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RESEARCH PAPER

Evaluation and identification of promising advanced breeding lines for quality and yield traits in groundnut (*Arachis hypogaea* L.)

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Abstract : Kernel size coupled with the nutritional quality will determine the worth of groundnut for direct consumption or export. Focusing on this objective one hundred and fifty advanced breeding lines (ABLs) in both Spanish and Virginia botanical varieties were evaluated with four checks under Augmented Design during *Kharif,* 2018 at ICAR- Directorate of Groundnut Research, Junagadh, Gujarat. Significant difference was observed for days to 50% flowering, hundred pod weight (g), hundred kernel weight (g), sound mature kernel (%), shelling percent, pod weight per plant (g), and protein percent. Pod yield per plant (g) registered highest estimates of GCV and PCV. High heritability coupled with high genetic advance as per cent of mean was recorded for 100 pod weight (g), 100 kernel weight (g), sound mature kernel percentage and pod yield per plant (g) traits which indicates a significant role of additive gene action for inheritance of these traits which may be exploited through simple selection methods. Eleven genotypes *viz*., PBS 19013, PBS 19015, PBS 19018, PBS 29079 B, PBS 29082, PBS 29124, PBS 29167, PBS 29196, PBS 29197, PBS 29212 and PBS 29219 had good confectionery quality traits *viz*., large seed size (HKW: >55 g; KL: >1.5cm and KW: >0.7cm), high protein (>30%), high total soluble sugar (>5 %), moderate oil (42- 48%), uniform pod size and shape, high pod yield per plant (> 10g) and good shelling percentage (>60%). These promising genotypes can directly be released as a variety after testing in multi-location AICRP-G trials or can be used in hybridization programmes as donor parents for improving confectionery qualities in groundnut.

Key Words : Confectionery, Groundnut, Quality, ABLs

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INTRODUCTION

Groundnut (*Arachis hypogaea* L.*)* is considered as an important oilseed crop throughout the world and having a unique nutritional composition. It is ranked as the second most important cultivated grain legume, third most important vegetable protein and fourth largest edible oilseed crop in the world (Shilman *et al.,* 2011). In India, it covers an area of 5.0 million ha area with the production and productivity of 7.72 million tons and 1537

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