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RESEARCH PAPER

Genetic variability and inter-relationship among seed quality parameters in field pea (*Pisum sativum* L.)

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Abstract : Thirty-two field pea genotypes were evaluated for seed quality parameters *viz.*, seed density, hydration capacity per seed, hydration index, swelling capacity per seed, swelling index, hard seed % and seed size. Among the quality parameters hard seed % had the highest GCV% followed by swelling index, hydration index and hydration capacity per seed, indicating further possibility of genetic improvement. Moderate heritability coupled with moderate genetic advance was observed for hydration capacity per seed, swelling index, hard seed % and seed size indicating predominance of additive gene action in the expression of these traits, which could be utilized through individual plant selection. Correlation analysis revealed that seed size had significant and positive correlation with hydration capacity per seed, suggesting more intake of water by bold seeded grains. Hydration capacity per seed had significant positive association with hydration index and swelling capacity per seed, suggesting water soaking capacity of the seeds will also influence its swelling capacity which is interestingly preferred by the consumer and fetch higher price. It means that bold seed will intake more water and will increase the swelling capacity of seed. A large hydration capacity per seed leads to decrease in cooking time, better cooking quality and is ultimately desirable to end user. Hydration capacity per seed had positive direct effect and significant positive association with seed size, whereas indirect effect via hydration and swelling index. It is suggested that direct selection of bold seed to increase hydration and swelling capacity of seed would be more rewarding in quality breeding programme of field pea.

Key Words : Genetic variability index, Correlation, Path analysis, Field pea, Seed quality parameters

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