



## Fruit Program

# Late-season “Rescue” Thinning with Ethephon

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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 three years of research in Massachusetts and research and observations in the mid-Atlantic area. It is important to understand that these recommendations are very tentative and should only be used to experiment with Ethephon. If conditions or concentration are wrong, then complete crop removal can occur, so be careful!

### Tentative Recommendations for “Rescue” Thinning with Ethephon

Experiment only

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)

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

**Varietal recommendations based on Massachusetts research and observations:**  
McIntosh and Macoun – 200-300 ppm (0.7 - 1 pint/100 gallons) + surfactant

**Varietal recommendations based on Mid-Atlantic research and observations:**  
Spur-type Delicious – 300-375 ppm (1-1.25 pint/100 gallons) + surfactant  
Fuji – 300-375 ppm (1-1.25 pint/100 gallons) + surfactant  
Golden Delicious – 120 ppm (0.4 pints/100 gallons) + surfactant  
Rome Beauty – 120 ppm (0.4 pints/100 gallons) + surfactant  
Gala – 225 ppm (0.75 pints/100 gallons) + surfactant  
Cameo – 225 ppm (0.75 pints/100 gallons) + surfactant  
Enterprise – 150 ppm (0.5 pints/100 gallons) + surfactant  
Goldrush – 225 ppm (0.75 pints/100 gallons) + surfactant  
Jonagold – 150-225 ppm (0.5-0.75 pints/100 gallons) + surfactant  
August varieties – 120 ppm (0.4 pints/100 gallons) + surfactant

**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%