

PHENOTYPICAL SCREENING OF MAIZE (*ZEA MAYS* L.) INBREDS AND BACKCROSS PROGENIES FOR SORGHUM DOWNY MILDEW RESISTANCE

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ABSTRACT

*Sorghum downy mildew caused by *Peronosclerospora sorghi* is considered as the top priority biotic constraint limiting maize productivity. The cost concerns and the emerging problem of buildup of chemical resistance in the pathogen point to the use of resistant varieties as a cost-effective and environmentally safe alternative for managing the disease. In any breeding program for disease resistance, the first step is to screen all available materials against disease pathogen. A sound screening technique forms the basis for identification of source of the resistance for the disease resistance breeding programme. Two maize inbred lines UMI 79 and UMI 936(w) with varied responses to sorghum downy mildew incidence were crossed and the resultant progenies were backcrossed with the recurrent parent, UMI 79 repeatedly to generate the BC₃F₂ population. The inbred lines UMI 79 and UMI 936(w) and backcross progenies generated were phenotypically screened for sorghum downy mildew resistance in sick plot condition. Progeny 7-2-10 was found to be highly susceptible (72.00% infection) to the disease. Progeny 7-7-7 (21.00% infection) and 7-2-3 (26.00% infection) showed moderate level of resistance with progeny 7-7-7 showing higher resistance to sorghum downy mildew.*

KEYWORDS: Maize, Sorghum Downy Mildew, Backcross, Phenotyping, Resistant

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