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Short Communication

Reaction of Indian bean cultivars against anthracnose disease in South Gujarat

S.B. Shewale, N.C. Desai, V.C. Kodappully and R.R. Waghunde

Department of Agricultural Botany
N. M. College of Agriculture, Navsari Agricultural University, Navsari-396 450 (Gujarat)

Indian bean (*Dolichos lablab* L.) presumably had its origin in tropical Asia, probably in India and from there it was introduced to China, Sudan and Egypt. India is considered as the homeland of most of the grain legumes and the lion share of protein is supplied by pulses to majority of Indians. Diseases are the major constraint in economic crop also attacked by many diseases during seed germination to seed production and maturity. The crop is affected by Anthracnose (*Colletotrichum lindemuthianum*) fungal disease. Considering the severity and its destructive nature, the study was selected to find out the appropriate cause and its management. The information on the disease is meagerly available and this disease looks becoming as a limiting factor in the cultivation of Indian bean in South Gujarat.

Sixty cultivars of Indian bean were sown in RBD with three replications in *rabi* season at the Regional Pulse Research Station, Navsari Agricultural University, Navsari. Row to row spacing was 60cm, while plant to plant distance was maintained at 20cm. With a view to determine the comparative resistance, sixty Indian bean genotypes were screened in the field under natural condition against anthracnose during 2006 at Pulses Research station Navsari Aricultural University, Navsari. All the recommended agronomical practices were adopted for the crop. Observations with regard to symptoms development was recorded on the basis of graded scale of 0-5.

Rating:

Scale		Per cent area infection
0	=	no infection
1	=	1 to 20 per cent necrotic leaf area
2	=	21 to 40 per cent necrotic leaf area
3	=	41 to 60 per cent necrotic leaf area
4	=	61 to 80 per cent necrotic leaf area
5	=	Above 80 per cent necrotic leaf area

Grading:

PDI		Reaction
0.0 to 10.0	=	Resistant (R)
10.1 to 20.0	=	Moderately resistant(MR)
20.1 to 40.0	=	Moderately susceptible(MS)
40.1 to 60.0	=	Susceptible(S)
Above 60.0	=	Highly susceptible (HS)

The per cent disease intensity was calculated by using the formula devised by Mathur *et al.* (1).

$$PDI = \frac{\text{numerical ratings of infected leaves observed}}{\text{No. of leaves observed X maximum disease score}} \times 100$$

Out of sixty genotypes screened under natural condition in field, none of the genotypes were found free from per cent disease intensity. Overall, anthracnose intensity was from 0.01 to 44.25 per cent in all the genotypes.

Most of the Indian bean genotypes NV 104, NV 2003/6, NV 37, NV 30, NV 81, NV 2002, NV 69, NW 71, NW 51, NW 68, NW 58, NW 113/11, NW NC/1, NW 49, NW 173/1, NW 2004/m4 NW 48 and NW 80/1 were found as resistant and remaining as moderately resistant except NC 2 which was found as susceptible. Similar findings observed Naik (2) for anthracnose disease intensity.

Conclusively, out of sixty genotypes screened under natural condition in field, anthracnose disease intensity was from 0.01 to 44.25 per cent in all the genotypes. Most of the Indian bean genotypes were found as tolerant, moderately resistant and moderately susceptible.

Table 1. Reaction of different varieties against anthracnose disease in natural condition

Sr. No.	Genotypes	PDI of Anthra-cnose	Reac-tion to disease
1.	NV 38	21.30	MS
2.	NV 74	25.10	MS
3.	NV 104	00.06	R
4.	NV 2003/6	03.80	R
5.	NV 206	24.00	MS
6.	NV 37	00.02	R
7.	NV 37/1	22.30	MS
8.	NV 73	10.80	MR
9.	NV 103	14.50	MR
10.	NV 91	25.70	MS
11.	NV 40	21.45	MS
12.	NV 2003	03.80	R
13.	NV 72	25.50	MS
14.	NV 30	00.09	R
15.	NV 81	00.01	R
16.	NV 57	25.00	MS
17.	NV 2005	23.70	MS
18.	NV 101	38.40	MS
19.	NV 113	00.09	R
20.	NV 6	12.00	MR
21.	NV 45/1	21.00	MS
22.	NV 2004	22.30	MS
23.	NV 55	11.70	MR
24.	NV 2002	23.70	MS
25.	NV 13/2	25.10	MS
26.	NV 33/1	22.00	MS
27.	NV 53	38.10	MS
28.	NW 69	25.10	MS
29.	NW 71	22.00	MS
30.	NW 145	38.10	MS
31.	NW sweet white	39.00	MS
32.	NW 30	37.90	MS
33.	NW 51	0.070	R
34.	NW 68	0.020	R
35.	NW 58	00.08	R
36.	NW 2003/1	13.95	MR
37.	NW NC/1	03.90	R
38.	NW 155	21.10	MS
39.	NW 67	14.10	MR
40.	NW 113/11	0.090	R
41.	NW 156	22.10	MS
42.	NW 29/1	14.30	MR
43.	NW 49	2.850	R
44.	NW 66	21.90	MS
45.	NW 173/1	8.750	R
46.	NW 2004/m4	4.150	R
47.	NW 48	0.010	R
48.	NW 196	25.10	MS
49.	NC 2	44.25	S
50.	NW 2004/m1	38.37	MS
51.	NW 20-4-5	25.30	MS
52.	NW 3	20.95	MS
53.	NW 80/1	0.010	R
54.	NW 64	21.00	MS
55.	NW 82/2	14.65	MR
56.	NW 45	14.10	MR
57.	NW N/173	15.21	MR
58.	NW 109	11.05	MR
59.	NW N/108	15.21	MR
60.	NW 61	11.05	MR

References

1. **Mathur, R.L., Mathur, B.N. and Sharma, B.S.** 1972. Relative Efficacy of fungicides for the control of Alternaria cyamopsidis causing leaf spot of guar (*Cyamopsidis tetragonaloba*). *Indian J. Mycol. Pl. Patho.*, **2** : 80-81.

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