

Hereditary pattern of red rot resistance in sugarcane parental line

SUJEET PRATAP SINGH^{1*}, S.P. SINGH¹, S.K.VISHWAKARMA¹, A. SINGH¹ AND J. SINGH²

¹*Plant Pathology Division, Sugarcane Research Institute, Shahjahanpur 242 001, Uttar Pradesh*

²*UP Council of Sugarcane Research, Uttar Pradesh*

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Red rot pathogen (*Colletotrichum falcatum* Went.) displays huge disparity in pathogenicity on host crop. Resistant varieties are most effective to manage red rot and the emergence of new races of pathogen is the main hurdle for sustaining the resistance in promising high sugar yielding cultivars. The development of varieties having stable resistance is prerequisite with vigorous testing against red rot pathotypes prevailing in the area. This study was carried out at Sugarcane Research Institute, Shahjahanpur during 2016-2017. Thirty three newly developed genotypes/varieties and tested against red rot pathogens (Cf 07, Cf 08, Cf 09) along with their mixture by plug method of inoculation. Results revealed that, all the pathotypes and their mixture were produced almost similar disease index. Over all mean disease indexing was computed as 4.61, 4.24, 4.29, 4.33 for Cf 07, Cf 08, Cf 09 and their composite inoculum, respectively. Mean disease index of moderately resistant was calculated 3.34, 3.01, 3.33, 3.07 to Cf 07, Cf 08, Cf 09 and their mixture, respectively. Based on correlation coefficient study, highly significant positive correlation was found 0.889 between Cf 08 and Cf 09. Pathogenic disease indexing indicates that all the pathotype displayed the almost the similar significant positive correlation among them. Hence, selection of genotypes with single existing pathotype could be well discriminated for effective and economic screening process of red rot resistant varieties.

Key words: Sugarcane, Red rot, *Colletotrichum falcatum*, pathotypes, correlation coefficient
