

# **Estimation of Heterosis and Inbreeding Depression in crosses derived from Grain Sorghum × Sweet Sorghum [*Sorghum bicolor* (L.) Moench]**

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## **ABSTRACT**

An investigation on heterosis and inbreeding depression was carried out in four crosses for fresh stalk yield, juice yield and its attributing traits in Sweet sorghum [*Sorghum bicolor* (L.) Moench]. High heterosis coupled with low inbreeding depression was observed for stem girth in two crosses *viz.*, 27 B × SSV 84 and ICSB 38 × SSV 74 while significant mid parent heterosis coupled with low inbreeding depression for stem girth, brix per cent, total soluble sugars and bioethanol yield was recorded in 296 B × URJA cross indicating additive and additive × additive gene action in the genetic control of these traits. Contrary to this in all four crosses, high heterosis coupled with high inbreeding depression was noticed for total biomass, fresh stalk yield, grain yield, juice yield and sugar yield indicating non-additive gene action in their genetic control. Maximum heterosis was recorded for sugar yield followed by juice yield and fresh stalk yield.

**Key words :** Additive, Inbreeding depression, Heterosis, Non additive gene action, Sweet sorghum.