Genetic Variability Studies on Agronmic and Physiological Traits Suitable for Direct Seeding in Rice (*Oryza sativa* L.)

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ABSTRACT

The present study conducted in the year 2014, aims to reveal the importance of some agronomic, physiological traits related to direct seeding in rice and genetic variability existing in the 48 rice genotypes. The coefficient of variation at phenotypic (PCV) and genotypic (GCV) levels were high for plant height, number of filled grains per panicle, number of total grains per panicle, test weight and moderate for the trait leaf area index, number of productive tillers per plant, total number of tillers m^{-2}, grain yield $plant^{-1}$, biological yield $plant^{-1}$, harvest index, anaerobic germination, seedling root length, seedling shoot length, seedling vigour index and basal culm diameter. Low PCV and GCV were observed for days to 50% flowering, panicle length, spikelet fertility and rate of germination. From the results, high heritability coupled with high genetic advance was observed for the traits plant height, leaf area index, number of productive tillers $plant^{-1}$, total number of tillers m^{-2}, number of filled grains $panicle^{-1}$, number of total grains $panicle^{-1}$, test weight, biological yield $plant^{-1}$, harvest index and other physiological traits which indicated the predominance of additive gene effects in controlling these traits. Early and simple selection could be exploited due to fixable additive gene effects of these traits.

KEY WORDS: *Direct seeding, genetic advance, heritability, rice, variability,*