Late Season Rescue Thinning With Ethephon

Win Cowgill

Rutgers
New Jersey Agricultural Experiment Station
Chemical thinners improve cropping consistency

US Apple Production (1935-73)
Thinning approaches?

- Blossom thinning
- Bloom/petal-fall thinning
- 8-15mm chemical thinning
- 20-25mm Rescue thinning
- Hand thinning
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 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**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit 15-25 mm diameter (0.8-1 inch)</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Fruit variety 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)
- **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%
Rescue Thinning

• Used When other thinning treatments have not adequately thinned or could not be applied
• Remember it takes 7-9 days to see the results of your last thinning treatment
• This treatment is variable and variety dependant
Recommendations

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

• Tank mix
  – Ethephon at recommended rate
  – Sevin XLR (1 pt/100 gal)
  – Surfactant (0.125% Regulaid)

• 20-25 mm diameter (0.8-1 inch)

• Day of treatment and next day – 70-80°F

• Response may be more or less than desired

• Return bloom enhanced ~ 30-50%
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<th>Points Range</th>
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<tr>
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