

**COMPENSATORY GROWTH AFTER EARLY  
SEASON FRUIT REMOVAL IN COTTON**

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**Abstract**

The ability of cotton to compensate for early season fruit removal was investigated at the University of Georgia Coastal Plain Experiment Station during the 1998 season. During the second week of squaring fruit removal treatments were initiated. Floral buds larger than a pinhead were hand removed for one, two, or three successive weeks. The hand removal treatments were as follows: (1) untreated, (2) 50% fruit removal for 1 week, (3) 100% fruit removal for 1 week, (4) 50% fruit removal for 2 weeks, (5) 100% fruit removal for 2 weeks, (6) 50% fruit removal for 3 weeks, and (7) 100% fruit removal for 3 weeks. Fruit retention was monitored during the three weeks of treatment establishment. At 90 days after planting, plants from three row feet were removed in each treatment and differences in plant height, number of main-stem nodes, leaf area, and fruit number were determined. At harvest, plants from ten feet of row in each treatment were removed and hand harvested by main-stem node and fruiting position. Harvesting in this manner allowed the contribution of each fruiting position to final yield to be determined.

Results from the growth analysis at 90 days after planting showed as the intensity of fruit removal increased, plant height, leaf area, and main-stem node number also increased. These data indicate plants subjected to more aggressive fruit removal responded by maintaining a more vegetative growth habit.

Results from the hand harvests showed plants subjected to more aggressive fruit removal responded by increasing fruit production on higher main-stem nodes. Also, as the intensity of fruit removal increased, more vegetative as well as third position fruit were recorded. Third position fruit in the more aggressive fruit removal treatments were also larger. Total lint yield was lower in the highest levels of fruit removal. Finally, delayed crop maturity was measured in the fruit removal treatments.

These results show, within limitations, cotton can compensate for early season fruit removal by producing more lint on (1) higher main-stem nodes, (2) third positions, and (3) vegetative branches. The crop also compensated by producing heavier third position fruit. Finally, these results show early season fruit removal does not necessarily result in lost yield potential.