



IPM News

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The Future of Apple Extension at UVM ?

As Elena described in the horticulture section, the UVM Apple Extension and Research Program has been dealt a severe blow both on a professional and personal level. Even though the Apple Program has been described as the model of how a multi-disciplinary, integrated extension and research program should be conducted by the University of Vermont, it has been cut. It is a very sad situation to say the very least and it is very difficult to focus on the work at hand....

Disease Management Update

Apple Scab - With some areas of Vermont having at least 18 days in which it rained during May and with wet weather continuing, it is not surprising to see scab on foliage and fruit. I have to confess that we have some scab at the UVM Hort. Res. Center. After looking at when we sprayed, conditions when we sprayed (i.e., factors that may have impacted coverage), and what we sprayed, it looks like the infection period between May 22 - 24 was a key infection period for us. We suspect that less than ideal spray coverage during the prior fungicide application and the 2+ inches of rain at the end of the spray interval before we could get on another fungicide on May 25 contributed to the scab situation. As always, it is good to analyze your situation to determine the factors that affected scab management this year. If all conditions were "ideal" for management and you ended up with scab, one has to seriously consider if resistance has developed in the scab population if you were using an SI fungicide or a strobilurin fungicide in a post-infection mode.

Powdery Mildew - Observations on non-sprayed trees at the UVM Hort. Res. Center indicate that the very cold temperatures this past winter plus the wet weather this growing season were not favorable for the survival and development of powdery mildew. Very few primary infection sites and secondary lesions have been observed. Hopefully, you are observing the same situation in your orchard.

Fire Blight - This summer we seem to be experiencing more thunderstorms than we have had in recent years -- unfortunately, some have had damaging hail. Please be aware that it is recommended to apply streptomycin within 24 hours after the start of a hail event in orchards that have had fire blight infections this year.

Flyspeck - As mentioned in previous issues of this newsletter, a "guideline" as to when to start fungicide applications for flyspeck has been developed — a fungicide is needed when 270 hours of wetting have accumulated from 10 days after petal fall. This guideline is based on the assumption that most of the inoculum for flyspeck infections comes from conidia produced on wild hosts surrounding the orchard. It assumes that infection by flyspeck ascospores in the orchard was prevented through peak flyspeck ascospore release (approx. 10 days past petal fall) by fungicides applied for apple scab. At 270 hours of wetting from 10 days after petal fall flyspeck conidia presumably will become available in the orchard perimeter from wild hosts and will begin blowing into the orchard.

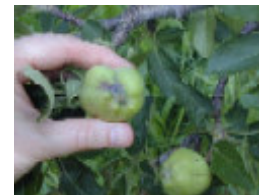
Unfortunately, on May 24, lightning from a fierce thunderstorm destroyed the weather equipment we had at the UVM Hort. Res. Center which we usually use to monitor hours of leaf wetness for flyspeck. However, with all the wet weather we have had it is a good bet to say that fungicides are needed now for flyspeck management. Table 12 on page 85 of the 2003-2004 New England Apple Pest Management Guide lists the materials that are effective against flyspeck. Note that Topsin M and the strobilurins (Sovran and Flint) have post-infection activity against flyspeck. However, given the concerns about the development of resistance in the scab fungus population with repeated applications of strobilurins in the orchard, you should consider other options. If your trees are not open, the grass is high, and you have a high concern about the development of flyspeck (and sooty blotch) in your orchard, perhaps a combination of Topsin M (which is rated as "excellent" against these diseases and would give you post-infection activity) and a full rate of captan (for scab management) should be considered.

Please note that keeping the trees open through summer pruning can significantly lower the incidence of flyspeck.

Rust Diseases: The one good thing about Cedar Apple Rust (CAR) and Quince Rust is that the fungi that cause these diseases do not re-infect apple causing an increase in disease throughout the season. Once the infection occurs during the early part of the growing season from spores coming in from cedars and junipers - that is it. The rainy weather favored the development of these diseases this year.



Bright CAR Lesions on Lower Leaves on Terminal



Typical Quince Rust at Calyx

Arthropod Management Update

Potato Leafhopper (PLH) - This insect has migrated into the state and is causing damage. PLH feed primarily on immature leaves of actively growing shoots causing the leaves to turn yellow, become cupped, and later appear scorched ("hopper burn"). Damage can be mistaken for herbicide injury, nutrient deficiency, or the result of over fertilization. Young trees are particularly at risk for serious damage. The nymphs and adults are green; when disturbed, nymphs move rapidly sideways (in contrast to white apple leafhoppers that move slowly and usually straight ahead). The following are guidelines from Cornell for sampling this insect to determine the need for an insecticide:

- ◆ Count the nymphs and adults on 50 to 100 randomly selected terminal leaves in an orchard. Older trees should be sampled approximately every three weeks during the summer. Young trees should be sampled weekly.
- ◆ Tentative threshold for taking action against this insect = an average of one nymph or adult PLH per leaf. (from SCAFFOLDS Fruit Journal, Geneva, NY Volume 13, No. 16, July 6, 2004)

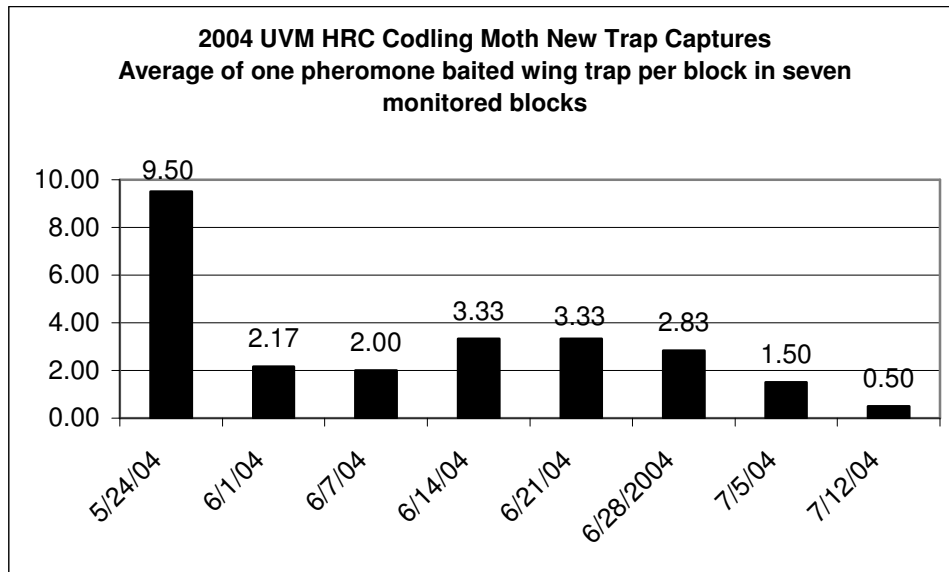
Of the options listed for leafhopper management in the 2003-2004 New England Apple Pest Management Guide on page 96, Provado, Avaunt, and Thiodan have potentially less impact on key beneficial species in the orchard (see page 98).



Potato Leafhopper damage
(yellowing and cupping of leaf)

Codling Moth - If codling moths are a problem in your orchard, the optimal time to begin to treat the second generation is at 1260 Degree Days (DD) after the initial trap captures in the spring. As of July 11th, the following DD had accumulated from the first trap capture at these sites:

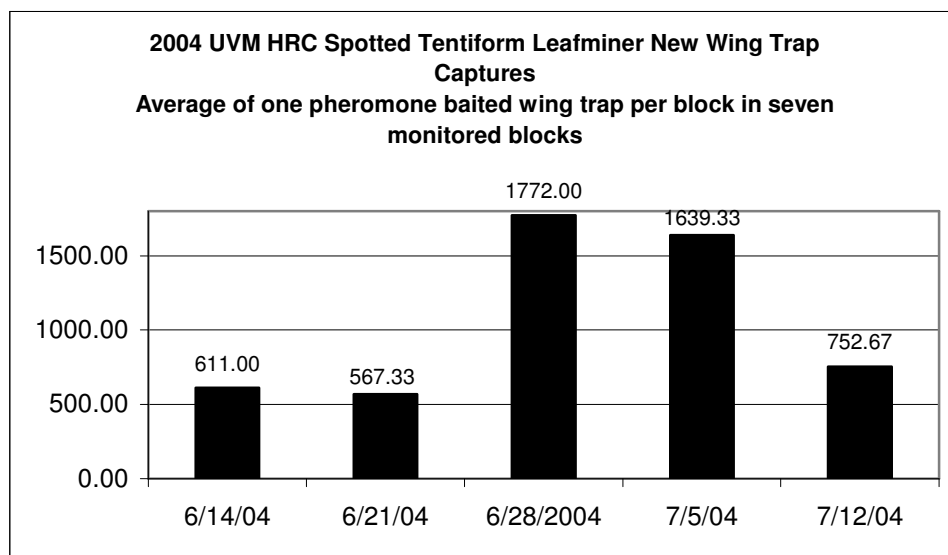
- Shoreham - 730 DD from May 15th;
- Dummerston - 828 DD from May 11th
- South Burlington - 697 DD from May 17th (conservative estimate of first trap capture)



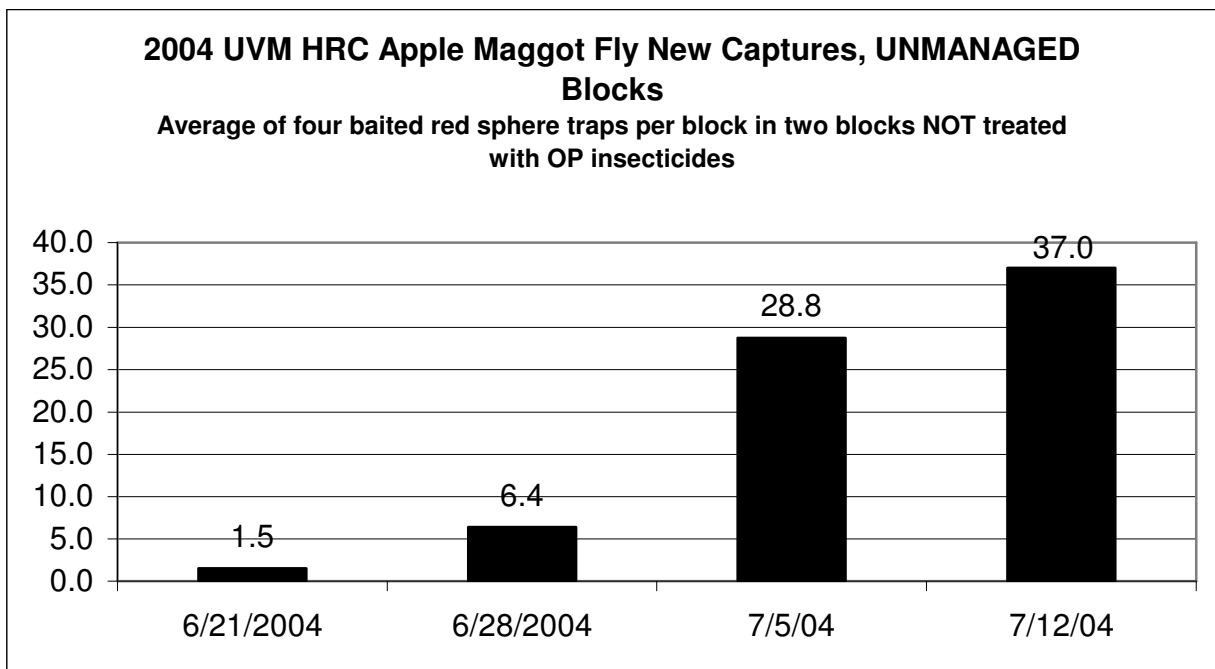
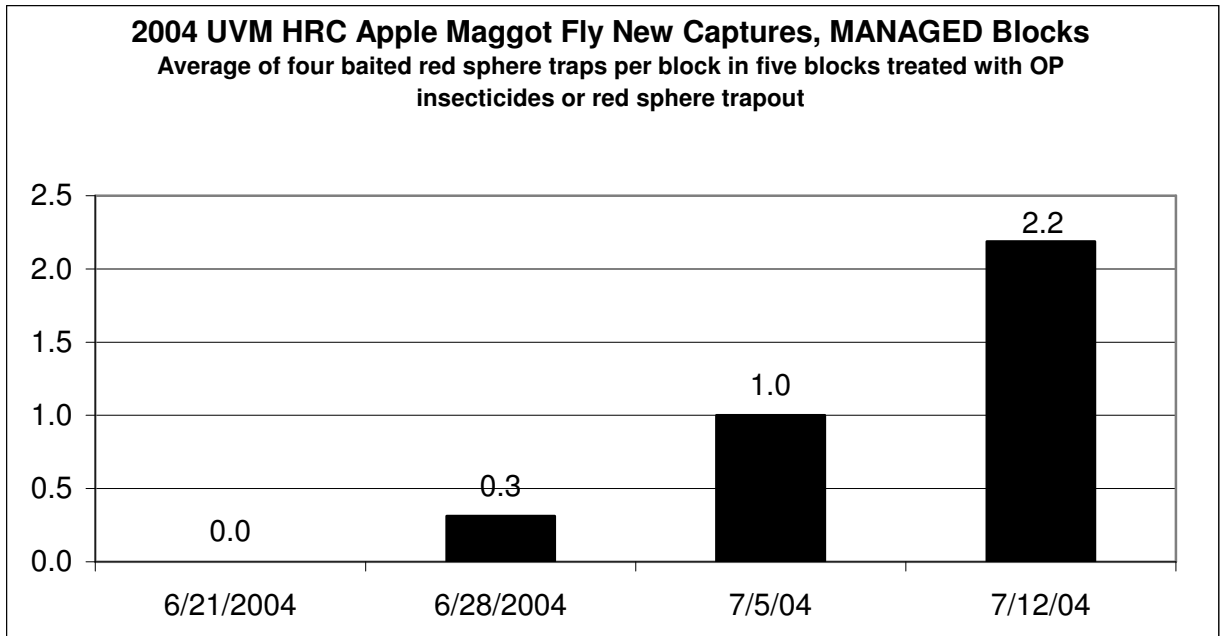
European Red Mites - In monitored blocks populations remain low. Threshold for July 16-July 31 = 80% of the middle-aged leaves with motile mites.

Japanese Beetles - The skeletonizing of the leaves that this insect causes can be particularly damaging to young tree development. Please see page 33 of the 2003-2004 New England Apple Pest Management Guide for insecticide options.

Leafminers - Early sap-feeding mines of the second generation are developing. Thresholds are: 50 mines/100 McIntosh leaves; 100 mines/100 Non-McIntosh leaves



Apple Maggot Flies - The following graphs show the trap captures at the UVM Hort. Res Center. The action threshold is the cumulative average trap capture of 5 flies/trap.



Looking Ahead... What can we expect to see in the near future?

The following two charts give where we are in terms of accumulated degree-days (base 50F) from Jan. 1 and what arthropod "events" should occur in the near future:

2004 Estimated Degree-Day Accumulation (Base 50F, from Jan. 1) for Selected Vermont Sites ¹

Date	So.Burlington	Shoreham	South Hero	Bennington	Dummerston
07/11	927	955	911	897	1001

¹Degree Days received from Skybit E-Weather Service: <http://www.skybit.com/>

Arthropod 'Events' Based on Degree-Day Accumulation ¹

Pest/Phenology Event	Estimated DD Base 50 F for Event (from Jan 1)
Apple Maggot Fly, 1st capture	746-1032
Redbanded Leafroller, 2nd gen. peak catch	781-1087
Spotted Tentiform Leafminer, 2nd gen. peak catch	861-1225

¹ Source of Estimated DD (Base 50F) for arthropod pest events: Pest Management Guidelines for Commercial Tree-Fruit Production 2003. A Cornell Cooperative Extension Publication, Table 14: "Degree-day accumulations (from January 1) corresponding to selected fruit phenology and arthropod pest events." <http://www.nysaes.cornell.edu/ent/treefruit/>

Contact Information

A Commitment to Excellence and Service:

If you have any questions or want to arrange for an orchard visit regarding your concerns, please call or write.

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