Delivery of weather and pest information via eNEWA

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NEWA - Network for Environment and Weather Applications

• Web-based, provides weather and pest model data from weather stations across New York State & seven surrounding states

• Now using Rainwise MKIII SP1 Weather Stations

http://newa.cornell.edu
RainWise weather stations

Solar-powered & gauge:

• Temperature
• Precipitation
• Relative humidity
• Leaf wetness
• Solar Radiation
• Wind speed & direction
• Barometric pressure
What is NEWA doing?

NEWA...

• summarizes and displays weather data
• displays pest forecast model results
• links to pertinent information
• displays and links to National Weather Service weather radar images and weather forecasts
NEWA Home Page
Accessing Info via Station Pages

Station Page forecasts use default biofix dates to provide last download date results. For prior years, other biofix dates, locations and models, choose from Pest Forecasts or Crop Management on the main menu.

Highland HVL Pest Forecasts

- Apple Scab
- Fire Blight
- Sooty Blistch/Flyspeck
- Leaf Weevil Events
- Spotted Tolkien Leafminer
- Oriental Fruit Moth
- Codling Moth
- Plum Curculio
- Oleander Aphid
- Apple Maggot
- Grape Maggot
- Grape Berry Moth
- Grape Downy Mildew
- Grape Brown Moth
- Onion Maggot
- Onion Disease Forecast
- Onion Disease Leaf
- Onion Disease Seedling
- Onion Blossom Blight
- Early Blight
- Late Blight
- Downy Mildew
- Tomato Bacterial Blight
- Tomato Tungro
- Late Blight Stemcast

Station Location

- Lat/Lon: 41.78/73.97
- Elevation: 436 ft.

Last Download

- 2/10/2015 7 AM

Station Sensors

- Temperature
- Leaf Wetness
- Precipitation
- Relative Humidity
- Wind Speed
- Wind Direction
- Solar Radiation

Statewide and Regional Pest Forecasts
The Problem

• LERGREP, Inc. identified increasing the use of NEWA resources as a priority for their research and extension funding.
The Response

• Determine why growers did not use NEWA
  • Not computer savvy
  • Don’t have the time
  • Don’t have a weather station near me
The Response: Part 2

- Develop an easier way to access information
  - eNEWA – grapes was developed based on eNEWA alerts for apples
  - A daily email containing weather and pest model information pertinent to grape growers was developed
eNEWA - grapes

• Daily email during the growing season
  • Weather info
  • Pest model info (diseases and grape berry moth)

• Cue to visit website if more info is needed
eNEWA grape provides

• 5-day Forecast for GDD (base 50F)
• Previous two days and current infection events for powdery mildew, black rot, Phomopsis
• Pest status and pest management information for grape berry moth
• **Does not** provide downy mildew model info
Ithaca - June 6, 2013

Past & Current Weather Data

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<th>Jun 4</th>
<th>Jun 5</th>
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5-day Forecast

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Past & Current GDD (base 50°F)

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<td>5.0</td>
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Powdery mildew model on eNEWA

**Powdery Mildew**

Estimated phenological stage: 10 inch shoot

**Disease Management:** A lot of powdery mildew the previous year = More primary inoculum to cause infections this spring. The model logs potential primary infection events. **CAUTION:** Prolonged cloud cover (lack of sunshine), high RH (>60%) and warm (83-89°F) weather significantly increases the risk of powdery mildew infections. Do not delay sprays beyond the 10 inch shoot growth stage for highly susceptible *V. vinifera* and hybrid varieties. Do not delay sprays beyond the immediate pre-bloom stage on Concord and other moderately to slightly susceptible varieties.

Fruit is extremely susceptible to powdery mildew from immediate pre-bloom through fruit set. This is the most critical period to protect from fruit infections. Management programs should be at their peak, emphasizing the use of effective fungicides, full rates, appropriate spray intervals, and superior spray coverage.

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<th>Past &amp; Current Infection Events</th>
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Grape Berry Moth model on eNEWA
The Evaluation

- EOS survey had 24 of 47 responding (51%)
- 92% of responses indicated that eNEWA – grapes was helpful in implementing their IPM practices (great or above average)
Grower Quotes

• “NEWA is a great source of information, it gives you a great road map to follow and still allows you to make your own decision based on the information

• Overall, I think it was a good program. I found the delivery of information to be timely and the content helped me with my management decisions. I liked that it came to my email and the information was already compiled for me
Take Home Messages

• Need to educate growers on the value (only 36% of growers indicated they would be willing to pay $5/month for eNEWA-grape)

• Need to develop a true alert system

• Effective method of relaying info for IPM

• Not a cure all. Growers may still need assistance

• Should be considered a gateway to NEWA website for more specific pest model information
Questions?

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