# PEST SITUATION ON RICE CROP IN PUNJAB DURING 2ND WEEK OF SEPTEMBER, 2019
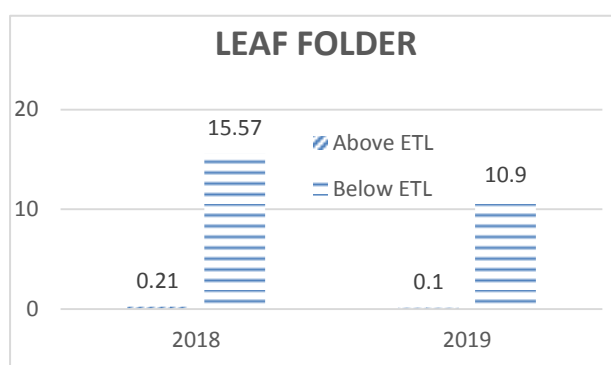
RICE BORERS: On overall Punjab basis 0.35**%** spots above ETL of Rice Borers have been observed as compared to 0.32**%** spots during the same corresponding period of last year, whereas 9.90**%** spots below ETL have been observed as compared to 5.35**%** spots during the same corresponding period of last year. It is predicted that its infestation may increase during next week.
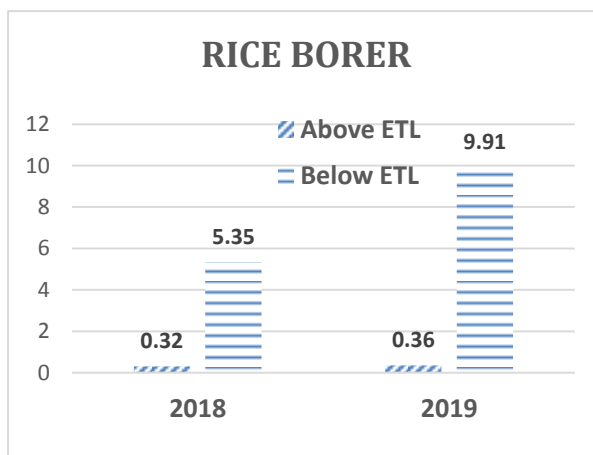
Tehsil wise percentage of hot spots of Rice Borer

| Sr.	TEHSIL	%AGE
1	BAHAWALNAGER	7.1
2	VEHARI	3.6
3	SAHIWAL	2.6

RICE LEAF FOLDER: On overall Punjab basis 0.79**%** spots above ETL of Rice Leaf folder have been observed as compared to 1.78**%** spots during the same corresponding period of last year, whereas 10.9**%** spots below ETL have been observed as compared to 15.6**%** spots during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

Tehsil wise percentage of hot spots of Rice Leaf Folder

Sr.	TEHSIL	%AGE
1	KHANEWAL	40.0
2	VEHARI	17.9
3	SAHIWAL	5.3

DIRECTORATE GENERAL OF PEST WARNING AND QUALITY CONTROL OF PESTICIDES PUNJAB, LAHORE

BROWN PLANT HOPPER: On overall Punjab basis 0.00**%** spots above ETL of Brown Plant hopper have been observed as compared to 0.50**% spots** during the same corresponding period of last year, whereas 0.00**%** spots below ETL have been observed as compared to 0.41**%** spots during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

WHITE-BACKED PLANT HOPPER

- Above ETL
- Below ETL

	2018	2019
Above ETL	0	0
Below ETL	0.41	0.5
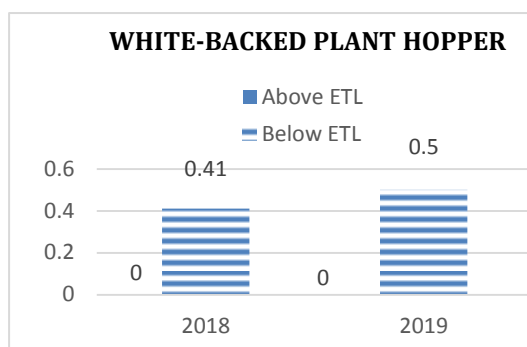
TOKA: On overall Punjab basis 0.00**%** spots above ETL of Toka have been observed as compared to 0.0**%** spots during the same corresponding period of last year, whereas 10.9**%** spots below ETL have been observed as compared to 12**%** spots during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

TOKA

- Above…
- Below…

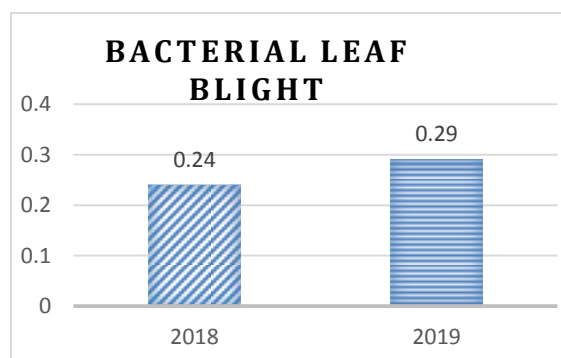|	2018	2019
Above	0	0
Below	12	10.9
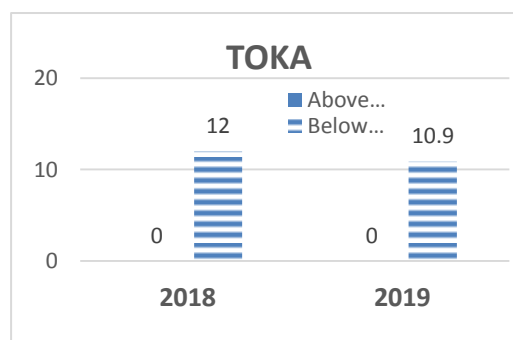
FOOT ROT: On overall Punjab basis symptoms of Foot rot have been recorded, 2.30% spots during the week under report as compared to 2.35**%** spots during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

FOOT ROT

2018	2019
2.35	2.30
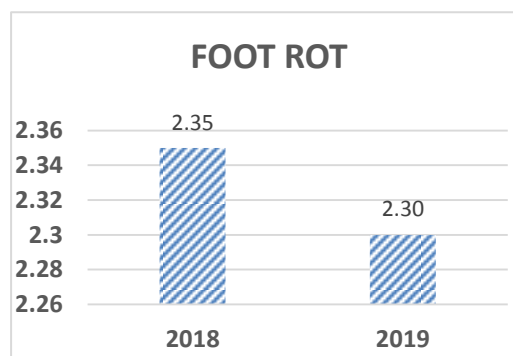
Tehsil wise percentage of hot spots of Foot rot

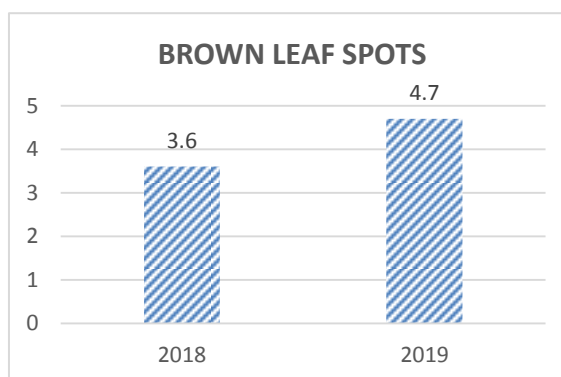| Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	SIALKOT	9.3	6	MULTAN	4
2	PAKPATTAN	6.3	7	M.B.DIN	3
3	SHEIKHUPURA	5.8	8	T.T. SINGH	2.7
4	HAFIZABAD	4.6	9	FAISALABAD	1.6
5	NANKANA SAHIB.	4.5	10	GUJRANWALA	0.9

BACTERIAL LEAF BLIGHT: On overall Punjab basis symptoms of Bacterial Blight have been recorded on 0.29**%** spots during the week under report as compared to 0.24**%** during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

BACTERIAL LEAF BLIGHT

	2018	2019
	0.24	0.29

Tehsil wise percentage of hot spots of Bacterial leaf blight

| Sr.	TEHSIL	%AGE
1	NANKANA SAHIB	3.4
2	SAHIWAL	2.6

BROWN LEAF SPOTS: On overall Punjab basis symptoms of Brown Leaf Spot (BLS) have been recorded on 4.7**%** spots during the week under report as compared to 3.6**%** during the same corresponding period of last year. It is predicted that its infestation may increase during next week.

BROWN LEAF SPOTS

	2018	2019
	3.6	4.7

Tehsil wise percentage of hot spots of Brown Leaf Spots

Sr.	TEHSIL	%AGE	Sr.	TEHSIL	%AGE
1	KHANEWAL	20.0	9	M.B.DIN	6.7
2	BAHAWALNAGER	16.7	10	GUJRANWALA	6.0
3	NAROWAL	15.4	11	SHEIKHUPURA	3.8
4	HAFIZABAD	12.3	12	VEHARI	3.6
5	T.T. SINGH	10.8	13	SAHIWAL	2.6
6	MULTAN	8.3	14	CHINIOT	2.4
7	LODHRAN	7.4	15	LAHORE	1.5
8	SARGODHA	6.9			

SHEATH BLIGHT: On overall Punjab basis symptoms of Sheath Blight have been recorded on 0.00 **%** spots during the week under report as compared to 0.2**%** during the same corresponding period of last year. It is predicted that its infestation may increase during next week.
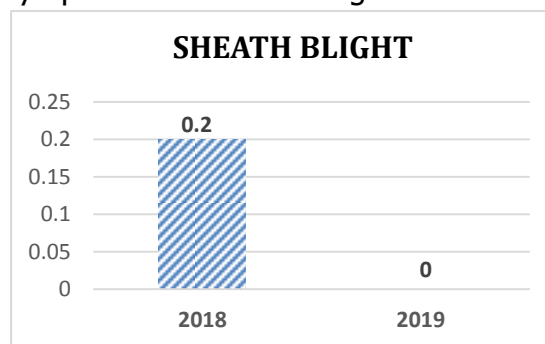
BLAST: On overall Punjab basis symptoms of Rice Blast have been recorded on 0.43**%** spots during the week under report as compared to 0.0**%** during the same corresponding period of last year. It is predicted that its infestation may increase during next week.
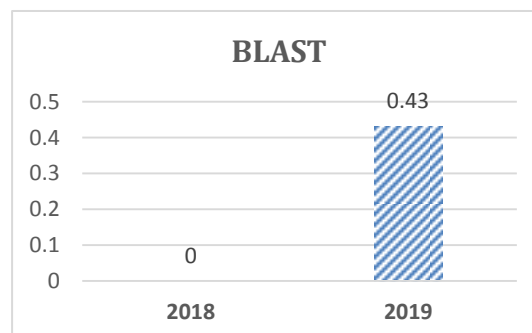

Tehsil wise percentage of hot spots of Rice Blast

Sr.	TEHSIL	%AGE
1	D.G.KHAN	13.6
2	BAHAWALPUR	2.7
3	M.B.DIN	1.7
4	SHEIKHUPURA	1.0

Meteorological data of the current week 2019-2020

METEOROLOGICAL DATA FOR THE 2ND WEEK OF SEPTEMBER 2019, RICE ZONE								
Districts	**2019**				**2018**			
	Temperature		**R.H%**	**Rainfall**	**Temperature**		**RH%**	**Rainfall**
	Max.	**Min.**		**(mm)**	**Max.**	**Min.**		**(mm)**
Gujranwala	40.3	28.0	65.1	0.0	35.1	27.1	70.9	11.1
Hafizabad	40.2	28.2	64.8	0.0	35.0	26.3	71.4	0.0
Sialkot	42.0	38.8	50.6	0.0	38.2	37.4	50.2	52.0
Narowal	34.4	23.1	84.1	0.0	33.4	23.1	82.5	22.0
Gujrat	38.0	26.0	55.0	0.0	36.6	24.2	56.2	22.0
M.B.Din	37.7	24.7	65.0	32.0	37.0	26.0	66.0	17.0
Lahore	36.7	27.3	64.0	0.0	34.7	26.7	64.6	0.0
Sheikhupura	37.5	27.2	56.7	0.0	36.5	27.0	56.7	0.0
Ferozwala	36.4	28.0	64.4	0.0	30.3	24.7	7178.0	10.0
Nankana	37.0	27.3	66.8	0.0	33.4	24.6	73.4	0.0
Kasur	39.0	30.9	60.3	0.0	35.3	25.3	74.0	0.0
Faisalabad	39.4	27.7	74.3	0.0	36.0	26.2	64.0	0.0
Jhang	39.1	28.9	54.3	0.0	40.0	26.8	57.2	0.0
Toba Tek Singh	39.5	28.4	79.9	0.0	38.3	27.1	79.9	0.0
Sargodha	36.0	27.0	30.0	30.0	43.0	30.0	31.0	0.0

Khushab	36.2	26.8	71.5	0.0	35.0	24.6	68.6	0.0
Multan	39.2	30.7	77.5	0.0	35.2	26.5	75.0	0.0
Khanewal	39.7	29.0	62.3	0.0	37.8	28.1	56.4	0.0
Vehari	39.3	30.0	69.2	0.0	33.9	29.5	51.6	0.0
Lodhran	39.4	31.3	60.2	0.0	35.9	26.4	54.8	0.0
Sahiwal	39.2	27.7	65.0	0.0	36.2	27.0	68.7	0.0
Pakpattan	37.6	27.0	64.0	0.0	36.0	25.4	67.0	0.0
Okara	41.5	32.0	68.0	0.0	38.0	28.5	69.0	0.0
Bahawalpur	40.2	29.5	60.1	0.0	37.2	27.9	62.2	0.0
Bahawalnagar	40.3	28.9	58.5	0.0	40.1	29.3	55.4	0.0
R.Y.Khan	42.1	36.4	78.9	0.0	40.0	26.9	79.6	0.0
D.G. Khan	41.4	28.9	55.5	0.0	39.9	27.1	51.8	0.0
Muzaffar Garh	38.4	28.1	64.1	0.0	41.8	27.6	64.3	0.0
Rajanpur	43.8	30.2	65.0	0.0	38.4	27.3	45.7	0.0
Layyah	38.0	26.8	42.8	0.0	43.8	28.8	40.5	0.0
TOT/AVG	**38.98**	**28.82**	**63.26**	**2.06**	**37.07**	**27.12**	**299.5**	**4.46**

Weather forecast for next 7 day in rice zone

Division	Dated	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep
Faisalabad	Max.Temp.	39	38	40	40	42	36	35
	Min.Temp.	27	27	26	27	27	27	26
	Humidity %	36	37	26	28	27	21	203
Gujranwala	Max.Temp.	36	37	37	37	37	33	34
	Min.Temp.	26	26	25	26	26	26	25
	Humidity %	49	43	42	40	43	31	28
Lahore	Max.Temp.	36	37	37	37	37	33	34
	Min.Temp.	26	26	25	26	26	26	25
	Humidity %	49	43	42	40	43	31	28
Sargodha	Max.Temp.	38	37	39	39	41	34	32
	Min.Temp.	26	26	25	25	26	22	22
	Humidity %	42	43	37	29	30	25	23
Multan	Max.Temp.	41	42	42	42	44	38	36
	Min.Temp.	28	27	27	27	26	28	27
	Humidity %	25	24	21	24	15	12	11
Average Rice Region	**Max.Temp.**	**37.6**						
	Min.Temp.	**25.9**						
	Humidity %	**36.8**						

Summary of weather forecast

Overall weather for seven days in rice zone during next week will remain less hot than previous week, cloudy and more chances of precipitation with an average 3-4°C decrease in temperature.

Forecast of Rice Pests:

Borer: This pest flourishes best in warm humid climate with optimum temperature 17-30 °C with relative humidity between 45-80%.The current weather conditions on

overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this pest.

Leaf Folder: This pest flourishes best in warm humid climate with optimum temperature 25-30°C. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this pest.

White-backed plant hopper: This pest flourishes best in warm humid climate with optimum temperature 25-29°C with relative humidity between 80-90%.The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this pest.

Brown plant hopper: This pest flourishes best in warm humid climate with optimum temperature 28-30°C with relative humidity below 80-90%.The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this pest.

Toka: This pest flourishes best in warm humid climate with optimum temperature 24-40°C with relative humidity between 30-80%.The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next

week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this pest.

Foot rot: High humidity and cloudy weather during heading stage are favorable for the development of foot rot of rice. The fungus have a wide range of temperature for optimum growth which is between 30-35 °C. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this disease.

Bacterial Leaf Blight: Heavy rain, heavy dew, flooding, deep irrigation water are favorable factors for the development of disease. Temperature for optimum growth is between 25-34 °C with relative humidity above 70%. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this disease.

Brown Leaf spots: Non-flooded and nutrient deficient soils or soils with accumulation of toxic substances are favorable for the development of disease. Temperature for optimum growth is between 16-36 °C with relative humidity from 86-100%. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this disease.

Sheath Blight: Crop plants during rainy season are more vulnerable to the disease. Temperature for optimum growth is between 28-32 °C with relative humidity from 85-100%. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for

current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this disease.

Blast: Intermittent drizzles, cloudy weather, more of rainy days, Low night temperature and longer duration of dew are favorable factors for the development of disease. Temperature for optimum growth is between 25-30 °C with relative humidity between 93-99%. The current weather conditions on overall Punjab basis (temp. Max. 37.6 °C, Min. 25.9 °C with R. humidity 36.8%) & forecast for the next week temp. Max. 38.6°C, Min. 27.6°C with humidity 35.3%. Keeping in view the temperature for current week and weather forecast of next week, it is predicted that population of this pest may increase during the coming week as the temperature remain favorable for the development of this disease.

RECOMMENDATION

RICE BORER MANAGEMENT

- Use resistant varieties.

- Discard the infested plants while transplanting.

- Ensure proper timing of planting and synchronous planting, harvest crops at ground level to remove the larvae in stubble, remove stubble and volunteer rice, plow and flood the field.

- At seedbed and transplanting, handpick and destroy egg masses.

- Raise level of irrigation water periodically to submerge the eggs deposited on the lower parts of the plant.

- Clip off the tips of the seedlings at the time of transplanting because the eggs of yellow and white stem borers are laid near the tip of the leaf blade. It will reduce a considerable number of egg masses and young larvae of the stem borers.

- Install light traps up to September to monitor moth population of stem borers.

- Use balanced Fertilizers (NPK) within 45 days after transplanting of nursery.

- Complete application of urea up to 31st August because due to late application of Urea, the plant becomes succulent and dark-green which

attracts the insects, especially stem borers and leaf roller and helps in their rapid multiplication.

BROWN LEAF SPOT MANAGEMENT

- Use resistant varieties.

- Contact your local agriculture office for an up-to-date list of available varieties.

- Follow rice with a different crop, or fallow period.

- Avoid ratooning.

- Flood and plow field after harvesting if possible.

- Remove grassy weeds from fields and borders.

- Reduce density of planting.

FOOT ROT SPOT MANAGEMENT

- Avoid sowing of seed obtained from infected crop.

- Uproot the diseased plants and destroy them.

- Use Potash 1 Bag within 14 days.

BROWN LEAF SPOT MANAGEMENT

- Control the pest with one of the following pesticides

S#	Common Name	Brand Name	Dose / Acre
1	Propineb 70 WP	Gift, Cover, Protest	800 gm
2	Mancozeb 80 WP	Shelter, Dithane-M	800 gm
3	Propiconazole 25 EC	Tilt	80 ml

BACTERIAL LEAF BLIGHT MANAGEMENT

- Use disease free seeds for next crop.
- Spray copper based fungicides.

PADDY BLAST MANAGEMENT

- For leaf blast, reflood if field has been drained. Maintain water level at 3-4 inches to ensure that soil is covered.

- Control the pest with one of the following pesticides

S#	Common Name	Brand Name	Dose / Acre
1	Kasugamycin 6% WP	Fork	250 gm

2	Trifloxystrobin+Tebuconazole 75%WP	Nativo	65 gm
3	Azoxystrobin 25 % SC	Primacy	200 ml
4	Difenoconazole 250 EC	Score	125 ml

CONOMIC THRESHOLD LEVELS OF RICE PESTS

INSECT PESTS	ECONOMIC THRESHOLD LEVELS
Borers (White, Yellow & Pink)	0.5% attack on rice nursery while 8-10 Moth/Trap/Night & 5% dead heart on rice crop.
Toka	3 per net on rice nursery & 5 on rice crop.
Leaf Folder	2 rolled leaves per plant in July-August & 3 rolled leaves per plant in September-October.
Brown Plant Hopper	15 Nymphs or Adults per plant in July-August & 20 Nymphs or Adults per plant in September-October. Or 7-10 Nymphs or Adults per net
White Backed Plant Hopper	15 Nymphs or Adults per plant in July-August & 20 Nymphs or Adults per plant in September-October. Or 7-10 Nymphs or Adults per net
Hispa	1 per plant
Diseases	On appearance