

## RESEARCH ARTICLE

# Genetic variability and correlation among different nutritional traits in an intra-varietal cross of GPBD-4 and a mutant GM4-3 derived RILs in groundnut (*Arachis hypogaea*L.)

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### SUMMARY

Groundnut is the world's third most important source of oil and fourth most important source of vegetable protein. Considering the importance of quality parameters, an experiment was carried out at the Main Agricultural research station, University of Agricultural sciences, Dharwad during both 2011 and 2012 *Kharif* seasons for the estimation of genetic variability, genetic parameters and correlation co-efficients of different quality traits in a Randomized Block Design with two replications for 816 RIL's. Highly significant variations were observed for all quality traits *viz.*, oil content, protein content and fatty acid profiles. Oleic acid (6.68%, 8.30% and 6.41%, 7.96%) arachidic acid (9.08%, 9.40% and 7.63%, 8.35%) and linoleic acid (16.53%, 13.73% and 13.11%, 11.38%) recorded low to moderate phenotypic and genotypic co-efficient of variability and O/L ratio (39.27%, 29.82% and 38.01%, 27.07%) recorded high GCV and PCV for 2011 and 2012 *Kharif* seasons, respectively. The highest heritability and genetic advance were recorded for the parameters *viz.*, linoleic acid (90.68%, 91.22%; 25.80%, 20.30%) and O/L ratio (89.56%, 93.67%; 49.96%, 75.78%) for 2011 and 2012 *Kharif* seasons which indicates that these characters are under influence of additive gene action, therefore, further improvement of these traits are possible. Oleic acid in the present study shown significantly negative association with linoleic acid, palmitic acid, behenic acid and total saturated fatty acid percentage in both 2011 and 2012 *Kharif* seasons and a significant positive association is seen with eicosenoic acid, lignoceric acid, O/L ratio and total saturated fatty acids. Therefore, improvement in the O/L ratio is possible with increase in the oleic acid which is required for the maintenance of oil stability for longer period and improves shelf-life of the oil.

**Key Words :** Genetic variability, Genetic advance, Groundnut, Heritability, O/L ratio, Oleic acid

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