The Plant Production (Scientific Journal of Agriculture), 35(2), Summer, 2012

Important Morphological Traits on Canola Yield as Second Cultivation in Guilan

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Received: 28 September 2010 Accepted: 6 July 2011

Abstract

To determine the correlated traits to grain yield in rapeseed, eight rapeseed cultivars were planted using randomized complete block design with three replications in Rice Research Institute of Iran, Rasht, Iran, during 2005-6 and 15 traits including sowing to rosette period. Analysis of variance showed that significant differences among varieties for studied traits, indicating the existence of high genetic variation among varieties. Grain yield had a significant positive correlation with 1000-grain weight and flowering to ripening period and had a significant negative correlation with number of grains per silique and silique length. Results of stepwise regression analysis of grain yield showed that traits 1000-grain weight, number of grain per silique, number of secondary stem and height of the first silique from soil surface had the highest effect on grain yield and 98% of grain yield variation was attributed. Correlation coefficients analysis to path coefficients analysis showed that 1000-grain weight has the highest direct effect on grain yield relation to other traits, but the indirect effects of this trait were unimportant through other traits. Factor analysis showed that 79.275 percent of total variations were determined by three main and independent factors namely yield components, plant type and vegetative growth and the most important traits as a selection index to improve grain yield were 1000-grain weight, number of grain per silique and flowering to ripening period, respectively, placed in first factor with grain yield. Biplot charts derived from the factor analysis and grouping traits using cluster analysis confirmed this result and the above traits were introduced as the most important traits to improve grain yield in rapeseed.

Keywords: *Factor analysis, Path analysis, Yield, Rapeseed, Correlation.*