

Research note :

Screening of sorghum genotypes for resistance against *Gloeocercospora sorghi* causing zonate leaf spot

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Sorghum (*Sorghum bicolor* (L.) Moench) is not only a staple food for large section of the people but also a main source of feed for cattle in India. Zonate leaf spot caused by *Gloeocercospora sorghi* Bain and Edgerton is fast emerging as one of the most destructive diseases of the crop in India. *Tarai* area of Uttaranchal has been identified as hot spot for this disease. Significant losses in leaf weight due to zonate leaf spot have been reported Ahmad *et al.* (1978) The disease is also known to reduce the quality of forage sorghum Gandhi *et al.* (1980). Hazardous effects of chemicals to crops, consumers and environment due to their phytotoxic, residual and pollution effect is well known, besides being not economically viable particularly for sorghum grown for fodder purpose. Resistant varieties can be the simple, practical, effective economical and ecofriendly method of plant disease control.

Eighty four sorghum genotypes including both grain

and forage sorghum were evaluated for resistance to zonate leaf spot under artificial inoculation conditions in field during *kharif* 2004. Genotypes were sown in paired rows, each 6 m long with a crop geometry of 45×15 cm. Three replications were maintained. Thirty days old plants of each genotype were inoculated by spraying the spore suspension of the inoculum adjusted to 5×10⁴ spores/ml. Observations on disease incidence were recorded before boot leaf emergence and one week before harvesting for grain sorghum while for forage sorghum at the time of 1st and 2nd cutting for multi cut and at 50% flowering for single cut genotypes in 1-5 scale (proposed by All India Coordinated Sorghum Improvement Project) where 1: no symptoms, 2: resistant (up to 10 % leaf area covered), 3: moderately susceptible (11-25% leaf area covered), 4: susceptible (26-50% leaf area covered), and 5: highly susceptible (>50% leaf area covered).

Out of 64 grain sorghum genotypes tested SPV 1659,

Table 1 : Sources of resistance in sorghum germplasm against *Gloeocercospora sorghi*.

S. No.	Trial	Resistant germplasm
Grain sorghum		
1.	AVT	SPV 1659, SPV 1643
2.	AHT	SPH 1420, SPH 1413, SPH 1478, CSH 17, CSH 16, IS 14332
3.	IVT	SPV 1685, SPV 1686, SPV 1696, SPV 1701, CSV 15
4.	IHT	SPH 1516, SPH 1517, SPH 1525, SPH 1538, SPH 1545, SPH 1342, CSH 9, CSH 17
5.	IVT (Dual purpose)	SPV 1713, SPV 1721, SPV 1727, CSH 18
6.	PLT	7A, RS 629, MBR 75, CSV 4
Forage sorghum		
1.	AVT (Single cut)	SU 1080, UTFS 43
2.	IVT (Single cut)	SU 1157, SU 1169, UTFS 45
3.	AH/VT (Multi cut)	PC 615, HH 85, UTMCH 523, HH 177, UTMCH 1301
4.	IH/VT (Multi cut)	AFC 6, PC 701, UTMCH 532, G 48, UTMCH 1302

AVT = Advanced Varietal Trial
 IVT = Initial Varietal Trial
 PLT = Parental Line Trial

AHT = Advanced Hybrid Trial
 IHT = Initial Hybrid Trial