



Morphological and genetic characteristics of hybrid combinations of *Dactylis glomerata*

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ABSTRACT. Six F_1 populations derived from crosses among 4 orchardgrass (*Dactylis glomerata* L.) cultivars were studied by morphological and simple sequence repeat molecular markers to test for hybrid vigor and a correlation between genetic distance and heterosis. Heterosis was observed for days to length of culm, leaf traits, tiller numbers, etc. Significant differences between obverse and inverse crosses were found for eleven traits. A cytoplasmic effect existed for the agronomic traits considered in this study. The correlations between genetic distance and heterosis were investigated by analyzing the performance of 3 crosses. The results showed that genetic distance was significantly correlated with tiller number ($r = 0.834$) and negatively correlated with length of culm ($r = -0.889$). However, there was no significant correlation with heterosis for the other traits, including yield; the correlation coefficient were too small to allow prediction of orchardgrass heterosis from the parental genetics.

Key words: *Dactylis glomerata*; Hybrids; Morphological characters; SSR