

Evaluation of Test Cross Combinations to Identify the Potential Restorers and Maintainers for Hybrid Rice Production in Sri Lanka

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Experiment was conducted to identify the new restorers and maintainers for hybrid rice programme at Rice Research and Development Institute Batalagoda in *Maha* 2016/17 and *Yala* 2017 seasons. Hundred and forty seven crosses were produced by using 29 CMS lines crossing with 58 elite inbred lines in *Maha* 2016/17. All F₁ hybrid progenies and respective male parents were planted in a test cross nursery in *Yala* 2017. Other agronomical practices were conducted according to the recommendations of the Department of Agriculture, Sri Lanka. Pollen sterility and fertility of F₁ hybrids were observed via light microscope after staining them with IKI solution. Fifty six pollen fertile F₁ crosses were identified having >81% pollen fertility and thirty one male parents of such crosses were selected as restorers. Meanwhile four pollen sterile F₁ combinations were identified and they showed >98.6% pollen sterility (IR58025A / RES 256, IR78359A / RES 256, IR78364A / RES 256, BG CMS7A/RES 256). The pollen parent of such hybrid combinations were selected as maintainer (RES 256) and it was advanced to back cross breeding programme in order to develop new CMS lines.

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