

S U M M A R Y

The effect of spraying of different vitamins (Thiamine hydrochloride, Pyridoxine hydrochloride, Nicotinic acid), Growth regulators (Dikegulac, Solum, Maleic hydrazide, p-chlorophenoxy acetic acid, 2-4.D ; 2-4-5-T) micronutrients ( $MnCl_2$ ,  $CuCl_2$  and  $ZnCl_2$ ), and different combinations of N,P and K has been investigated with special reference to growth performance of the plant.

Three concentrations ( $10^{-3}M$ ,  $10^{-5}M$  and  $10^{-7}M$ ) have been used for all the chemicals excepting the combinations of N,P and K.

Though overall increase in height of the plant has been observed due to treatment of all the chemicals the effect of vitamins has been observed to be the best so far as the height of the plant is concerned specially at the post reproductive stage of the plant.

Maximum number of branches per plant has been produced during the treatment of p-chlorophenoxyacetic acid and -K culture.

Maximum spreading has been observed due to treatment of Nicotinic acid, though pyridoxine hydrochloride, thiamine hydrochloride,  $ZnCl_2$ . -P and -K culture

show stimulation in this respect.

Production of maximum number of leaves per plant has been recorded due to thiamine hydrochloride treatment though Nicotinic acid and Maleic hydroazide show the promising result.

Maximum production of total leaf area per plant has been observed due to treatment of Maleic hydroazide, Next to MH, -K culture is observed to show significant increase of total leaf area per plant.

So far as the dry matter accumulation in leaf is concerned, -P and -K culture show the highest value, in connection with several treatments the lowering of value at the post reproductive stage as compared to reproductive stage, is due to defoliation caused by chemical effect.

Maximum dry weight of root has been observed to be due to Nicotinic acid treatment.

Complete culture shows maximum production of dry weight of stem per plant though p-chlorophenoxyacetic acid and -K culture have been observed to stimulate significantly the same over control. In connection with the production of the total biomass of vegetative parts

significant increase has been observed due to treatment of pyridoxine hydrochloride, complete solution, -P and -K.

Maximum number of fruit per plant is observed due to the treatment of p-chlorophenoxyacetic acid though maximum diameter of fruit and total dry wt. of fruit/plant have been observed to be due to the treatment of pyridoxine hydrochloride and  $MnCl_2$  respectively.

Maximum number of seed/fruit is caused by pyridoxine hydrochloride treatment. The same chemical has been shown to yield maximum percentage of glycoalkaloid content. Though wt. of 100 seeds is observed to be maximum due to DK treatment.

Maximum stimulation of chlorophyll synthesis has occurred due to treatment of p-chlorophenoxy acetic acid, 2,4-D at pre reproductive, DK, and MH at reproductive and DK complete solution, MH and NA at post reproductive stages. The treatment of DK shows initial decrease in chlorophyll content at the pre reproductive stage, though significant increase in chlorophyll has been observed at the later stages of development.

Significant increase of protein content has been observed due to treatment of pyridoxin hydrochloride,

NA Thiamine complete solution, -K solution and -P at pre reproductive, pyridoxine hydrochloride, Thiamine and DK at reproductive and Thiamine, complete solution at post reproductive stage of the plant. Significant increase in carbohydrate content has been observed due to treatment of Vitamins at all the stages of development of the plant.