International Journal of Chemical Studies

P-ISSN: 2349–8528
E-ISSN: 2321–4902
www.chemijournal.com
IJCS 2020; 8(3): 2785-2792

Received: 26-03-2020
Accepted: 30-04-2020

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Screening of Maize (*Zea mays* L.) Germplasms for resistance against Turcicum Leaf Blight (TLB) under field conditions

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DOI: https://doi.org/10.22271/chemi.2020.v8.i3an.9635

Abstract
Maize is the leading cereal worldwide with wide adaptability and higher productivity potential. It has notable productive potential among the cereals. It is the third most important grain crop after wheat and rice. Turcicum leaf blight (TLB) affects the maize crop from the seedling stage to maturity. The present study involved field evaluation of 335 maize entries for resistance against TLB disease under artificially inoculated field conditions in RBD using with a check at Agricultural Research Station, Karimnagar during *rabi* 2018-2019 and *kharif*, 2019. Among 92 lines, 84 lines were categorised as resistant, Five lines were moderately resistant, two lines were moderately susceptible and CM -202 recorded 70.33% percent disease index (PDI), which is highest during Rabi 2018-2019. Out of 243 lines, 12 lines were categorised as resistant, 129 lines were recorded as moderately resistant,28 lines were noticed moderately susceptible and two lines *viz*., IB-98 and IB-103 observed with high PDI and severely affected by TLB and rated as susceptible during *Kharif*-2019.

Keywords: Germplasms, screening, resistance, turcicum leaf blight - maize

Introduction
Maize (*Zea mays* L., 2n=20) is the leading cereal worldwide. It originated in Central America and Mexico. It belongs to the tribe Maydeae of Poaceae family. Maize is the third most important grain crop after wheat and rice with a notable productive potential among the cereals. In Telangana, it is being cultivated in 16.06 lakh acres area with an annual production of 40.78 lakh million tonnes and productivity of 2,539 kg per acre (Anonymous b 2019-2020) [2]. Due to existing biotic and abiotic stresses, the sustainability of the maize production to meet the future demand remains to be debatable. *Maize is affected by more than 60 diseases, of which 16 are major.* Among the biotic stresses affecting maize, TLB also called Northern corn leaf blight, caused by *Exserohilum turcicum* (syn. *Heliminthosporium turcicum* Pass.), *is considered a serious disease where climatic conditions are cool with high relative humidity.* Maize grain yield loss varies from 25 to 90 per cent in different parts of India depending upon the severity of Turcicum Leaf Blight epiphytotics (Chenula and Hora, 1962; Jha, 1993) [5, 9]. Yield losses approached 50%, when the disease is severe at 2-3 weeks after pollination (Shurtleff, 1980) [14]. Turcicum leaf blight is considered a serious disease under agro ecologies of Telangana.

Turcicum leaf blight affects the maize crop from the seedling stage to maturity. The symptoms first appear as grayish green small elliptical spots on the leaves with water soaked lesions parallel to leaf margins, finally attaining a spindle shape with long elliptical grayish or tan lesions. If the disease starts at an early stage, it causes premature death of blighted leaves. As a result, the crop losses their nutritive value as fodder, have reduced germination capacity, vigor, grain yield and total sugar content (Payak and Renfro, 1968, Ferguson *et al*., 2004) [12, 7], has restricted starch formation, chaffy kernels and infected plants are liable to infection with stalk rots (Cuq *et al*., 1993) [6].

Genetic resistance of crop plants against pathogen is economical and eco-friendly disease management strategy. The resistant varieties are not only environmental friendly but also suitable to adopt at farmers level. There is a need to identify new sources of resistance through artificial epiphytotics to cater to the resistance breeding programmes. Keeping in view the above points, the present study was carried out to screen the 335 maize entries for

identification of resistant sources against Turcicum leaf blight disease under artificially inoculated field conditions.

Materials and Methods

Collection of diseased samples: The diseased leaf samples of affected maize plants showing typical symptoms of Turcicum leaf blight having necrotic lesions were collected in paper poly bags from different maize growing areas of Research station and Karimnagar district during survey in *Rabi 2018-2019* and *Kharif* season -2019. The Agricultural Research Station, Karimnagar is situated at 18º 30' N latitude, 79º 15 ' E longitude and 259.15 m above mean sea level. The pathogen *Exserohilum turcicum* was isolated from infected leaves using single spore isolation technique (Tuite, 1969) [16].

Layout of Maize Trial for field screening: For the identification of source of resistance to *E. turcicum*, a set of 335 maize entries were evaluated in a RBD design along with a check CM-202 under field conditions at Agricultural Research Station, Karimnagar, a hot spot of Turcicum leaf blight in Telangana during *rabi* and *kharif* season 2019, using 1 to 9 disease rating scale (Anonymous a , 2014) []. The test genotypes were planted in 2 row plots of 3m length with plant spacing of 60cm×20 cm.

Inoculum preparation and inoculation: Spore suspension of the *E. Turcicum* from of 20 days old cultures was prepared by washing the conidia with distilled water. The spore concentration was measured by haemocytometer and maintained at 3×10^5 spore ml/l. Equal volume of spore suspension was mixed and sprayed in evening by using atomizer at three to four leaf stage of maize plants on and humidity was maintained by spraying water. Control plants were treated similarly with distilled water in which spore suspension was made (Ahangar, M.A. *et al*., 2016) [3].

Disease assessment: Disease reaction was recorded by using 1 to 9 scale (Table 1) of Indian Institute of Maize Research, Ludhiana (Anonymous a, 2014) [1] commenced from 45 days after planting and assessment of disease severity. The genotypes showing disease score from 1.0 to 3.0 were considered as resistant (R), 4-5 as moderately resistant (MR), 6-7 as moderately susceptible (MS), 8-9 as susceptible (S).

Table 1: Rating scale for Maize Turcicum Leaf Blight Disease

Rating scale	Degree of infection (per cent DLA*)	PDI**	Disease reaction
1.0	Nil to very slight infection (≤10%).	≤11.11	Resistant (R) (Score: ≤ 3.0) (PDI: ≤ 33.33)
2.0	Slight infection, a few lesions scattered on two lower leaves (10.1-20%)	22.22	
3.0	Light infection, moderate number of lesions scattered on four lower leaves (20.1-30%).	33.33	
4.0	Light infection, moderate number of lesions scattered on lower leaves, a few lesions scattered on middle leaves below the cob (30.1-40%).	44.44	Moderately resistant (MR) (Score: 3.1–5.0) (PDI: 33.34-55.55)
5.0	Moderate infection, abundant number of lesions scattered on lower leaves, moderate number of lesions scattered on middle leaves below the cob (40.1-50%).	55.55	
6.0	Heavy infection, abundant number of lesions scattered on lower leaves, moderate infection on middle leaves and a few lesions on two leaves above the cob (50.1-60%)	66.66	Mod. susceptible (MS) (Score: 5.1-7.0) (PDI: 55.56-77.77)
7.0	Heavy infection, abundant number of lesions scattered on lower and middle leaves and moderate number of lesions on two to four leaves above the cob (60.1-70%).	77.77	
8.0	Very heavy infection, lesions abundant scattered on lower and middle leaves and spreading up to the flag leaf (70.1-80%).	88.88	Susceptible (S) (Score: >7.0) (PDI: >77.77)
9.0	Very heavy infection, lesions abundant scattered on almost all the leaves, plant prematurely dried and killed (>80%).	99.99	

*DLA- Diseased leaf area; **Percent disease index (PDI)

Results and Discussion

The Turcicum leaf blight disease of maize was widespread over the surveyed areas of Karimnagar province. Among 91 germplasms along with susceptible check on the basis of disease reaction and 1-9 disease scale, the performance of all the maize germplasms were classified into four groups in *Rabi*-2018-2019 and *Kharif*-2019 (Table 2 and 3).

***Rabi*-2018-2019:** Eleven lines with a disease score 1, sixty three lines with a score 2 and ten lines with a score 3 were categorised as resistant, showed per cent disease intensity (PDI) ranging from 5.37 per cent for 52288-1 to 33.33 per cent for 52306 for resistant lines. Five lines with disease score 4 indicated moderate resistance and shows 38.63 PDI for 52284 and 41.66 PDI for 52333. Two lines with disease score of 6 were rated moderately susceptible with 60.25 PDI for IB-147 and 61.11 PDI for BLS 42050. CM-202 recorded 70.33 PDI was severely affected by TLB and rated as moderately susceptible.

***Kharif*-2019:** Two lines with a disease score 2 and ten lines with a score 3 were categorised as resistant, showed from 20.40 PDI for 193XBML-6 to 33.25 PDI for 52300 for resistant lines. Thirty six lines with disease score 4 and Ninety three lines with disease score 5 indicated moderate resistance and shows from 33.46 PDI for 111XBML-20 to 55.55 PDI for 101X605-1-1.Nine lines with disease score of 6 were rated moderately susceptible as their PDI ranged from 55.69 per cent for IB-147 to 66.18 per cent for 13xBML-14.Ninteen lines with disease score of 7 were rated moderately susceptible as their PDI ranged from 67.02 per cent for CM-202 to 77.77 per cent for IB-101. IB-98 and IB-103 recorded 84.64 and 84.68 PDI respectively, severely affected by TLB and rated as susceptible.

Babita and Mani (2011) [4] screened the temperate maize lines against northern corn leaf blight and found five inbreds resistant to disease. Singh *et al.*, (2014) [15] evaluated 118 maize genotypes to identify, the new sources of resistance to TLB under artificial epiphytotic conditions and identified 26 resistant, 56 moderately resistant, 26 susceptible and 10 highly susceptible maize genotypes. Ishfaq *et al.*, (2014) [8] carried out a disease reaction studies against turcicum leaf blight were done with two crosses *viz*., 15C (A) x I-318 (R) and I-401(A) x I-318(R) for all six generations with P1, P2, F1, F2, BC1 and BC2 and results revealed significant variability has been exhibited by fungus to infect different

generations of a particular cross. In I-15C (A) x I-318(R) cross, F1 was moderately resistant to turcicum leaf blight but F1 of I-401(A) x I-318(R) cross was moderately susceptible to the disease. Mitiku *et al.*, (2014) [12] results revealed that the variety BH660 was highly resistant with the incidence of 13.7% and variety BH543 was susceptible with the incidence of 52.3%. Mir *et al*., (2015) [11] confirmed that among 10 inbred lines evaluated, three were found moderately resistant, five lines moderately susceptible and the rest two, were severely affected by TLB and rated as susceptible. Out of 26 maize genotypes,8 genotypes *viz.*, PS 39, CML 451, CML 470, CML 472, VL1030, VL 1018140, VL1018527 and SMI178-1 were found resistant and eight genotypes *viz*., PS45, CML165, CML459, VL1249, VL0536,SMC-5,SMC-3 and KDL 211 were found moderately resistant against *E. turcicum* with disease grade ranged from 2.1-2.5 (Ahanger *et al.*, 2016) [19]. Parents PDM-8, PDM-60 and PDM-254 had disease index of <10% indicating their resistance to Turcicum leaf blight (Jayant S. Bhat *et al.*,2017) [17]. Wani *et al.*, 2018 [17] per cent disease severity was recorded in two inbred lines, *viz*., NAI-112 and NAI-147 and one hybrid, *viz*., HQPM-1 was found resistant to Turcicum leaf blight disease. Two resistant lines of PDI *viz*., Shopian and Pulwama-3 was identified against TLB disease (Nida Yousuf *et al*. 2018) [19]. Out of twenty six maize hybrids were evaluated along with check hybrids against Turcicum disease resistance, two hybrids *viz*., AH4158 and AH4142 were found to be resistant to Turcicum leaf blight disease (Meghashri S. Patil *et al.*, 2020) [10].

Table 2: Per cent disease severity of different maize entries to Turcicum leaf blight (TLB) *Rabi*- 2018-19

Sl.no	Germplasm	Percent disease index of TLB mean	Score	Reaction
1	IB-12	29.16	3	R
2	IB-16	12.5	2	R
3	IB-18	19.8	2	R
4	IB-20	17.14	2	R
5	IB-22	17.09	2	R
6	IB-27	17.14	2	R
7	IB-28	40	4	MR
8	IB-31	20.09	2	R
9	IB-32	21.59	2	R
10	IB-37	16.66	2	R
11	IB-41	13.84	2	R
12	IB-42	13.80	2	R
13	IB-43	18.75	2	R
14	IB-47	38.63	4	MR
15	IB-48	19.37	2	R
16	IB-59	12.69	2	R
17	IB-60	20.3	2	R
18	IB-64	19.64	2	R
19	IB-65	20.83	2	R
20	IB-66	39.28	4	MR
21	IB-67	13.57	2	R
22	IB-69	13.48	2	R
23	IB-70	13.80	2	R
24	IB-73	18.46	2	R
25	IB-74	12.87	2	R
26	IB-83	19.37	2	R
27	IB-93	21.82	2	R
28	IB-95	21.92	2	R
29	IB-96	15	2	R
30	IB-100	17.37	2	R
31	IB-102	7.69	1	R
32	IB-105	18.52	2	R
33	IB-106	17.41	2	R
34	IB-111	11.53	2	R
35	IB-117	12.94	2	R
36	IB-118	10	1	R
37	IB-120	7.17	1	R
38	IB-131	15	2	R
39	IB-132	13.33	2	R
40	IB-138	14.58	2	R
41	IB-139	24.99	3	R
42	IB-147	60.25	6	MS
43	IB-149	27.77	3	R
44	IB-152	16.66	2	R
45	IB-156	7.11	1	R
46	IB-147-1	17.14	2	R
47	WNC-4	23.80	3	R
48	WNC-6	13.33	2	R
49	WNC-8	16.66	2	R

50	WNC-42	11.02	1	R
51	WNC-52	14.37	2	R
52	WNC-54	22.5	2	R
53	WNC-55	14.37	2	R
54	WNC-150	30.28	3	R
55	WNC-226	24.47	3	R
56	WNC-233	21.42	2	R
57	WNC-239	9.98	1	R
58	WNC-259	8.57	1	R
59	WNC-412	15.83	2	R
60	WNC-414	10.83	1	R
61	WNC-416	16.87	2	R
62	BLS 42050	61.11	6	MS
63	BLS 42050-1	13.12	2	R
64	CLQ-RCY	10.81	1	R
65	CML-165	13.44	2	R
66	E1598438	9.2	1	R
67	P72 x BRAZIL	18.75	2	R
68	S-99	11.80	2	R
69	SHDIER 6-1	12.25	2	R
70	WLS F-73	11.36	2	R
71	4845	14.28	2	R
72	52007	14.64	2	R
73	52014	13.85	2	R
74	52075	17.89	2	R
75	52082	14.09	2	R
76	52089	16.22	2	R
77	52161	16.22	2	R
78	52175	16.19	2	R
79	52188	15.88	2	R
80	52204	17.78	2	R
81	52257	15.37	2	R
82	52265	23.75	3	R
83	52284	38.63	4	MR
84	52288	19.64	2	R
85	52288-1	5.37	1	R
86	52297	20.72	2	R
87	52299	24.28	3	R
88	52300	24.99	3	R
89	52306	33.33	3	R
90	52323	21.97	2	R
91	52333	41.66	4	MR
92	CM-202 (C)	70.33	7	MS

Table 3: Per cent disease severity of different maize entries to Turcicum leaf blight (TLB) *Kharif*-2019

Sl. no.	Germplasm	Percent disease index of TLB mean	Score	Reaction
1	IB-1	46.86	5	MR
2	IB- 2	53.64	5	MR
3	IB- 4	47.70	5	MR
4	IB- 6	52.11	5	MR
5	IB- 7	52.4	5	MR
6	IB- 11	56.33	6	MS
7	IB- 14	67.73	7	MS
8	IB- 15	59.13	6	MS
9	IB- 16	62.83	6	MS
10	IB- 17	69.66	7	MS
11	IB- 18	56.08	6	MS
12	IB- 20	67.83	7	MS
13	IB- 22	67.83	7	MS
14	IB- 27	52.08	5	MR
15	IB- 28	63.31	5	MR
16	IB- 32	47.93	5	MR
17	IB- 33	59.87	6	MS
18	IB- 36	60.15	6	MS
19	IB- 37	58.16	6	MS
20	IB- 39	53.43	5	MR
21	IB- 41	62.28	6	MS
22	IB- 42	63.49	6	MS

23	IB- 43	60.67	6	MS
24	IB- 45	41.94	4	MR
25	IB- 47	75.12	7	MS
26	IB- 48	52.29	5	MR
27	IB- 51	59.22	6	MS
28	IB- 53	64.12	6	MS
29	IB- 55	58.59	6	MS
30	IB- 59	58.72	6	MS
31	IB- 60	47.91	5	MR
32	IB- 63	52.74	5	MR
33	IB- 66	61.04	6	MS
34	IB- 68	56.22	6	MS
35	IB- 69	61.05	6	MS
36	IB- 70	64.73	6	MS
37	IB- 71	59.54	6	MS
38	IB- 72	68.13	7	MS
39	IB- 73	54.88	5	MR
40	IB- 74	54.9	5	MR
41	IB- 75	62.91	6	MS
42	IB- 77	63.32	6	MS
43	IB- 78	74.95	7	MS
44	IB- 81	53.33	5	MR
45	IB- 83	50.71	5	MR
46	IB- 84	54.90	5	MR
47	IB- 85	54.16	5	MR
48	IB- 86	49.95	5	MR
49	IB- 86-1	65.41	6	MS
50	IB- 87	43.05	4	MR
51	IB- 90	53.30	5	MR
52	IB- 92	58.41	5	MR
53	IB- 95	70.86	7	MS
54	IB- 96	51.65	5	MR
55	IB- 97	37.75	4	MR
56	IB- 98	84.64	8	S
57	IB- 99	54.44	5	MR
58	IB- 100	35.73	4	MR
59	IB- 101	77.77	7	MS
60	IB- 102	50.5	5	MR
61	IB- 103	84.68	8	S
62	IB- 104	53.49	5	MR
63	IB- 105	45.18	5	MR
64	IB- 106	58.29	6	MS
65	IB- 107	54.78	5	MR
66	IB- 108	53.64	5	MR
67	IB- 109	52.33	5	MR
68	IB- 112	62.79	6	MS
69	IB- 113	57.88	6	MS
70	IB- 117	55.42	5	MR
71	IB- 120	49.05	5	MR
72	IB- 125	56.24	6	MS
73	IB- 127	56.38	6	MS
74	IB- 132	53.47	5	MR
75	IB- 133	46.78	5	MR
76	IB- 135	44.99	5	MR
77	IB- 138	68.05	7	MS
78	IB- 139	57.68	6	MS
79	IB- 140	57.68	6	MS
80	IB- 141	52.49	5	MR
81	IB- 142	47.49	5	MR
82	IB- 144	55.48	5	MR
83	IB- 146	38.24	4	MR
84	IB-146-1	47.47	5	MR
85	IB-147	55.69	6	MS
86	IB- 149	27.93	3	R
87	IB- 154	54.85	5	MR
88	IB-154-1	31.46	3	R
89	WNC-494	41.22	4	MR
90	WLS-73	44.39	4	MR
91	52323	32.69	3	R

92	C1-B4-32-1	21.18	2	R
93	WLS-F-191	38.88	4	MR
94	52306	34.98	4	MR
95	52075	36.10	4	MR
96	ACC5204093	41.95	4	MR
97	52333	26.62	3	R
98	WNC-150	54.18	5	MR
99	SEPARATELY	26.91	3	R
100	TC 44612	64.92	6	MS
101	WNC 494	42.22	4	MR
102	IB-305	50.56	5	MR
103	52014	52.81	5	MR
104	52297	34.16	4	MR
105	PFSR-16	36.10	4	MR
106	IB-80	52.77	5	MR
107	52300	33.25	3	R
108	EC 61901	42.93	4	MR
109	52299	44.33	4	MR
110	WNC-412	77.08	7	MS
111	52089	38.1	4	MR
112	EC 72848	42.08	4	MR
113	52007	63.51	6	MS
114	BLS-42050	39.11	4	MR
115	PFSR-3	54.87	5	MR
116	IB-322	64.4	6	MS
117	KML-225	38.86	4	MR
118	IB-11	52.08	5	MR
119	MYSYN-B	54.24	5	MR
120	52284	42.3	4	MR
121	PFSR-3	44.70	5	MR
122	WNC-54	29.77	3	R
123	WNC-226	38.51	4	MR
124	52193	62.34	6	MS
125	IB-113	70.57	7	MS
126	WNC-52-1	41.59	4	MR
127	52186	52.62	5	MR
128	52082	51.77	5	MR
129	EC 619098	53.88	5	MR
130	WNC-52	32.36	3	R
131	52288	58.83	6	MS
132	IB-3	39	4	MR
133	WNC-416	52.88	5	MR
134	SHDIER 6-1	43.16	4	MR
135	IB-155	55.59	6	MS
136	T-II NA 004	42.33	4	MR
137	52256	41.3	4	MR
138	52161	52.89	5	MR
139	SHDIER-62	54.18	5	MR
140	BLS-42050-1	55.01	5	MR
141	TC 5060	62.3	6	MS
142	52257	58.43	6	MS
143	WNC-412	32.44	3	R

Sl. no.	Hybrids	Percent disease index of TLB mean	Score	Disease Reaction
1	1 X BML-32	50.45	5	MR
2	2 X 50-2-1	59.72	6	MS
3	2 X BML-14	53.31	5	MR
4	2 X BML-45	44.26	4	MR
5	2 X BML-7	48.19	5	MR
6	4 X 605-1	47.08	5	MR
7	6 X 50-2-1	45.83	5	MR
8	6 X BML-20	53.32	5	MR
9	6 X BML-45	43.20	4	MR
10	6 X BML-7	50.55	5	MR
11	7 X 50-2-1	52.83	5	MR
12	7 X BML-14	51.72	5	MR
13	8 X 605-1-1	61.56	6	MS
14	8 X BML-32	46.65	5	MR
15	9 X 605-1-2	43.06	4	MR

16	9 X BML-20	64.61	6	MS
17	9 X BML-6	67.08	7	MS
18	9 X BML-7	51.2	5	MR
19	10 X BML-32	59.39	6	MS
20	12 X BML-32	61.94	6	MS
21	13 X BML-14	66.18	6	MS
22	13 X BML-6	51.26	5	MR
23	14 X BML-32	56.75	6	MS
24	14 X BML-6	41.38	4	MR
25	15 X 605-1-1	55.63	6	MS
26	15 X BML-20	59.02	6	MS
27	15 X BML-45	47.73	5	MR
28	CIM15X PFSR-3	64.13	6	MS
29	16 X BML-14	65.98	6	MS
30	16 X BML-32	49.11	5	MR
31	16 X BML-45	57.98	6	MS
32	16 X BML-7	60.3	6	MS
33	17 X 605-1-2	46.70	5	MR
34	17 X BML-45	63.59	6	MS
35	17 X BML-6	47.26	5	MR
36	17 X BML-7	57.22	6	MS
37	18 X BML-14	52.93	5	MR
38	18 X BML-32	62.57	6	MS
39	18 XBML-45	62.44	6	MS
40	52 X 605-1-1	48.60	5	MR
41	52 X BML-7	57.89	6	MS
42	53 X 605-1-2	49.88	5	MR
43	53 X BML-14	65.95	6	MS
44	53 X BML-45	50.94	5	MR
45	59 X 605-1-2	56.36	6	MS
46	62 X 50-2-1	56.66	6	MS
47	62 X BML-14	63.30	6	MS
48	62 X BML-20	59.01	6	MS
49	62 X BML-45	62.00	6	MS
50	62 X BML-6	47.33	5	MR
51	62 X BML-7	52.77	5	MR
52	62 X PFSR-3	69.41	7	MS
53	85 X 605-1-2	63.89	6	MS
54	85 X BML-6	65.47	6	MS
55	CIM 101 X BML-7	65.19	6	MS
56	CIM 101 X PFSR-3	39.27	4	MR
57	101 X 50-2-1	58.58	6	MS
58	101 X 605-1-1	55.55	5	MR
59	105 X PFSR-3	45	5	MR
60	107 X BML-20	57.43	6	MS
61	107 X BML-32	55.22	5	MR
62	107 X BML-45	69.99	7	MS
63	107 X BML-7	69.16	7	MS
64	107 X PFSR-3	47.03	5	MR
65	108 X BML-20	58.25	6	MS
66	108 X BML-32	62.56	6	MS
67	108 X BML-45	60.83	6	MS
68	111 X 605-1-1	46.43	5	MR
69	111 X 605-1-2	43.33	4	MR
70	111 X BML-14	56.35	6	MS
71	111 X BML-20	33.46	4	MR
72	111 X BML-45	52.32	5	MR
73	111 X BML-6	53.33	5	MR
74	116 X BML-6	62.21	6	MS
75	119 X BML-14	65.43	6	MS
76	131 X PFSR-3	54.59	5	MR
77	145 X BML-32	59.74	6	MS
78	151 X BML-14	56.66	6	MS
79	151 X BML-6	57.22	6	MS
80	151 X BML-7	50.97	5	MR
81	155 X BML-14	48.5	5	MR
82	155 X BML-32	57.83	6	MS
83	184 X BML-32	50.71	5	MR
84	184 X BML-6	53.88	5	MR

85	184 X PFSR-3	53	5	MR
86	186 X BML-32	56.7	6	MS
87	187 X PFSR-3	46	5	MR
88	188 X BML-45	52.18	5	MR
89	188 X BML-7	41.22	4	MR
90	188 X PFSR-3	25.2	3	R
91	193 X 605-1-2	47.74	5	MR
92	93 X BML-32	54.45	5	MR
93	193 X BML-6	20.4	2	R
94	193 X PFSR-3	65.76	6	MS
95	195 X BML-6	40.27	4	MR
96	196 X 50-2-1	57.86	6	MS
97	196 X BML-32	58.45	6	MS
98	196 X BML-7	69.68	7	MS
99	199 X BML-6	68.38	7	MS
100	199 X PFSR-3	67.12	7	MS
	CM-202 (C)	67.02	7	MS

Conclusion

Among ninty two lines, 84 lines were categorised as resistant and CM -202 recorded 70.33 PDI, which is highest during rabi -2018-2019. Out of 243 lines,12 lines were categorised as resistant , remaining lines were recorded as moderately resistant and moderately susceptible and two lines viz., IB-98 and IB-103 were observed with high PDI, severely affected by TLB and rated as susceptible during *Kharif*-2019.Screening of maize germplasms leading to the identification of TLB resistant sources that holds a great promise in resistance breeding in areas prone to Turcicum Leaf Blight.

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