



Horticultural and Pest Management Notes,  
produced by Lake Ontario Fruit Program, CCE

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## **Horticultural notes... Here are some critical updates about chemical thinning (from Terence and Mario)**

### **Precision Chemical Thinning – An Update on Fruit Measurement Studies**

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**HEAT WARNING: Growers should use slightly reduced rates (15-30%) for the next few days. If it really gets to the 90's then growers should delay thinning until temperatures moderate.**

The results of fruit diameter measurements made by several cooperating NY grower and consultants after petal fall thinning sprays around May 19th or 20th show that the sprays provided significant thinning on Gala and Honeycrisp but that additional thinning is still needed. In these blocks where fruit size was measured on day 3 and day 8 after the thinning spray, Gala and Honeycrisp fruit set on mature trees was reduced by about 70% (Table 1), however the target is to reduce fruit set by 90%. Thus substantial thinning on Gala and Honeycrisp still remains to be done. This suggests another spray in these blocks. These results suggest what might be done in similar blocks with excellent bloom and set. Of course, you know best conditions on your farm and how individual blocks respond to thinners.

The **high temperatures** which are forecasted are creating a moderate carbohydrate deficit which suggests reduced rates depending on how high the temperatures go. If temperatures reach 90°+ then we suggest delaying thinning sprays until temperatures moderate. Since the weather forecasts change regularly and that affects the apple carbohydrate thinning model, we suggest that growers check the model each day but especially immediately before spraying to get the best estimates of thinning effect. If the forecasted conditions aren't achieved then the thinning prediction will be wrong. This is one of the risks of having a model using forecasted data and then having growers not check it regularly.

The carbohydrate model is now available on the web at the NEWA website (<http://newa.cornell.edu>) under the crop management tab. Run the model before each thinning spray and adjust thinner rate based on the recommendation in the last column of the. The four very simple steps are: (1) Go to the NEWA Apple Carbohydrate Thinning Model Page, (2) Choose a station and click "Continue", (3) Enter your green tip (@ April 16-17) and full bloom dates (@ May 7-8) and click "Calculate", (4) Move the scroll bar on the right to find today's date on the table. The last column gives the recommended adjustment in thinning rates for today based on the model. The model is limited by the accuracy of the forecasted temperatures and sunshine, which change daily.

We have a large crop this year which will require an aggressive thinning effort to reduce crop load to the target number. We suggest a 2 or 3 spray program beginning with a petal fall spray followed by a 12mm spray and if needed a 18mm spray. Most of the petal fall sprays were applied between Friday May 17 (inland sites) and Monday May 21 (lake sites). The next spray should be applied this week. This must be applied between the rain showers and on a day that is cooler than 90°F. When calculating rates begin with the suggested full rate of thinner (For hard to thin varieties, either 3oz NAA + 1pt Sevin/100 gal TRV dilute basis or 64 oz Maxcel + 1pt Sevin/100 gal TRV dilute basis; For easy to thin varieties either 2oz NAA + 1pt Sevin/100 gal TRV dilute basis or 48 oz Maxcel + 1pt Sevin/100 gal TRV dilute basis) and adjust up or down based on the carbohydrate model results. However if temperatures are above 90° do not thin.

In summary, we have a lot of confidence in the carbohydrate model but the high temperatures forecasted for the next few days lead us to be cautious. **Thus despite the model we think growers should use slightly reduced rates (15-30%) for the next few days. If it really gets to the 90's then we delay thinning until temperatures moderate.**

Table 1. Chemical thinning recommendations for 8 field studies conducted as part of a precision chemical thinning group effort during May 2013 in NY State.

Cultivar/Farm	Initial number of clusters/fruitlets per tree (averaged from 5 trees)	Current number of clusters/fruitlets after bloom and/or petal fall spray(s) as May 28, 2013	Current set (% fruitlets/tree) after thinning spray(s)	Target fruit number per tree	Chemical thinning recommendation
Gala (young tree)/Abbott Farm	146 clusters (or 729 fruitlets)	224 fruitlets	30.7%	111 fruits	Spray again
Honeycrisp (young tree)/Abbott Farms	210 clusters (or 1050 fruitlets)	414 fruitlets	39.4%	61 fruits	Spray again
Gala (mature tree)/Orchard Dale Fruit Farms	235 clusters (or 1175 fruitlets)	328 fruitlets	32.5%	135 fruits	Spray again
Gala (mature tree)/Ledge Rock Farms	488 clusters (or 2440 fruitlets)	748 fruitlets	30.6%	231 fruits	Spray again
Honeycrisp (mature tree)/Sandy Knoll	225 clusters (or 1125 fruitlets)	321 fruitlets	28.6%	65 fruits	Spray again
Gala (mature tree)/Sandy Knoll	470 clusters (or 2350 fruitlets)	578 fruitlets	24.6%	135 fruits	Spray again
Gala (mature tree)/Lamont Fruit Farm	200 clusters (or 1000 fruitlets)	375 fruitlets	37.5%	80 fruits	Spray again
Honeycrisp (mature tree)/Lamont Fruit Farm	200 clusters (or 1000 fruitlets)	213 fruitlets	21.3%	60 fruits	Spray again