

Genetic Analysis of Hard To-Cook in Common Beans (*Phaseolus vulgaris* L.)

Yadji HT¹, Noubissié TJB¹, Aladji Abatchoua MM^{1*} and Bell JM²

¹University of Ngaoundéré, Cameroon

²University of Yaoundé I, Cameroon

In order to develop cultivars of *Phaseolus vulgaris* seeds with faster cooking time, knowledge of genetic information susceptible to improve this trait will be help in the application strategies of selection. An experiment was conducted at Dang University of Ngaoundéré (Cameroon). Five dry beans genotypes resulting from ten varieties genetically diverse and ten hybrids F1 synthesized from 5 x 5 half diallel cross were assessed in a Randomized Complete Block Designed (RCBD) with three replications. The analysis of variance showed that, the difference among the genotype for cooking time at T= 0 and T= 10 days after storage were highly significant ($P < 0.0001$) indicating the presence of wide genetic variability. High broad sense heritability was obtained for this trait, suggesting that, the population can be improved through recurrent selection. Highlighted Narrow sense heritability indicated the prevalence of additive gene action involved in the governing of cooking time of dry beans. The ratio GCA/SCA was greater than unity, confirming the importance of additive genetic variance for this character. The lines CT and PN were the best combiners. Among all crosses, the crosses PB x BI, PB x PN, CT x PR and BI x PN had considerably specific combining ability. Improvement of methods to predict genetic advance and assess cooking time of beans without the environmental factors is also needed.