ABSTRACT

THE RELATIONSHIPS BETWEEN YIELD AND YIELD COMPONENTS OF OAT (*Avena sativa* L.)

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This study was conducted at the experimental fields of Aegean Agricultural Research Institute (AARI) to determine the relationships between yield and yield components of oat (*Avena sativa* L.) in 2009-2010 and 2010-2011 production periods of two yield trials (YVD-1 and YVD-2). There were 25 genotypes in each trial. Experimental design was completely randomized block design with four replications in the both trials. The relationships between yield and yield components of oat genotypes were investigated in detail here. The rates of protein, oil, starch, nutritious fiber, beta glucan, hull, and ash in grain; addition, plant height, grain size, harvest index, panicula height, number of spikelet in a panicula, number of grain in a panicula, grain weight in panicle, thousand kernel weight, test weight and grain yield were characters evaluated in this study. The data obtained for characters were subjected to analysis of variance using JUMP statistical program. Genotypes were ranged via least significantly difference (LSD) method at $P<0.05$ level for characters determined having significantly important difference. Statistical program TARİST was used to determine the correlation and path coefficients. Cluster analysis for step-wise regressions analysis of yield, βeta glucan and βeta glucan rate was performed using MINİTAB-11 statistical program. The correlations between yield and yield components including test weight, thousand kernel weight, grain size and harvest index were positive and significantly important. Harvest index had the highest correlation coefficient.

Key Words: Oat, *Avena sativa* L., grain yield, βeta glucan, correlation coefficient, path analysis, stepwise analysis, cluster analysis.