GROWTH BEHAVIOUR AND N CONTENTS OF SWEET CORN AFFECTED BY NITROGEN APPLICATION AND INTERCROPPING

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ABSTRACT

A field experiment was conducted at the Waimanalo Research Station of the University of Hawaii, Honolulu, to study the effect of Nitrogen and intercropping on growth behaviour and N contents of sweet corn, during 1993-94. Sweet corn was planted as a sole and as intercrop in between sugarcane rows at N levels of 0, 75, 150 and 300 kg ha^{-1}. The results of the study indicated that cropping system did not affect plant height and leaf area index. Increasing N levels increased plant height in both cropping systems. Plants were tallest at 300 kg N ha^{-1} and shortest in the control plots at various growth stages in both cropping systems. Similarly leaf area index, at the time of harvest, was maximum at 300 kg N ha^{-1} and minimum in the control plots in both cropping systems. Total fresh weight of ears ha^{-1} was higher in the intercropped sweet corn. Fresh weight of ears per hectare increased with increasing N levels in both cropping systems. Application of 300 kg N ha^{-1} produced maximum tonnes of ears ha^{-1} (16.41 t ha^{-1} in sole sweet corn and 21.11 t ha^{-1} intercropped sweet corn). Average nitrogen concentration of sweet corn stems, leaves, husks and the total plant was not affected by cropping systems. N concentration in stems, husks, leaves and the whole plant increased with increasing N levels in both cropping systems. Stem and leaf N concentrations were significantly different between various N levels in both cropping systems. The highest N concentrations in stems, leaves, husks and whole plant were found in 300 kg N ha^{-1} and the lowest in the control plot treatment.