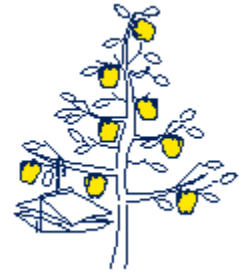




The Orchard Monitor

Committed to the Integration of Orchard Management Practices



EXTENSION
SPECIALISTS

Henry Hogmire
ENTOMOLOGY

Alan Biggs
PLANT PATHOLOGY

February 2, 2009

UPCOMING EVENTS

February 13, 8:00 a.m. – 4:00 p.m. – Winchester Area Commercial Fruit Production School at the Best Western, Lee-Jackson Inn Banquet Convention Center, Winchester, VA. Registration fee (includes lunch) is \$9 at the door. Recertification credits will be provided for pesticide applicators. For more information contact the Frederick County Extension Office at 540-665-5699, or email Cyndi Marston at cmarston@vt.edu.

February 17, 24, March 3, 10, 17 & 24, 7:00 – 9:00 p.m. – Beginning Beekeeping Short Course sponsored by the Eastern Panhandle Beekeepers Association (EPBA) at the WVU Tree Fruit Research and Education Center, Kearneysville, WV. The registration fee is \$40 at the door, which includes all family members of the same household, membership in EPBA and WV Beekeepers Association, and a textbook. For more information go to www.epbawv.org, or contact Gerry Fitzgerald at 304-274-1564 or at GerryFitzgerald_1@msn.com.

February 19, 8:30 a.m. – 4:00 p.m. – 2009 Western Maryland Regional Fruit Meeting at Western Maryland Research and Education Center, Keedysville, MD. Registration fee (includes program materials, refreshments and lunch) is \$30 by February 13, \$40 after. For more information contact Susan Barnes at 301-432-2767 x301 or at sbarnes6@umd.edu.

February 23-26. – West Virginia Department of Agriculture Ag Safety Days at the WVU Tree Fruit Research and Education Center, Kearneysville, WV. Recertification credits will be provided for various training programs. Register (free) before February 13. For more information contact Kathy Martin at 304-558-2209.

February 24-26. – Fifth Annual West Virginia Small Farms Conference at the Ramada Inn, Morgantown, WV. Registration fee is \$60 per day or \$150 for all three days, and is due by February 13. For a copy of the agenda go to: www.wvu.edu/~agexten/sustanag/events/wv_small_farms_conference/agenda.htm. For a registration form go to: www.wvu.edu/~agexten/sustanag/events/wv_small_farms_conference/2009_registration.pdf. For more information contact Becky Casteel at 304-293-6131 x4231 or at Becky.Casteel@mail.wvu.edu.

March 4, 8:00 a.m. – 4:00 p.m. – Berkeley/Jefferson Counties Winter Fruit School at the WVU Tree Fruit Research and Education Center, Kearneysville, WV. See enclosed brochure. Registration is free for members of the WV State Horticultural Society. For non-members, the registration fee is \$15 by February 24 or \$20 at the door. Recertification credits will be provided for pesticide applicators. For more information contact the WVU-KTFREC at 304-876-6353 or at Stephanie.Stephens@mail.wvu.edu.

March 5, 8:00 a.m. – 3:30 p.m. – Hampshire County Winter Fruit School at the South Branch Inn, Romney, WV. See enclosed brochure. Registration is free for members of the WV State Horticultural Society. For non-members, the registration fee is \$15 by February 24 or \$20 at the door. Recertification credits will be provided for pesticide applicators. For more information contact the Hampshire County Extension Office at 304-822-5013 or at LLKidner@mail.wvu.edu.

March 11, 9:00 a.m. – 3:30 p.m. – Processing for Profits: Moving from Concept to Consumers at the Friendly Farm Restaurant, Upperco, MD. Registration fee is \$30 per person or \$50 for two people from the same organization, and is due by March 2. For more information go to: www.agmarketing.umd.edu/Events.html, or contact Susan Barnes at 301-432-2767 x301 or at sbarnes6@umd.edu.

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2009 SPRAY BULLETIN

The 2009 Virginia/West Virginia/ Maryland Spray Bulletin For Commercial Tree Fruit Growers should be available by mid-February, however, the cost is yet to be determined. Contact the WVU-KTFREC at 304-876-6353, or at Stephanie.Stephens@mail.wvu.edu after February 15 to determine availability and cost.

ENTOMOLOGY

Voliam flexi insecticide from Syngenta was recently registered by EPA for the control of numerous insect pests on pome and stone fruits. This product is a combination of 20% thiamethoxam (active ingredient in Actara) and 20% chlorantraniliprole (active ingredient in Altacor), and is available as a 40WDG (water-dispersible granule). The combination of these two active ingredients enables Voliam flexi to provide broad spectrum control of over 15 sucking and chewing pests on pome fruits and over 10 pests on stone fruits. Application rate ranges from 4-7 oz per acre, depending upon the target pest, with a seasonal maximum of four applications and 16 oz per acre on pome fruits, and three applications and 14 oz per acre on stone fruits. Apply in a minimum of 100 gallons of water per acre. Do not use an adjuvant with Voliam flexi on cherries, nor within 60 days of harvest on pome fruits. Voliam flexi is highly toxic to bees exposed to direct treatment or to residues on blooming crops. Therefore, do not apply after early pink through bloom in apple; after green cluster bud through bloom in pear; and from swollen bud through bloom in stone fruits. In addition, wait at least five days before placing beehives in a treated orchard. For resistance management, do not use more than two consecutive applications of Voliam flexi, and do not use immediately before or after other Group 4A or Group 28 insecticides. Restrictions include an REI

of 12 hours and PHI of 35 days on pome fruits and 14 days on stone fruits.

Bifenture (bifenthrin) from United Phosphorus, Inc. is a 2EC pyrethroid insecticide that has been registered by EPA for the control of various insect and mite species on pear. Rate of application is 2.6 to 12.8 fl oz (0.04 to 0.2 lb ai) per acre. The seasonal maximum is 0.5 lb ai per acre, with no more than 0.45 lb ai per acre applied after petal fall. Restrictions include an REI of 12 hours and PHI of 14 days.

Requiem is a 25EC insecticide and acaricide from AgraQuest, Inc. that has been registered by EPA for the control of rosy apple aphid and various mite species on pome fruits. An extract from the herb, *Chenopodium ambrosioides*, Requiem provides control or suppression through contact activity. Rate of application is 2-4 quarts per acre. Restrictions include an REI of 4 hours and PHI of 0 days.

Lorsban Advanced from Dow AgroSciences is a new low-odor and low volatile organic compound (VOC) formulation of chlorpyrifos that has been registered for insect control on apple and stone fruits. Consisting of an emulsion in water, Lorsban Advanced contains 3.755 lb of chlorpyrifos per gallon, instead of the 4 lb per gallon as in Lorsban 4E. However, application rates are the same for both products. Both products are registered for use on the same crops and pests, except for control of trunk borers on apple, which does not appear on the label for Lorsban Advanced. Although both products will be available this year, eventually Lorsban 4E will be replaced by Lorsban Advanced.

Chlorpyrifos re-registration has been completed by EPA, resulting in some label changes on products released for shipment during late 2008 for use this year. Only one application of a chlorpyrifos product is now permitted per year on apples East of the Rockies. Therefore, growers will now have to choose between a dormant/delayed dormant and trunk application for borers, since both will no longer be permitted.

Guthion (Azinphos-methyl) seasonal maximum amount is reduced to 4 lbs of

product per acre on pears, beginning this year. The seasonal maximum amount continues at 6 lbs of product per acre on apples and 3 lbs of product per acre on cherries.

PLANT PATHOLOGY

Peach leaf curl should be controlled in the spring with a fungicide application before the buds swell, unless you already made a leaf curl application in the fall. If leaf curl was severe in your peach and nectarine blocks in 2008, and you made your fall fungicide application to control the disease for 2009, a spring fungicide application will be needed to ensure complete disease control. In orchards where careful monitoring is practiced and where leaf curl has not been present for two or more years, this spray can be omitted until the disease begins to recur. For best control of peach leaf curl, make a dilute application of fungicide under calm conditions, making sure to cover each bud thoroughly. Using one of the fixed coppers for the leaf curl spray may help suppress **bacterial spot** in blocks where this disease is a problem. See the *Spray Bulletin* for fungicides and rates of application. For more information on **bacterial spot**, refer to the October 13, 2008, issue of the *Orchard Monitor*.

Apple scab urea application. A spray of 5% solution of urea (46-0-0) in water may be applied as late as green tip to apple leaves on the ground if this was not done in the autumn (42 lb. urea in 100 gal. water, applied at 100 gallons/acre). The nitrogen will hasten leaf litter decomposition and will result in reduced ascospore production by 60 to 90%, thereby changing high-inoculum orchards into low-inoculum orchards. Moving leaves from under the trees to the row middles with a leaf blower and then shredding them with a flail mower is a good alternative to the urea spray for small acreages on level land (mud, rocks, and weeds can turn this into a futile exercise). If you had enough scab that you easily noticed it at the end of last year's growing season, one of these inoculum reduction measures should be implemented. If the urea spray is used, remember to reduce other nitrogen applications ac-

cordingly. I would estimate that about half of the urea nitrogen will land in the sodded row middles, and thus will not be available to the trees.

Fungicide-resistant apple scab. Resistance to scab fungicides (mostly the DMI's Rally/Nova, Rubigan, and Procure) can be thought of in two ways based on your experiences with scab in the past couple of years, as well as the results of any resistance testing you've had done. I'll address the past part of that long sentence first – all the orchards I tested (except one in Hampshire County) showed a significant shift in the fungus population toward the resistant end of the spectrum. So mostly we're all in the same boat on that one. The scab situation can be thought of like this: you have either a high-inoculum orchard or a low inoculum orchard. Did you notice scab at the end of the growing season? If so, you have a high inoculum orchard.

What do we do in high inoculum orchards with resistant scab? Growers using fungicide strategies that are dependent on fungicides at high risk for resistance often encounter major crop losses when resistance finally appears in their orchards. For example, the

combination of a DMI fungicide plus 3 lb/A of a mancozeb fungicide applied on a 10-day schedule will control scab only so long as the DMI fungicide remains effective. As resistance to the DMI fungicide gradually increases, inoculum levels in the orchard increase and the 3-lb/A rate of mancozeb will fail to control scab when spring weather favors scab development (for example, when it gets washed off after an inch of rain at the beginning of an infection period). This scenario is exacerbated in alternate-row-middle application schedules when the interval is extended past the capabilities of the fungicides to resist weather and redistribute to new tissues. The loss potential can be minimized by shortening the spray interval and/or increasing the rate of the protectant fungicide in the combinations. Switching to one of the second generation DMI's, such as Inspire Super, may work well initially but is probably not a long term solution (the fungus will eventually become resistant to the new DMI's, and will become resistant to them more quickly in orchards where resistance is already established). Where DMI resistance is suspected, spray intervals should be shortened to 7 days during primary scab season and rates for contact fungi-

cides should be increased to 4.5-6 lb/A for mancozeb, 5 lb/A for Captan 80W, or at least 5 lb/A of a captan + mancozeb combination (this combination will be weak against mildew). Alternatively, Scala, Flint, or Sovran can be used in combinations with mancozeb at 3 lb/A or Captan 80W at 2 lb/A or with the equivalent rate of another captan formulation. We may need to begin to think about our DMI's the way we think about Bayleton: very good against mildew and rust, but with no scab activity.

What do we do in low inoculum orchards with resistant scab? In low-inoculum orchards with no prior history of a practical failure due to DMI-resistant apple scab, growers can continue to use DMIs for scab control since no equivalent substitute is available. As noted above, however, it would be wise to either shorten spray intervals or to increase the rate of protectant fungicide in the DMI combinations. If/when scab appears in orchards sprayed with DMIs, changes must be made immediately so as to avoid crop loss. We'll have a more in-depth discussion of these ideas at the upcoming West Virginia Fruit Schools (see enclosed brochures).

Henry W. Hogmire
Extension Specialist-Entomology

Alan R. Biggs
Extension Specialist-Plant Pathology

READ THE LABEL CAREFULLY AND USE THE CHEMICALS IN ACCORDANCE WITH LABEL CAUTIONS, WARNING AND DIRECTIONS. REQUEST A MATERIAL SAFETY DATA SHEET (MSDS) FROM THE MANUFACTURER FOR EACH PRODUCT YOU USE.

Trade and brand names are used only for the purpose of information, and the West Virginia University Extension Service does not guarantee nor warrant the standard of the product, nor does it imply approval of the product to the exclusion of others which may also be suitable. The West Virginia University Extension Service assumes no responsibility in the use of hazardous chemicals.

Individuals requesting an accommodation to a meeting because of a disability should contact one of the Extension Specialists at the WVU Kearneysville Tree Fruit Research and Education Center at (304) 876-6353 at least five days prior to the event.

Berkeley/Jefferson Counties Winter Fruit School

March 4, 2009

WVU Tree Fruit Research & Education Ctr.
Kearneysville, WV

Morning Presiding: Henry Hogmire

8:00 **Registration** - \$15 by Feb. 24; \$20 on site

8:30 **West Virginia State Horticultural Society
Annual Business Meeting and Discussion
of WVU-KTFREC Educational Programs**
Julie Bolyard
Outgoing President, WVSHS

9:00 **West Virginia State Horticultural Society
President's Address**
Mark Orr
Incoming President, WVSHS

9:15 **Assessment of 2008 NRCS-EQIP Tree
Fruit IPM Program in West Virginia**
Dr. Henry Hogmire, WVU Entomologist
Dr. Steve Miller, USDA Horticulturist
Robert Boarman, Mark Orr, Doug Raines
Isaac Wolford, NRCS State Agronomist

10:15 **Refreshment Break**

10:30 **Managing Fungicide Resistance in
Orchards**
Dr. Alan Biggs
WVU Plant Pathologist

11:00 **What Do We Know About Injury,
Monitoring and Management of Stink
Bugs in Apples?**
Brent Short, USDA Entomology Technician
Dr. Henry Hogmire, WVU Entomologist

11:45 **2009 Spray Bulletin Update (Panel)**
Dr. Alan Biggs, WVU Plant Pathologist
Dr. Rakesh Chandran, WVU Weed Scientist
Dr. Henry Hogmire, WVU Entomologist

12:15 **Catered Lunch**

Afternoon Presiding: Alan Biggs

1:00 **Options for Thinning Peaches**
Dr. Jim Schupp
Penn State Univ. Horticulturist

1:45 **Weed Management in Small Fruits
(blueberries and brambles)**
Dr. Rakesh Chandran
WVU Weed Scientist

2:15 **Refreshment Break**

2:30 **New Varieties for Vegetables and
Small Fruits**
Dr. Lewis Jett
WVU Extension Horticulturist

3:00 **WVDA READ/Pesticide Regulatory
Programs Unit Update**
Grant Bishop
Assistant Director
Pesticide Regulatory Programs Unit

3:30 **West Virginia Farm Bureau Update
and Legislative Agenda**
Bill Aiken
Field Service Representative
WV Farm Bureau

4:00 **Distribution of Attendance Form for
Pesticide Applicator Recertification**

Registration Form

**Kearneysville Fruit School
March 4, 2009**

Name _____

Mailing Address _____

City, State, Zip _____

Phone _____

E-mail _____

I am **not** a member of WVSHS

No. attending ___ @ \$15 ea = _____

I am a member of WVSHS

Do not send check

Registration will be paid by WVSHS

Questions about WVSHS membership?
Call Julie Bolyard at 304-676-4552

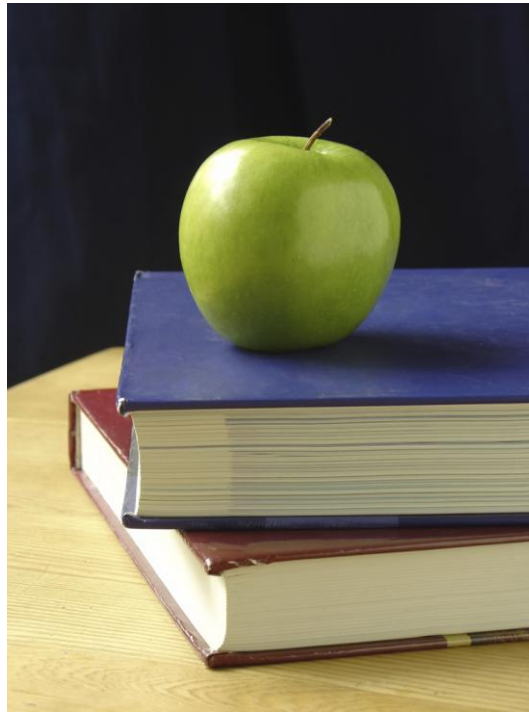
Mail check (**payable to WVSHS**) and/or
registration form **by Feb. 24** to:

WVSHS
PO Box 323
Inwood, WV 25428

**2009
Berkeley/Jefferson Counties
Winter Fruit School**

March 4

***West Virginia University
Tree Fruit Research & Education Ctr.
Kearneysville, WV***



**Sponsored by
WVU Extension Service
WV State Horticultural Society**

Pesticide Applicator Recertification
Credits in categories 1, 11, 12, Private

Directions

The WVU Tree Fruit Research and Education Center is located on the north side of Charles Town Road (Route 9) halfway (about 6 miles) between Martinsburg and Charles Town, ¾ mile West of Kearneysville.



Individuals with questions regarding the physical access provided, or who request an accommodation to this fruit school because of a disability should contact the WVU Tree Fruit Research and Education Center (304-876-6353) at least 5 days prior to the event.

For more information about this fruit school, contact Stephanie Stephens at the phone number above, or at Stephanie.Stephens@mail.wvu.edu.



West Virginia University
Tree Fruit Research and Education Center
PO Box 609
Kearneysville, WV 25430

Hampshire County Winter Fruit School

March 5, 2009
South Branch Inn
Romney, WV

Morning Presiding: Gerald Leather

- 8:00 **Registration** - \$15 by Feb. 24; \$20 on site
- 8:30 **West Virginia State Horticultural Society
President's Address**
Mark Orr
President, WVSHS
- 8:45 **Options for Thinning Peaches**
Dr. Jim Schupp
Penn State University Horticulturist
- 9:30 **WVDA READ/Pesticide Regulatory
Programs Unit Update**
Grant Bishop
Assistant Director
Pesticide Regulatory Programs Unit
- 10:00 **West Virginia Farm Bureau Update
and Legislative Agenda**
Bill Aiken
Field Service Representative
WV Farm Bureau
- 10:30 **Refreshment Break**
- 10:45 **Assessment of 2008 NRCS-EQIP Tree
Fruit IPM Program in West Virginia**
Dr. Henry Hogmire, WVU Entomologist
Dr. Steve Miller, USDA Horticulturist
Mark Orr, Garry Shanholtz,
Eric Johnson or Doug Raines
Steve Ritz, NRCS District Conservationist

11:45 **New Varieties for Vegetables and
Small Fruits**
Dr. Lewis Jett
WVU Extension Horticulturist

12:15 **Catered Lunch**

Afternoon Presiding: Gerald Leather

1:00 **What Do We Know About Injury,
Monitoring and Management of Stink
Bugs in Apples?**
Brent Short, USDA Entomology Technician
Dr. Henry Hogmire, WVU Entomologist

1:45 **Managing Fungicide Resistance in
Orchards**
Dr. Alan Biggs
WVU Plant Pathologist

2:15 **Refreshment Break**

2:30 **Weed Management in Small Fruits
(blueberries and brambles)**
Dr. Rakesh Chandran
WVU Weed Scientist

3:00 **2009 Spray Bulletin Update (Panel)**
Dr. Alan Biggs, WVU Plant Pathologist
Dr. Rakesh Chandran, WVU Weed Scientist
Dr. Henry Hogmire, WVU Entomologist

3:30 **Distribution of Attendance Form for
Pesticide Applicator Recertification**

Registration Form

Romney Fruit School
March 5, 2009

Name _____

Mailing Address _____

City, State, Zip _____

Phone _____

E-mail _____

I am **not** a member of WVSHS

No. attending ___ @ \$15 ea = _____

I am a member of WVSHS

Do not send check

Registration will be paid by WVSHS

Questions about WVSHS membership?
Call Julie Bolyard at 304-676-4552

Mail check (**payable to WVSHS**) and/or
registration form **by Feb. 24** to:

WVSHS
PO Box 323
Inwood, WV 25428

**2009
Hampshire County
Winter Fruit School**

March 5

***South Branch Inn
Romney, WV***



**Sponsored by
WVU Extension Service
WV State Horticultural Society**

Pesticide Applicator Recertification
Credits in categories 1, 11, 12, Private

Directions

The South Branch Inn is located on the north side of Route 50 on the outskirts (east side) of Romney across from Hampshire High School.

**Hampshire County
Fruit Grower Meetings**

April 23 – Gourmet Central
May 28 – Gourmet Central
June 25 – To be determined



Individuals with questions regarding the physical access provided, or who request an accommodation to this fruit school because of a disability should contact the Hampshire County Extension Office (304-822-5013) at least 5 days prior to the event.

For more information about this fruit school, contact Leah Kidner at the phone number above, or at LLKidner@mail.wvu.edu.



West Virginia University
Tree Fruit Research and Education Center
PO Box 609
Kearneysville, WV 25430