

# EFFECTS OF THE RATE OF NITROGEN AND TIMES OF PRUNING ON THREE VARIETIES OF PEACH IN CENTRAL ALABAMA, 2001

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This is a continuation of a study initiated in 2000 at the Chilton Research and Extension Center in Clanton, Alabama. The objective of the study was to determine an optimal nitrogen rate and pruning regime for peach. The study is being conducted on three varieties of peach with different ripening dates: 'Surecrop' (early), 'Contender' (mid), and 'Encore' (late). During the growing season, trees were pruned once (winter), twice (winter and shortly before harvest), or three times (right before hand thinning, two to three weeks before harvest, and after harvest). Nitrogen was applied at 30, 60, and 90 pounds per acre per year. The

experiment was a blocked (five blocks), split-plot design with nitrogen application as the main plot and pruning treatment as the split plot. Data collected included weights of all prunings, trunk cross sectional area, yield, fruit color, firmness, soluble solids, and average fruit weight.

No fruit were produced in 2001. There were no significant differences for 'Surecrop' (see table) in trunk cross sectional area for the nitrogen treatment or pruning method. Pruning weights by pruning method were different, with the trees that were pruned twice having the least weight. Also photosynthesis and stomatal

conductance by method of pruning were different, with the trees that were pruned three times a year having the highest rates.

There were no differences in trunk cross sectional area for 'Contender' with respect to amount of N applied and pruning method. Pruning weights with respect to N rate and pruning method were significantly different. Also photosynthesis and stomatal conductance by method of pruning were different, with the trees that were pruned three times a year having the highest rates.

There were no differences in trunk cross sectional area for 'Encore' with respect to N rate or pruning method. Pruning weights by pruning method were different with the trees that were pruned two times having the highest weights. Also photosynthesis and stomatal conductance by method of pruning were significantly different with the trees that were pruned three times a year having the highest rates.

## INFLUENCE OF NITROGEN RATE AND PRUNING METHOD ON PEACH (*PRUNUS PERSICA* (L.) BATSCH) PERFORMANCE IN 2001

	Trunk cross-sectional area (cm <sup>2</sup> /tree)	Pruning weight (kg/tree)	Photo-synthesis ( $\mu\text{mol CO}_2/\text{m}^2/\text{s}^1$ )	Stomatal conductance (mol H <sub>2</sub> O m <sup>-2</sup> s <sup>-1</sup> )
<b>'Surecrop'</b>				
Nitrogen rate (lbs/acre)				
30	155 <sup>1</sup>	9.1	15.7	0.190
60	161	10.7	15.6	0.195
90	139	8.8	15.7	0.195
Pruning (no. times/year)				
1	169	12.7 a	14.1 c	0.159 c
2	143	6.2 b	15.5 b	0.182 b
3	143	10.8 a	17.4 a	0.239 a
<b>'Contender'</b>				
Nitrogen rate (lbs/ac)				
30	151	10.6 a	14.9	0.198
60	139	10.1 a	14.5	0.185
90	143	8.3 b	14.7	0.184
Pruning (no. times/year)				
1	142	8.7 b	13.6 c	0.154 c
2	147	12.4 a	14.5 b	0.183 b
3	144	8.2 b	16.1 a	0.230 a
<b>'Encore'</b>				
Nitrogen rate (lbs/ac)				
30	150	14.8	11.3	0.149
60	154	15.5	11.6	0.154
90	141	14.4	11.1	0.145
Pruning (no. times/year)				
1	148	9.2 b	10.7 b	0.128 c
2	154	21.9 a	11.0 b	0.150 b
3	143	12.1 b	12.2 a	0.170 a

<sup>1</sup> Mean separation within columns by Duncan's Multiple Range Test  $p = 0.05$ , columns without letters were not significantly different.