

Impact of Brown Marmorated Stink Bug on Wine Grapes and Research Plans for 2011

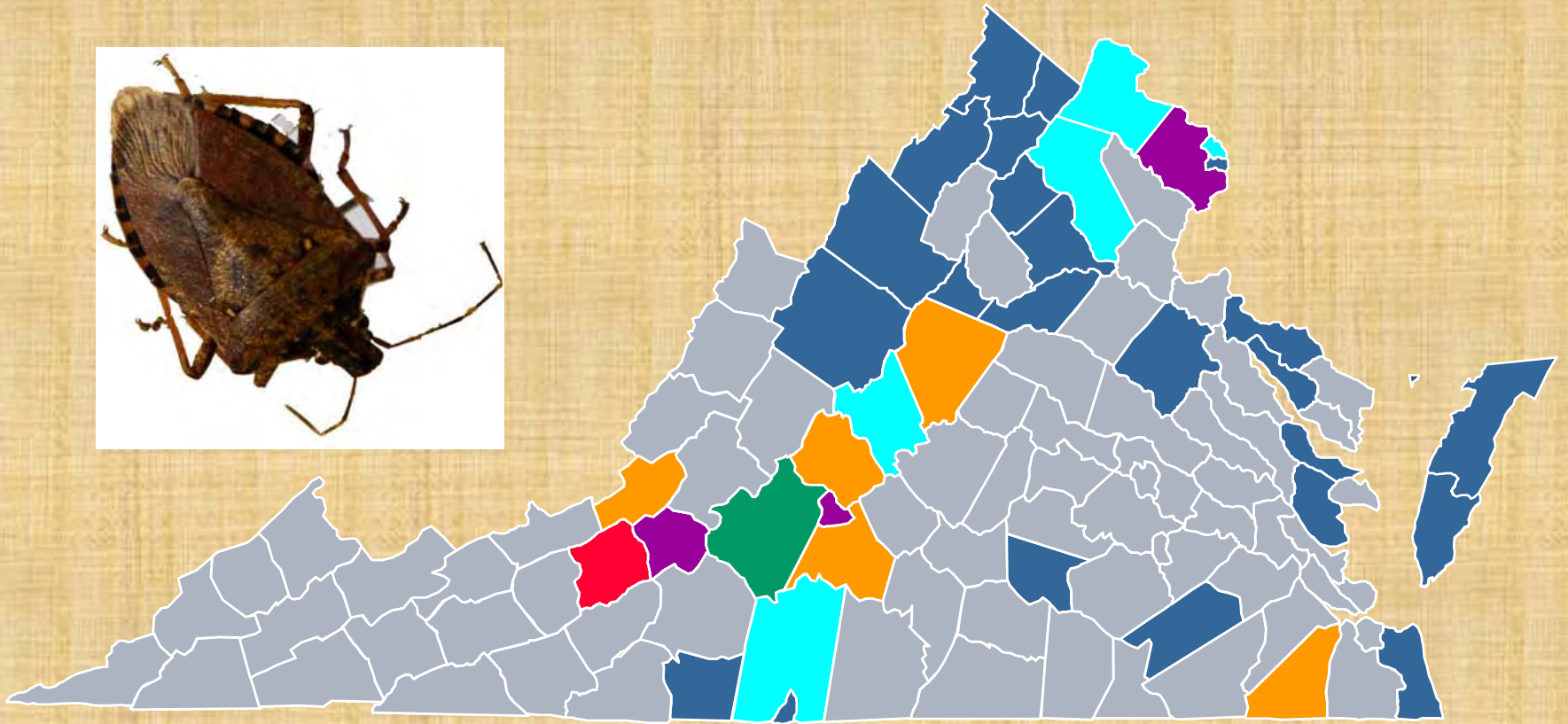


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“these bugs are getting out of hand. what is the best way to get rid of them they are all in our homes . if the department whom brought them here should have their testing/ experimentation revoked or figure out a way to control them. this is ridiculous it almost like the plague of the biblical days. so if you have any suggestion please let me know, or i will keep searching for something to do the job.” Virginia homeowner 2010

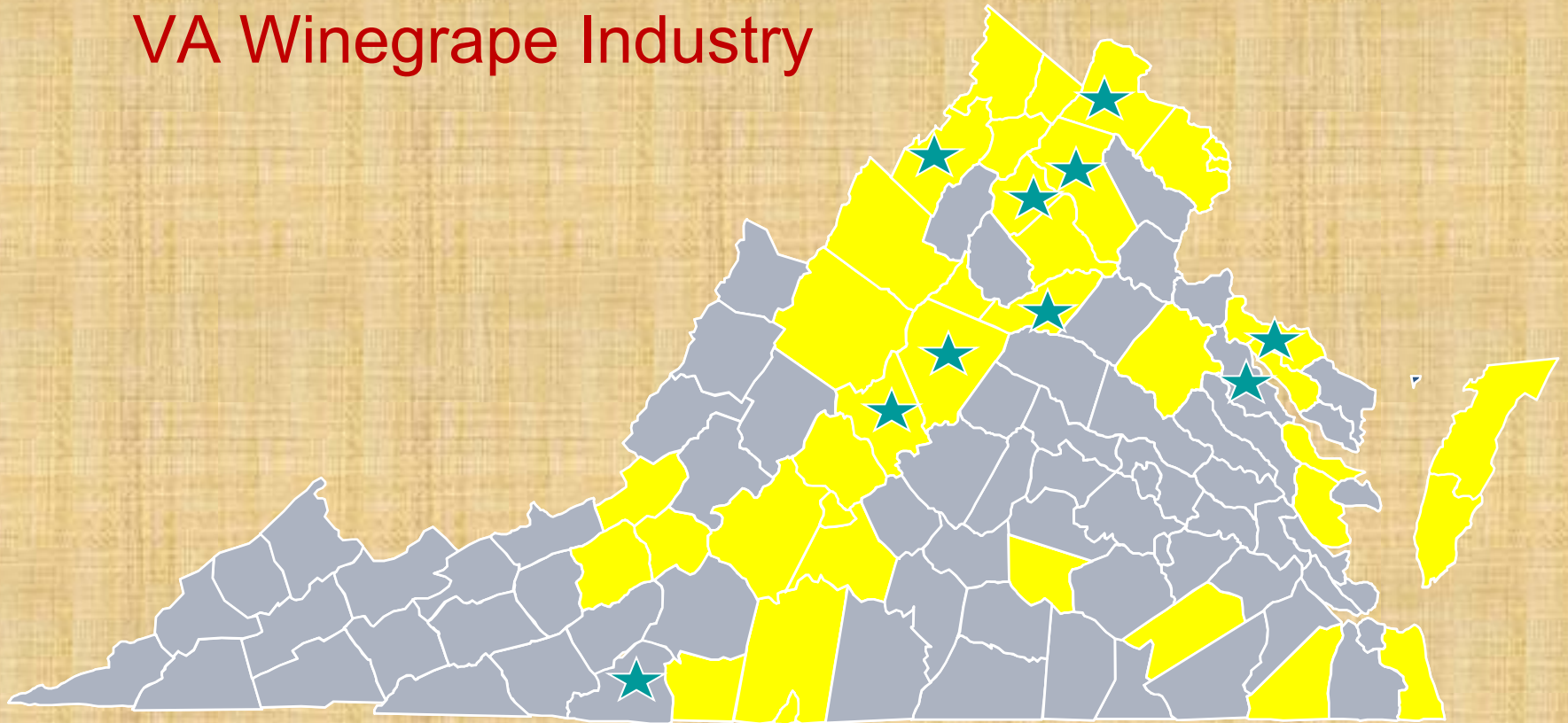
BMSB Submission Records



Eric Day

2004, 2005, 2006, 2007, 2008, 2010

BMSB Distribution Relative to VA Winegrape Industry



★ - 10 Leading Virginia Wine Counties

2004, 2005, 2006, 2007, 2008, 2010

Voltinism

- One generation in most of Asia (Hoebeke 2002, Funayama 2007)
- One generation reported in Pennsylvania and New Jersey (Hoebeke 2002, Nielsen and Hamilton 2009)
- Two generations in WV (Leskey unpubl.)
- Up to 6 generations in China (Hoffman 1931)

Polyphagous

- Host list probably about 300 spp.
- In Japan, *Prunus* a reproductive host
- *Paulownia* used as reproductive host in spring
- *Viburnum*, *Fraxinus* important mid-season hosts
- *Vitis* rarely reported as a host

(Panizzi et al. 2000, Nielsen & Hamilton 2009)





Potential for Pest Status of BMSB in Vineyards

- Injury to berries
- Introduction of rots, other pathogens
- Delays in postharvest sorting
- Contamination of wine at crush
- Nuisance in wine tasting rooms

Preliminary data on stink bug taint

- Adding known numbers of BMSB to trial lots of grapes and crushed
- Preliminary results: Fewer than 10 BMSB per lug can impart a perceptible taint (Fiola 2010)

Vineyard Scholar Site

Logout

My Workspace Arthrop Pest Manag 2010 IPM CRSP South Asia IPM CRSP West Africa IPM CRSP East Africa IPM CRSP Central Asia
IPM CRSP SE Asia Vineyard Scholar My Active Sites ▼

Enter Participant View


- Home
- Announcements
- Calendar
- Mailtool
- Email Archive
- Chat Room
- Blog
- Polls**
- Resources
- Drop Box
- Disease Update (Mizuho's Blog)
- Virginia Vineyards Web Site
- 2010 Risk for PD
- Virginia Pest Management Guides
- Vineyard Advisor: Smart phones as delivery tools

Site Information Display

Options

Welcome to the VT Vineyard Scholar Site

This portal will be used to facilitate sharing of information, observations, and data pertinent to current research. Much of the work will include participation from grape growers throughout the state. Links to key web sites are included in the tool bar on the left side of the screen. The Resources folder is a storage/archive site for many vineyard-related items. The membership list is used as the basis for e-mail updates during the season.



Recent Announcements

Options

There are currently no announcements at this location.

Recent Chat Messages

Options

Calendar

Options

November, 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Vineyard Scholar Polls

My Workspace

Arthrop Pest Manag 2010

IPM CRSP South Asia

IPM CRSP West Africa

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Polls

Add Permissions

Poll list

Question	Opening	Closing ▼	Results	Remove
Vineyard Managers: Did you have stink bugs in your vines at harvest this year? Edit	Oct 19, 2010 3:11 PM	Oct 31, 2010 3:11 PM	Results	<input type="checkbox"/>
Winemakers: Have stink bugs posed any problem in your winemaking? Edit	Oct 19, 2010 3:30 PM	Oct 30, 2010 3:30 PM	Results	<input type="checkbox"/>
Vineyard Managers: If you sprayed for stink bugs, did you use: Edit	Oct 19, 2010 3:20 PM	Oct 26, 2010 3:20 PM	Results	<input type="checkbox"/>

[Update](#)

Scholar Poll Question 1

Vineyard Managers: Did you have stink bugs in your vines at harvest this year?
(n=18)

- Many, a problem for us 22%
- A few, not too severe 72%
- No, none noticed 6%

Scholar Poll Question 2

Vineyard Managers: If you sprayed for stink bugs, did you use: (n=3)

■ Neonicotinoid	0%
■ Pyrethroid	67%
■ Other	33%

Scholar Poll Question 3

Winemakers: Have stink bugs posed any problem in your winemaking? (n=6)

- None seen 0%
- A few SB seen, no taint 83%
- SB seen, we're concerned 17%
- Taint detected in wine 0

Vineyard Harvest Spray Trial 2010

- Grower complained of high number of BMSB in vines at harvest
- Made pre-treatment counts afternoon of 2 Sep
- Immediately following, grower applied two 0d PHI chemical treatments:
 - Belay (clothianidin) 6 fl oz/A
 - PyGanic (pyrethrin) 64 fl oz/A







Vineyard Harvest Spray Trial Results

Pre-treatment – 14% of clusters with BMSB

Post-treatment

	<u>Vines with stink bugs</u>		<u>SB/vine</u>
Clothianidin	1	6.7%	0.1 ab
Pyrethrin	0	0%	0 a
Control	4	26.7%	0.7 b

Tukey's HSD, $\alpha = 0.05$

Diurnal shift in behavior?



BMSB eggs on Cabernet Sauvignon in Maryland

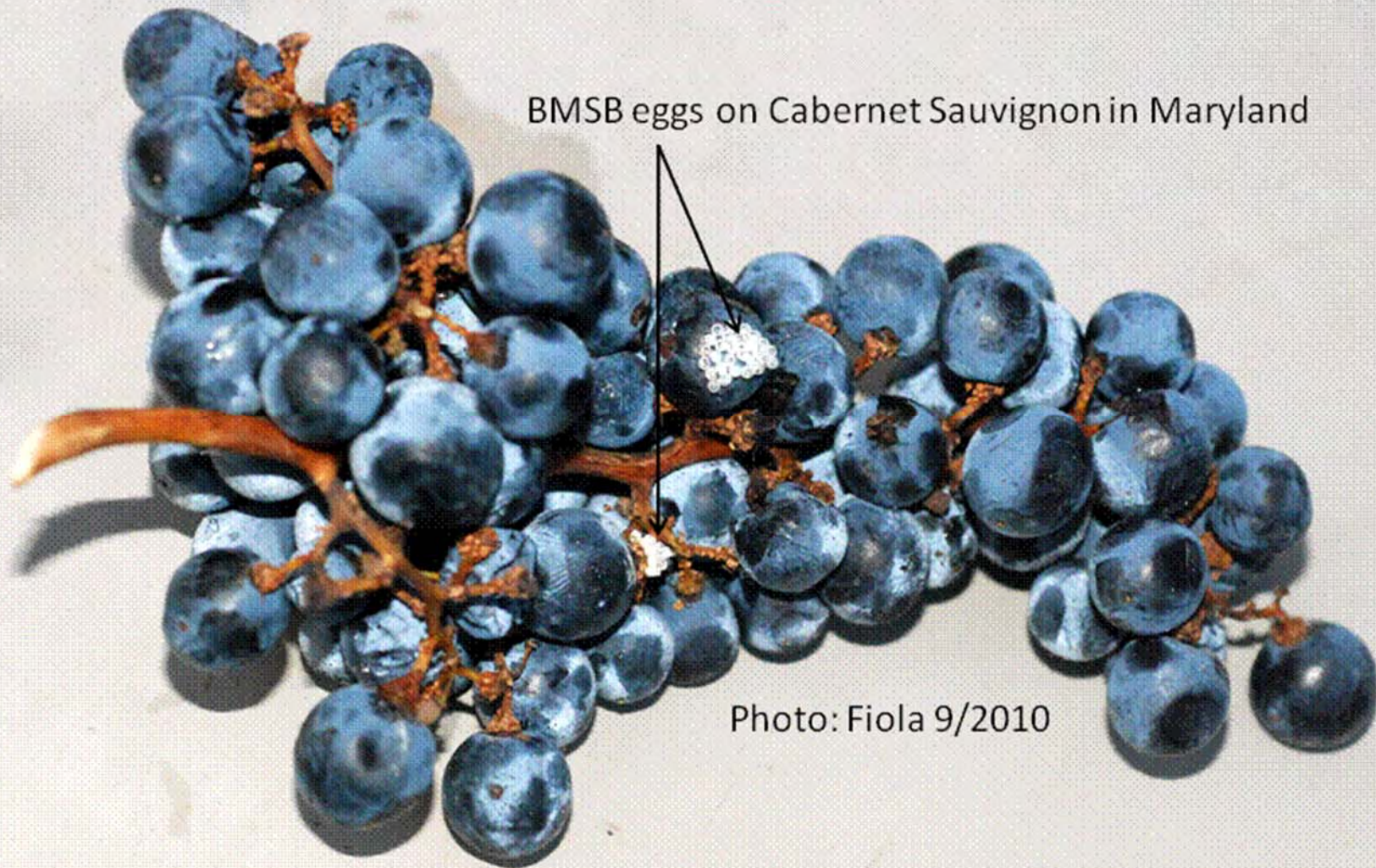


Photo: Fiola 9/2010

BMSB eggs on Cabernet Sauvignon in Maryland

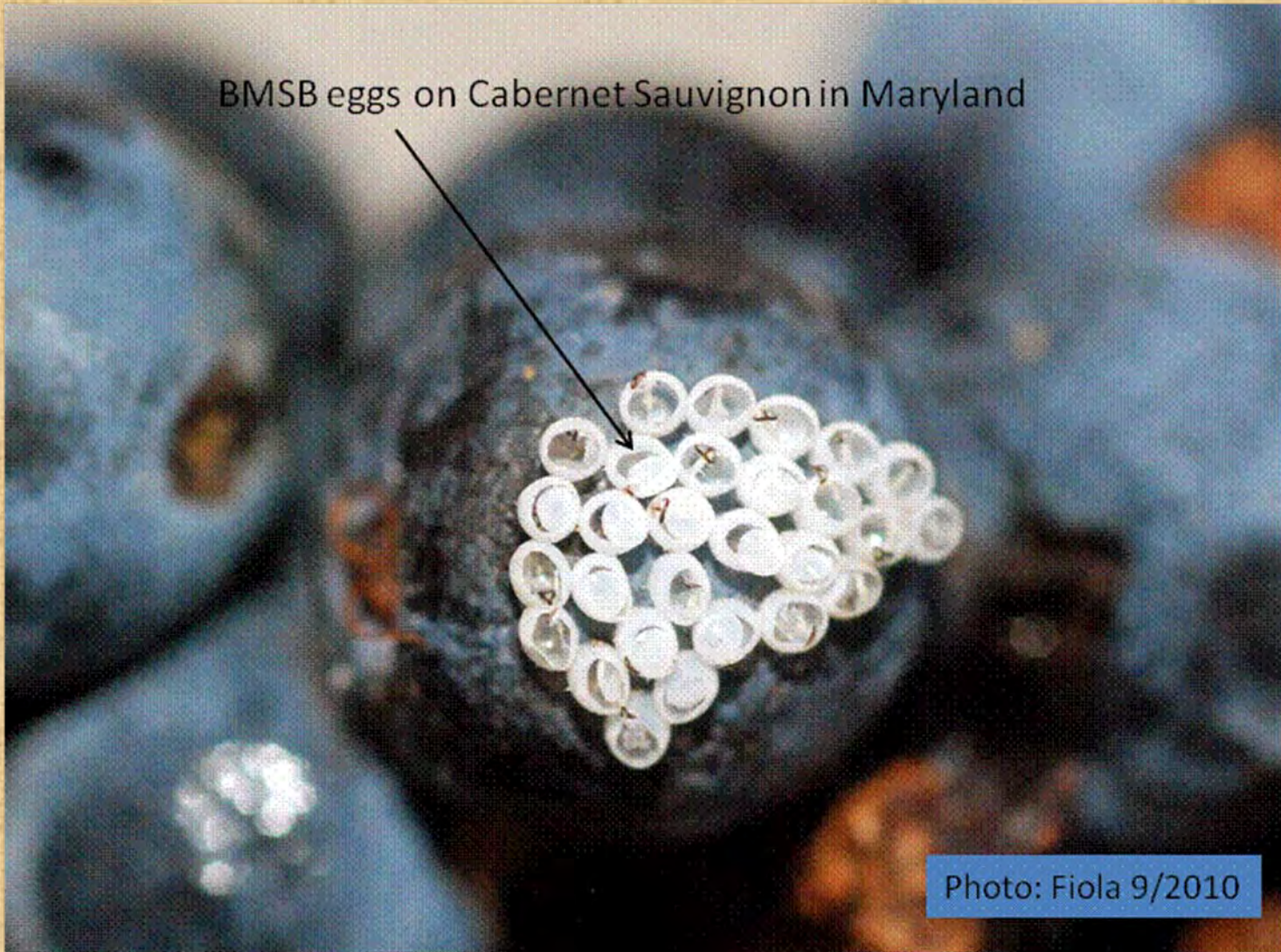


Photo: Fiola 9/2010

Problems related to chemical control of BMSB in vineyards

- Mortality
- Recovery
- Immigration
- Induction of secondary pests

Problems related to chemical control of BMSB in vineyards

- Mealybugs/leafroll virus



Research plans for 2011

- Phenology
- Mechanics of injury, symptoms
- Baseline data on egg parasitization
- Control
- Grower practices

