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## Rutgers Fruit Newsletter-Thinning -Fireblight

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### Rutgers Tree Fruit Newsletter

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May 18, 2013

**Update on Fireblight Alert- NEWA 's Cougarblight** model is predicting Blossom Blight infection potential in North Jersey from High to Extreme beginning today May 18 through May 23 with conditions rated Extreme 21-23

**Showers forecasted Saturday** night through all next week will make it hard to keep covered up for fireblight and to do chemical thinning.

The following is the NEWA output on fireblight from our Snyder Farm station listed as Pittstown, NJ Hunterdon County.

**Reminders on Fireblight control:** any flower still open on pear or apple is susceptible to the blossom blight phase of fireblight. Streptomycin (Firewall or Agri-Mycin-17) is highly effective for 24 hours before a wetting event/infection and helps some two days out. Therefore strep applied today will cover you to Monday. For back action Strep is only good 24 hours after infection.

- Use a minimum of 12 ounces Strep per acre, especially if you are concentrating.

#### More Fireblight Con't.

- Infection can come from spray wetting, rain, dew.
- Maintain your low rates of Apogee (2-3 ounces) every two weeks until several weeks after bloom to prevent shoot blight.
- Use a surfactant, Regulaid or Glycerin preferred, do not apply back-to-back Regulaid applications or photo can occur.

•Do not add Captan to the mix if using Regulaid.

•**For Strep resistance** management consider adding Oxytetracycline as Fireline 17WP or Mycoshield 17WP with the Streptomycin.

**For Apogee-** make sure to add AMS as per label directions to buffer the water and use a Surfactant. Apogee does not replace Strep, if you have open flowers add Strep.

With Apogee do not add Calcium products except System- Cal from Agro-K.

**Apple scab** -Ascospores were essentially all released on May 20. Orchards are still at risk for conidial infections. Continue to monitor scab infection events and maintain spray coverage accordingly for at least two more weeks, or until June 3. Scout orchards for primary scab infections after this time. Stay covered up for Apple Scab through first week of June.

### **Apple Thinning review and**

#### ***NEWA Apple Carbohydrate Thinning Model alert***

Most growers in NJ are well into the thinning season. Growers in Morris County and north are just at petal fall.

Consider the current weather forecast for the week (lousy!) to help you judge as you make your decisions. Storms are expected for the next 5-6 days.

**Pollination-** make sure you had good pollination this year before thinning, many areas have had very poor honeybee activity and or poor native bee activity.

We have been encouraging growers to thin multiple times a season, beginning at bloom, then petal fall then the standard 8-12 MM stage. The idea is that you start to reduce crop load early and then you will always have several more chances to thin!

**Modeling-** we have been using the Cornell NEWA Apple Carbohydrate Thinning Model for the past three years. The good news is it is now available to all NJ growers thanks to Rutgers Cooperative Extension Director, Dr. Larry Katz, who funds the NEWA/Cornell service for NJ growers.

To learn how you can use NEDA go to our [Snyder Farm Website NEWA page-](#)

The Cornell NEWA Apple Carbohydrate Thinning Model is now available on all of our NJ weather stations, locate the one nearest to you and run the Carbohydrate model located under the crop management tab at the top, select Apple Carbohydrate Model.

The following is from my colleague Dr. Duane Green, UMASS via the UMASS-Jon Clements [Healthy Fruit Newsletter](#)

“Petal fall is generally the stage of development that most orchardists start their thinning program. I consider this to be an extremely important opportunity to adjust crop load down. There are only four legitimate reasons to skip a petal fall thinning spray:

1. The block received cold or freeze damage and the extent of injury is unknown.
2. Bloom is so light that that a further reduction in crop load is not warranted.
3. The bloom period was very questionable and there is concern that adequate pollination did not occur.
4. The block shows a consistent history of poor fruit set.”

**NJ NEWA Thinning Alert for North Jersey Growers-** the way the model works is it looks at all weather conditions including temperature, and solar radiation- it looks three days out and predicts weather the apple fruitlets will be stressed. If they are stressed they will thin easier. Of you look at the attached picture and the graph at the bottom, you will see that today and for the next 3 days (the cloudy weather) is triggering a carbohydrate deficit to the trees. In the table you will see recommendations daily for decreasing chemical thinner by 15-30%.

Look at the station closest to you and check daily before making an application of thinner!

More from Dr. Green, UMASS

“Much has been written and said about using the carbon balance model (see <http://newa.cornell.edu/index.php?page=apple-thin>) as an aid in determining when to thin and what products to put in the spray tank to thin. It is based on the observation that there is a strong demand for carbohydrate as fruit increase in size. It is an extremely useful tool in making thinning decisions at the 7 to 14 mm fruit size stage when fruit growth is rapid, however, fruit growth is relatively slow at petal fall and shortly after, thus carbohydrate demand is relatively low. Making thinning decisions at petal fall based upon a projected carbohydrate deficit should be tempered by the fact that carbohydrate demand to sustain growth is low to moderate until fruit reach about the 5 to 6 mm size range.

**“Petal Fall PGR Choices-**

There are generally three options that orchardist have for thinning at petal fall. The petal fall spray is extremely important. Do not wait for ideal weather except where rain or windy conditions prevail. As soon as the bees are removed from the orchard, apply a petal fall spray. **You will always have another chance.**”

**Three petal fall options:**

**Carbaryl** -- this is the most conservative choice and it is the choice selected by the majority of growers. Carbaryl is a mild thinner that rarely overthins. The thinning activity is not concentration dependent, thus errors in the amount applied rarely affect the extent of thinning. Rates between 1 pint to 1 quart/100 gallons are frequently selected rates.

**Naphthaleneacetic acid (NAA)** -- this is a more aggressive approach to thinning that should be considered on varieties and in blocks that have a history of oversetting. The thinning potential of NAA when applied at bloom is lower than when the same rate is applied at the 7 to 14 mm stage. You will have a choice between three NAA formulations.

1. Fruitone N 3.5% has been used for many years but that formulation is being phased out by the manufacturer. You may have some on hand or your supplier may have some available from previous years. It is a viable choice.
2. You also have available Fruitone L which is a 3.5% liquid formulation of the framilier Fruitone N. Fruitone N and Fruitone L are comparable in activity.
3. **New this year is PoMaxa**, a 3.5% liquid formulation of NAA. In thinning trials done last year in Massachusetts, thinning activity of Fruitone L and PoMaxa were comparable.
4. **Note- the NJ label for ProMaxa was awarded this week. Email me if you wish a copy of the label, I have!**) Win Cowgill

**Carbaryl plus NAA** -- this combination is generally considered the most aggressive approach to thinning at petal fall. It is useful for thinning of hard to thin varieties. When used at petal fall it has a lower thinning potential than when used at the more traditional thinning time of the 7 to 14 mm stage.

**“Timing Thinning Applications** The predicted cool temperatures until Monday, and chance of rain showers over the next couple of days will make it a juggling act to schedule crop load management this week.

The Cornell carbohydrate model predicts an increased response to thinners applied the next three days (reduce rates is the guidance through Monday by 30%). Move forward and apply thinning agents as the opportunity presents itself.”

**Note** in a perfect world you would like to have 8 hours of drying time on thinners, but NAA cannot be washed off once it is applied to the tree in dry weather- it is absorbed almost immediately. In a light rain Sevin XLR will rewet and give you a second shot as it reabsorbs. I would not concentrate Sevin XLR for the next three days due to rewetting and increased activity.

A Review of Chemical Choice for Apple Thinning 8-12 MM

**NAA-** is one of our oldest and most reliable thinners. It can be applied from petal fall to 20MM fruit size at rates of 5ppm to 20ppm per 100 gallons. It is especially effective in helping to return bloom.

**Caution Notes:** *on red delicious do not apply concentrations more than 5ppm to avoid pygmy fruits. Do not use NAA or NAD on any trees that are to be treated with MaxCel, Promalin or Provide this year! Pygmy fruits may result. Do not use NAA on Fuji for the same reason.*

**NAD-** is a mild form of NAA and is used at PF and early fruit set only! It is very effective on summer varieties such as Paulared, Jersey mac, Macintosh cultivars and Macoun. It is usually applied at 40-50 ppm per 100 gallons at PF-5MM, it is no longer labeled in NJ as not enough was sold by AMVAC to warrant a NJ label.

**6-BA-** It is sold in three formulations as MaxCel (1.9% BA), RiteWay (1.9% BA) or Exilis Plus (2.0% BA).

6-Ba is best used in combination with Sevin at 50-to 100 ppm. It also works best in a warming trend over 65F and works best between 8-12 MM. Caution should be used if temperatures approach 85F or higher.

**Caution Notes:** 6-BA and Sevin can be a very aggressive combination on Gala especially under the right weather conditions (cloudy days as are forecasted can overthin)

**Sevin** is a carbamate insecticide that is a standard thinner for apples. It has been reported to be safer on bees and to have less toxicity to mite predators. It has the same concentration of active ingredient as Sevin 50W and thins the same way. Sevin is a mild thinner at the full rate of 1 quart/acre. It can be used at PF till 20 mm and is best used in combination with other thinners (NAA or 6-BA) with most varieties. (Do not use Vydate in combination with Sevin.

**Vydate L** is a carbamate insecticide that works the same way as Sevin. Vydate has had a state label in NJ since 1996 based on our research trials in North Jersey. It too is a mild thinner like Sevin and should be used in combination with another thinner for best results (NAA or 6BA). At 1-2 pints per 100 gallons it should be applied dilute between PF/5MM and 20MM. Up to two applications can be made per season. Vydate may be less toxic to mite predators than Sevin and at the 1-2 pint /100 rates have activity on spotted tentiform leafminers if present at thinning time.

**Ethephon 2 or Ethrel** is both labeled for apple thinning. Manufactured by Microflow and Bayer respectively, their labels are slightly different. Ethephon is used extensively throughout Europe to help bring non-bearing apples into production as well. This use is outlined on both labels as well.

Refer to the 2013 NJ Commercial Tree Fruit Production Guide for additional information.

### ***Some guidance on PGR materials and Combinations and Cautions***

**Thoughts on NAA:** many researchers have been indicating that NAA thins fruit and helps with return bloom, but have found NAA *does not* increase fruit size. In addition, in up to a third of the cases, NAA *may reduce fruit size* if applied after 8MM in size. Hence the move toward Sevin XLR or Sevin and NAA combinations applied early.

The NAA base rate depends on the variety; the harder to thin cultivars require the higher NAA concentration. The exception would be Spur Delicious and Fuji. I would not use more than 5ppm NAA on Reds or Fuji's and I would use it only in combination with Sevin or Vydate at Petal Fall.

You can also use 5 ppm NAA at petal fall and follow up at 8-10 mm with 1qt of Sevin/A if needed.

All the above petal fall treatments allow for you to come back with a second application of the appropriate material at 8-12MM.

A second approach might be to try using Sevin XLR at petal fall at 1 qt/A. It can be used alone or combined with NAA. Combined with NAA it is more aggressive. Varieties like Gala and Fuji are hard to thin and will benefit from the multiple application approach. Since Gala, Fuji, Golden Delicious and others are hard to size and thin, be aggressive if bloom warrants at petal fall.

For Gala, Fuji, Suncrip- time sprays based on bloom on the older wood, (two year old spurs) not the flowers on the one-year-old wood (our goal is to eliminate the flowers/fruit on one year old wood, it is always small and ripens a week or more later). Time the rate by sizing the fruit on the older wood, i.e. 5-8mm for sprays later than petal fall.

Promalin™ - on Gala-many growers in British Columbia, Washington State, Chile and New Zealand use Promalin™ at bloom to PF of the king flower on 2 year wood. 1-2 Pints.

Golden Delicious: consider the use of Ethephon 2 (21.7%) at 1/2 pint per 100 gallons plus 10ppm of NAA. Ethephon is labeled for Goldens. The label calls for an increased rate for spur Goldens. One north Jersey grower has used this combination on Goldens for over 15 years with good success.

Fuji can be thinned successfully at 8-12 MM in NJ with Sevin XLR @1QT acre + Maxcel at 75-100PPM. However this combination alone will not ensure return bloom.

**Note on Fuji/Red Delicious:** Do not use NAA on Fuji in the normal thinning window of 8-12MM, it can cause mummies.

For Jersey Reds try 5ppm NAA plus Sevin XLR at 1 quart/A, again this combination has been successful in North Jersey consistently.

As you can see there are a lot of ways to go. *Try some bloom and petal fall sprays, use multiple applications.* Keep detailed records including weather two days before and two days after application. *Always be sure to leave some check trees.* Experiment slowly on portions of your acreage cultivar by cultivar.

If you still have too much fruit after petal fall and 8-10 MM applications, consider the use of Ethephon plus Sevin XLR combinations when fruit size is greater than 18-25 (Rescue Thinning)

[See our fact sheet on Rescue Thinning](#)

Growers are always welcome to call me to discuss strategy.

Win Cowgill

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