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RESEARCH PAPER

Effect of planting geometry and nitrogen levels on growth, green cob yield and economics of sweet corn (*Zea mays saccharata* Sturt.)

AARTI VERMA* **AND** G.S.TOMAR[1]
Krishi Vigyan Kendra (I.G.K.V.), BHATAPARA (C.G.) INDIA (Email : verma.aarti2503@gmail.com)

Abstract : A field experiment was conducted at the Instructional Farm of Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during *Kharif* season of 2009. The sweet corn var. Sugar-75 was sown on July 7th 2009 using experimental techniques of Split Plot Design with three replications. Treatment comprised of three planting geometry *viz.*, 60 × 25cm (P_1), 60 x 20cm (P_2), 60 x 15cm (P_3) in main plots and 5 levels of nitrogen *viz.*, control (N_0), 40 (N_1), 80 (N_2), 120 (N_3), 150 (N_4), kg N ha^{-1} in sub plots. Results revealed that all the growth parameters were influenced significantly due to different planting geometries and levels of nitrogen. Wider plant spacing 60x25cm (P_1) produced maximum number of green leaves, stem girth, dry matter accumulation and crop growth rate which resulted in maximum green cob yield (9.65 t ha^{-1}) and higher net returns (Rs. 78,371 ha^{-1}) coupled with wider B:C ratio (3.33) as compared to other planting geometries. However, narrow plant spacing (60 × 15 cm was found to be superior in terms of number of cobs ha^{-1} (91.63 × 10^3), green fodder and stover yields. Application of nitrogen @ 120 kg N ha^{-1} was found to improve growth and yield attributes of sweet corn and consequently the higher green cob yield (10.23 t ha^{-1}). Wider plant geometry (60 × 25cm) in combination with 120 kg N ha^{-1} recorded maximum green cob yield (11.06 t ha^{-1}).

Key Words : Sweet corn, Planting geometry, Levels of nitrogen, Growth, Green cob yield

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*** Author for correspondence**
[1]Department of Agronomy, College of Agriculture, Indira Gandhi Krishi Vishwa Vidyalaya, RAIPUR (C.G.) INDIA