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Factsheet

Prepared by the University of Massachusetts Fruit Program

Late-season "Rescue" Thinning with Ethephon

Wesley R. Autio

Department of Plant, Soil, & Insect Sciences, University of Massachusetts

Winfred P. Cowgill, Jr.

Department of Agricultural and Resource Management Agents, Rutgers University

We all experience occasional failures during the normal apple thinning period from petal fall through the 12mm stage. Once fruit are larger than 12 mm, there are very few options for fruitlet removal. The most commonly utilized technique in New England is hand thinning. Hand thinning is usually performed in early July. Because of this timing, it has very little effect on return bloom the following year, since most flower-bud formation occurs in June. So, it may be possible to gain some fruit size with hand thinning, but if the set is heavy before hand thinning, bloom may be light the next year and trees may even become biennial.

Another thinning option is to use a late-season (early to mid June) ethephon treatment. Ethephon works by breaking down to form ethylene in the plant tissues. It can be very effective as a "rescue" treatment, but we have had very little experience with ethephon thinning in New England. Below are some general guidelines based on five years of research in Massachusetts

and research and observations in the mid-Atlantic area. It is important to understand that Ethephon can be tricky. If conditions or concentration are wrong, then complete crop removal can occur, so be careful!

Recommendations for "Rescue" Thinning with Ethephon

Treat when temperatures are 70-80°F (day of treatment + 2 days).
Do not treat when below 70°F or above 80°F (day of treatment + 2 days).
Determine the dilute gallonage requirement on a per-block basis relative to tree-row volume.

Fruit 15-25 mm diameter (0.8-1 inch)

Varietal recommendations based on Massachusetts research and observations (per 100 gallons dilute spray, with 0.5 lbs carbaryl a.i. and a surfactant):

McIntosh and Macoun	200-300 ppm (0.7 - 1 pint)
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Varietal recommendations based on Mid-Atlantic research and observations (per 100 gallons dilute spray, with 0.5 lbs carbaryl a.i. and a surfactant):

Spur-type Delicious	300-375 ppm (1-1.25 pint)
Fuji	300-375 ppm (1-1.25 pint)
Golden Delicious	120 ppm (0.4 pints)
Rome Beauty	120 ppm (0.4 pints)
Gala	225 ppm (0.75 pints)
Cameo	225 ppm (0.75 pints)
Enterprise	150 ppm (0.5 pints)
Goldrush	225 ppm (0.75 pints)
Jonagold	150-225 ppm (0.5-0.75 pints)
August varieties	120 ppm (0.4 pints)

Cautions: Ethephon can defruit trees, particularly with high temperatures.
Response may be less than ideal, particularly with low temperatures.

Benefits: Reduced or eliminated hand thinning
Enhanced fruit size
Increased return bloom – 30-50%