



# Correlation studies between mechanical damage (%) and seed quality parameters in *Kharif* and summer sown soybean [*Glycine max* (L.) Merrill] genotypes

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**Abstract :** An experiment was conducted to evaluate ninety soybean genotypes in two seasons' viz., *Kharif* and summer. In *Kharif* season highly significant positive correlation with seed length (0.423), seed width (0.419), 100 seed weight (0.577) and seed infestation (0.215) was recorded. Whereas, germination percentage (-0.148), seedling vigour index (-0.199) and field emergence (-0.086) showed negative correlation with mechanical damage percentage at non-significant level. In summer season highly significant positive correlation with seed length (0.285) seed width (0.400), hundred seed weight (0.544) and electrical conductivity (0.301) was recorded.

**Key Words :** Correlation, Mechanical damage, Seed quality, Soybean

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## INTRODUCTION

Soybean [*Glycine max* (L.) Merrill] is gaining popularity on account of its unique characteristics and adaptability to varied agro-climatic conditions. It has unmatched composition of 40 per cent protein and 20 per cent oil and nutritional superiority on account of containing essential amino acids, unsaturated fatty acids, carbohydrates, vitamins and minerals. Soybean protein is rich in valuable amino acid lysine (5%) in which most cereals are deficient. In addition, it contains a good amount of minerals, salts and vitamins (thiamine and riboflavin) and its sprouting grains contain a considerable amount of vitamin C. It is a cream-colored oval bean about the size of a common pea. Soybean belongs to the legume family and is native to East Asia. Soya is a frost-sensitive summer annual and plants may reach 1 metre high. Seeds are borne in hairy pods, which grow in clusters of three to five; each pod

contains two or three seeds, which resemble peas. It has been an important protein source for millions of people for over five thousand years.

Soybean seed is regarded as a poor storer, generally it loses its viability and vigour readily since it is easily susceptible to mechanical injuries caused during harvest and post harvest operations. Soon after harvest, soybean seed is subjected to several post harvest operations like threshing, drying, grading, transportation and other handling operations. During these operations, soybean is subjected to the mechanical damages /injuries due to susceptibility and breakage of the seed coat and it loses its viability and vigour at a faster rate due to losses of membrane permeability of seeds. In soybean, there are several improved varieties available for commercial cultivation but they are likely to lose viability and vigour more due to differential mode of mechanical forces causing damages and injuries to the seeds.

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