

Inheritance of protein content in long bean (*Vigna sesquipedalis* Fruw.)

ABSTRACT

The components of gene effects for protein content were studied following a six parameter model of Hayman and three parameter model of Jinks and Jones, using the means of the six basic populations (P1, P2, F1, F2, BC1P1 and BC1P2) from four crosses derived from four diverse genotypes of long bean. The scaling tests indicated the presence of non-allelic interactions for pod protein and seed protein in two crosses. Additive effects are more important than dominance effects for pod protein. The interaction effects contributed more than the main genetic component for seed protein. Among the digenic epistatic interactions, dominance \times dominance (1) contributed the most followed by additive \times additive (i) and additive \times dominance (h) effects. Pedigree, bulk or single seed descent methods are suggested for developing elite populations. Duplicate epistasis was noticed for the two interacting crosses.

Keyword: Gene effects; Generation means; Long bean; Protein content