



# Healthy Fruit

Volume 11, 2003

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## Issue 11 – June 17, 2003

### Current Degree-day Accumulations<sup>1</sup>

Location	Base 43F	Base 50F
Belchertown, UMass CSO observed (01/01/03 – 06/15/03)	906	500
Belchertown, UMass CSO, SkyBit™ (01/01/03 – 06/15/03)	861	NA
Belchertown, UMass CSO, observed (05/25/03 petal fall – 06/15/03)		232 <sup>2</sup>

<sup>1</sup> Base 43 and Base 50 from January 1 used in insect models.

<sup>2</sup> 340 Degree Days Base 50 used for plum curculio spray cut-off.

### Degree-day Discrepancies

An observant reader pointed out that previous degree-day accumulations published in Healthy Fruit seemed at odds when looking at SkyBit vs. ‘observed’ base 43 values. For example, Volume 11, Issue 10 (June 12) shows 966 for Belchertown ‘observed’ vs. 790 for SkyBit. Well, they were right, and in fact, we were comparing apples and oranges. For the ‘observed’ accumulation at Belchertown, the high-low growing degree-day formula was being used. ‘SkyBit,’ however uses a more sophisticated hourly ‘integral’ method for the degree-day accumulation. This method has a tendency to even-out temperature extremes, and is the preferred method if using a computer and connected weather station to compute degree-days. Since this is actually the case for the ‘observed’ data at Belchertown, the integral method will be used from now on for published degree-day data in Healthy Fruit. As you can see above, the observed (906) and SkyBit (861) are now much closer than previously published, and are certainly within a range that might be expected given the fact they are two completely different methods of orchard weather monitoring.

Some may wonder what’s the point in publishing the degree-day data? As the footnote denotes, degree-days are used in helping predict insect (and disease) pest emergence or events. For example, at the current accumulation of approximately 900 base 43 degree-days, we can expect oblique-banded leafroller and peachtree borer adults to be flying soon. (The 2003 Pest Management Guidelines for Commercial Tree Fruit Production published by Cornell University has an excellent Table of Degree-day accumulations (from Jan. 1) corresponding to selected fruit phenology and arthropod pest events: Table 14, <http://www.nysaes.cornell.edu/ent/treefruit/>). Also, note that we have not reached the threshold of 340 degree-days (base 50 from petal fall) when we can stop spraying for plum curculio. Keep in mind the degree-day information is from Belchertown only, and care must be taken in extrapolating it to your orchard.

### Mites

In the few orchards where mites have appeared, after all this wet weather, low numbers of mites do appear to be hanging in there, either red mites or two-spotted mites, so do monitor carefully and don't take it for granted that mites will not be a problem!

### Leafminers

Mines are in the tissue-feeding stage in most locations; this is not a good time for treating but is a good time for monitoring, since the mines are readily visible. Very few orchards have substantial numbers of leaf mines this year.

***These recommendations are not a substitute for pesticide labeling. Read the label before applying any pesticide - it is the legal document.***

## Rosy Apple Aphids

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Occasional colonies of rosy aphid are evident, generally in Cortlands or Paula Reds; this insect is rarely a problem in this region. These aphids are protected from contact insecticides by the curled leaves which are the evidence of their presence, but systemic insecticides such as Provado will still control them.

## Pear Psylla

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Newly hatched nymphs of the second generation are beginning to appear; monitor pear trees and use a split application of insecticide if nymphs are found.

## Plum Curculio

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Baited traps at Belchertown showed considerable plum curculio (PC) immigration this past week, especially on Tuesday and Sunday (sunny days). Relatively warm and misty days following the Tuesday immigration were ideal for egg-laying. A survey of about 5,000 fruit in several commercial orchards yesterday showed a 3-fold increase in injured fruit compared with the previous Monday, which in turn showed a 5-fold increase over the Monday before that. Average injury reached about 8% of fruit sampled on sprayed perimeter row trees baited with attractive odor in commercial orchards. In several blocks insecticide coverage was inadequate to prevent injury. How long will the curculio season last? As of today, we have reached 232 degree-days (base 50) at Belchertown and 228 in Conway from petal-fall. The New York model suggests that insecticide coverage ought to remain effective through 340 degree-days to contain PC. So it seems that we have a week or so to go before we can begin to think about relaxing sprays against PC. But, with the prolonged emergence period of over-wintered adults this year, it would not be surprising if immigration extended beyond a week from now.

## The Power of a PTO

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Do you know someone who has been hurt by a power takeoff? Just about every farmer does. Like many farm machines, a power takeoff, or "PTO," can be a useful tool—or a lethal one. Used in the right way, a PTO can safely power your augers, mowers, choppers, and other implements. Used in the wrong way, a PTO can rip off your arm, crush your skull, or sever your spine.

A PTO can spin around 1,000 times per minute. That's 16 times per second! Toss a six-foot rope over a spinning PTO. It'll wrap around the shaft in less than a second. Now, imagine that rope is your shoelace—or your sleeve. How fast could you pull free? You'd need nearly a full second just to realize you'd been caught.

Electrical wires are insulated. Manure pits are covered. It's just common sense to cover up something that's a farm hazard. In most states, it is the law that any new or used tractor sold by a dealer must have a PTO master shield. The master shield covers the front U-joint and connector, a frequent site of entanglement. On newer PTO's, a driveline shield covers and spins independently of the driveline shaft. PTO shields that attach directly to the implement are also available. Most of them cost less than \$200 (and even the most expensive shield costs less than a day in the hospital). Sometimes shields are offered free; check with your equipment dealer.

*Check your PTO safety...*

Whatever kind of shield your power takeoff has, it will only protect you if it's installed—and left on. The first step to PTO safety is to buy a shield and to keep it on. How many of these other steps have you taken?

- **I almost always shut off the PTO before getting off the tractor.**
  - If using non-stationary or field equipment, shut off the PTO and the tractor before getting off. Remove the key. If you're using stationary equipment, keep a safe distance from the PTO. Don't reach over the back of the tractor to adjust the PTO or throttle.
- **I never step over a revolving shaft, even if it's shielded.**
  - Even a shielded shaft can catch hold of a shoelace or a flapping pants cuff.
- **I wear tight-fitting clothes when operating farm machinery.**
  - Tuck in your shirt, and button your sleeves. Replace your work gloves if they're frayed.
- **I've read the safety section of my machine's operator manual.**
  - So has anyone else who uses the machine. The manual tells you how to operate your particular piece of machinery. You paid a lot for it; take the time to use it right. Any kids on my farm have been taught to stay away from tractors and machinery.
- **Never let a child operate a PTO.**
  - We don't let children operate heavy factory machines. Why do we think they're safe around farm machinery?