

Inheritance of Sugar Yield and Character Association Study in Sweet Sorghum [*Sorghum bicolor* (L.) Moench]

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ABSTRACT

Inheritance and character association study of sugar content in sweet sorghum was carried out during 2010 - 12 at Directorate of Sorghum Research, Hyderabad. Two newfangled crosses of sweet sorghum were generated during *khariif*, 2010 by crossing parents which are contrasting for the trait of interest *i.e.*, low sugar content (27 B and ICSB 38) with high sugar content (SSV 84 and SSV 74). F₁ generation was raised during *rabi*, 2010 - 11 and F₂, B₁ and B₂ crosses were attempted. On the basis of sugar yield, plants were grouped into two distinct classes *i.e.*, high sugar and low sugar content. Chi square test was applied to test the goodness of fit for the segregation ratio and it was evident that sugar content in both the crosses governed by simple monogenic pattern (3High sugar: 1low sugar) of inheritance for this trait with high sugar content being governed by dominant and low sugar by recessive allele. Further, correlation studies in F₂ generation revealed significant positive correlation of sugar yield with juice yield, fresh stalk yield, total biomass, grain yield, total soluble sugars, brix per cent and bioethanol yield. These correlated traits can be effectively utilized in formulating indirect selection schemes.

Key words : Inheritance, chi square test, monogenic, dominant, recessive, correlation.