scaffolds Update on Pest Management and Crop Development

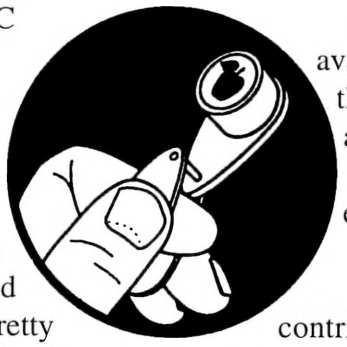
FRUIT JOURNAL

March 24, 1997 VOLUME 6, No. 1 Geneva, NY

INSECTS

THE END OF THE TUNNEL

PHOTOTROPIC
(Art Agnello, Entomology, Geneva)



❖❖ We've all been leaning into the light these past few weeks, and with a relatively benign winter pretty much over, most conversation we've heard recently has to do with the prospects of a mild and even pleasant spring season for a change. We wouldn't presume to encourage this sort of speculation of course, for fear of irritating some unknown but spiteful meterological agent. However, it may be a good sign that our first issue this year comes out on a dry, sunny spring day. Regardless, field season is not too far away, so the annual housekeeping duties should be attended to first, if for no other than ritualistic reasons.

As usual, a word about subscriptions. This issue has been delivered to you in the form that you want to receive it, according to our records. If the hard copy has been mailed to you even though you failed to return the re-subscription card, this will be your last issue (or maybe the next to last; depends on how long the sunny weather lasts.) We're not being hard-nosed for fun — rules that we didn't make up require us to have an annual request in order to maintain each person's subscription. The electronic ASCII-text version is being sent to the CENET or e-mail address you have specified. Let us know of any preferred changes you wish to make in this arrangement (to/from one form or another, address changes, start-up or stopping of subscriptions, etc.), and we will do our best to accomodate you.

As before, there is a web version available from the NYSAES server on the World Wide Web; if you have access, the URL address is:
http://www.nysaes.cornell.edu/ent/scafolds/

We are always happy to consider contributions (particularly from N.Y. sources) in the form of articles on topics in any of the fruit crop protection or crop production areas, as well as N.Y. field observations, trap data, etc. For the record, we generally do not send the mailed version of this newsletter to growers, homeowners, or other private individuals not having some fruit extension, commercial, university or governmental affiliation. This is not only for economic reasons, but also because of "turf" considerations having to do with growers' relationships with their local Extension programs. (There are a few exceptions, mostly for people who were "grandfathered in" before this policy was instituted, and we prefer to keep this number low). The electronic version, however, will be sent to anyone who requests it.❖❖

KEEP YOUR FINGERS CROSSED

MITE CONTROL: WHAT IS AND WHAT MAY NEVER BE
(Art Agnello, Entomology, Geneva)

❖❖ I'm not sure why this relatively straightforward pest management issue seems destined forever to be a contentious matter in N.Y., and moreover, one that escalates the closer we get to establishing some sort of logical and versatile resistance management strategy. As of this date, state acaricide registration uncertainties about

continued...

Agri-Mek and Pyramite continue to cloud our view of this season's European red mite recommendations, so for the time being, it looks like we'll have to go with what we know is available for the time being. Decisions on other options may fall one way or another at the last minute, and naturally this will only confuse the situation. Briefly, here's what's happening with these products from what we can tell:

• Agri-Mek was available in N.Y. last year through Third Party 24(c) Special Local Need labels, with the N.Y. Horticultural Society and the N.Y. Pear Growers Association acting as registrants, respectively, for apples and pears. Theoretically, these registrations should have been valid for long enough to assure their availability into this season as well, but the N.Y.S. DEC has the authority to review this label and modify or cancel it according to their assessment of its acceptability as a management option. Unfortunately, the DEC has some concern over Agri-Mek's toxicological profile that has not yet been reconciled with the manufacturer's proposed labeled usage in apples and pears. We understand that Merck has been meeting with the DEC over the past weeks to resolve these issues, but until such time as a decision is made, the possible outcomes could range anywhere from a fully approved label to one that is completely denied.

• Pyramite - After Omite's cancellation last year, a hasty effort was made by the EPA to expedite the registration (and interim passage of a Section 18 exemption) for this BASF product, which was already fairly close to getting a federal label. A few eastern states (N.J., Virginia, and Maryland, I think) actually did receive a Section 18 registration, but it *came* through too late to do much good. A couple of weeks ago, BASF filed a petition with the EPA for establishment of a residue tolerance in various tree fruits. A tolerance is expected to be granted sometime around the first of May, and a federal label would presumably come soon afterward. Just how soon is of course fairly academic when it comes to predicting its availability here, as New York's long internal review process pretty much precludes a state label until late summer. However, there has been talk about the possibility of making it available through a 24(c) administered by BASF, in light of the recognized need for more mid- to late season options. So, depending on whether or not you have a pure heart and a hopeful outlook, there may be some resolution to these questions in time to make a difference in your mite programs.

• Apollo and Savey - Fortunately, these two products are definitely labeled and available for use prebloom, as they were last season. Furthermore, even acknowledging a relatively moderate ERM season in 1996, both of these materials did very admirable jobs of keeping mites under threshold for much of the season so that late rescue treatments were more the exception than the rule. In addition, field trials we conducted showed slightly longer residual control (by 1–2 weeks) when either product was tank-mixed with 1% dormant oil as opposed to being applied alone, so this could be one way of squeezing a little extra out of your program this year. The pity is that it doesn't help the resistance management strategy to be using these products in the

continued...

scaffolds

is published weekly from March to September by Cornell University—NYS Agricultural Experiment Station (Geneva) and Ithaca—with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 3 pm Monday to:

scaffolds FRUIT JOURNAL
Dept. of Entomology
NYSAES, Barton Laboratory
Geneva, NY 14456-0462
Phone: 315-787-2341 FAX: 315-787-2326
E-mail: ama4@cornell.edu

Editors: A. Agnello, D. Kain

This newsletter available on CENET, on the Tree Fruit News bulletin board under FRUIT and on the World Wide Web at:
http://www.nysaes.cornell.edu/ent/scafolds/

same orchards two years in a row, but given the circumstances and "all" the alternatives at this point, the decision has been all but made for us.

The industry standbys are still available, and should not be ignored for the usefulness they may have. Kelthane is still effective in some locations, and even in orchards where resistant populations have been found, it can be used quite successfully if no Kelthane has been applied for 5 years or more. Carzol, despite its destructive effect on predator mites, remains a good short-residual adulticide that may be just what is needed to knock down a running population shortly before harvest. Superior oil and highly refined summer oils also have their strengths, and should be incorporated into ERM programs of certain blocks where possible, for the diversity and sustainability they offer. We'll attempt to keep up to speed with all the developments in this area as the season progresses, but as usual, it will be up to each grower and field consultant to exercise the appropriate judgement over the pest managment decisions in their orchards. Field history will be an important consideration, as will horticultural factors such as cultivar, planting site, training system, tree nutrition and even intended market of the fruit.❖❖

HORTICULTURE

FEED 'EM AND WEEP?

NUTRITIONAL AND OTHER FACTORS INFLUENCING SUSCEPTIBILITY OF TREES TO FIRE BLIGHT.

(Warren C. Stiles, Fruit & Vegetable Science, Ithaca)

❖❖ The high incidence and severity of fire blight that developed during the 1996 growing season has prompted concerns about the relationship between nutritional factors and this disease. It may be pertinent, therefore, to review some of its relationships with nutrition and other environmental factors that have been determined over the last 50 to 60 years.

SOIL TEXTURE. Several reports indicate that "heavy" poorly drained soils are more conducive to fire blight development than are well-drained coarser-textured soils. This difference is largely due to two factors: higher reserves of readily available nitrogen and higher water-holding capacity of the "heavier" soils. Both of these factors promote more succulent growth that is more susceptible to blight infections, not only during the spring but throughout the growing season.

SOIL pH, CALCIUM AND MAGNESIUM. Generally, fire blight severity is greater on acidic soils that are low in calcium and magnesium. Some workers suggest soil pH be maintained in the range of pH 5.5 to 6.5. We presently recommend maintaining the subsoil above pH 6.0 and the topsoil 6.5 to 7.0. Inadequate levels of calcium and magnesium, either in the soil or in the tree tissues, have been associated with increased susceptibility of trees to blight. Excessive nitrogen fertilization or availability, through its effect of stimulating excessive growth, is one of the major factors limiting levels of these

continued...

elements in the tree. Maintaining soil and leaf contents of calcium and magnesium within presently recommended levels should minimize problems associated with inadequate supplies of these elements.

NITROGEN AND TREE VIGOR. Nitrogen status of the trees is consistently cited as a primary factor in blight susceptibility. This is a primary concern under New York State conditions. Excessive nitrogen stimulates excessively succulent growth that favors fire blight infection. This is a serious problem, particularly in young trees of blight-susceptible varieties that are being "pushed" with nitrogen in order to fill allocated space as rapidly as possible.

Effects of excessive nitrogen can, in some cases, be moderated somewhat by increasing potassium, calcium and magnesium supplies. However, this approach is not likely to eliminate the problem. Maintaining a moderate nitrogen status and growth of the trees should be preferable to the alternative of losing the plantings to blight. Leaf nitrogen levels should be maintained no higher than 2.0 to 2.4 percent at normal sampling time, depending upon the variety, for both apples and pears if fire blight is of concern.

Application of foliar sprays of nitrogen have been shown to increase the susceptibility of blossoms to fire blight and should not be used in orchards where blight potential is high.

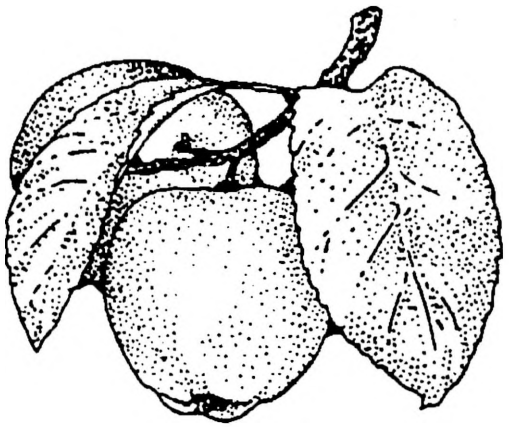
POTASSIUM. Several studies have shown greater susceptibility of trees that are low in potassium. Our suggested levels of 1.35 to 1.80% appear to be in the optimal zone for minimizing susceptibility. Also, we must consider the Nitrogen/Potassium balance, and again our suggested ranges appear to be within reason. I am not aware of studies of the potential effectiveness of potassium sprays as a supplement specifically with reference to fire blight.

MICRONUTRIENTS. There is little definitive data on relationships of levels of micronutrients to blight susceptibility. However, leaf tissue concentrations that we currently recommend fall within the ranges suggested in at least one report.

In one study, low levels of boron in nutrient solutions were associated with reduced susceptibility to blight inoculations, but this effect appears to have been related to significantly reduced tree growth. Other reports suggest that leaf boron should be between 30 and 50 ppm. We suggest 35 to 50 ppm.

It should also be stressed that the use of Bordeaux mixture (8-8-100) with oil between swollen bud and bud burst stages is still recommended as an effective treatment in blight infested orchards.

SUMMARY. Soil and nutritional factors that influence tree vigor can have significant effects on incidence and severity of fire blight in apple and pear trees. Avoiding excessive tree vigor and maintaining adequate levels of all essential nutrient elements as indicated by soil tests and leaf analyses appear to be the best approach in managing nutrition to minimize blight potential. ❖❖



PHENOLOGIES

Geneva and Highland:
Apple - **Dormant**
Pear, cherry - **Dormant**
Peach, plum: **Dormant**

PEST FOCUS

Geneva and Highland: No **pear psylla** or **green fruitworm** activity yet.

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1 - 3/24):	51	14
(Highland 1/1 - 3/24):	61	18

Coming Events:	**Ranges:**	
Green fruitworm 1st catch	41–143	9–69
Pear psylla adults active	2–121	0–49
Pear psylla 1st oviposition	25–147	1–72
McIntosh at silver tip	56–137	17–58

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

scaffolds
Dept. of Entomology
NYS Agricultural Exp. Sta.
Barton Laboratory
Geneva, NY 14456-0462