

Heterosis and Heterobeltiosis studies on morphological traits of F₁ generation of two crosses in Rice (*Oryza sativa* L.)

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Abstract

The rice crop grown in low country wet zone of Sri Lanka, especially in river basins close to the coastal areas, subjected to frequent flood and salinity conditions. Therefore, there is a need to develop improved varieties for both salinity and submergence tolerance. With the objective of salinity and submergence tolerant variety improvement, generation advancement of two crosses (Cross 1: At 354/Bg 455, Cross 2: Ld 12-22-2-1-1/ Ld 13-5-7) were carried out at Rice Research Station (RRS), Labuduwa, using submergence (Bg 455 and Ld 13-5-7) and salinity (At 354 and Ld 12-22-2-1-1) tolerant parents. Estimation of genetic parameters of growth and yield characteristics was carried out using F₁ of two crosses and respective parents established at RRS at Labuduwa during 2014/15 *Maha* Season. Both crosses showed positive heterosis and heterobeltiosis in number of panicles per plants, flag leaf length, flag leaf width, number of seeds per panicle, weight of seeds per panicle and seeds width. The estimated genetic parameters indicated that with respect to both crosses there is a possibility to have transgressive segregants for above mentioned important yield components of rice in subsequent generation selections.

Keywords: Heterobeltiosis, Heterosis, Rice

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