Analysis of Yield Traits as Selection Parameters and their Implications on Genetic Improvement in Chilli (*Capsicum annuum* L.) under Dry Zone Conditions in Sri Lanka

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ABSTRACT

Nineteen inbred lines of chilli (*Capsicum annuum* L.) were evaluated in a Randomized Complete Block Design (RCBD) with two replicates for yield and some yield related traits during *Yala* 2017 and *Maha* 2017/18 seasons to identify genetic variability, highly heritable yield related traits and their association and effects with the purpose of finding most suitable traits as selection parameters for genetic improvement of chilli. Interaction between season and treatment was significant for the studied traits indicating that these traits are not stable across the seasons. Phenotypic and genotypic correlation coefficient analysis revealed that yield in chilli can be improved by selecting genotypes having higher pod length, pod diameter, pericarp thickness, plant height and canopy width during *Yala* season. More attention should be given to the pod length, pod diameter and pericarp thickness during *Maha* season. Path analysis confirmed that in order to increase the yield in chilli, pod length and pod diameter are the most suitable selection parameters for *Yala* season and pod length, pod diameter and pericarp thickness are the most suitable selection parameters for *Maha* season. Selection of genotypes with higher canopy width leads to increase plant height and pod diameter and selection of germplasm with long pods reduces the pericarp thickness during both seasons.

Key words: Chilli, Correlation, Heritability, Path analysis

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