http://ipm.osu.edu/fruit/index.html

THE OHIO STATE UNIVERSITY Newsletter Extension

Volume 3, No. 11
April 8, 1999

In This Issue:

A Tip o' the Hat

Fruit growers in north central Ohio attending yesterday's Fruit Crops Breakfast were pleasantly surprised to find their breakfasts paid for by Mr. John Price, Technical Sales Representative for Rohm & Haas Company. Thank you for your generosity, John.

Northern Ohio Scab Watch

We are presently downloading temperature/leaf wetness data from Spectrum Technologies loggers. We are still learning how to utilize the upgraded SpecWare 4.0 software. This program will rate scab infection periods by degree for three forecast systems: Modified Mills, Washington State, and Cornell. Last weekend's wetness events were not significant because our apples are just now reaching green tip in northern Ohio. The forecasting tools provided by SkyBit indicate this next weekend's rainfall will create conditions for active spore development, with infection expected on April 14th. Please understand your personal observations and experience should be your first line of defense.

Fruit Crops Breakfast Notes

Dr. Celeste Welty led the discussion at the April Fruit Crops Breakfast. She emphasized the following thresholds for various apple pests:

- Rosy apple aphid: If any twisted clusters are observed, a spray is indicated.
- Spotted tentiform leafminer: See STLM Pink Sampling Form enclosed. For electronic version: http://www.nysaes.cornell.edu:80/ipmnet/ny/fruits/tree_fruit/STLM_PK.GIF
- White apple leafhopper: Threshold is 1 nymph per leaf at petal fall. Remember that the WALH overwinters in the egg stage on the trees, whereas the potato leafhopper adults blow in on southern winds.
- Plum curculio: Trapping has been ineffective so far. If you observe even one adult in the late afternoon, apply spray immediately.

Look for a label for Confirm (tebufenozide) expected in late May. It is a new insect growth regulator (IGR), and it is considered to be a "reduced risk pesticide", or more biorational. Expected use in Ohio for Confirm will be codling moth. Michigan and New York have had Section 18s for obliquebanded leafroller control. Pennsylvania has had a Section 18 for tufted apple budmoth.

As a supplement to OSU Extension FactSheet HYG-2137-99, Celeste provided the enclosed handout dealing with the control of the periodical cicada in commercial fruit crops. Refer to Issue 3 of this newsletter for an Ohio emergence map. For electronic version of OSU Extension FactSheet on Periodical and "Dog-Day" Cicadas: http://ohioline.ag.ohio-state.edu/hyg-fact/2000/2137.html

It was noted that there has been some peach bud damage on lower limbs. If you are still pruning, you may want to assess your situation and adjust accordingly.

Correction

Source: Art Agnello, Scaffolds Fruit Journal, Vol. 8, No.

In last week's article, "A Retrospective on Apple Scab in '98 and Suggestions for '99", one sentence in the section on reviewing what we know about contact fungicides was printed as follows:

"Full rates (Mancozeb at 2 lb/100 gallons or Captan 50W at 5-6 lb/100 gal) provide excellent scab control when used on a 7-day program."

An alert reader pointed out the error in Captan rates: The sentence should have indicated a "full rate of Captan 50W 5-6 lb/**ACRE**." I apologize for the error.

Black Knot on Plums

Source: Scaffolds Fruit Journal, Vol. 8, No. 3, Geneva, NY

If they have not already done so, plum growers should be removing all black knots from plum trees within the next week. Black knot in plums can be controlled only by using a combination of inoculum reduction and an effective fungicide program.

Knots that are pruned from trees can still release ascospores if the knots are left on the ground in the orchard. Thus, black knots pruned from plum trees should be burned if possible. If burning is not feasible, move the knots to brush piles that are a considerable distance (at least 100 yards) from the orchard.

Pear Psylla Crazy After All These Years

Source: Art Agnello, Scaffolds Fruit Journal, Cornell University, Geneva, NY

Originally introduced accidentally from England into Connecticut about 1832, the pear psylla has 3-4 generations a year, depending on the length of the growing season for the area. The overwintering adults pass the winter in litter on the ground or in cracks in the tree bark. On warm spring days, prior to the trees breaking dormancy, these adults can be found on the trunks, twigs, and branches. The first eggs in the spring are laid prior to bud burst, on the terminals and spurs. As the foliage appears and for succeeding generations, the eggs are laid on the new leaves. First egg hatch occurs about the time the foliage appears. The pear psylla is a "flush feeder", meaning that the nymphs feed and develop primarily on the newer, more tender growth. By midway through the growing season, the majority of leaves are hardened off, and psylla development then may be limited primarily to the water sprouts.

Once the nymph begins to feed, a honeydew drop forms over the insect; the psylla develops within this drop for the first few instars. Honeydew injury occurs when excess honeydew drips onto and congregates on lower leaves and fruit. Under bright sunlight and dry conditions, the honeydew can kill the leaf tissue and produce a symptom called "psylla scorch". The honeydew is a good medium for sooty mold growth. When it occurs on the fruit, it russets the skin and makes the fruit unsaleable. Excessive feeding and the injection of toxic saliva by large populations of psylla can cause a tree to wilt and lose its leaves prematurely. This reduces tree vigor, which can take the tree several years to recover.

Ladybird beetles, lacewings, syrphids, snakeflies, and predatory bugs have been recorded feeding on the psylla. There are also two wasp parasitoids of pear psylla in the U.S. However, to obtain commercially acceptable fruit in New York, pear psylla must be controlled with insecticides.

Registered insecticides for summer use on pears are historically unreliable in controlling pear psylla because of the development of resistance in psylla populations to materials that were once effective. In addition, N.Y. growing conditions necessitate management practices for fruit size attainment (vigorous fertilization and significant canopy pruning) that are favorable for the rapid buildup of psylla populations. Contributing to this situation of incomplete control is the widespread use of materials for other pests that are highly destructive to natural control agents, such as pyrethroids and carbamates. These factors virtually assure a yearly infestation of an insect that would otherwise be a relatively insignificant orchard resident, and at best, a grower can hope to keep psylla populations barely under control. Large numbers of adults left in the orchard at the end of the summer overwinter and initiate the next spring population, while natural control agents don't have the chance to recover before the next encounter with destructive pesticides.

Current management recommendations call for prebloom oil applications and insecticide sprays to manage nymphal populations that build beyond 1-2 per leaf, starting anytime after Petal Fall and throughout the summer. Agri-Mek used shortly after Petal Fall has given good control if applied correctly (well-timed, adequate coverage, combined with an oil adjuvant), and Dick Straub"s trials in the Hudson Valley have shown the utility of split applications of Pryamite or Provado, also starting soon

after Petal Fall.

Diazinon Label Change

Source: Scaffolds Fruit Journal, Vol. 8, No. 3

D·z·n Diazinon 600AG WBC can now be applied in apples no later than petal fall. This restriction is not placed on the 50WP formulation, nor on the use of 600AG in other tree fruit crops. Growers using the *1999 Ohio Commercial Tree Fruit Spray Guide* should make a note of this restriction on page 28. Also, recognize that the Diazinon included in the list on page 27 refers only to the 50WP formulation.

Plan for Potential for Fire Blight on Your Farm

Source: Deb Breth, Scaffolds Fruit Jounal No. 2, Lake Ontario Fruit Program, Albion

Weigh the risk of fire blight on your farm by asking the following questions (in order of decreasing risk):

- Will there be active cankers present in the orchards this year?
- Did you have fire blight in the orchards last year?
- Was there fire blight infection in the local area last year?
- Did you have fire blight in the local area two seasons ago?
- Are there any of your orchards or hosts in the local area where there was no fire blight during the last two seasons?

The risk of fire blight epidemics starting with blossom blight increases as you get closer to the source of fire blight infections in the area. The closer you are, the higher the risk, and the more stringent the control measures that must be planned and implemented.

The risk is also dependent on other factors specific to the orchard:

- Orchard age, vigor, and variety and rootstock susceptibility
- Orchard size and ease of getting good spray coverage
- Is it a high value orchard, or close to one?

Erwinia amylovora bacteria numbers have the capacity to double in 20 minutes at 70° F. In 10 hours, 1 bacterium becomes 1 trillion bacteria. Therefore, the first step in planning for fire blight potential requires reduction in the number and distribution of inoculum sources available for each phase of the disease (blossom blight, canker blight, shoot blight, "trauma" blight). If blossom blight is controlled, but

canker blight is allowed to remain in the trees, the resulting oozing bacteria will be a source of infection for shoot blight the remainder of the season. Although eradication of the bacteria is impossible, steps for reducing inoculum sources will reduce the disease incidence.

Cleaning Up Old Fire Blight Infections

Source: Scaffolds Fruit Journal, Vol. 8, No. 2

- Remove wild hosts in hedge rows in surrounding areas and neglected apple and pear orchards that are susceptible to fire blight.
- Prune out cankers on an annual basis or remove whole trees if cankers are on the main trunk (or try canker surgery). The cankers with the indistinct margins have the greatest potential for oozing in the spring. Prune while still dormant before bacteria become active andstart to move within the tree cambium.
- Canker removal will also serve to remove sources of black rot, white rot, and bitter rot, which cause summer fruit rots.
- Removal of prunings -- whole trees and large branches obviously need to be removed from the orchard for the above reasons, but smaller prunings can be raked to the row middles to chop with a flail mower in the spring.
- If blossom blight is controlled, but there is canker blight active in the orchard, there is still plenty of inoculum for shoot blight and trauma blight in the summer.
- **Fertility** - Maintain a balanced fertility program; although nitrogen is known to help increase yields, it also results in greater susceptibility to fire blight.
- **Early copper sprays** - Copper sprays do not kill bacteria inside the cankers. They only reduce the efficiency of the bacteria oozing from the cankers to colonize the bark and bud surfaces during the prebloom period.

Additional benefits of early copper - as an early scab protectant, if applied before the first scab infection; nutritional value; can be applied with oil (often recommended on copper labels as an adjuvant). Results (as in improved control) are not always consistent because of variables associated with timing the application. Control depends on how much copper remains on the tree surface relative to when cankers are oozing bacteria. **Good spray coverage is critical**.

Bacteria will colonize even non-susceptible varieties, so when applying copper to susceptible varieties in an orchard, you must apply copper to the entire orchard. Early copper sprays do not eliminate the need to control blossom blight; copper just reduces the bacterial population before they can multiply during bloom.

Source of following information on copper sulfate: Facts for Fancy Fruits, 99-02, Purdue University

If copper sulfate (4 lbs/100gal) is used be sure to apply it when trees are dormant. If applied late it may burn leaf tissue. Also, do not apply copper sulfate with oil; apply copper sulfate and dormant oil as

separate sprays spaced at least 10 days apart. If copper sulfate is applied under poor drying conditions or later than silver tip, plant injury can result. An alternative to copper sulfate are the fixed coppers such as Kocide and C-O-C-S; most fixed coppers do not have the compatibility problems of copper sulfate and can be tank mixed with early season oil sprays. Remember, however, that even fixed coppers, if applied after 1/2 inch green, can cause fruit russetting in years when there is not enough rain to remove the copper residues before tight cluster.

Home in the Oil Field

Most growers don't hesitate to express their lack of enthusiasm for applying oil sprays, particularly during the early season, and for reasons that make quite a bit of sense: it takes too much water, and therefore too much time, which means a greater chance of running into poor spraying weather, and of cutting up the not-yet-firm orchard floor. Nevertheless, the accomplishment of getting a thorough prebloom oil spray applied is often related with a note of achievement that is at least proportionate in scale, and also for good reasons: the high degree of coverage possible, which results in the high level of efficacy against its target pests, the sound resistance management practice it represents, and even the relative compatibility with other management tactics like biological control. That being said, the devil is in the details, and details are what we have to be concerned with just now.

Dr. Celeste Welty offered these details: the most effective European Red Mite (ERM) control is achieved by waiting until tight cluster, when the eggs are close to hatching, using a 1% oil spray by volume. Unfortunately, those of you with large acreages feel uncomfortable waiting. Therefore, start at 1/2 inch green. **Remember, all of the bark must be covered for good control**.

Mite Control in Honeybees

Source: Will Smith, Pesticide Management Education Program, Cornell University, NY

EPA published a notice in the Federal Register of August 6, 1996 announcing that Mann Lake Ltd., Hackensack, MN, had submitted an application to register the pesticide product Formite Formic Acid, containing the active ingredient formic acid at 65%. The application was approved on January 28, 1999 following reformulation, as For-Mite Formic Acid for the control of tracheal mites and the suppression of varroa mites in honeybees.

Periodical cicada: control with insecticide in commercial fruit crops

(March 1999; supplement to Ohio State University Extension FactSheet HYG-2137-99)

Celeste Welty, Extension Entomologist

Insecticides used for cicada control (X = registered for crop)

							Toxicity

	apples	pears	peaches	grapes	brambles	blueberries	to *N. fallacis* mites
Chemicals that list periodical cicada on label as a target pest:							
Sevin	**X**[a]	**X**[a]	**X**				moderate
Asana	**X**	**X**	**X**				high
Lorsban 50W	**X**						moderate
Chemicals that do not list periodical cicada on label as target pest, but which are known to be effective for cicada control:							
Sevin				**X**	**X**	**X**	moderate
Lannate	**X**	**X**	**X**	**X**		**X**	high
Vydate	**X**[a]	**X**[a]					high
Ambush, Pounce	b	b	**X**				high

[a] On apple or pear, do not use Sevin or Vydate within 30 days of bloom due to fruit thinning effects.

[b] Ambush and Pounce are not relevant for cicada control on apples and pears due to restrictions; they can be used only before petal-fall on apples and pre-bloom on pears.

Chemical control considerations for apples:

1. The first option is to use your regular cover spray schedule, which usually includes an organophosphate insecticide such as Guthion or Imidan. This might work well if one of the sprays is timed just after peak emergence of cicadas, or in locations where the cicada population is light in density.

2. Once the cicada emergence begins, scout every 2-3 days during the egg-laying period. If you see a significant amount of damage to branches from egg laying, and you are not yet due for the next cover spray, then use one of the insecticides listed in the table above.

3. In an orchard where pyrethroid insecticides (Asana, Ambush, Pounce) are normally NOT used due to concern about their toxicity to the *N. fallacis* predatory mites, Asana can be used for cicada control but it might lead to a flare-up of European red mite later in the summer. In such orchards, it might be better to try Sevin if it is more than 30 days after bloom, or Lorsban 50WP if it is less than 30 days after bloom.

4. In an orchard where pyrethroid insecticides (Asana, Ambush, Pounce) are normally used for other target pests, Asana will probably give the best control of cicadas, and you are probably already managing European red mite without the help of predatory mites.

The Ohio Fruit ICM News is edited by:

Ted W. Gastier
Extension Agent, Agriculture

Tree Fruit Team Coordinator
Ohio State University Extension Huron County
180 Milan Avenue
Norwalk, OH 44857
Phone: (419)668-8210
FAX: (419)663-4233
E-mail: gastier.1@osu.edu

| Back |