Volume 21, Number 15. July 30, 2013 (Special Edition).

Contents

The way I see it

Although last week I said there would not be a new Healthy Fruit until next week (August 6), I just received important information from Duane Greene on apple drop control. Although immediate action is not necessary, it's important to thoroughly think over your apple stop-drop strategy and then be ready to act in a few weeks at the appropriate time. (I would remind you that ReTain is registered for use on peaches at this time though.)

I also want to mention that PoMaxa has received state approval in Massachusetts. PoMaxa is an alternative NAA product to Fruitone-L. The use pattern for both of them is the same.

Also, yesterday, I saw apple maggot fly (AMF) active on McIntosh apples at the UMass Orchard. You should be in the midst of AMF control and for the next few weeks.

We'll be back next week with a regular Healthy Fruit, but for now here are Duane's thoughts below.

JC

Pre-harvest apple drop control strategy for 2013

Duane W. Greene, UMass Amherst

Over the past several years I have been evaluating preharvest drop strategies to improve drop control. More recently this has included the addition of NAA with ReTain as well as various split application treatments with ReTain. I have reviewed all of these data recently and have come

up with the discouraging conclusion that no one strategy works better than another on a consistent basis year after year. In difficult drop years differences in drop control between treatments can be shown whereas in less challenging years differences are not great or they may not exist. It also appears that there are differences in effectiveness from orchard to orchard. The dilemma now is to come up with a suggested approach for this coming 2013 season. A way to approach this may be to review the drop control components available that may influence preharvest drop and fruit quality. From this discussion you as growers can piece together a drop control strategy that best fits your situation.

Time of Application of ReTain

The earlier you apply ReTain the greater the effect it will have on delaying ripening. The earliest time of application suggested on the label is 4 weeks before anticipated harvest. For maximum delay in ripening this is the timing that you should use. Split applications of ½ rate of ReTain applied at 4 and 2 weeks before anticipated harvest are not as effective in delaying ripening as one full rate applied at 4 weeks before anticipated harvest. It seems prudent to use the full rate strategy to start out with for pick-your-own blocks intended for late harvest. In this case a supplemental application of ReTain would be required to control drop late into the season. Applications made 2 to 3 weeks before anticipated harvest (or even closer if you are the gambling type) will extend the drop control period later into the season and minimize reduction in fruit color often observed with the earlier timing. It is good to remember that it required 10 to 14 days for ReTain to start to control drop. Drop control is often aided by cooler temperatures that are frequently experienced later. I generally favor application nearer anticipated harvest because of the greater drop control during the period when drop is most intense, but following this strategy may result in loss of some fruit due to early drop.

ReTain Concentration

The more ReTain applied the greater the delay in ripening and the longer the drop control period lasts. The primary restriction on the ReTain label related to the amount that can be applied is that no more than one pouch can be applied per acre at any one time.

Split ReTain Applications

Over the years that we have been applying ReTain I have found that 3 split applications of ½ rate of ReTain starting 2 to 3 weeks before harvest with subsequent treatments applied 2 to 2.5 weeks apart has been satisfactory and equal to or better than other approaches. Of all of the options and possible combinations available this is the one that I favor, primarily for its consistence. One single application of ReTain application made at the full rate will satisfactorily retard drop for about 35 days in normal years. After that drop starts to increase and a supplemental application of ReTain may be necessary to extend the drop control period. Experience in your orchard will be a good guide in assembling the pieces necessary to come up with a good drop control plan.

ReTain and NAA Combinations

Perhaps one of the most fickle drop control strategies involves NAA. In some years when NAA is applied with ReTain drop control is extended. This response is not consistent. Initially, there was hope of achieving drop control with a combination of NAA and ReTain thus allowing the use of a lower rate of ReTain. Research over these past several years clearly shows on McIntosh types that ripening will be advance if the ratio of NAA to ReTain is too high. Advanced ripening is unlikely if a half rate of ReTain is used with 10 ppm NAA. If more NAA or less ReTain is used ripening is most likely to be advanced. In some situations where too much NAA is applied with ReTain drop may be increased. Application of 20 ppm NAA or more than two applications of 10 ppm NAA may advance ripening. Application of 10 ppm NAA in the first or the

second application with ReTain appeared to influence drop similarly. Since the timing of application of NAA with ReTain was inconsistent no timing recommendation is offered. I look at the use of NAA with ReTain as a type of insurance policy where each grower must assess if the cost is too high for the drop benefits which are not seen every year. In the years (only 1 and marginally 2 out of 4 years) the drop delay was large enough to be of importance. The investment is not excessive but the occasional benefit accrued may not be worth the additional expense. If you do delay ReTain application to less than 2 weeks prior to the anticipated harvest the addition of 10 ppm NAA may be useful to provide some early drop control until the full drop control effect of ReTain is achieved. It is my feeling (but not confirmed experimentally) that the ReTain will offset the ethylene production and advanced ripening from NAA much earlier than it initiates drop control.

The Use of ReTain on Gala and Honeycrisp
Both Gala and Honeycrisp are low ethylene producing cultivars. Rates suggested on these are lower than those that are used and required for McIntosh types.

- **Gala** is not afflicted with the preharvest drop problem but it does ripening very rapidly, especially in warm weather. This results in development of cracking and greasy fruit and ReTain is useful to counteract this. A ½ rate of ReTain is the highest rate recommended. The use of a full rate of ReTain may delay ripening up to a month and the uneven ripening characteristic of Gala may be accentuated. Timing is 2 to 4 weeks prior to anticipated harvest. I have not tested the use of NAA with ReTain on Gala but from a purely logical standpoint it does not make sense. We use NAA with ReTain to improved drop control and NAA has a proven history of advancing fruit ripening.
- **Honeycrisp** has a drop control problem that is overcome with ReTain. Rate of ReTain from 1/3 to ½ pouch per acre seems most appropriate. Comments about NAA for McIntosh types are applicable for Honeycrisp. Timing of application is 2 to 4 weeks before anticipated harvest. Drop on Honeycrisp is accentuated by excessive heat and drought. Drop control may be made easier and much more effective by the use of overhead sprinkler irrigation for cooling and water and trickle irrigation to provide just water.

Useful links

UMass Fruit Advisor: http://umassfruit.com

UMass Fruit Notes: http:umassfruitnotes.com

Scaffolds Fruit Journal: http://www.nysaes.cornell.edu/ent/scafolds/

Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu

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UMass Vegetable & Fruit IPM Network (on Facebook, http://www.facebook.com/umassipmteam)

2013 New England Tree Fruit Management Guide (http://fruit.umext.umass.edu/2013netfmg/)

The next Healthy Fruit will be published on Tuesday, Augst 6 or thereabouts, 2013. As always

feel free to get in touch with any member of the UMass Fruit Team (http://extension.umass.edu/fruitadvisor/team-members) if you have questions or comments.