



Biochemical characterization of oat genotypes for β -glucan content and powdery mildew resistance

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Abstract

A study was undertaken to select oat genotypes which were powdery mildew resistant and had high β -glucan content during *Rabi* 2018-19. The data of β -glucan and yield related traits were evaluated using several biometrical approaches. In both the experiments, it was found that there was negligible difference in β -glucan content, indicating that β -glucan content showed no reduction effect after single cut. Eleven genotypes were found most promising for β -glucan content. Cluster analysis revealed that in both the experiments, genotypes EC523890, JPO-10, JPO-25, ALGERIAN and EC528889 could be considered as the best with respect to β -glucan and related traits. Principal component analysis revealed that in both the experiments β -glucan content, crude protein and tillers per plant were the major sources of variation among oat genotypes. Genotypes JPO-28, OS-6, PLP-1, JPO-46, JPO-36, KRR-AK-26, JPO-38, and IG-03-205 were found powdery mildew resistant under *in vivo* and *in vitro* conditions and confirmed using microsatellite marker AM-102 that was tightly linked to resistant gene *Eg-5*. Genotypes IG-03-205, JPO-38 and JPO-46 were selected as the best genotypes having disease resistance and potential β -glucan content as well.

Keywords: Correlation, Diversity, β -glucan, Oat, Powdery mildew, Selection