

Combining Ability Studies for Rice (*Oryza sativa* L.) under Coastal Saline Soil Conditions

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ABSTRACT

Combining ability study of yield contributing and salt tolerance related physiological traits from the diallel analysis of eight varieties under saline soil conditions revealed the predominance of *sca* variance than *gca* variance for all the characters studied except yield reduction per cent, suggesting the significant role of non-additive gene action for majority of the parameters. Under saline soils, SR26B was adjudged as the best general combiner coupled with high *per se* performance for twelve traits *viz.*, total and productive tillers, panicle length, panicle weight, number of filled grains panicle⁻¹, 1000-grain weight, grain yield, low visual salt injury, harvest index, low Na⁺ / K⁺ ratio, SPAD readings and low yield reduction, while CSRC(S)7-1-4 was the next best general combiner which showed high *gca* and *per se* for six traits *viz.*, number of tillers plant⁻¹, panicle weight, number of filled grains panicle⁻¹, test weight, root/shoot ratio and Na⁺ / K⁺ ratio. Further, CSRC(S) 5-2-2-5 was also found to be promising for six traits *viz.*, number of tillers plant⁻¹, number of filled grains panicle⁻¹, spikelet fertility, test weight, low visual salt injury and low yield reduction. Hence, these parents could be exploited for development of salt tolerant high yielding varieties.

Key words : Combining ability, Rice, Saline soils.