

ABSTRACT

The effect of three forms of nitrogen fertilizers at different levels and frequency of application were studied in experiments carried out in the field, as well as under greenhouse conditions.

Contrary to the many reported work in Jamaica, the beneficial effect of nitrogen fertilizers on the growth and yield of hybrid corn has been established. This was only obvious when the treatments were effectively separated.

Whether nitrogen fertilizers were applied all at planting or at different stages of growth did not cause any significant effect on the yield of corn and in the nitrogen content of the grains. On the other hand, soil application of nitrogen fertilizers were superior to applying a similar amount of the fertilizer as foliar sprays.

The varieties of hybrid corn used (Pioneer X - 304 and X - 306) did not show any preference to any of the three nitrogen fertilizers, viz. sodium nitrate, ammonium sulphate and urea. However, the nitrogen content of the grains was higher in plants given nitrogen in the form of sodium nitrate and ammonium sulphate than in the form of urea.

The amount of nitrogen used had a very significant effect on the dry weights of roots, stems, leaves and grains of the corn plant. The increase was great at the lower end of the nitrogen level, and became gradual when nitrogen applied exceeded 40 lb per acre. Also, the nitrogen content of the grains produced showed a more or less direct

relationship to the amount of nitrogen applied.

It is suggested that under Jamaican conditions, any form of nitrogen fertilizer should be applied all at planting, and amounts over 80 lb nitrogen per acre in the form of urea should be avoided.