

Generation mean analysis for forage yield and quality in Kenaf

ABSTRACT

The objective of this study was to estimate heritability, heterosis, and genetic parameters involved in the control of forage yield and quality in kenaf populations, using analysis of generation means. Two crosses were used; Cuba 2032×Accession 75-71 and IX51×Everglade 41. Experimental material comprised of P₁ and P₂, their F₁ and F₂ and BC₁P₁ and BC₁P₂ generations. The effects of generations were significant for all traits in both crosses. Results revealed that both additive and non-additive effects were important for the inheritance of the traits in both crosses. The additive gene effects had a higher contribution than dominance gene effects, for most of the traits in cross 1, while dominance gene effects had a greater contribution than additive gene effects, for most of the traits in cross 2. Broad-sense heritability was high for the majority of traits in two crosses, while narrow-sense heritability was higher in cross 1 than in cross 2 for all traits. In cross 2, heterosis estimates were higher than those of cross 1 for most of the traits. Thus, selecting the segregating generations would lead to a significant improvement for forage yield.

Keyword: Additive; Dominance; Gene effect; Kenaf