

GENETIC DISSIMILARITY AMONG AVENA CULTIVARS IN RESPONSE TO THE BLAST REACTION

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The oat blast caused by *Pyricularia oryzae* Cavara (teleomorfa *Magnaporthe oryzae* B. Couch), has increased the incidence and has attracted the attention of plant scientists worldwide. The disease causes significant reduction in oat grain yield. The search for blast resistance sources amongst oat germplasm is as a priority in Brazilian oat breeding programs. Genetic dissimilarity may help in better understanding of the different genotypes within and between groups. This study aimed to evaluate the genetic dissimilarity between cultivars of *Avena strigosa* (Schreb) e *A. brevis* (Roth) in response to blast reaction. An experiment was carried out at Embrapa Trigo, in 2015. We used four cultivars of *A. strigosa* (Embrapa 29 Garoa; Embrapa 139 Neblina; Agro Planalto; Agro Zebu) and two cultivars of *A. brevis* (BRS Centauro; BRS Madrugada). The experimental design was a randomized block with four replications. A mixture of four isolates of *P. oryzae* at a concentration of 2×10^5 conidia/mL was sprayed at tillering stage of oats development. The lesions number, lesion size (length x width) and severity was recorded, at three days-interval, during 27 days. The data were subjected to multivariate analysis, clustering groups average using Euclidean distance and UPGMA methods from the statistical program Gene. The six cultivars were separated in three groups. The group I, clustered the cultivars Embrapa 139 Neblina, Agro Zebu and BRS Centauro. This group represents cultivars with large lesions. The cultivars Embrapa 29 Garoa and Agro Planalto formed the group II characterized by small lesions. The group III, represented solely by BRS Madrugada showed a low number of lesions and low severity. According to the Euclidean average matrix, the maximum distance (84%) was between cultivars Embrapa 29 Garoa and BRS Centauro and the minimum distance (18%) between the cultivars Embrapa 129 Neblina and Agro Zebu. As to the relative contribution of characters for genetic divergence, the severity was the most important variable (91.86%), followed by the number of lesions (4.77%), lesion length (3.24%) and width (0.13%). There was dissimilarity between cultivars of *A. strigosa* and *A. brevis* in response to the reaction to oat blast.

Keywords: oat; *Pyricularia oryzae*; euclidean distance