

# Can Ethephon Reduce Vegetative Growth of Nonfruiting Peach Trees?

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During the winter of 2004, peaches at the University of Massachusetts Cold Spring Orchard Research & Education Center experienced significant amounts of flower bud damage (see “New Peach Variety/Selection Plantings and Evaluation When

Grown to the Perpendicular V” and “Observations on Winter Flower-bud Damage and Crop Load of Several Peach Varieties” in this issue). We know that peach trees without a crop produce a great amount of vegetative growth. The objective of this study was to use trees where the flower buds were frozen during the winter to determine if ethephon could be used to reduce excessive vegetative growth.

A block of 24 Summer Beauty nectarine trees were used for this study. Trees were planted in 2000 and trained to a perpendicular V system. When shoot growth was between 2 and 4 inches long (May 20, 2004), ethephon at 0, 50, 100, or 150 ppm was applied.

All treatments included 0.1% Regulaid as a surfactant. Trunk cross-sectional area was assessed before treatment and again in the winter of 2005. Also, 10 shoots per tree were selected at random and measured during the winter of 2005.

Research elsewhere, studying the potential use of ethephon as a fruit thinner on peach, suggested that 50 to 100 ppm was the highest usable concentration of ethephon because of effects on leaf quality and premature leaf drop. In this study, we saw no such leaf responses, even at 150 ppm ethephon. Also, we saw very little impact on growth (Table 1). Trunk growth was reduced slightly by

ethephon, but shoot growth was not affected significantly (although there was a numerical reduction).

In 2005, this research will continue in a similar block of non-fruiting trees, but the concentrations used will be increased up to 300 ppm.

Table 1. Effects of ethephon treatment on trunk and shoot growth of Summer Beauty nectarine in 2004. All treatments included 0.1% Regulaid as a surfactant.

Ethephon treatment (ppm)	Trunk cross-sectional area before treatment (cm <sup>2</sup> )	Trunk growth in 2004 (cm <sup>2</sup> )	Average shoot growth (cm)
0	54.5	17.1	78
50	56.0	19.1	69
100	55.7	14.6	68
150	54.8	15.3	69
Significance <sup>z</sup>	ns	*L	ns

<sup>z</sup>\*, ns: Differences among means are significant at odds of 19 to 1 or nonsignificant, respectively. L. Signifies that the relationship between ethephon concentration and the designated parameter is linear.

