

Diallel analysis of length and shape of rice using Hayman and Griffing method

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Abstract	<p>Length and shape of rice are important physical qualities that determine public acceptance of a variety and determine the price. Improvement of length and shape of rice requires information on the genetic parameters of these traits. Diallel analysis is one of the methods usually used to estimate the genetic parameters of a trait. The purpose of this study was to estimate the genetic parameters of length and shape of rice using full diallel analysis. The plant material used was a full diallel cross-population of six rice genotypes, namely, Basmati Pakistan, Basmati Delta 9, Inpago Unsoed 1, Inpari 31, Koshihikari, and Tarabas. Thirty-six genotypes consisting of parents, F (1) and F (1reciprocal), were planted using a randomized block design with three replications. The data of rice grain length and length:width ratio were used for diallel analysis using the Hayman and Griffing method-1. The results showed additive and non-additive gene action influencing the length and shape of rice. The effect of the additive gene action was greater than the non-additive gene action, while both broad-sense heritability and narrow-sense heritability were high, revealed that the selection of these traits at the early generation using the pedigree selection method may be considered. Length and shape of rice were not affected by the female parent cytoplasm so that F (2) and F (2reciprocal) populations may be combined into one population the next generation.</p>
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