

scaffolds

Update on Pest Management
and Crop Development

F R U I T J O U R N A L

August 21, 1995

VOLUME 4

Geneva, NY

NEW
DIPS
???

POSTHARVEST
FUNGICIDE
TREATMENTS
FOR APPLES
IN 1995
(Dave
Rosenberger,
Plant Pathology,
Highland)



❖❖ This year there is good news and bad news about postharvest fungicides for apples. The good news is that three new postharvest fungicides have recently been registered for apples and pears. The bad news is that none of them are likely to be available for use in the northeast this year. Why aren't the new fungicides available? The answer provides an interesting case study on problems associated with commercialization of new biorational and biotechnology products.

All three of the new fungicides that have been registered are "biocontrols". This means that the products are not traditional fungicides that act by killing fungal spores or inhibiting spore germination. Instead, the three new products are formulations of bacteria or yeasts—living organisms that actually grow on the fruit after they are applied. These biocontrol organisms control decays by colonizing wounds on the apple fruit where decays are initiated. The biocontrol organisms apparently use up all of the available nutrients in the wounds, leaving nothing to support germination of the spores of the decay fungi.

The three new postharvest fungicides registered for apples and pears were all registered by relatively small companies with little or no ex-

perience in marketing fungicides. Two products, BioSave-10 and BioSave-11 have been registered by EcoScience Corporation. EcoScience was formerly headquartered in Worcester, MA, but recently moved to New Jersey. Both BioSave-10 and BioSave-11 are bacteria. BioSave-11 is targeted for pears, whereas BioSave-10 has better activity on apples. The third biocontrol is Aspire, which has been registered by Ecogen Inc., Langhorne, PA. Aspire is a yeast, *Candida oleophila*.

Extensive company testing and limited university trials have shown that all three of these new products have reasonably good activity against postharvest decay fungi. The level of control achieved is sometimes slightly better than and sometimes slightly less than that achieved with thiabendazole (TBZ). The real benefits from these products become apparent when they are combined with TBZ. Combinations of the biocontrols plus TBZ have frequently provided better control than can be achieved with either TBZ or the biocontrol used alone. In many trials, reduced rates of TBZ (20% of the recommended rate) combined with the biocontrols provided exceptional decay control.

If these products can be used to improve decay control, what is the hold-up in getting them into commercial use? As stated above, the products may not be available in the northeast this year. The companies are just now gearing up their production lines, but they are targeting initial sales toward the citrus and west coast apple markets. Neither company was certain that there would be any product available in the northeast this fall, and it appears that neither company has determined how their product

continued...

will be distributed in the northeast after it does become available. Both companies have apparently applied for labels in New York State, but I could not get clear answers on the status of those labels.

Another reason for not recommending these products at this time involves pricing. The rumored price for BioSave-10 is \$25/lb and the application rate for drenchers is 1 lb/10 gallons. (No, we didn't miss a zero: the price would be \$250 per 100 gal of drench solution.) The company feels that it can get this price in citrus and west coast apple and pear operations where the product will be applied as a non-recirculating spray to bushes on pre-sizer lines. In my opinion, they need to do some more homework if they expect to see their product used in the east. I have not heard a price for Aspire, but the company said they will be "competitive".

Even if the biocontrols were available this year, growers might wish to proceed with caution because no one can be certain about public acceptance of food products sprayed with bacteria and yeasts. This may be a case where we should be happy to let the west coast get into the action ahead of us. I do not mean to imply that there are any safety concerns with using these new products. The products have been tested and approved by EPA. They are perfectly safe for their labeled uses. However, as we learned with Alar, public perceptions are not always based on facts.

Before recommending the new fungicides for general use in eastern packinghouses, I believe additional testing should be done in university trials. Results of company-run trials have generally looked quite good, but I am reluctant to recommend expensive new products based solely on the data presented by the manufacturer.

If Aspire or BioSave-10 become available during the 1995 harvest season (and if they are affordable), packinghouse operators may wish to try these products on limited quantities of fruit. However, I suspect that it will be another year or two before these products can be broadly recommended for

apple storages in the northeast.

The scenario I have described for the new postharvest fungicides for apples is likely to be repeated many times over the next few years as more biological control and biotechnology products reach the marketing stages. The small companies that develop these products may succeed in speeding their products through the EPA labeling process because EPA is making an effort to put bicontrol and biorational products on a fast track for registration. However, the label itself is of little value if there is no distribution network for getting the product to the commercial end-user. Whereas large agrichemical companies experience lengthy delays in getting traditional fungicides registered, it appears that the delay with the new fungicides may occur between labeling and development of effective distribution and usage patterns.

Next week: A review of the recommendations for using TBZ in postharvest apple drenches.❖❖

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: art_agnello@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/scaffolds/>

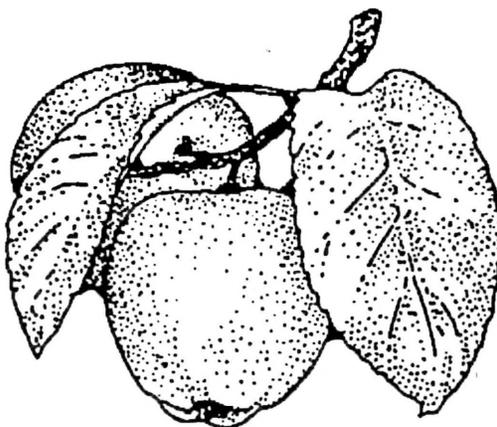
INSECT TRAP CATCHES (Number/Trap/Day)

Geneva NY

HVL, Highland NY

	8/14	8/16	8/21		8/7	8/11	8/21
Redbanded leafroller	0.3	0.3	0.3	Redbanded leafroller	0	0.2	2.3
Spotted tentiform leafminer	204	550	184	Spotted tentiform leafminer	42.8	33.9	57.8
Oriental fruit moth (apple)	7.0	11.3	6.2	Oriental fruit moth	1.6	0	0.1
Lesser appleworm	2.1	3.0	1.8	Fruittree leafroller	0	0	0
Codling moth	6.3	2.8	1.1	Codling moth	0.6	2.4	0.7
San Jose scale	4.6	4.0	3.1	Lesser appleworm	0.7	1.1	0.4
American plum borer	2.0	1.0	0.5	Sparganothis fruitworm	0.2	1.9	1.3
Lesser peachtree borer (peach)	5.0	8.8	2.6	Tufted apple bud moth	0.6	0.3	0.8
Lesser peachtree borer (cherry)	2.3	3.8	3.8	Variegated leafroller	1.1	0	0.4
Peachtree borer	1.1	1.0	0.6	Obliquebanded leafroller	0.1	0.1	0.3
Obliquebanded leafroller	0.8	0.3	0.7	Apple maggot	0.3	0.4	0.7
Apple maggot	0.6	0.06	0.08				

(Dick Straub, Peter Jentsch)

**UPCOMING PEST EVENTS**

	43°F	50°F
Current DD accumulations (Geneva 1/1 - 8/21):	2943	2149
(Highland 3/1 - 8/21):	3142	2231

Coming Events:**Ranges:**

Codling moth 2nd flight subsides	2782-3624	1796-2582
STLM 3rd flight subsides	3235-3471	2228-2472
Oriental fruit moth 3rd flight peak	2549-3267	1845-2326
American plum borer 2nd flight subsides	3005-3587	2154-2497
Apple maggot flight subsides	2775-3174	1958-2169
Redbanded leafroller 3rd flight peak	2775-3174	1863-2169
San Jose scale 2nd flight subsides	2494-3191	1662-2302
Obliquebanded leafroller 2nd flight peak	2634-3267	1789-2228
Lesser peachtree borer flight subsiding	2782-3328	1796-2359
Peachtree borer flight subsiding	2230-3255	1497-2309
Lesser appleworm 2nd flight peak	2961-3328	1927-2359

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

ARTHUR AGNELLO
ENTOMOL OGY
BARTON LAB

NYS AES