




**Pest Situation of Sugarcane  
Crop of Punjab  
(1<sup>ST</sup> – 15<sup>TH</sup> NOVEMBER, 2018)**



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**PEST SITUATION OF SUGARCANE CROP IN THE PUNJAB FOR THE  
1<sup>ST</sup> FORTNIGHT OF NOVEMBER, 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, 6.58% below ETL spots have observed as compared to 9.05% spots during the past fortnight and 15.55% during same corresponding period of the last year.

**PYRILLA**

On overall Punjab basis 5.21% above ETL of has observed as compared to 1.50% spots during the past fortnight and 1.64% during same corresponding period of the last year. Similarly, 13.42% spots below ETL have observed as compared to 13.18% spots during the past fortnight and 22.81% during same corresponding period of the last year.

**WHITEFLY**

On overall Punjab basis 0.57% above ETL of Whitefly has observed as compared to 1.07% spots during the past fortnight and 1.64% during same corresponding period of the last year. Similarly, 16.99% spot below ETL have observed as compared to 21.79% spot during the past fortnight and 15.48% during same corresponding period of the last year.

**BLACK BUG**

On overall Punjab basis 0.00% spots above ETL of Black Bug 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 have observed as compared to 3.42% spots during the past fortnight and 2.95% during same corresponding period of the last year.

**MITES**

On overall Punjab basis 0.00% spot above ETL of Mites has observed as compared to 0.00% spots during the past fortnight and 0.00% during same corresponding period of the last year. Similarly, 0.55% below ETL has observed as compared to 0.00% spots during the past fortnight and 0.55% 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, 0.41% below ETL has observed as compared to 5.56% spots during the past fortnight and 3.97% during same corresponding period of the last year.

**RED ROT**

On overall Punjab basis 6.30% spot of Red Rot has observed as compared to 4.34% spots above ETL during the past fortnight and 4.45% during same corresponding period of the last year.

**WHIP SMUT**

On overall Punjab basis, 0.00% of Whip Smut has observed as compared to 0.93% spots during the past fortnight and 0.07% during same corresponding period of the last year.

**RUST**

On overall Punjab basis, 0.00 of Rust has observed as compared to 0.14% spots above ETL during the past fortnight and 0.41% 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.		
<b>Multan</b>	22.80	14.20	79.60	0.00	25.40	17.60	87.20	0.00
<b>Khanewal</b>	23.60	14.60	72.30	0.00	24.60	14.70	71.50	0.00
<b>Vehari</b>	21.90	17.10	68.50	0.00	25.90	11.90	67.90	0.00
<b>Lodhran</b>	23.50	13.80	76.50	0.00	25.00	15.90	76.30	0.00
<b>Sahiwal</b>	27.00	12.00	63.00	0.00	30.00	12.80	69.00	0.00
<b>Pakpattan</b>	31.70	18.00	89.43	0.00	31.70	19.60	88.00	0.00
<b>Okara</b>	26.70	11.20	79.00	0.00	27.00	14.30	79.00	0.00
<b>Bahawalpur</b>	30.33	14.36	58.70	0.00	27.74	15.49	80.86	0.00
<b>Bahawalnagar</b>	32.79	15.88	58.13	0.00	26.29	13.46	81.88	0.00
<b>R.Y.Khan</b>	34.38	15.69	62.34	0.00	31.11	16.00	70.62	0.00
<b>D.G Khan</b>	28.62	15.93	49.46	0.00	31.86	18.50	48.50	0.00
<b>M. Garh</b>	29.31	14.60	56.22	0.00	27.06	39.56	83.79	0.00
<b>Rajanpur</b>	31.27	17.80	52.39	0.00	37.70	22.00	46.72	0.00
<b>Layyah</b>	24.15	16.61	40.84	0.00	23.15	15.30	40.61	0.00
<b>TOT/AVG</b>	<b>27.72</b>	<b>15.13</b>	<b>64.74</b>	<b>0.00</b>	<b>28.18</b>	<b>17.65</b>	<b>70.85</b>	<b>0.00</b>

### Weather forecast for Next 15 Days

Division	Dated	15/ 11	16/ 11	17/ 11	18/ 11	19/ 11	20/ 11	21/ 11	22/ 11	23/ 11	24/ 11	25/ 11	26/ 11	27/ 11	28/ 11	29/ 11
<b>Multan</b>	Max.Temp.	26	26	27	26	26	28	27	27	25	27	27	26	26	26	27
	Min.Temp.	15	14	14	16	15	13	15	16	16	16	16	16	16	16	16
	Humidity %	43	39	38	34	30	22	12	12	11	16	21	21	22	21	20
<b>Sahiwal</b>	Max.Temp.	26	26	26	27	26	27	26	26	26	26	26	26	26	26	26
	Min.Temp.	14	13	13	14	13	12	15	16	16	16	16	16	16	16	16
	Humidity %	44	38	37	35	33	24	11	12	13	18	19	19	18	16	19
<b>Bahawal pur</b>	Max.Temp.	27	26	28	28	27	28	27	27	27	28	28	27	27	27	28
	Min.Temp.	15	14	16	16	15	14	13	14	13	14	14	14	14	14	14
	Humidity %	39	39	35	34	33	25	13	13	11	17	17	17	18	18	17
<b>D.G.Khan</b>	Max.Temp.	26	26	26	26	27	28	26	26	25	28	28	27	27	27	28
	Min.Temp.	16	14	14	17	16	14	15	15	16	16	16	16	16	16	16
	Humidity %	39	40	36	29	26	21	13	13	12	16	18	19	20	19	18
<b>Average Cotton Zone</b>	Max.Temp.	<b>26.67</b>														
	Min.Temp.	<b>14.98</b>														
	Humidity %	<b>23.38</b>														

### 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. It is predicted that the population of this pest will increase 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. It is predicted that the population of this pest may decrease 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38% 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. 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 27.72 C°, minimum 15.13 C° with R. humidity 64.74%. Weather forecast for the next fifteen days is as; maximum temperature 26.67 C°, minimum temperature 14.98 C° with humidity 23.38%. As virus is transmitted by insect vector like aphid and whitefly. The attack of these insect pests has been reported due to which the incidence of viral disease is expected to increase 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*

### BLACK BUG MANAGEMENT

- ❖ Avoid the cane fields from water stress.
- ❖ Apply granular insecticide carbofuron 3G@ 12-14 kg/acre

## **RUST MANAGEMENT**

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

## **RED ROT MANAGEMENT**

- ❖ Select the seed for cultivation from diseased free crop.
- ❖ Cultivate resistant varieties.
- ❖ Cut and burn the diseased plants with stubbles.
- ❖ If diseased plants are observed in the fields then avoid ratooning of crop.
- ❖ Sowing of cane after dipping the sets in the solution of Thiaphenate Methyl.

## **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**

<b>INSECT PESTS</b>	<b>ECONOMIC THRESHOLD LEVEL</b>
Borers	10% infested canes.
Pyrrilla	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