

Evaluation of Adaptability of Exotic Rice Hybrid Combinations for Low Country Intermediate Zone in Sri Lanka

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Enhancement of rice yield will be needed to fulfill the increasing demand for rice in future. Heterosis breeding is one of the options to enhance the rice production. Development of hybrids by using exotic hybrid parents is one of the alternatives to increase the rice production in country. Identification of adaptable exotic hybrids for local condition is important to select their parents (Cytoplasmic Genetic Male Sterile and Restorers) to use them for the F_1 seed production under local condition. Therefore this experiment was conducted to find out the most suitable well adopted hybrid varieties for the low country intermediate zone. Five Chinese hybrid varieties (CH13, CH14, CH17, CH18, and CH21) with two local hybrids (Bg 407H, HR10) were evaluated during the *Maha* 2017/18 at Rice Research and Development Institute, Batalagoda. Randomized Complete Block Design (RCBD) was adapted with three replicates. Bg 304 (90 days old), Bg 357 (105 days old) and Bg 403 (120 days old) were used as standard check varieties. Sixteen days old seedlings were transplanted in 3 x 6 m plot at 20 x 15 cm spacing in puddle soil. Grain yield and yield components (1000 grains weight, number of productive tillers per hill, spikelet per panicle, filled grain percentage of panicle) and other important morphological traits were recorded. Exotic hybrid CH18 showed significantly higher grain yield (6.26 t/ha) compared with all exotic, local hybrids and respective standard varieties. All exotic hybrid varieties showed less maturity days (~100) in local conditions than their maturity days (~120) in the native environment in China. Early maturity is mainly affecting to reduce the vegetative phase of varieties and it affects to obtain low yield. CH18 showed highest standard heterosis too (20.15 %) and it was selected as best performing exotic hybrid during the 2017/2018 *Maha* season of the low country intermediate zone under supplementary irrigation condition in Sri Lanka.

Keywords: Exotic hybrids, Inbred, Heterosis breeding, Standard heterosis