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Screening of oat germplasm for resistance against powdery mildew

A.B. Malannavar*, D. K. Banyal and V. K. Sood
Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Palampur-176062, India
*Corresponding author e-mail**:** bmanudeep54@gmail.com
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Abstract
Three hundred and three oat genotypes were evaluated under natural epiphytotic conditions against powdery mildew at Research Farm, CSKHPKV, Palampur for 3 years during 2016-17, 2017-18 and 2018-19. The maximum disease score for three years of evaluation was used to categorize the genotypes for resistance and only 11 genotypes were found resistant, and 34 lines showed moderately resistance reaction against the disease. Nineteen accessions belonging to 12 species of genus *Avena*, were also evaluated and none of the accessions exhibited highly resistance reaction against powdery mildew. However, 142 lines were also evaluated under *in vitro* against five different isolates of the pathogen. Host-pathogen tests with different isolates revealed varied level of disease reaction with these isolates, indicating variation in virulent behavior of the pathogen. The present study constitutes first report on presence of variability in *Blumeria graminis* f. sp. *avenae* in India and provides basic insight into the variation among pathogen as well as different resistant genes in oat lines. It can be further, studied for elaboration of resistant genes associated and virulence of pathogen present in the high hills of north-western Himalayas of India.

Keywords: *Blumeria graminis* f. sp. *avenae,* Germplasm, Oat, Powdery mildew, Resistance