

Effect of plant growth regulator (auxin) on fruit set in tomato .

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This experiment was carried out in fall 1998 to test the effectiveness of plant growth regulator, auxin (4-Chlorophenoxy acetic acid), on fruit set in field grown tomato under unfavorable temperatures. The commercial auxin (4-CPA) was sprayed during early flowering with 25, 50 and 100 ppm followed by two additional applications at 3 days intervals on tomato racemes CV. Early Urbana. The control plants, treated with distilled water. At harvest, treated racemes with 4-CPA were longer, with thicker stems, and had more large fruits than did control racemes. The ratio of fruit flower in all treated racemes increased significantly ($p < 0.01$) compared with the control plants. But, treatment did not affect number of flower per raceme compared with the control. Treatment with 4-CPA produced the highest yield of marketable fruit. The greatest increase in total yield and parthenocarpic fruit occurred with 100 ppm 4-CPA treatments. Seed number per fruit and the ratio of juice/pericarp, were also decreased significantly with 50 ppm and 100 ppm 4-CPA treatments.

$C_{25}T_{75}$ combinations in all planting densities were greater than unity. So, the advantage of intercropping cucumber and tomato were confirmed.

According to obtained results, the optimum plant density for cucumber and tomato were 2.8 plants /m₂.

Among all treatments of interopping systems, medium planting density of $C_{50}T_{50}$ combination with mean yield of 40.71 tons/ha and yield advantage of 34% is recommended.