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indirect effects with other components traits. These findings are in conformity with Diwarkar *et al.* (2006). Direct selection for these characters would enhance the breeding efficiency for seed yield in safflower.

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Variations for physical and nutritional quality traits in advanced breeding lines of groundnut

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ABSTRACT

Eighty four advanced breeding lines of groundnut were evaluated for quality traits with four checks during summer, 2019. Three genotypes, PBS 29180, PBS 29067 and PBS 29148 recorded 80.1 g, 76.3 g, and 72.6 g hundred kernel weight, respectively. Protein content was high (33.8%) in PBS 29124 followed by PBS 29082 (32.7%) and PBS 29116 (32.3%). The oil content ranged from 45.0% (PBS 29105) to 53.1 (PBS 19031). Soluble sugar content was high (6.95%) in PBS 29116. Three genotypes viz., PBS 29079B, PBS 29148 and PBS 29180 had desired combination of traits required for confectionery purpose which can be used as donor parents in breeding program or can be released as varieties after further evaluation and validation.

Keywords: Groundnut, Quality traits, Oil, Protein, Soluble Sugar

Confectionery groundnut with premium edible grade has great demand all over the world. Large seed size (>60 g/100 kernel), high protein (>30 %), high soluble sugar (>6 %), low to moderate oil (42%-47%), uniform pod size and shape, pink or tan seed color, ease of blanching and high oleic/linoleic (O/L) ratio along with good shelling percentage are the important traits for confectionery or table purpose groundnuts (Dwivedi and Nigam, 1995; Kona *et al.*, 2019).

Eighty four advanced breeding lines (ABLs) along with four checks viz., BAU 13, GJGHPS1, Mallika and TKG 19A were evaluated during summer, 2019 for quality traits viz., hundred kernel weight, protein, oil and soluble sugar contents. Protein, oil and soluble sugars were estimated using NIR-Dickey John, Instalab 700 (Mahatma *et al.*, 2016).

All the traits showed significant variations among ABLs when compared to checks. Three genotypes viz., PBS 29180 (80.1 g/100 kernel), PBS 29067 (76.3 g/100 kernel) and PBS 29148 (72.7 g/100 kernel) were found superior over checks (57.2 g/100 kernel). Twenty-nine genotypes recorded >30% of protein of which PBS 29124 recorded the highest (33.82%) followed by PBS 29082 (32.78%) and PBS 29116 (32.27%). The oil content varied from 45.0% (PBS 29105) to 53.1% (PBS 19031). The soluble sugar content ranged from 3.82% (PBS 29189) to 6.95% (PBS 29116). Three ABLs, PBS 29079B, PBS 29148 and PBS 29180 recorded high kernel weight (>70

g), high protein (>30 %), high soluble sugar (>6 %) and low oil (45-47%) which can be used as donor parents in breeding program or can be exploited as confectionery varieties after further validation.

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