

Regulating Fruit Set and Maturity of Macoun Apples

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The objective of this study was to compare the efficacy of two chemical thinning treatments: Accel plus carbaryl, or NAA plus carbaryl, with an untreated control. A second objective was to evaluate the efficacy of ReTain for delaying Macoun fruit maturity and to determine if there was an interaction between ReTain and thinning treatment on fruit characteristics at harvest.

Both thinning treatments were effective in reducing fruit set in 1997 (Table 1). Accel plus carbaryl was effective again in 1998, while NAA plus carbaryl over-thinned (Table 2). Accel increased fruit size in 1997, compared to unthinned controls (Table 1), and both thinning treatments increased fruit size in 1998 (Table 2). Accel increased fruit firmness in both years (Table 3). ReTain reduced pre-harvest drop and delayed fruit maturity both years. In 1997, firmness was greatest for fruit treated with Accel and ReTain, while ReTain had no effect on fruit firmness in 1998. Accel + Sevin increased return bloom compared to NAA + Sevin in 1998 (Table 4).

Table 1. Macoun fruit set and size, 1997.^z

Treatment	Fruit set (%)	Fruit wet (no. fruit/cm ² limb cross-sectional area)	Fruit weight (g)
Control	66 a	10.0 a	150 b
NAA + Sevin	29 b	6.3 b	150 b
Accel + Sevin	33 b	5.1 b	166 a

^z Means in columns significantly different at odds of 19 to 1 if not followed by the same letter.

Table 2. Macoun fruit set and size, 1998.^z

Treatment	Fruit set (%)	Fruit wet (no. fruit/cm ² limb cross-sectional area)	Fruit weight (g)
Control	55 a	6.5 a	139 b
NAA + Sevin	20 b	1.4 c	179 a
Accel + Sevin	30 b	3.6 b	177 a

^z Means in columns significantly different at odds of 19 to 1 if not followed by the same letter.

This study was done at Chick Orchards, Inc., Monmouth, ME with the assistance of the management and employees of Chick Orchards, Inc. Also, Dr. Schupp was with the University of Maine at the time of the study.

Table 3. Effect of Accel and ReTain on fruit firmness of Macoun apples in Maine.^z

Treatment	Fruit firmness (lb)	
	1997	1998
Accel + ReTain	18.6 a	18.3 a
Accel alone	17.9 b	18.0 a
NAA + ReTain	17.2 c	17.4 b
NAA alone	17.3 c	17.2 b

^z Means in columns significantly different at odds of 19 to 1 if not followed by the same letter.

Table 4. Effect of NAA or Accel on return bloom of Macoun, May, 1998.

Treatment	Return bloom (no. flower cluster/cm ² limb cross-sectional area)
Control	10.9
NAA + Sevin	11.8
Accel + Sevin	14.7

