | 38  | 38  | 36  | 36  | 38  | 38  |
|              | Min.Temp.  | 27    | 28  | 27  | 26  | 25  | 27  | 28  |
|              | Humidity % | 32    | 33  | 30  | 36  | 30  | 44  | 23  |
| D.G.<br>Khan | Max.Temp.  | 38    | 39  | 39  | 37  | 39  | 40  | 38  |
|              | Min.Temp.  | 26    | 28  | 28  | 26  | 26  | 28  | 30  |
|              | Humidity % | 31    | 28  | 28  | 32  | 29  | 30  | 16  |
| Average      | Max.Temp.  | 37.43 |     |     |     |     |     |     |
| Cotton       | Min.Temp.  | 26.68 |     |     |     |     |     |     |
| Region       | Humidity % | 30.71 |     |     |     |     |     |     |

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

### Summary of weather forecast

Overall weather for seven days in cotton zone during next week will remain cooler than last week.

**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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. 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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. 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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. 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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. Keeping in view above all, it is

predicted that population of this pest will initiate 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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. Keeping in view above all, it is predicted that population of this pest will sustain as such during the coming week.

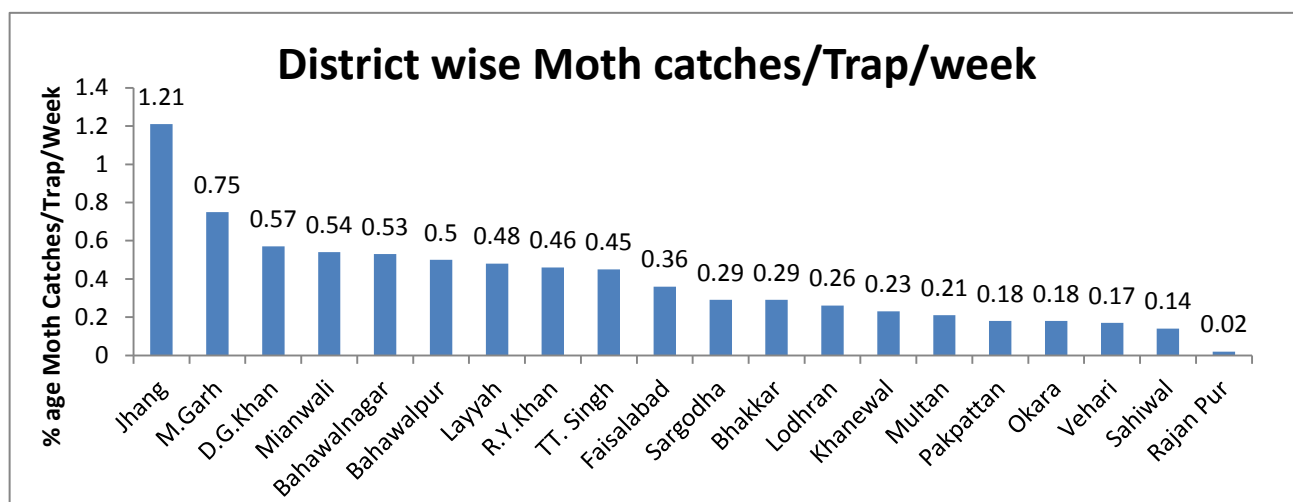
**Dusky Cotton Bug:** This pest flourishes best in moderate climate with optimum temperature 28-40 °C with relative humidity above 50-80%. The current weather conditions on overall Punjab basis (temp. Max. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. Keeping in view above all, it is predicted that population of this pest may increase 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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. It is predicted that population of this pest will increase on cotton during the coming week.

### Moth Catches in Pheromone Traps during 4<sup>th</sup> Week of May, 2020

| Moth Catches in Pheromone Traps During 4 <sup>th</sup> Week of May, 2020 |                 |                        |                             |
|--|-----------------|------------------------|-----------------------------|
| District   | Traps Installed | Moth catches/Trap/week | Av. Moth catches/Trap/night |
| Multan   | 6               | 0.21                   | 0.00                        |
| Khanewal   | 8               | 0.23                   | 0.00                        |
| Vehari   | 6               | 0.17                   | 0.00                        |
| Lodhran  | 6               | 0.26                   | 0.00                        |
| Sahiwal  | 4               | 0.14                   | 0.00                        |
| Pakpattan  | 4               | 0.18                   | 0.00                        |
| Okara  | 4               | 0.18                   | 0.00                        |
| Bahawalpur   | 8               | 0.50                   | 0.07                        |
| Bahawalnagar   | 10              | 0.53                   | 0.21                        |
| R.Y.Khan   | 8               | 0.46                   | 0.09                        |
| D.G.Khan   | 4               | 0.57                   | 0.00                        |
| M.Garh   | 8               | 0.75                   | 0.00                        |
| Rajan Pur  | 6               | 0.02                   | 0.00                        |
| Layyah   | 6               | 0.48                   | 0.00                        |
| Sargodha   | 2               | 0.29                   | 0.00                        |
| Mianwali   | 4               | 0.54                   | 0.00                        |
| Bhakkar  | 8               | 0.29                   | 0.00                        |
| Faisalabad   | 6               | 0.36                   | 0.00                        |
| TT. Singh  | 6               | 0.45                   | 0.00                        |
| Jhang  | 4               | 1.21                   | 0.00                        |

*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. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. It is predicted that population of this pest will increase on non Bt varieties on cotton crop during the coming week.

#### **Moth catches on light traps during 4<sup>th</sup> week of May, 2020**

| <b>Moth Catches on Light Traps/Trap/week During 4<sup>th</sup> Week of May, 2020</b>  |                        |              |              |                 |
|---|------------------------|--------------|--------------|-----------------|
| <b>District</b>   | <b>Traps Installed</b> | <b>A.B.W</b> | <b>S.B.W</b> | <b>Armyworm</b> |
| Multan  | 3                      | 4            | 0            | 7               |
| Khanewal  | 4                      | 9            | 0            | 26              |
| Vehari  | 3                      | 5            | 0            | 11              |
| Lodhran   | 3                      | 2            | 0            | 16              |
| Sahiwal   | 2                      | 5            | 0            | 11              |
| Pakpattan   | 2                      | 2            | 0            | 10              |
| Okara   | 3                      | 3            | 0            | 7               |
| Bahawalpur  | 4                      | 4            | 4            | 6               |
| Bahawalnagar  | 5                      | 10           | 2            | 13              |
| R.Y.Khan  | 4                      | 10           | 7            | 11              |
| D.G.Khan  | 3                      | 0            | 0            | 5               |
| M.Garh  | 4                      | 2            | 1            | 10              |
| Rajan Pur   | 3                      | 2            | 1            | 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. The current weather conditions on overall Punjab basis (temp. Max. 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. 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 42.85 °C, Min. 26.54 °C with R. humidity 55.45%) & forecast for the next week temp. Max. 37.43 °C, Min. 26.68°C with humidity 30.71%. Keeping in view above all, it is predicted that population of this pest will increase during the coming week.

**CLCuV:** No spot has been observed of this disease like same week of last year on cotton crop. The incidence of this disease is expected to sustain as such on cotton crop 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/<br>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 <sup>nd</sup> 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   |