




**Pest Situation of Sugarcane
Crop of Punjab
(1ST – 15TH DECEMBER, 2018)**



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**PEST SITUATION OF SUGARCANE CROP IN THE PUNJAB FOR THE
1ST FORTNIGHT OF DECEMBER, 2018**

PEST SITUATION ON SUGARCANE CROP

BORERS

On overall Punjab basis, 0.00% above ETL of borers has observed as compared to 0.00% spots during the past fortnight and 0.00% during same corresponding period of the last year. Similarly, 0.32% below ETL spots have observed as compared to 1.47% spots during the past fortnight and 2.18% during same corresponding period of the last year.

PYRILLA

On overall Punjab basis 0.16% above ETL of has observed as compared to 4.95% spots during the past fortnight and 0.00% during same corresponding period of the last year. Similarly, 4.19% spots below ETL have observed as compared to 11.51% spots during the past fortnight and 1.09% during same corresponding period of the last year.

WHITEFLY

On overall Punjab basis 0.00% above ETL of Whitefly has observed as compared to 4.69% spots during the past fortnight and 0.00 during same corresponding period of the last year. Similarly, 1.13% spot below ETL have observed as compared to 13.52% spot during the past fortnight and 5.45% during same corresponding period of the last year.

TOKA

On overall Punjab basis 0.00% spot above ETL of Toka has observed as compared to 0.00% spots during the past fortnight and 0.00 % during same corresponding period of the last year. Similarly, 0.00% below ETL has observed as compared to 0.13% spots during the past fortnight and 0.00% during same corresponding period of the last year.

RED ROT

On overall Punjab basis 2.25% spot of Red Rot has observed as compared to 3.35% spots above ETL during the past fortnight and 0.00% during same corresponding period of the last year.

WHIP SMUT

On overall Punjab basis, 0.00% of Whip Smut has observed as compared to 0.00% spots during the past fortnight and 0.73% during same corresponding period of the last year.

METEOROLOGICAL DATA OF THE FORTNIGHT

| Districts | 2018 | | | | 2017 | | | |
|----------------|--------------|--------------|--------------|------------------|--------------|--------------|--------------|-------------------|
| | Temperature | | R.H% | Rainfall (mm) | Temperature | | RH% | Rainfall (mm) |
| | Max. | Min. | | | Max. | Min. | | |
| Multan | 23.40 | 9.20 | 84.20 | 0.00 | 21.80 | 9.80 | 72.20 | 16.00 |
| Khanewal | 23.80 | 11.50 | 69.70 | 3.30 | 23.30 | 9.20 | 69.30 | 14.00 |
| Vehari | 22.90 | 11.10 | 63.40 | 11.00 | 24.70 | 9.20 | 57.10 | 0.00 |
| Lodhran | 21.50 | 13.30 | 66.50 | 5.00 | 22.70 | 15.30 | 64.20 | 12.00 |
| Sahiwal | 22.40 | 9.70 | 75.70 | 4.00 | 21.20 | 7.80 | 61.80 | 11.00 |
| Pakpattan | 20.70 | 12.90 | 92.57 | 0.00 | 21.70 | 13.70 | 90.60 | 0.00 |
| Okara | 21.40 | 9.90 | 85.00 | 1.00 | 22.50 | 10.00 | 88.00 | 0.00 |
| Bahawalpur | 25.20 | 11.66 | 69.36 | 2.00 | 23.81 | 8.09 | 65.07 | 12.50 |
| Bahawalnagar | 22.08 | 10.08 | 63.08 | 0.50 | 24.92 | 8.54 | 62.75 | 0.00 |
| R.Y.Khan | 27.43 | 12.43 | 69.47 | 0.00 | 26.21 | 8.10 | 71.93 | 0.00 |
| D.G Khan | 25.36 | 11.36 | 47.86 | 1.00 | 22.79 | 9.36 | 53.54 | 1.00 |
| M. Garh | 25.00 | 9.51 | 64.05 | 0.50 | 22.01 | 9.84 | 85.66 | 7.00 |
| Rajanpur | 19.46 | 10.63 | 44.16 | 3.00 | 26.58 | 10.17 | 47.00 | 5.00 |
| Layyah | 23.21 | 12.64 | 41.35 | 6.00 | 18.21 | 13.64 | 41.07 | 2.00 |
| TOT/AVG | 23.13 | 11.14 | 66.89 | 37.30 | 23.03 | 10.20 | 66.44 | 80.50 |

Weather forecast for Next 15 Days

| Division | Dated | 14/ 12 | 15/ 12 | 16/ 12 | 17/ 12 | 18/ 12 | 19/ 12 | 20/ 12 | 21/ 12 | 22/ 12 | 23/ 12 | 24/ 12 | 25/ 12 | 26/ 12 | 27/ 12 | 28/ 12 |
|---------------------|------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Multan | Max.Temp. | 20 | 20 | 21 | 21 | 21 | 24 | 23 | 23 | 24 | 22 | 21 | 21 | 21 | 16 | 16 |
| | Min.Temp. | 9 | 9 | 8 | 7 | 7 | 7 | 10 | 10 | 11 | 9 | 9 | 9 | 10 | 7 | 7 |
| | Humidity % | 48 | 42 | 27 | 24 | 22 | 16 | 6 | 6 | 6 | 7 | 12 | 16 | 14 | 15 | 15 |
| Sahiwal | Max.Temp. | 20 | 20 | 20 | 20 | 20 | 22 | 22 | 22 | 22 | 20 | 19 | 19 | 19 | 15 | 15 |
| | Min.Temp. | 8 | 7 | 6 | 5 | 5 | 5 | 9 | 10 | 9 | 10 | 10 | 10 | 10 | 9 | 8 |
| | Humidity % | 38 | 35 | 30 | 29 | 25 | 16 | 7 | 9 | 8 | 9 | 11 | 14 | 14 | 14 | 19 |
| Bahawal pur | Max.Temp. | 21 | 20 | 21 | 20 | 21 | 24 | 23 | 24 | 23 | 22 | 21 | 21 | 21 | 17 | 18 |
| | Min.Temp. | 9 | 9 | 8 | 7 | 6 | 7 | 6 | 7 | 6 | 7 | 7 | 7 | 7 | 6 | 6 |
| | Humidity % | 46 | 42 | 27 | 26 | 24 | 14 | 6 | 8 | 7 | 8 | 10 | 15 | 13 | 12 | 14 |
| D.G.Khan | Max.Temp. | 21 | 21 | 22 | 22 | 22 | 23 | 22 | 22 | 24 | 21 | 21 | 21 | 20 | 16 | 17 |
| | Min.Temp. | 10 | 8 | 7 | 6 | 6 | 5 | 10 | 9 | 10 | 10 | 10 | 10 | 10 | 7 | 7 |
| | Humidity % | 45 | 42 | 24 | 21 | 20 | 16 | 8 | 7 | 6 | 8 | 12 | 15 | 14 | 11 | 13 |
| Average Cotton Zone | Max.Temp. | 20.68 | | | | | | | | | | | | | | |
| | Min.Temp. | 8.00 | | | | | | | | | | | | | | |
| | Humidity % | 18.13 | | | | | | | | | | | | | | |

Optimum Temperature and Humidity of Sugarcane Insects

| Insects | Optimum temperature (C*) | Relative Humidity (%) |
|------------------------|--------------------------|-----------------------|
| Pyrilla | 29C Retard at 43C | 75-84 |
| Borer | 35-41C | 65-70 |
| Mealy bug | 32C | 50-60 |
| Toka | 28.5-33 | 60-70 |
| Black Bug | 22.9C- 40.9C | 46 |
| Mite | 30-36 | 20-40 |
| Termites | 35-40 | 70-80 |
| Red rot of Sugarcane | 25.5-26.5°C | 60% |
| Whip smut of sugarcane | 14 to 35°C | 55-80% |
| Rust of sugarcane | 12° to 14° | 80-85% |
| Sugarcane Mosaic Virus | 35-41 | Below 50% |

FORECAST FOR THE NEXT FORTNIGHT

BORERS

This pest flourish best at optimum temperature 35-41C° with relative humidity below 65-70%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest will decrease during the next fortnight.

PYRILLA

This pest flourish best at optimum temperature 29-40C with relative humidity 75-84%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest will decrease during the next fortnight.

WHITEFLY

This pest flourish best at optimum temperature 29-40C with relative humidity 75-84%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest may sustain as such during the next fortnight.

BLACK BUG

This pest flourish best at optimum temperature 22.9-40.9C with relative R. humidity 46%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest will remain zero during the next fortnight.

TOKA

The optimal temperature and RH conditions for the feeding activities are 28.5-33C and 60-70 C° % respectively. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest may sustain at zero during the next fortnight.

MEALY BUG

This pest flourish best at optimum temperature 29-40C with relative humidity 75-84%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest may remain zero during the next fortnight.

TERMITES

The optimal temperature and RH conditions for the feeding activities are 35°-40C and 70-80% respectively. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest will may sustain on zero during the next fortnight.

MITES

The optimal temperature and RH conditions for the feeding activities are 30°-36C and 20-40% respectively. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the population of this pest will decrease during the next fortnight.

RUST

This disease flourish best at optimum temperature 12-14C with relative humidity below 80-85%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°,

minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the present climatic conditions may be favorable for the development of this disease.

RED ROT

This disease flourish best at optimum temperature 25.5-26.5C with relative humidity 60%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the incidence of this disease may increase in the coming fortnight.

WHIP SMUT

This disease flourish best at optimum temperature 14-35C with relative humidity 55-80%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. It is predicted that the present climatic conditions are favorable for the disease development so its incidence is expected to increase during the next fortnight.

MOSAIC VIRUS

This disease flourish best at optimum temperature 14-35C with relative humidity 55-80%. The current weather conditions on overall Punjab basis is as; maximum temperature 23.13 C°, minimum 11.14 C° with R. humidity 66.89%. Weather forecast for the next fifteen days is as; maximum temperature 20.68 C°, minimum temperature 8.00 C° with humidity 18.13%. As virus is transmitted by insect vector like aphid and whitefly. The attack of these insect pests has reported zero due to which the incidence of viral disease is expected to sustain at zero in the next fortnight.

RECOMMENDATIONS

BORERS MANAGEMENT

- ❖ Install cards of beneficial insects (*Trichogramma*) from the start of crop.
- ❖ Apply granular insecticide carbofuron 3G@ 12-14 kg/acre to the fields where infestation of sugarcane borers observed above ETL.

PYRILLA MANAGEMENT

- ❖ Promote parasitic insects (*Tetrastichus pyrillae*) against eggs of pyrilla and (*Epiricania melanoleuca*) against nymphs and adults of pyrilla.
- ❖ Cut the leaves 6 inch in length from those fields having parasite eggs and pupae in abundance and shift/hang them in fields where parasites are not found.

- ❖ Apply Granular insecticide Carbofuron 3G@ 12-14 kg/acre to the fields where infestation of sugarcane Pyrilla reaches ETL and parasites are not found. Application of granules may be done till the 6 feet height of canes.

WHITEFLY MANAGEMENT

- ❖ Cut severe infested leaves of whitefly and bury in the soil.
- ❖ Install cards of beneficial insects i.e *Chrysoperla carnea*

RUST MANAGEMENT

- ❖ Cultivate resistant varieties.
- ❖ Cut and burn the diseased plants/ Plant pests.

TOKA MANAGEMENT

- ❖ For the management of Toka, eradicate the weeds along with water channels and field boundaries.
- ❖ In case its population exceeds ETL, dusting should be made with suitable insecticides around field bunds of Sugarcane.

WHIP SMUT MANAGEMENT

- ❖ Cut and burn the diseased plants / Plant pests

ECONOMIC THRESHOLD LEVELS (ETLs) OF SUGARCANE PESTS

| INSECT PESTS | ECONOMIC THRESHOLD LEVEL |
|---------------------|---------------------------------|
| Borers | 10% infested canes. |
| Pyrilla | 3 per leaf. |
| Whitefly | 10 per Leaf |
| Black bug | 10 per sheath. |
| Toka | 3 per sweep |
| Mites | 10 per Leaf |
| Mealy bug | Only presence |
| Termites | 10% damage |
| Rodents | 5 live burrows per acre |
| Diseases | Only presence |