



## Healthy Fruit, Vol. 23, No. 15, August 4, 2015

Jon Clements, Author (unless otherwise noted) and Editor

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### Current degree day accumulations

|   |       |
|---|-------|
| UMass Cold Spring Orchard,<br>Belchertown, MA | 3-Aug |
| Base 43 (SkyBit)                              | 2,417 |
| Base 50 (NEWA)                                | 1,781 |

Note: this will be the last degree day accumulations for 2015

## Upcoming pest events

| Coming events                                   | Degree days (Base 43) |
|---|-----------------------|
| Spotted tentiform leafminer 2nd flight subsides | 1994-2366             |
| STLM 3rd flight begins                          | 2263-2647             |
| Apple maggot flight peak                        | 2115-2655             |
| Apple maggot 1st oviposition punctures          | 1605-2157             |
| Oriental fruit moth 2nd flight subsides         | 2066-2548             |
| Oblique banded leafroller 2nd flight begins     | 2248-2640             |
| Redbanded leafroller 2nd flight subsides        | 2177-2731             |
| Codling moth 2nd flight peak                    | 1956-2722             |
| San Jose scale 2nd flight peak                  | 2137-2493             |

Note: this will be the last upcoming pest events for 2015

## AgRadar

### *Key insect life cycle and management dates*

Note: for 2015, we have five Massachusetts orchard locations subscribed to AR: Belchertown, Groton, Phillipston, Stow and Sutton. The website for looking at AgRadar for these locations is: <http://extension.umaine.edu/ipm/ag-radar-apple-sites/>. What follows is for the Belchertown location.

**Codling moth (CM)** -- Codling moth development as of August 4: 2nd generation adult emergence at 66% and 2nd generation egg hatch at 27%. 2nd generation 7% CM egg hatch: July 28, Tuesday = target date for 1st spray where multiple sprays needed to control 2nd generation CM. 2nd generation 30% CM egg hatch: August 5, Wednesday = target date where one spray needed to control 2nd generation CM.

**Obliquebanded leafroller (OBLR)** -- 1st generation OBLR flight begins around: June 9, Tuesday. Early egg hatch and optimum date for initial application of B.t., Delegate, Proclaim, Intrepid, Rimon, Altacor, Belt, pyrethroid or other insecticide effective against OBLR (with follow-up applications as needed): June 23, Tuesday. Where waiting to sample late instar OBLR larvae to determine need for treatment is an option, or to check on results from earlier sprays: Optimum sample date for late instar summer generation OBLR larvae: July 4, Saturday

If first OBLR late instar larvae sample is below threshold, date for confirmation follow-up: July 7, Tuesday.

**Spotted tentiform leafminer (STLM)** -- 2nd STLM flight begins around: June 15, Monday. Rough guess of when 2nd generation sap-feeding mines begin showing: July 5, Sunday. Optimum first sample date for 2nd generation STLM sap-feeding mines is July 12, Sunday. Second optimized sample date for 2nd generation STLM sapfeeding mines, if needed: July 18, Saturday. Third optimized sample date for 2nd generation STLM sapfeeding mines, if needed: July 28, Tuesday.

## Preliminary McIntosh harvest date forecasts

The Michigan formula estimates that non-spur McIntosh will reach starch-index 4.0 and start the optimum harvest window for long term storage on Saturday, September 5. Using the Hudson Valley NY (Cornell) formula, McIntosh maturity is forecast to reach starch index 6.0 in Belchertown, MA on Wednesday, September 23, which is the end of the optimum harvest window for long term storage. To delay single pick harvest up to 7 to 10 days, apply ReTain 21 to 28 days prior to beginning of expected harvest date for untreated fruit. To delay fruit maturity and improve storage potential of later picked apples (2nd, 3rd, 4th picks), apply ReTain 7 to 14 days prior to beginning of expected harvest date for untreated fruit. This later timing will not delay the start of harvest (1st pick), but will delay maturity for later picks. Date to apply ReTain to delay first harvest for apples without treatment would be ready for storage harvest on September 5 is from Saturday August 8 to August 15. Date to apply ReTain to delay maturity for 2nd, 3rd or 4th pick of those apples, without delaying start of harvest maturity, is from Saturday August 22 to August 29.

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## Upcoming meetings

New England Vegetable & Fruit Conference, December 15-17, 2015, Radisson Hotel - The Center of New Hampshire, Manchester, NH. <http://www.newenglandvfc.org>

For more information and updates, see [Upcoming Events](#) or contact Jon Clements, 413-478-7219.

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## The way I see it

The primary reason I am putting out Healthy Fruit this week is to include Duane Greene's comments on ReTain because the time of application may be as early as next week for some growers. The pest management season is really winding down, so beginning with the next Healthy Fruit we will focus on harvest maturity.

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## Insects

**Spotted wind drosophila** (SWD) has been [found in peaches](#) (as well as appearing in other crops). As long as you keep up with peach harvest, ie.don't let fruit get too soft, SWD should not require insecticide treatment in peaches.

Please note we are in the peak of **apple maggot fly** (AMF) season, so be warned. Prophylactic insecticide sprays against this pest are strongly advised.

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## Diseases

**Brown rot** of peaches(and nectarines) is [rampant where fungicide sprays have been weak or non-existent](#). Please see the brown rot management recommendations from Rutgers:

- [Brown Rot Management in a Wet Growing Season: Part I](#)
- [Brown Rot Management in a Wet Growing Season: Part II](#)
- [Brown Rot Management in a Wet Growing Season: Part III](#)

**Summer diseases** (fly speck, sooty blotch, rots) of apples need to be controlled with repeated fungicide applications where and when it rains, or 2-3 weeks pass.

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## Horticulture

Now is still a good time to collect leaf samples for nutrient analysis. (But you should do it in the next week.) Please visit the [UMass Soil and Plant Tissue Testing Laboratory](#) for forms and instruction on submitting samples. Samples should be collected by mid-August at the latest.

### Use of ReTain in 2015

Duane Greene, UMass

The purpose of this is to provide a brief update on ReTain use for 2015 and to call your attention to small changes that Valent has made to the ReTain label.

#### Useful Generalizations Related to ReTain Use

1. The more ReTain you apply the greater the response (more drop control and greater delay in fruit maturity) you can expect. In general, this is a linear response.
2. The earlier you apply ReTain the greater retardation of ripening will occur.
3. Effective drop control (20% or less) from a 1 pouch per acre application will generally last between 34 and 40 days. Supplemental application of ReTain will be required to achieve additional drop control.
4. Supplemental application of ½ to 1 pouch per acre will extend the period of drop control and continue some retardation of ripening.
5. It requires 10 to 14 days after ReTain application before drop control start to become effective.

#### The Label for ReTain has be Modified for 2015

Valent has released a [Supplemental Label for ReTain](#) this year. Among other things, the new label allows application of up to two pouches of ReTain per acre at the initial application. It is unclear at this point if there is a season limit. This will probably be made clear once the rewrite of the federal label is approved later in the year.

#### Delay Ripening of McIntosh

If you would like to delay fruit maturation to allow later harvest, application should be applied at least 4 weeks before the anticipated start of harvest. At least one pouch should be used at this time to have a meaningful delay in ripening. Presumably, if more than one pouch is applied a greater delay in ripening will occur. A supplemental application may be useful if harvest is delayed. There is a 7 day pre-harvest interval.

Application of ReTain 3 to 3½ weeks before anticipated harvest will have less of an effect on delaying ripening than the earlier application. The supplemental label suggests that application at this time will allow delay of harvest 7 to 10 days. While starch breakdown is delayed by ReTain, it is not a large delay. Below is a summary table of starch rating recorded over the past 6 years using the Cornell Generic Starch Chart and flesh firmness of fruit that were treated 3 to 3½ weeks before the anticipated start of harvest and data taken between September 7 and 15. The six year average shows a 0.8 starch unit reduction for ReTain treated fruit and only a 0.4 lb increase in flesh firmness. It should be stressed that loss of flesh

firmness does occur at very nearly the same rate in ReTain treated fruit as the untreated control fruit so a delaying harvest does come at the expense of lower flesh firmness. Flesh firmness is a significant factor when determining the length of storage time and this should be considered. Perhaps the most visible effect of early ReTain application is the delay in red color development and the intensity of red color.

| Starch rating (Cornell Generic Starch Chart) and flesh firmness of Gatzke McIntosh apples treated with 1 pouch per acre of ReTain 3 to 3½ weeks before the anticipate start of harvest. Data taken from harvests made on September 7 to 15. |                     |            |                     |             |
|---|---------------------|------------|---------------------|-------------|
| Year  | Starch Rating (1-8) |            | Flesh Firmness (lb) |             |
|   | Control             | ReTain     | Control             | ReTain      |
| 2009  | 5.4                 | 4.8        | 15.4                | 16.1        |
| 2010  | 5.1                 | 4.4        | 13.9                | 14.2        |
| 2011  | 5.2                 | 4.3        | 13.5                | 14.2        |
| 2012  | 5.5                 | 4.6        | 14.7                | 14.5        |
| 2013  | 5.0                 | 4.4        | 13.5                | 13.8        |
| 2014  | 5.9                 | 5.4        | 14.9                | 15.1        |
| Mean  | <b>5.4</b>          | <b>4.6</b> | <b>14.3</b>         | <b>14.7</b> |

### Pre-harvest Drop Control of McIntosh

If drop control is desired into late September or early October supplemental ReTain application will be necessary. In the past two years significant drop control into early October was achieved with an application of a second pouch per acre of ReTain applied 2 weeks after the first application. Application can be delayed for up to 2 weeks prior to harvest but some early drop may occur. Depending on the year sometimes this loss may be substantial.

We do not recommend the addition of NAA with ReTain for drop control. While improvements in drop control were documented one year there were several years where this was not observed. ReTain masked most of the ripening effects normally attributed to NAA use at harvest time, we did observe fruit cracking on the tree and fruit cracking and extremely soft fruit from a portion of the fruit (1 to 3%). While the percent is not great it is real and eliminating these from the stored bins can be difficult and expensive.

### Use of ReTain on Gala and Honeycrisp

Both Gala and Honeycrisp are considered low ethylene producing varieties. Consequently, they are much more sensitive to ReTain application than other varieties that produce more ethylene. Experience has shown that the use of one half to one third of the amount of ReTain is appropriate. If higher rates are used then ripening can be delayed of up to a month and red color development can be dramatically reduced and delayed. Since Gala do not have a drop problem the primary use of ReTain is to delay ripening to prevent or delay fruit cracking and the development of greasiness. Honeycrisp does drop and sometimes this can be severe. This is exacerbated by high temperature and a lack of rain. Consequently, it is important to make sure Honeycrisp are provided with adequate water and make sure that the ReTain is applied advance of exposure of Honeycrisp to these stresses.

## Guest article

No guest article this week...

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## Facebook Me

No Facebook me this week, sorry...

Follow me (jmcextman) on FB: <https://www.facebook.com/jmcextman>

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## Youtu.be

No video this week, sorry...

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## Useful links

[Index of Healthy Fruit](#) (2015, 2014)

UMass Fruit Advisor: <http://umassfruit.com>

Scaffolds Fruit Journal: <http://www.nysaes.cornell.edu/ent/scaffolds/>

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

[New England Apple Decision Support System maps](#) (experimental)

Follow me on Twitter (<http://twitter.com/jmcextman>) and Facebook (<http://www.facebook.com/jmcextman>)

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

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The next Healthy Fruit will be published on Tuesday, August 18 or thereabouts, 2015. 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.