



# Viticulture 201



- 1 PM: Mizuho Nita
- 1:45 PM: Jonathan Ames
- 2:30 PM: Drew Harner



VIRGINIA AGRICULTURAL EXPERIMENT STATION  
ALSON H. SMITH JR. AGRICULTURAL  
RESEARCH AND EXTENSION CENTER  
VIRGINIA TECH.

1




---

## Data and resources for your pesticide application decision support

For VVA Winter  
24 Feb 2026

---

Mizuho (me-zoo-jo) Nita, Ph.D.  
Virginia Tech  
nita24@vt.edu



VIRGINIA AGRICULTURAL EXPERIMENT STATION  
ALSON H. SMITH JR. AGRICULTURAL  
RESEARCH AND EXTENSION CENTER  
VIRGINIA TECH.

2

**VT VIRGINIA TECH.**

**Integrated Pest Management (IPM) is  
a way to manage diseases using multiple approaches**

<b>Genetic resistance</b>	• Cultivar choice: e.g., Chardonnay vs Chardoneel
<b>Cultural practices</b>	• Site selection, proper pruning, leaf removal, canopy management, etc.
<b>Chemical options</b>	• Choice and timing are important 
<b>Biological options</b>	• Often time the results are either not as consistent or as effective as conventional options.

3

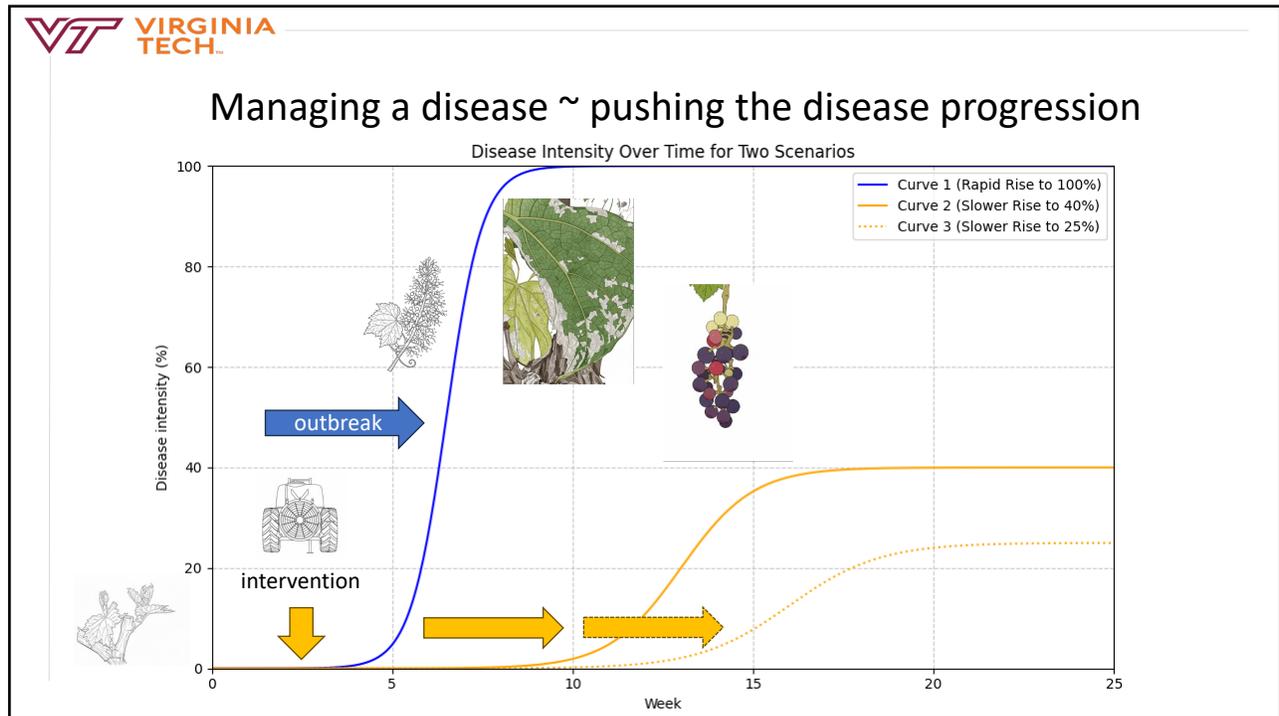
3

**VT VIRGINIA TECH.**

**Fungicide  
application  
timing**

- Crop's physiological stages
  - E.g, grapes are susceptible to multiple diseases during bloom
- Pathogen activities
  - Temperature (e.g., grape downy mildew's overwintering structure starts to release spores around 450 GDD from January)
  - Wetness event: many pathogens require water for their infection process
    - → prediction models
- Vector activities
  - E.g., Sharpshooters come from the south with the Pierce's Disease pathogen
    - → prediction models
- Property of fungicides

4



5

**VT VIRGINIA TECH.**

## Disease triangle matters!

- The environmental conditions are critical for many plant pathogens, if not all!
- Cultural practices such as site selection, cultivar selection, canopy management, etc., are your homework.
- It would be ideal if you adjust your spray program, not only based on the grape's physiological stages (e.g., bloom), but also weather events
  - E.g., adding a phosphite for downy mildew when you had a rain event.

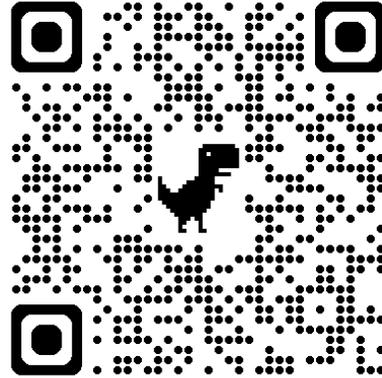
freeicons.io

6



# NEWA: Network for Environment and Weather Applications

- <https://newa.cornell.edu/>
- Agriculture Weather Network operated by Cornell University
- Virginia Tech is a partner institute
  - Our AREC pays annual fees to cover Virginia



7



## You need to create an account and sign in to use their functions

NEWA home   IPM crop forecasts   IPM weather tools   NEWA help   **Sign In**

### NEWA | Network for Environment and Weather Applications

NEWA is a partnership of [New York State Integrated Pest Management](#), [Northeast Regional Climate Center](#), and [Virginia Tech](#)

**Weather and science driven integrated pest management tools**

#### IPM Forecasts and Weather Data

Get started by selecting your nearest weather station.

Select or search by weather station

8



## You can select options to set up your dashboard

- Favorite Weather Station
- Disease models
- Insect models

**Olympic Lake Overview** Edit Weather Overview

At 2:08 PM Today 77 °F

Base 50°F Degree Days since January 1: 1137

Relative Humidity: 51 %

Dew Point: 57.3 °F

Wind Speed: 1.6 mph

**5-Day Weather Forecast**

Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6/15/2024	6/16/2024	6/17/2024	6/18/2024	6/19/2024	6/20/2024
77 58	82 58	87 62	91 70	84 68	84 65

**NEWA Weather Tools**

- [Degree Day Calculator](#)
- [Hourly Data](#)
- [Daily Summary](#)
- [Regional Radar](#)

**Downy Mildew (DMCast)** Go To Tool →

[Go to model \(external site\)](#)

**Spotted Lanternfly** Go To Tool →

**Grape Berry Moth** Go To Tool →

2nd generation treatment over. Scout for 15% damage threshold. Accum. DD (base 50°F BE) since Jan 1: 1248

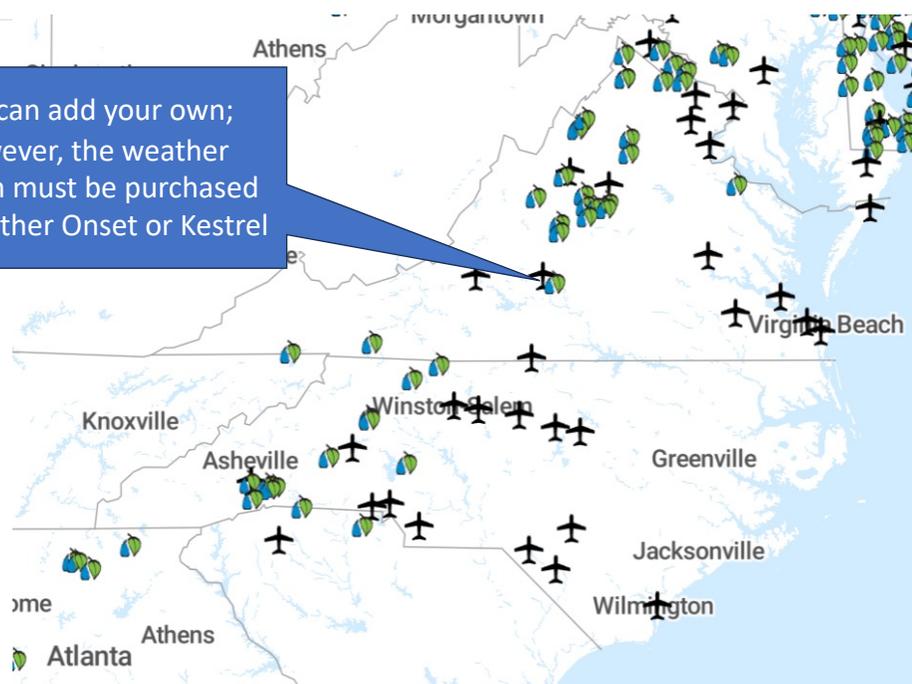
Accum. DD (base 47.14°F SA) from wild grape bloom: 929

**Grape Diseases** Go To Tool →

9



You can add your own; however, the weather station must be purchased from either Onset or Kestrel



10



## Licor/Onset weather station

- Modular design = easy to customize sensors
- Can host radio-based remote sensors
- Cellular model only
  - Wifi and Ethernet options are no longer offered
- \$2,700 and up
- \$200/year for data (~~\$99 for Wifi~~)
- Assembly time: ~2 hours
- ~~Connect to Weather Underground~~



11



## Kestrel weather station

- You cannot expand sensors
- Cellular and Wifi models
- \$1,000 - \$1,300
- \$50/yr for data
- Assembly time: ~20 min
- Connect to Weather Underground, Ambient Weather, Personal Weather Stations (PWS), Google, Alexa, IFTTT
- You need to find a good sunny spot since the battery is small (not a big deal in summer)



12

**VT VIRGINIA TECH.**

## NEWA: Grape Diseases

Grape Disease Infection Events [Download CSV](#)

[Forecast Details](#)

DATE (2024)	PHOMOPSIS	POWDERY MILDEW	BLACK ROT
June 9	No	No	No
June 10	No	No	No
<b>June 11</b> Forecast	No	No	No
June 12 Forecast	No	-	No
June 13	No	-	No

13

**VT VIRGINIA TECH.**

## Spotted Lanternfly

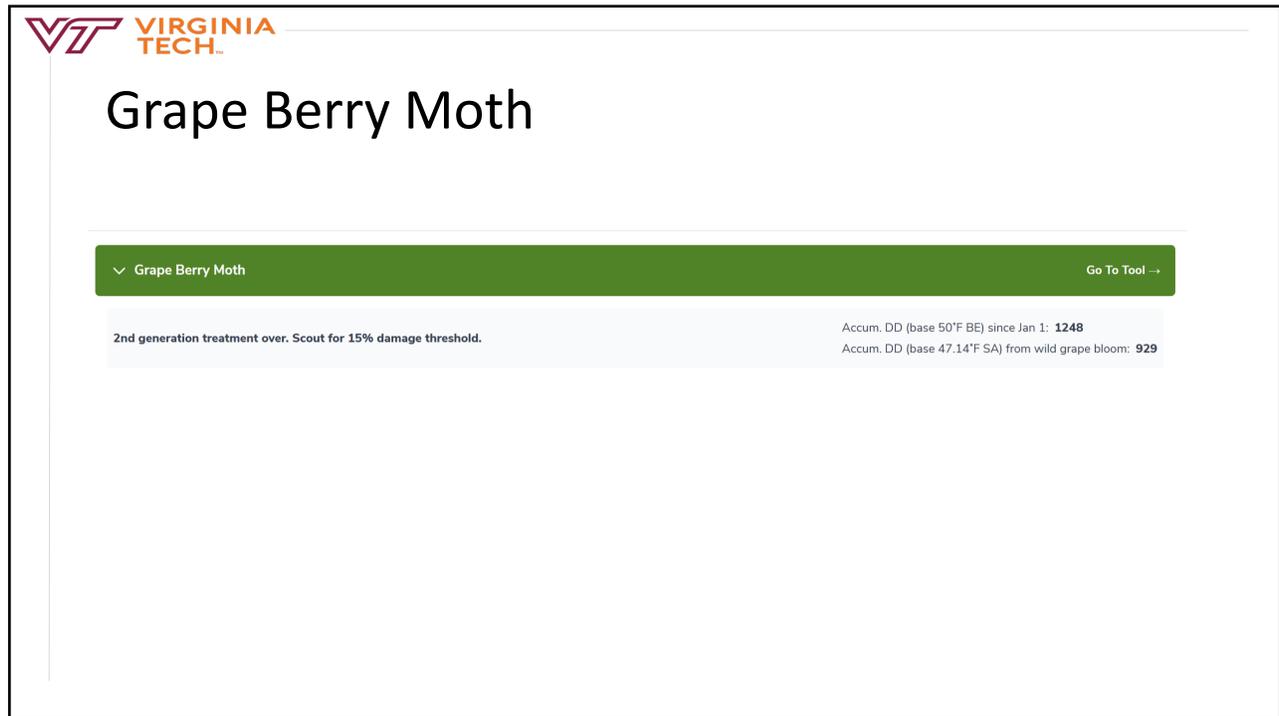
▼ Spotted Lanternfly [Go To Tool →](#)

Life Cycle Status

Spotted Lanternfly Progress

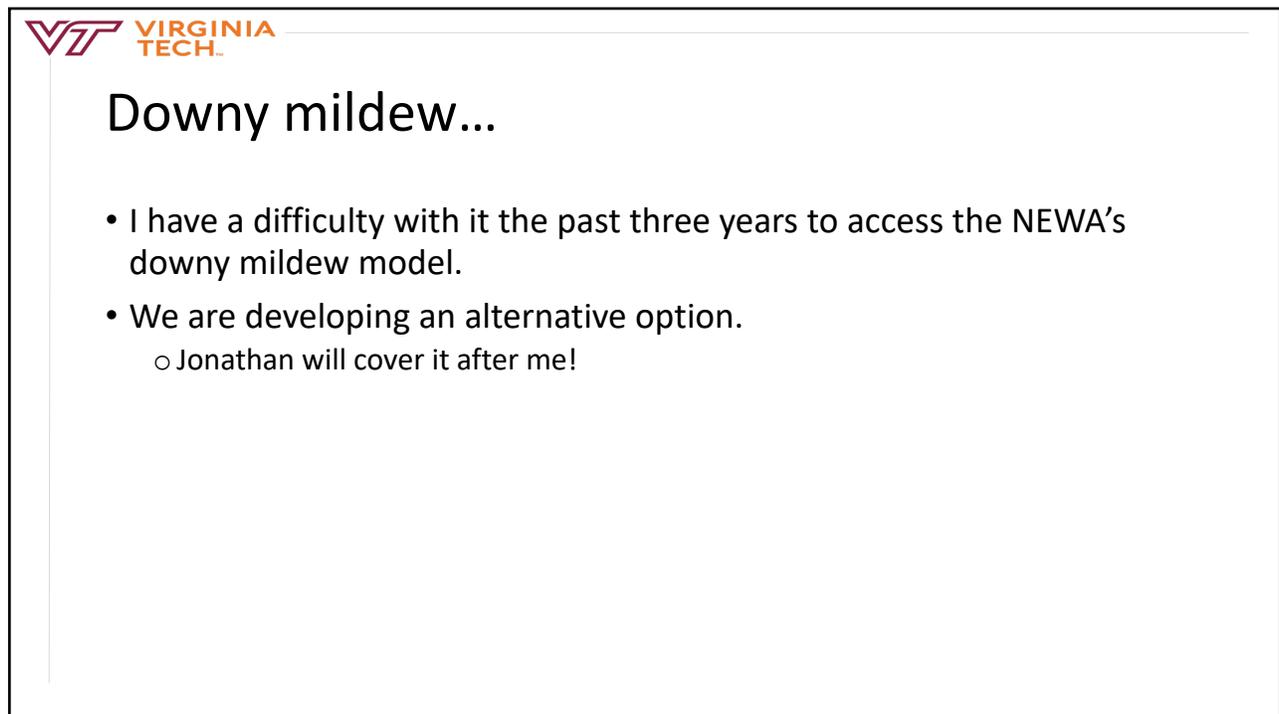
Life Cycle Stage	Start Date	End Date
Eggs inactive	8/31/2023	9/15/2023
Eggs growing	9/15/2023	8/15/2024
Instar 1	8/15/2024	8/25/2024
Instar 2	8/25/2024	8/31/2024
Instar 3	8/31/2024	9/5/2024
Instar 4	9/5/2024	9/10/2024
Adults	9/10/2024	9/15/2024

14



The screenshot shows the Virginia Tech logo in the top left corner. The main heading is "Grape Berry Moth". Below the heading is a green navigation bar with a dropdown menu for "Grape Berry Moth" and a "Go To Tool" link. The main content area contains two lines of text: "2nd generation treatment over. Scout for 15% damage threshold." and "Accum. DD (base 50°F BE) since Jan 1: 1248". Below this, there is another line of text: "Accum. DD (base 47.14°F SA) from wild grape bloom: 929".

15



The screenshot shows the Virginia Tech logo in the top left corner. The main heading is "Downy mildew...". Below the heading is a list of bullet points:

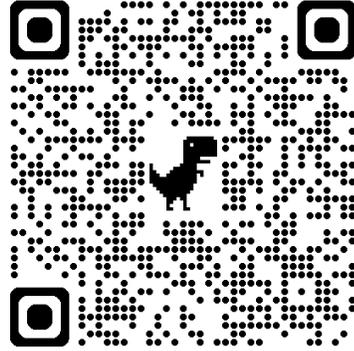
- I have a difficulty with it the past three years to access the NEWA's downy mildew model.
- We are developing an alternative option.
  - Jonathan will cover it after me!

16



## Sign-up sheet!

- We will add you to our mailing list.
- It is free of charge, but we may eventually ask you to pay a small fee. (~\$20/year) for data.
  - Wish me luck with grants. ;)



21



## Climate Fieldview (climate.com)

The screenshot displays the Climate Fieldview web interface. At the top, there is a navigation bar with the Virginia Tech logo, the text "VIRGINIA TECH.", and the "CLIMATE FIELDVIEW" logo. The main navigation includes "Fields", "Prescriptions", and "Import". On the right side of the navigation bar, there are "Notifications" (with a red badge showing "20"), "Mizuho Nita's Operation" (with a dropdown arrow), and a "Buy" button.

The main content area features a large aerial satellite image of a vineyard. A white outline highlights a specific field within the vineyard. Above the field image, there are two dropdown menus: "2024" and "Field Summary".

On the left side of the interface, there is a sidebar with several data panels:

- Weather:** A panel with a weather icon and a dropdown arrow.
- Planting:** A panel with "Planted" and "Avg Population" fields, both showing "---".
- Harvest:** A panel with "Avg Yield", "Moisture", "Area Harvested", and "Date Harvested" fields, all showing "--".
- Activities:** A panel with the text "No activities found".

23

**VT VIRGINIA TECH.**

Weather Forecast:

PARTLY CLOUDY **55°F** WIND **S 8 mph** HUMIDITY **69%** DEW POINT **46°F**

Hourly Forecast

HOUR	3pm	4	5	6	7	8	9	10	11	12am	1	2	3	4	5	6	7	8	9	10	11	12pm	1	2
% PRECIP	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	1%	0%	0%	0%	0%	0%	0%
WIND (mph)	10	13	13	14	12	13	14	13	11	11	11	11	10	9	8	6	5	4	4	5	5	6	5	5
CONDITIONS	☀️ ☀️																							

7 day forecast

Day	Fri Feb 20	Sat Feb 21	Sun Feb 22	Mon Feb 23	Tue Feb 24	Wed Feb 25	Thu Feb 26
Weather	☀️	☀️	☁️	☁️	☀️	☁️	🌧️
Temp	59°F 37°F	55°F 32°F	37°F 28°F	38°F 23°F	36°F 27°F	46°F 41°F	46°F 30°F
Wind	W 14 mph	WNW 6 mph	NW 15 mph	WNW 18 mph	WNW 11 mph	S 9 mph	WSW 9 mph
Precip	2% precip, 0"	79% precip, 0.1"	77% precip, 0.3"	15% precip, 0"	11% precip, 0"	24% precip, 0"	51% precip, 0.4"

☁️ Spray Weather Forecast ⓘ

25

**VT VIRGINIA TECH.**

# Soil type and drainage

CLIMATE FIELDVIEW | Fields | Prescriptions | Import | Notifications | Mizuho Nita's Operation | Buy

AHS AREC Vineyards

Soil (SSURGO) - Soil Type

Area	Soil Type
2.4 ac	Frederick-Poplimento loams, 15 to 25 percent slopes
1.4 ac	Frederick-Poplimento loams, 2 to 7 percent slopes
5.4 ac	Frederick-Poplimento loams, 7 to 15 percent slopes

Weather

Planting

Planted	Avg Population
---	---

Harvest

Avg Yield	Moisture	Area Harvested	Date Harvested
---	---	---	---

2024 | Soil (SSURGO) - Soil Type

Recenter

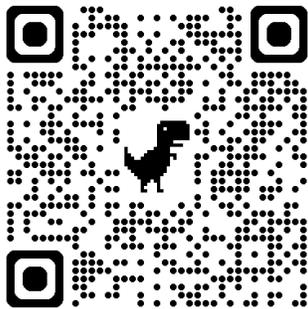
26

## Drones for scouting?

- While it can be done, it may not be done in a timely manner.
- Flying → mapping → analysis
- Plus, there is no solid vegetative index that matches our diseases...
- I will discuss more about spray drones at EWE at the end of March



27



grapeIPM.org



VIRGINIA AGRICULTURAL EXPERIMENT STATION  
ALSON H. SMITH JR. AGRICULTURAL  
RESEARCH AND EXTENSION CENTER  
VIRGINIA TECH.

CALS SmartFarm Initiative  
Center for Advanced Innovation in Agriculture



28

The screenshot shows the GrapelPM.org IPM Dashboard. At the top, there is a navigation bar with links for Dashboard, Planner, Reports, Settings, and Help. The main heading is "IPM Dashboard". Below this, there is a section titled "Show Vineyard:" with a dropdown menu currently set to "Fungicide workshop".

Below the dropdown, a message states: "Below is a list of upcoming events for Fungicide workshop. Click here to add a new spray event." This is followed by two event entries:

- Event 1:** Date: 05/18/2022 - 00:00 Fungicide workshop - 10 inch DM. Includes options to print WPS Report and Work Order. Details: Blocks: Chardonnay, Volume: 60 gals. Materials: Cueva Fungicide Concentrate @ 1.2 gals. PHI: 2022-05-18 (Cueva Fungicide Concentrate), REI: 2022-05-18 5:00 AM (Cueva Fungicide Concentrate). Note: Pre-Harvest Interval (PHI) and Re-Entry Intervals (REI) are based on the material with the longest interval.
- Event 2:** Date: 05/25/2022 - 00:00 Fungicide workshop - Prebloom DM. Includes options to print WPS Report and Work Order. Details: Blocks: Chardonnay, Volume: 120 gals. Materials: Dithane 75DF Rainshield @ 3.6 lbs, Microthiol Disperss @ 3.6 lbs, Quintec @ 6 floz. PHI: 2022-07-30 (Dithane 75DF Rainshield), REI: 2022-05-26 1:00 AM (Dithane 75DF Rainshield, Microthiol Disperss). Note: Pre-Harvest Interval (PHI) and Re-Entry Intervals (REI) are based on the material with the longest interval.

GrapelPM.org

- Personal database for growers
  - Inventory management
  - Spray planner and support system
  - Record keeping
  - Reporting (e.g. Worker Protection Standard requirements.)

29

The screenshot shows the GrapelPM.org user login page. On the left, there is a large QR code. Below it, the text "Set-up" is displayed in a large font. To the right of the QR code is a blue arrow pointing towards the login form.

The login form includes the following elements:

- Navigation bar: GrapelPM.org, Home, Locations, Plan, Settings, Login.
- User Menu: Login.
- User login section: Username \* (input field), Password \* (input field).
- Links: Create new account, Request new password.
- Log in button.
- Footer text: "This grape disease/Insect management decision support system is maintained by Nita Lab at Virginia Tech. We thank these Funding Agencies" followed by a list of agencies: Virginia Wine Board (2013 - current), USDANIFA EIP (2016 - current), USDANIFA EIPM (2010 - 2015), Virginia Agricultural Council (2010 - 2011), and VDACS Specialty Crop Research Initiative (2012 - 2014).
- Additional text: "grapelPM.org is a part of SmartFarm Innovation Network led by College of Agriculture and Life Sciences of Virginia Tech. If you wish to access trunkdiseaselD.org's database, please click on this link."
- Powered by Drupal.
- Grapeipm.org Credits: "This grape disease/Insect management decision support system is maintained by Nita Lab at Virginia Tech. We thank these Funding Agencies" followed by the same list of agencies as above.

Below the screenshot, the text reads: "Before you start, you need to visit 'grapelPM.org' and request a new user account. Please check <https://www.youtube.com/watch?v=VeXiFqRPQNA> for how you set up a new vineyard after your first log in".

30

**Locations**

Filter Location  
- Select Location -

**Select a Vineyard**  
Click here to Add a Vineyard

Vineyard Name		
AHS AREC 2019 MN	Manage	✗
AHS AREC test 2019	Manage	✗
AHS Test block	Manage	✗
AREC	Manage	✗
AREC test #3	Manage	✗
Fungicide workshop 2019	Manage	✗
PA test site	Manage	✗

Powered by Drupal

31

Filter Location  
\*\* Show All AHS AREC 2019 MN

**Vineyard Blocks**  
AHS AREC 2019 MN (View / Edit All Blocks)

Block Name	Area(ac)	Variety	Add Spray	Planning	
AREC 2019 MN CH09	0.25	Chardonnay	Add Spray	Planning	✗
AREC 2019 MN CS15	0.25	Cabernet Sauvignon	Add Spray	Planning	✗
AREC 2019 MN CH13	0.3	Chardonnay	Add Spray	Planning	✗

Edit Vineyard Info

32



# Pesticide inventory

PMG = Pest Management Guide for commercial grapes published from Virginia Cooperative Extension

FRAC = Fungicide Resistance Action Committee, each FRAC group indicates chemicals in the same group have the same mode of action

REI = Restricted Entry Interval

PHI = Pre-Harvest Interval

33

IPM Select Materials									
<input type="checkbox"/> Material	REI	PHI	FRAC	PM	DM	Ph	BR	Bot	
<input type="checkbox"/> BioLink Boron	0	0		U	U	U	U	U	
<input type="checkbox"/> Calcium				U	U	U	U	U	
<input type="checkbox"/> Calcium				U	U	U	U	U	
<input type="checkbox"/> Coron 28-0-0				U	U	U	U	U	
<input type="checkbox"/> Coron 28-0-0	und	und		und	und	und	und	und	
<input type="checkbox"/> Elemax Boron LC				und	und	und	und	und	
<input type="checkbox"/> Epsom Salts				U	U	U	U	U	
<input type="checkbox"/> Megafol				U	U	U	U	U	
<input type="checkbox"/> New Formulary	und	und		und	und	und	und	und	
<input type="checkbox"/> System-Cal				und	und	und	und	und	
<input type="checkbox"/> Sysstem Seacal				U	U	U	U	U	
<input type="checkbox"/> Sysstem-SeaCal 0-14-0.15				und	und	und	und	und	
<input type="checkbox"/> Ultrasol				und	und	und	und	und	
<input type="checkbox"/> <b>Abound<sup>PMG</sup></b>	4	14	11	P	P	G	E	P	
<input type="checkbox"/> Acoidal				U	U	U	U	U	
<input type="checkbox"/> Actinovate			NC	F	U	U	U	P	
<input type="checkbox"/> Adament 50 WG	12	14		F	G	G_F	E	F	
<input type="checkbox"/> Alette WDG <sup>PMG</sup>	12	15	P07	U	E	U	U	U	

34

Current Material List			
Material	FRAC	REI	PHI
Captan 50 WP	M4	48	0
Cueva	M01	4	0
Dithane DF Rainshield	M03	0	66
Elevate 50WDG <sup>PMG</sup>	17	12	0
Luna Experience <sup>PMG</sup>	07	12	14
Luna Experience <sup>PMG</sup>	03	12	14
Microthiol Dispers <sup>PMG</sup>	M02	24	0
Penncozeb 75DF	M03	24	66
Phostrol <sup>PMG</sup>	P07	4	0
Quintec <sup>PMG</sup>	13	12	21
Ranman <sup>PMG</sup>	21	12	30
Revus <sup>PMG</sup>	40	4	14
Vanguard WG <sup>PMG</sup>	09	12	7
Vivando(R) Fungicide <sup>PMG</sup>	U08	12	14
Rely		0	0
Carbaryl 4L		0	0
Intrepid 2F <sup>PMG</sup>	18	4	30

**Development Notes**

- Japan fungicides will not yet show up because we need a way to link the Japanese farms to their regulatory agency. The view is currently filtered to the EPA list, but

35



# Pesticide application planning aid

36

Year \* Month \* Day \* Application Date \*

2020 May 10

**Blocks to Spray at AHS AREC 2019 MN**

**Block**

AREC 2019 MN CH09

AREC 2019 MN CH13

AREC 2019 MN CS15

<input type="checkbox"/>	Material	REI	PHI	FRAC	PM	DM	Ph	BR	Bot
<input type="checkbox"/>	Captan 50 WP (f)	48	0	M4	und	und	und	und	und
<input type="checkbox"/>	Cueva (f)	4	0	M01	F	G	F	N	P
<input type="checkbox"/>	Dilthane DF Rainshield (f)		66	M03	U	U	U	U	U
<input type="checkbox"/>	Elevate 50WDG (f)	12	0	17	F	U	U	U	E
<input type="checkbox"/>	Luna Experience (f)	12	14	03	E	U	U	E	G
<input type="checkbox"/>	Microthiol Disperss (f)	24	0	M02	G	N	U	N	N
<input type="checkbox"/>	Penncozeb 75DF (f)	24	66	M03	U	G	G	E	U
<input type="checkbox"/>	Phostrol (f)	4	0	P07	U	G	F	U	U
<input type="checkbox"/>	Quintec (f)	12	21	13	G	U	U	P	U
<input type="checkbox"/>	Ranman (f)	12	30	21	U	G	U	U	U
<input type="checkbox"/>	Revus (f)	4	14	40	U	G	U	U	U
<input type="checkbox"/>	Vanguard WG (f)	12	7	09	U	U	U	U	G
<input type="checkbox"/>	Vivando(R) Fungicide (f)	12	14	U08	E	U	U	U	U

37



Scale spray and material volume based on % of full canopy

Scale spray and material volume based on % of full canopy(fraction)

100 %

**Total Volume of Spray**

Total Volume of Spray(gal)

100 gal

**Size of Area**

Size of Area(acres)

1 acres

Notice: This application is designed to be an aid to help your pesticide use planning. However, it is your responsibility to keep, read, and follow the labels and SDS.

Chosen Rate	Material Label Range	Per Tank / Total
<p><b>Rate for Aprovia Top *</b></p> <p>10 fluid oz/acre</p>	<p><b>Aprovia Top</b></p> <p>Label Rate: (8.5 to 13.3 fluid oz/acre)</p> <p>* 100% of full canopy</p> <p>Estimated Amount to Be Sprayed = 8.5 to 13.3 fluid oz/acre in 100 gals of water/acre</p>	<p>10 floz / 10 floz</p>

**Notes**

[Empty text area]

38

**FRAC # of Apps Rating Message**

3	3	2	FRAC 3 has 3 uses on block: Chardonnay You have used the same FRAC with medium or high risk of fungicide resistance 3 times, please revise your schedule.
---	---	---	--

**Warming message based on the number of application for fungicide resistance management**

**Week Beginning Add Event Info FRAC PM DM BR Pho Bot**

02-27 to 03-06	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
03-06 to 03-13	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
03-13 to 03-20	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
03-20 to 03-27	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
03-27 to 04-03	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
04-03 to 04-10	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
04-10 to 04-17	Add Spray	--	--	N/A	N/A	N/A	N/A	N/A
04-17 to 04-24	Add Spray	<b>Date:</b> 04/20/2022 - 00:00 Fungicide workshop - Bud break Ph <a href="#">Print WPS Report</a> / <a href="#">Print Work Order</a> <b>Blocks:</b> Chardonnay <b>Volume:</b> 25 gals <b>Materials:</b> <ul style="list-style-type: none"> <li>Dithane 75DF Rainshield @ 3 lbs</li> </ul> <b>PHI:</b> 2022-06-25 (Dithane 75DF Rainshield ) <b>REI:</b> 2022-04-21 1:00 AM (Dithane 75DF Rainshield ) <small>Note: Pre-Harvest Interval (PHI) and Re-Entry Intervals (REI) are based on the material with the longest interval.</small>	M03	N/A	Good	Good	Good	N/A

**Efficacy of fungicide "mix" against five major diseases**

39

**VT VIRGINIA TECH.**

GrapelIPM.org Home Locations Plan Settings Ag-chems Weather Reports Events My account Log out

## Edit Planned Spray

FRAC 7 has 3 uses on block: Workshop  
You have used the same FRAC with medium or high risk of fungicide resistance 3 times, please revise your schedule.

### App Form

Title \*  
Planned Spray

acres

Year \* Month \* Day \* Hour \* Minute \* Application Start Date/Time \*

2021 Jun 16 0 00

Year \* Month \* Day \* Hour \* Minute \* End Date/Time

2021 Jun 16 1 00

Status

- Planned
- Complete
- Cancelled
- Post-Harvest

Blocks to Spray at Fungicide workshop

40

GrapelPM.org Home Locations Plan Settings Ag-chems Weather Reports Events My account Log out

## IPM Dashboard

Filter Location: AREC 2019 MN CS15

Add Action/Event: - Choose -

### Recent/Upcoming Events

Click here to add a spray event.

Date: 04/24/2020 - 00:00

2020-04-24: AHS AREC 2019 MN - Planned Spray

Blocks: AREC 2019 MN CH09, AREC 2019 MN CH13, AREC 2019 MN CS15

Volume: 4.8 gals

Materials:

- Dithane DF Rainshield @ 1.6 floz

PHI: 2020-06-29 (Dithane DF Rainshield)

REI: 2020-04-24 1:00 AM (Dithane DF Rainshield)

### Latest Weather

Vineyard: AHS AREC 2019 MN

Station: AHS AREC - PP

Last Updated: 07/11/2019 - 10:00

Rain (in.)	Temp (lo / hi / dark)	RH (all/dark)	Wet hrs. (all/dark)
0.0	79.5°F (71.8/88.3/64.9)	82 / 98 %	0.0 / 4.9

Risks

### Shortcuts

- Click here to Add a Vineyard
- How-to ( GrapelPM.org Youtube)
  - Initial Setup
  - Managing Blocks
  - Smartphone Calendar Sync
- 2019 Pest Management Guide - Grapes: Diseases and Insects in Vineyards

### Your Vineyards

Click here to Add a Vineyard

41

Calendar Today < > April 2020

19 20 21 22 23 24 25

My calendars

- Mizuho Nita
- Contacts
- Nita lab
- Relative Humidity Experim...
- Reminders
- Reminders (Nita's)
- Ripe Rot Progress
- Tasks
- Vineyard
- Vineyard Sprays & Ratings
- Work

Other calendars

- AHS Vineyards GraplPM.org
- arec.calendar12@gmail.c...
- Holidays in United States
- Price-420
- Hatzios-Library
- Leaf Disk
- melbycalendar@gmail.com
- Temkin Work Schedule

Events:

- Stay at The Concierge (SUN 19)
- Mizuho in Chicago (MON 20)
- INTERVIEWS LARGE AND S (MON 20)
- TREE FRUIT/INTERVIEW FR (TUE 21)
- Transfer cultures! (THU 23)
- INTERVIEWS SMALL AND L (THU 23)
- AHS AREC 2019 MN: Plann (FRI 24)

42

The screenshot shows a web-based calendar interface for July 2020. A pop-up window displays the following event details:

- Event Title:** AHS AREC 2019 MN: Berry touch - growth on AREC CH09, AREC CH1...
- Date/Time:** Saturday, July 25, 2020 - 7:30 - 7:30am
- Description:** What: AHS AREC 2019 MN - Berry touch - growth on AREC CH09, AREC CH13, AREC CH20, AREC CS15, AREC Organic 20 - 31.5 gals H2O w/ Microthiol Dispers @ 3.15 lbs, Phostrol @ 2.63 pt, Revus @ 8.4 floz, Vivando(R) Fungicide @ 10.8 floz, Carbaryl 4L @ 1.58 qt, PHI:2020-08-08 (Revus, Vivando(R) Fungicide ) REI:2020-07-27 9:00 AM (Carbaryl 4L) View: <http://www.grapeipm.org/live/ipm-live-events/467/spraysuan/53948/maidest=ipm-home>
- Reminders:** 1 day before
- Location:** AHS Vineyards GrapIPM.org

43

**Reporting/reviewing functions**

44

By Material

Material	# of Applications Planned	Amount	Units
Captan 50 WP	2	4.8	
Carbaryl 4L	1	1.2	qt
Cueva	6	514.3	floz
Dithane DF Rainshield	2	4.8	floz
Diuron 4L	1	0.8	floz
Elevate 50WDG	1	0.8	lbs
GlyStar Plus	1	3.2	floz
Intrepid 2F	1	12.8	floz
Microthiol Disperss	8	15.2	lbs
Penncozeb 75DF	7	14.4	lbs
Phostrol	3	4.07	pt
Quintec	2	6.4	floz
Ranman	1	2	floz
Rely	1	65.6	floz
Revus	3	17.6	floz
Vanguard WG	1	8	oz
Vivando(R) Fungicide	2	20.3	floz

Start Date: Is greater than or equal to | End Date: Is less than or equal to | Apply

45

By FRAC

Start Date: Is greater than or equal to | End Date: Is less than or equal to | Apply

2019-01-01 | 2019-12-31

Feature Name: AREC 2019 MN CS15

FRAC	# of Applications Planned
	3
09	1
13	2
17	1
18	1
21	1
40	3
M01	6
M02	7
M03	8
M4	2
P07	3
U08	2
	1

46

**Pesticide Application Event Record**  
 (Click here for work order format)

Start Date: 2022-01-01      End Date: 2022-12-31      [Apply](#)

Date: 04/20/2022 - 00:00  
 Location & Description of Treated Area: Chardonnay - Chardonnay

Brand or Product Name	Active Ingredients	EPA Registration Number	Size or Units Treated	Rate	Total	Applicator Information (name and certificate #)	REI Duration (#hours) / Expiration (date/time)
Dithane 75DF Rainshield	Mancozeb,	62719-402	1 acres	3.00 lbs/acre	3.00 lbs	Mizuho Nita, #111453-G	24

Date: 04/27/2022 - 00:00  
 Location & Description of Treated Area: Chardonnay - Chardonnay

Brand or Product Name	Active Ingredients	EPA Registration Number	Size or Units Treated	Rate	Total	Applicator Information (name and certificate #)	REI Duration (#hours) / Expiration (date/time)
Orius 20AQ	Tebuconazole	66222-128	1 acres	8.60 fl oz/acre	8.60 fl oz	Mizuho Nita, #111453-G	12

47

**Event recording and tracking**

48

**VT VIRGINIA TECH.**

1&1 Login SCRI Trunk VT AHS NEWA Nita lab GrapeIPM NitaLab SAS\_OD HOBOLink GScholar NPIRS Public

**Add Action/Event**

- Choose -
- Choose -
- agchem
  - Fertilizer Applied
  - Lime Application
- agman
  - Fruit chemistry sample
  - Harvest
  - Petiole Sample
  - Pruning/Canopy Management
- plant\_ipm
  - Disease Report
  - Frost Damage
  - Hail Damage
  - Insect Damage
  - Spray Injury
  - Vineyard Scouting Form
- vitis
  - Bloom
  - Bud Break
  - Bud Swell
  - Bunch Closure

Volume: 100 gals  
Materials:

- Abound @ 10 floz

  
PHI: 2021-06-09 (Abound)

Vineyard  
org Youtube)  
cks  
Calendar Sync  
ect Damage Events  
ent Guide - Grapes: Diseases  
ards  
agement information (Mizuho's  
to the latest PMG)

ards

eyard

Boonsboro  
Harper's Ferry  
Charles Town  
Leesville  
Ash  
Gainesville

49

**VT VIRGINIA TECH.**

Year \* Month \* Day \* Event Date/Time \*

2021 Feb 22

Sub-Area

Location  
Workshop

Share Event Info?  
Share County/City in Community Reports

Leaf Samples

Black Rot (leaf)  
0 %

Powdery Mildew (leaf)  
0 %

Phomopsis (leaf)  
0 %

Anthracnose (leaf)  
0 %

Downy Mildew (leaf)  
0 %

Botrytis (leaf)  
0 %

50

## Spotted Lanternfly (SLF)

- Mass invasion observed in 2022 surrounding Winchester, VA
- Their range has been expanded in various parts of VA

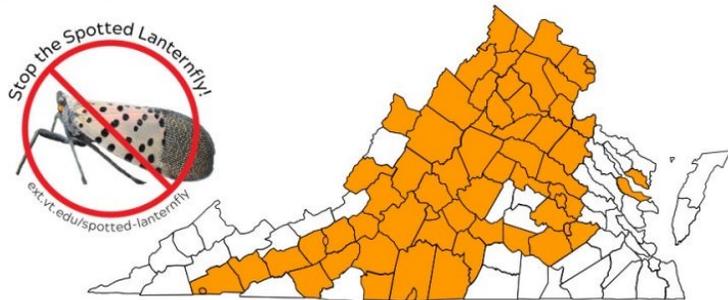


51

### How to minimize the movement of SLF?

- Make sure to check vehicles when you are visiting the infested area in the Fall. They are known to be a good hitch hiker.

Currently Known Distribution of Spotted Lanternfly Populations in Virginia,  
1 October 2025



**Orange** Spotted lanternfly is present in these locations

**Note:** The Spotted Lanternfly Quarantine was repealed on Mar 27, 2025, and is no longer in effect in Virginia. \*Other states still have quarantines.\*

52



## Spring SLF management

- Wait until they move into leaves and shoots (~ mid-May in our areas)
- One spray will cover it.
- Delect materials to hit more than one species.
  - Scorpion/Venom (dinoteferan) for both SLF and mealybugs (leaf roll virus)
  - Admire Pro (imidacloprid) for SLF, mealybugs, and sharpshooters (Pierce's Disease)
    - The rate might be low for mealybugs.

53



## Fall SLF management (late-July to harvest)

- More than a few applications might be necessary, depending on the population level, which changes year to year.
  - Mustang Maxx could be a good choice at Brix 15 + one week after it to knock down fruit flies (sour rot)
  - Seven could be a good option if you also see Japanese beetle.
- Keep eye on the legal limitations! (e.g., Dinoteferan is limited to 2 applications/year)

Spotted lanternfly	Brigade eVo	3.2-6.4 oz	Adults begin to appear in mid-July, and will be present through most of the fall. A provisional action threshold is 5-10 adults per vine. Assess frequently; continued re-immigration is a problem with SLF. Adults may develop high numbers on surrounding Ailanthus before moving into vineyard blocks. Pay close to attention to PHI and season maximum applications or amount of material per season.
	Actara 25WDG	1.5-3.5 oz	
	Scorpion 35SL	1.25-5.0 fl oz	
	Admire Pro (G)	1.0-1.4 fl oz	
	Mustang Maxx (G)	4 fl oz	
	Sevin XLR Plus	1.0-2.0 qt	
	BoteGHA ES ★	3 qt	
	PFR-97 20WDG ★	1-2 lb	

54



## Our K-9 projects: Detection of Spotted Lanternfly and Grape Powdery Mildew

- We are awarded with another grant to work on Extension training materials
- Keep eye on our updates!



55



## Resources



- My blog: I will update this presentation
- You will also find links to other resources dicussed today.

56



## Our workshops

### Grape IPM workshops (Fee: \$20, Check ONLY)

- 3/4/2026: Nelson Co. Extension Office
- 3/11/2026: Loudoun Co. Extension Office
  - Viticulture: Drew Harner (9–10 AM)
  - Entomology: Doug Pfeiffer (10–11 AM)
  - Weed Science: March 4: Ram Yadav (11:00 AM–12:00 PM), March 11: Jefferey Derr (11:00 AM–12:00 PM)
  - Pathology: Mizuho Nita (12:30–1:30 PM)
  - Agricultural Economics with Mario Ortez (1:30–2:15 PM)
  - Research updates and open discussion (2:15– 3:45 PM)

**Disease/Pest ID workshop** (No fees, but registration is required, language translation available)

- 3/13/2026: Loudoun Co. Extension Office, 10 AM- Noon



57



## Monthly Viticulture Meeting



Please keep eye on our newsletters and other information.

You can subscribe to it via sign-up email through my blog (or email me.)



1<sup>st</sup> or 2<sup>nd</sup> Thursday from April?

58

## Acknowledgements

- Thank you to all my lab members for your help in this project
  - Jonathan Ames
  - Ian Mclellan
  - Tremain Hatch
  - Akiko Nita
  - Akiko Mangan
- Additional thanks to funding agencies for their gracious support
  - Virginia Wine Board (#25-20)
  - Southern Region Small Fruits Consortium
  - Southern Sustainable Agriculture and Education



59

## Quiz time!



- Just kidding 😊
- Three questions to help us understand the effectiveness of our talk.

60



## Question? And a Survey Please!

**It has only 3 questions.  
Please fill out!**

