Key Insect Pests to Monitor in Fruit

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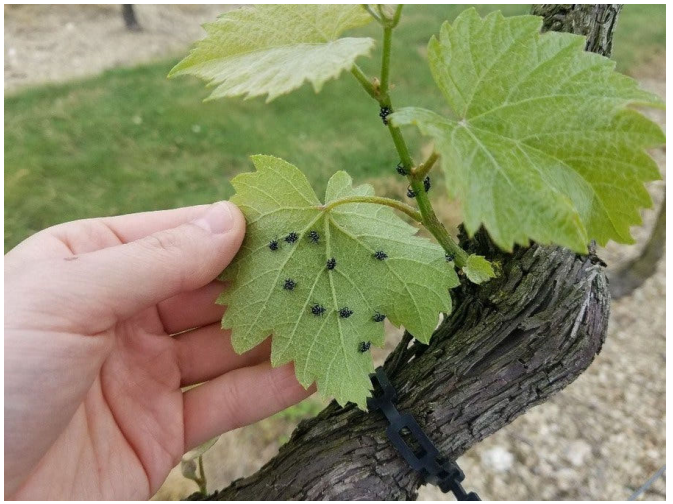
Grapes and Vineyards # 1

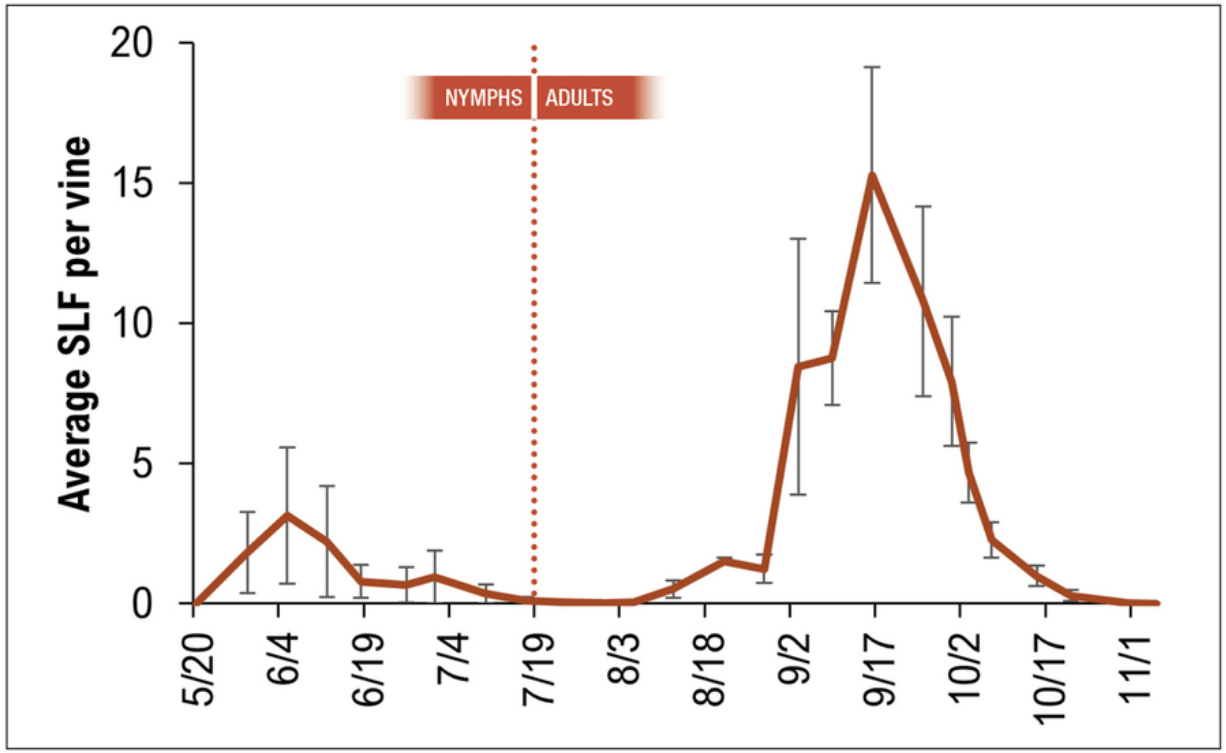
Grapes and Vineyards # 1: Spotted Lanternfly



Photos by Heather Leach

Spotted Lanternfly: Watchout for Adult Migration

- Adult activity concentrated on edge rows
- Check posts, trellis equipment, and cordons for egg masses



SLF Treatment Recommendations

- Nymphs not as damaging as adults, fairly easy to kill with broad spectrum insecticides (Pyrethroids, OP's, Carbamates, Neonics)
- Probable target is 10+ per vine
- Hatch is staggered, wait 2-3 weeks after first hatch (other pests may be active at this point). DE 2023: first hatch April 22
- Adults: border treatments, target 5-10 per vine
  - Bifenthrin, beta-cyfluthrin up to 7 d
  - Danitol up to 21 d
  - Mustang: knock down only
  - Neonics: 3-5 d
  - OP and carbamates: knock down only
  - PHI's vary from 1-30 days

Photo by Katarzyna Madalinska

Grape and Vineyards # 2

Grapes and Vineyards # 2: Japanese Beetle

The most significant defoliator of grapes

Grapes can take a beating. Threshold estimates vary between 15 and 30%

Beetle traps tend to make problems worse

Controlling Japanese Beetles

- Focus efforts on younger plants and on vineyard edges
- Exhibit varietal preferences

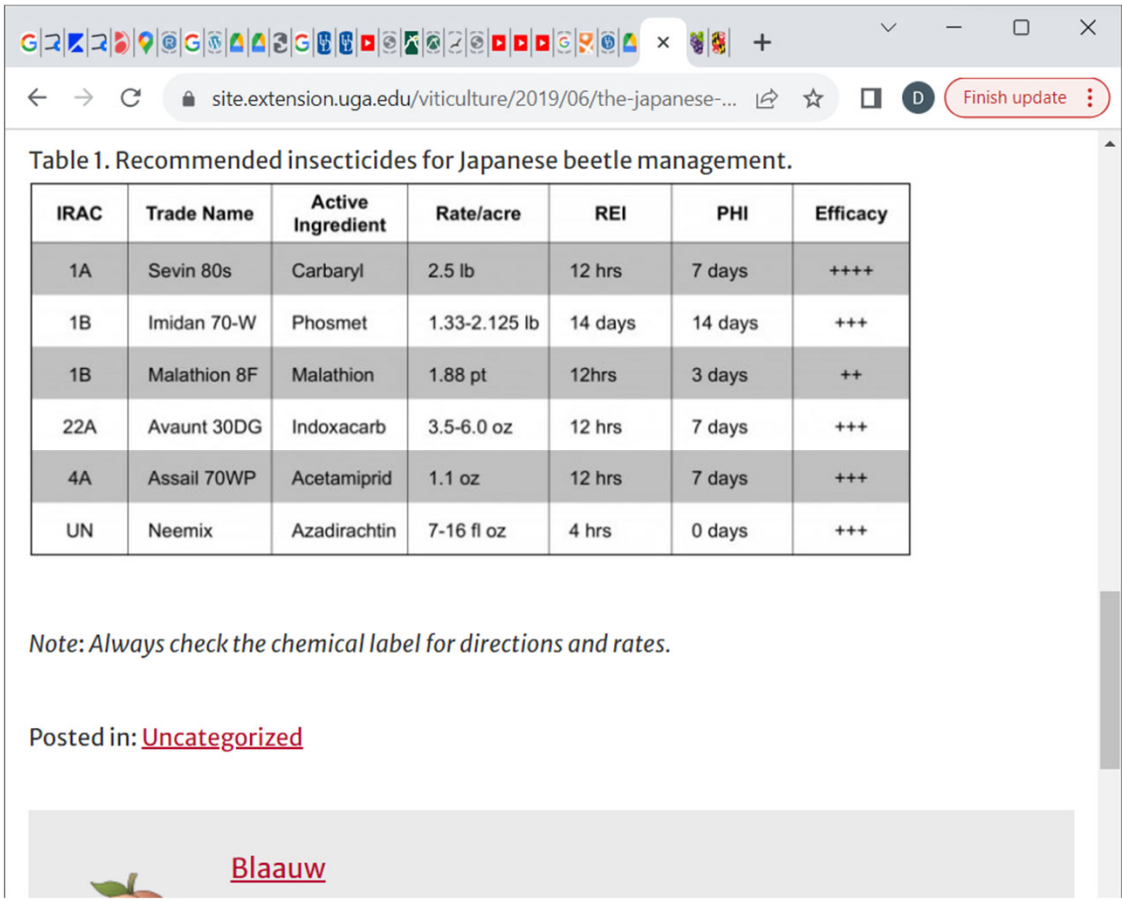


Table 1. Recommended insecticides for Japanese beetle management.

IRAC	Trade Name	Active Ingredient	Rate/acre	REI	PHI	Efficacy
1A	Sevin 80s	Carbaryl	2.5 lb	12 hrs	7 days	++++
1B	Imidan 70-W	Phosmet	1.33-2.125 lb	14 days	14 days	+++
1B	Malathion 8F	Malathion	1.88 pt	12hrs	3 days	++
22A	Avaunt 30DG	Indoxacarb	3.5-6.0 oz	12 hrs	7 days	+++
4A	Assail 70WP	Acetamiprid	1.1 oz	12 hrs	7 days	+++
UN	Neemix	Azadirachtin	7-16 fl oz	4 hrs	0 days	+++

Note: Always check the chemical label for directions and rates.

Posted in: Uncategorized

Blaauw

Grapes and Vineyards # 3

Grape Root Borer

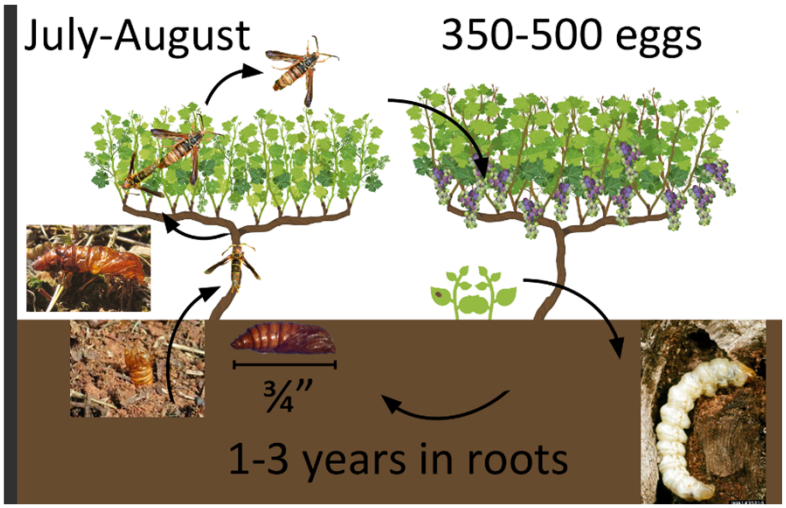
- Vine health declines after 2-5 years.
- Adults emerge mid-late July and lay hundreds of eggs
- Larvae live underground 2-3 years
- Once one of our great uses for Lorsban

Grape Root Borer Monitoring

- Pheromone trapping: presence/absence
- Looking for pupae
- 5% infested vines

Grape Root Borer Management

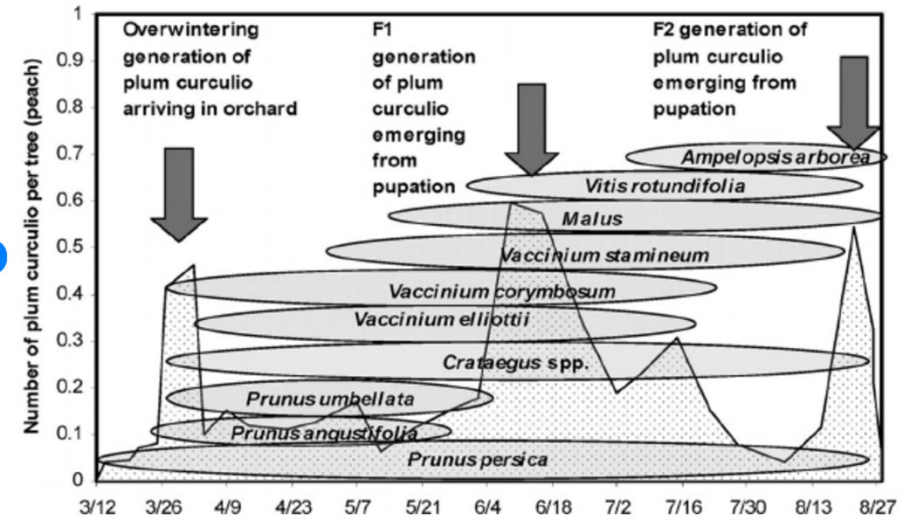
- Mounding soil up near base of vines 8-12” deep around first two weeks of July.
- Keep area around vine base weed free: harder for larvae to establish
- Mating Disruption?



Tree Fruit Pest # 1

Plum Curculio

- 2 generations
- Larval infestation
- Fruit feeding – 100+ fruit punctures



Phenology of selected fruit and adult plum curculio population ßuctuations in a peach orchard in 2003. Fruit phenology is an approximation based on observations of when fruit was available in central Georgia.

Jenkins et al. 2006; Georgia

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Article Contents

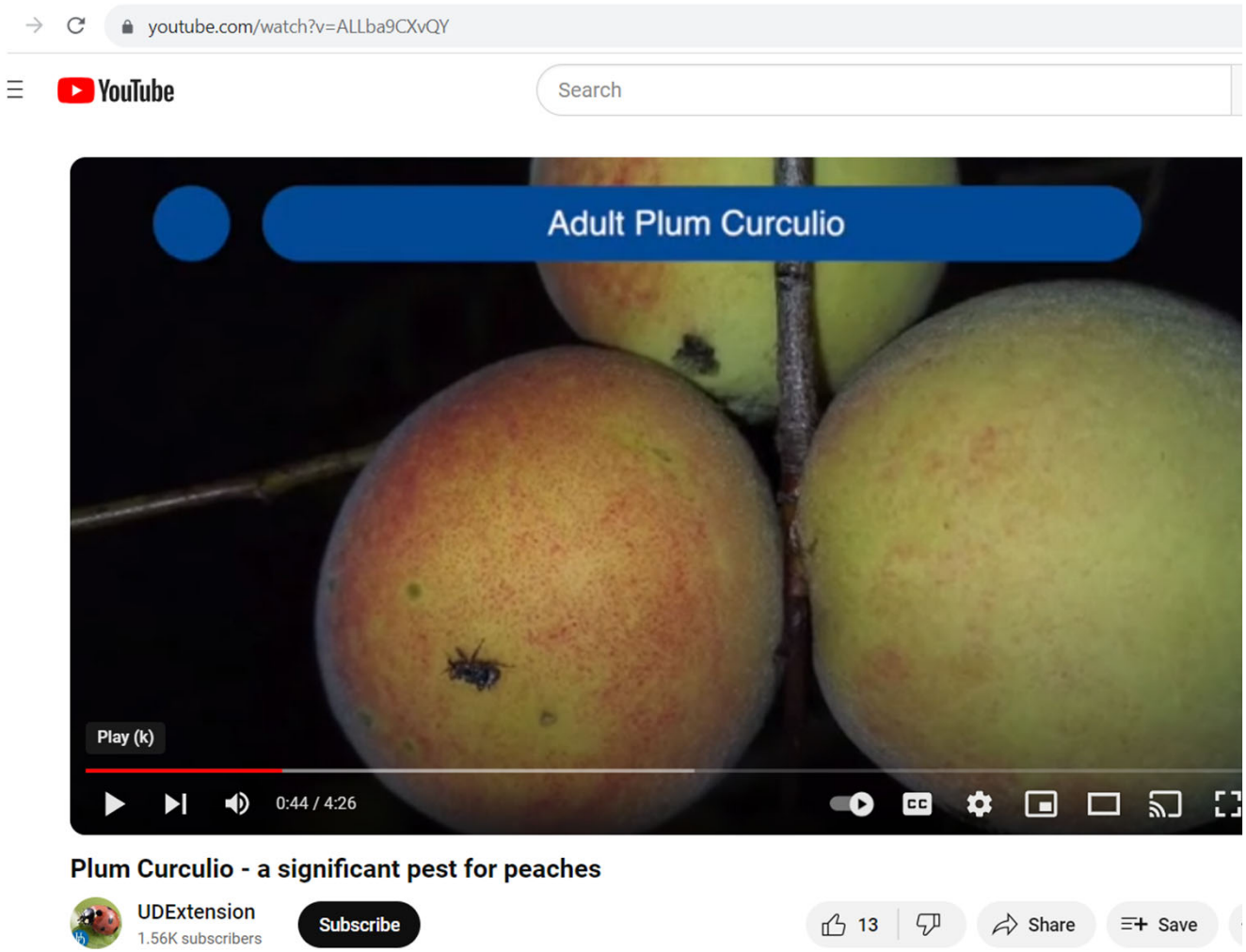
JOURNAL ARTICLE

A Review of the Biology, Ecology, and Management of Plum Curculio (Coleoptera: Curculionidae)

Timothy P Lampasona ✉, Cesar Rodriguez-Saona, Tracy C Leskey, Anne L Nielsen

Journal of Integrated Pest Management, Volume 11, Issue 1, 2020, 22,
https://doi.org/10.1093/jipm/pmaa018
Published: 10 November 2020 Article history ▾

Plum Curculio



Plum Curculio

- Avaunt – most IPM friendly material – use first, must be ingested
- Neonics – use well after petal fall, 250-400 DD, antifeedant
- If fruit damage, curative treatments: neonics and Ops
- Other materials: Venerate (OMRI), Apta, and suppressive materials labeled for and used for other pests (Rimon petal fall, Verdepryn, Exirel,
- Scout for damage in late June - July from first generation adults
- https://www.canr.msu.edu/news/effectively_controlling_plum_curculio_in_stone_and_pome_fruits

Tree Fruit Pest # 2

Photos by Haily Shanovich, U. Minnesota

udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/pest-management/insect-trapping/#:~:text=The%20University%20of%20Delaware's%20Exten...

Finish update

PEST MANAGEMENT INSECT TRAPPING

COOPERATIVE EXTENSION

HEALTH & WELL-BEING +

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Insect Trapping Program

IPM Hot Topics

Commercial Field Crop Insect Management

Commercial Field Crop Disease Management

Commercial Fruit & Vegetable Crop Pest Management

EIPM Implementation Projects

Pollinators

Research and Extension Demonstration Results

agdev.anr.udel.edu/trapsb/trap.php

INSECT TRAP INFORMATION

The University of Delaware's Extension IPM Program provides in-season insect trap information to help producers, agribusiness and consultants make informed insect management decision in field and vegetable crops.

Traps are monitored twice a week and current trap catches are posted on this website. The main pests monitored include corn earworms (CEW) , European corn borers (ECB), and true armyworm (TAW), and stink bugs.

Links for decision making information

- Action Thresholds for Silk Stage Sweet Corn
- ECB and CEW moth catch thresholds for processing snap beans

Local

- UD IPM Black Light and Pheromone Trap Counts (European Corn Borer & Corn Earworm)
- True Armyworm Black Light Trap Counts
- Stink Bug Black Light Trap Counts

BMSB monitoring

- 5-10 cumulative stink bugs per trap
- Other stink bugs may or may not be attracted to the lures used for BMSB
  - 1 per limb, shake upper border tree limbs
- Greens susceptible to all pyrethroids
- BMSB, BSB bifenthrin or OPs

Tree Fruit Pest # 3 ?

- Coddling Moth
- Scales
- Mites
- Aphids
- Borers

April 13-20

San José scale damage on apple fruit (left). San José scale black cap stage (center), female (upper right) and male (lower right). [Photos courtesy of Greg Krawczyk (Penn State University), E. Beers (Washington State University) and S. Schoof (North Carolina State University).]

Strawberry Pest # 1

Tarnished Plant Bug

- Mis-shapen fruit
- Nymphs small, aphid like, green
- Adults mottled brown
- 1 TPB/ 20 plants OR 30 flower clusters
- Easier to see on a black background – beat on a sheet or on plastic
- Tend to be more problematic on later berries
- Plethora of good insecticides, Beleaf is the most pollinator-friendly, Apta has powdery mildew activity

Strawberry Pest # 2

Photo by T. Bilbo, Clemson

Photo by Surendra Dara

Two Spotted Spider Mite

- Management begins in fall – check plugs, scout before putting winter covers on
- 10 mid-canopy leaflets/acre.
  - 5 mites/leaflet in fall
  - 10 mites/leaflet in spring before fruit ripening
  - 15-20 mites/leaflet as harvest approaches
- Predatory mites can be useful, use early

Mites in Strawberries

- Can become mites in other crops!

Strawberry Bonus Mite

deformed, shrivelled fruit

Young, deformed, shrivelled leaves

Cyclamen Mite

- Extremely Small! 20-40x
- Tend to peak in early spring
- Look at midveins of young unfolded leaves and under calyx of flower buds
- Threshold: 10% infested plants
- Infestations tend to come in from nurseries

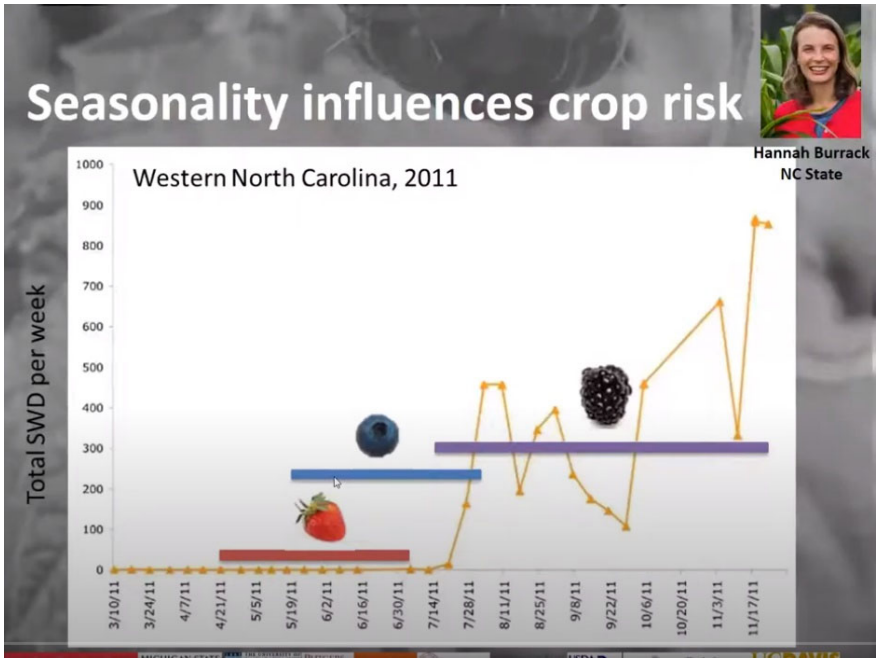
Strawberry Pest # 3

Spotted Wing Drosophila

- Strawberries are one of the most favored hosts between raspberry and blackberry (Burrack et al. 2013)

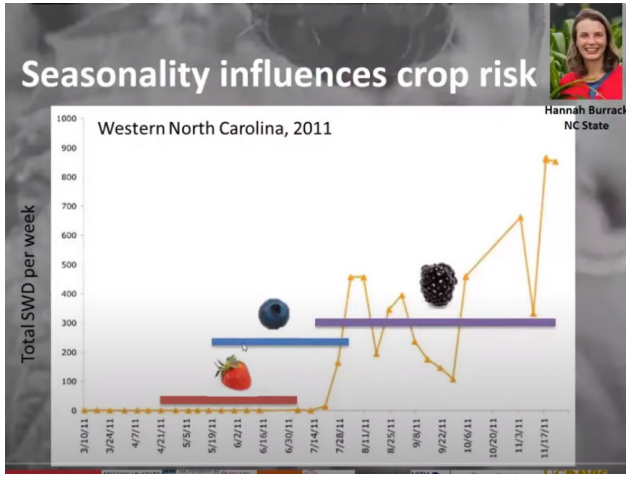
- Spotted Wing Drosophila – Trapping generally doesn't catch this one until late May/early June

Photos by Hannah Burrack, NCSU



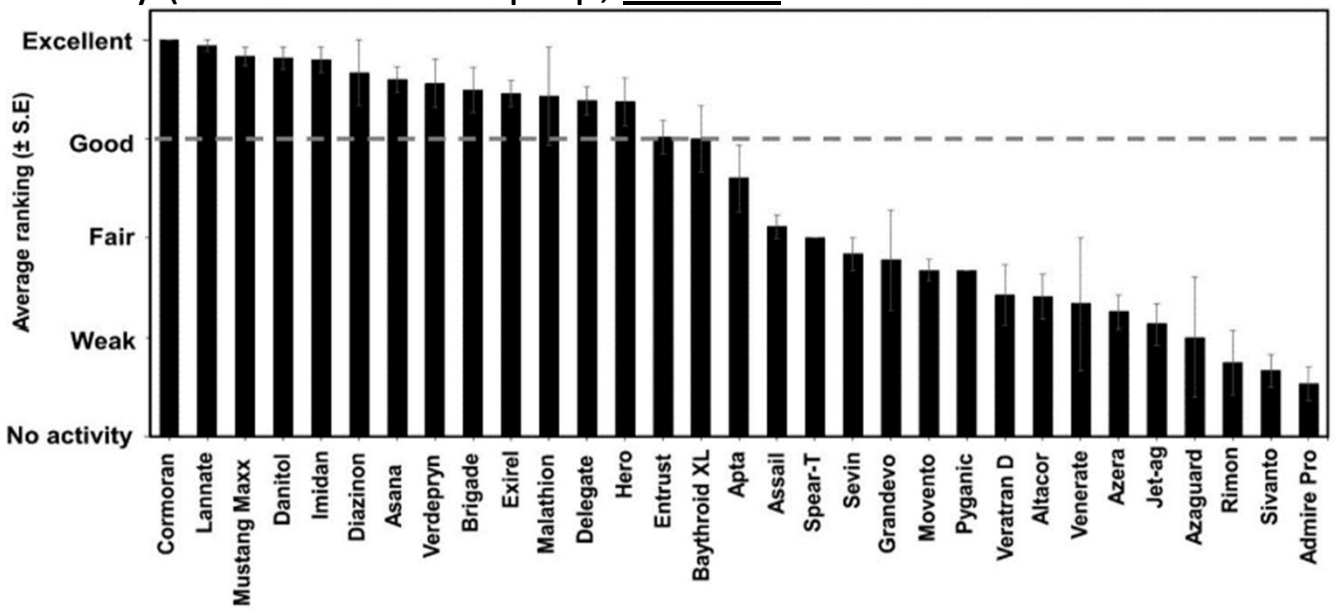
SWD in Strawberry

- Day neutral varieties or late varieties could see damage
- Most significant pest of blueberries and caneberries
- Biggest threat to primocane bearers



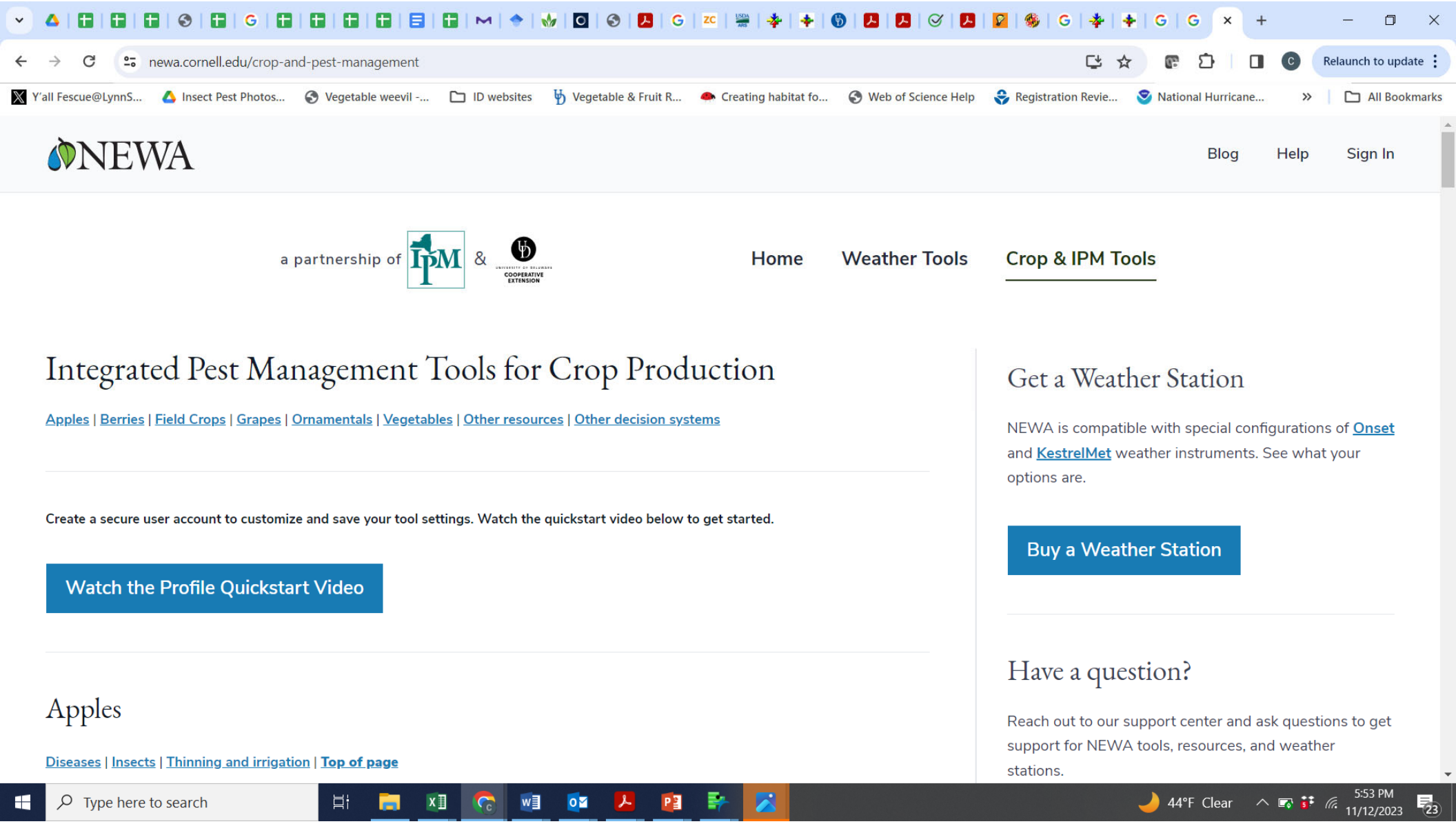
Spotted Wing Drosophila Chemical Management

- In commercial plantings, managed for SWD, fly infestation concentrated in ripe fruit.
- **Pyrethroids** generally excellent, some minor differences among them
- Hit them hard early (Mermer et al. in prep; curative: Andika et al. 2020 J. Economic Entomol. 113: 2372-2379)



NEWA Weather Tools

- Useful for tree fruit pests for calculating GDD
- Timing seedcorn maggot (base 39)
- Timing squash vine borer ~ 1,000 degree days


newa.cornell.edu/crop-and-pest-management
Relaunch to update
Y'all Fescue@LynnS...
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Vegetable weevil -...
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IPM
&
COOPERATIVE EXTENSION
Home
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Vegetables

Top of page

Beet Cercospora Leaf Spot. Manage Cercospora leaf spot (*Cercospora beticola*) in table beet with this tool that predicts 2-day, 14-day, 21-day, and season-long infection risk.

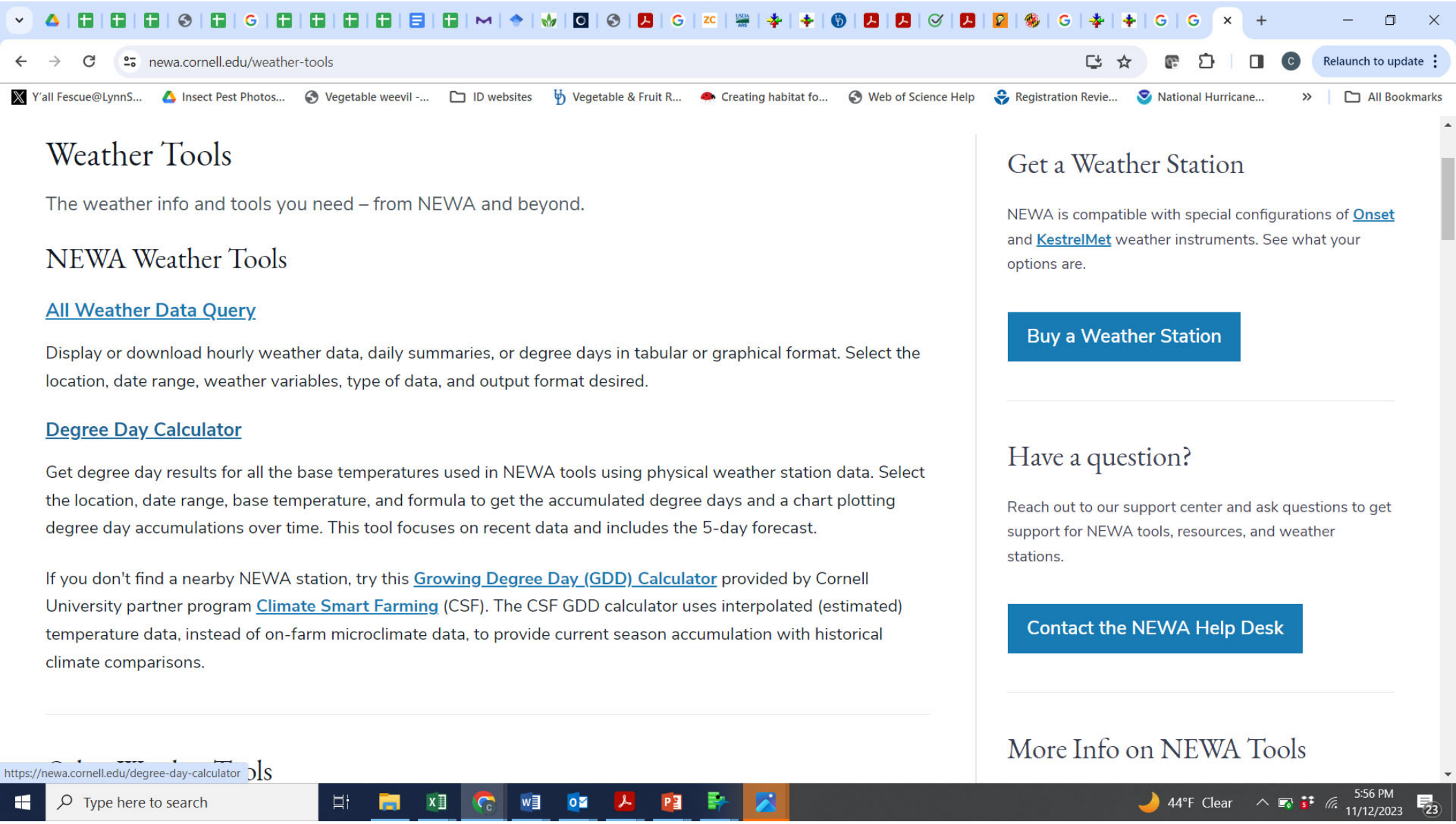
Cabbage Maggot. Use base 40°F BE degree days to identify the critical treatment timing before cabbage maggot (*Delia radicum*) can infest your crucifer crops. Treatment guidelines include organic options.

Onion Diseases. These risk assessment tools forecast the infection potential for Botrytis leaf blight or blast (*Botrytis squamosa*), onion downy mildew (*Peronospora destructor*), and purple blotch (*Alternaria porri*).

Onion Maggot. Monitor base 40°F BE daily and accumulated degree days to track critical treatment timing for onion maggot (*Delia antiqua*) to protect your crop from this pest.

Potato Diseases. **(Legacy resource)** Ascertain infection risk using P-days for early blight (*Alternaria solani*) and Blitecast for late blight (*Phytophthora infestans*) to assess the need for targeted management.

Tomato Diseases. **(Legacy resource)** Manage tomato diseases more effectively using TOMCAST for early blight (*Alternaria solani*), Septoria leaf spot (*Septoria lycopersici*), and anthracnose (*Colletotrichum coccodes*) and using Blitecast for late blight (*Phytophthora infestans*) to identify infection risk.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Web of Science Help
Registration Revie...
National Hurricane...
All Bookmarks
Weather Tools
The weather info and tools you need – from NEWA and beyond.
NEWA Weather Tools
All Weather Data Query
Display or download hourly weather data, daily summaries, or degree days in tabular or graphical format. Select the location, date range, weather variables, type of data, and output format desired.
Degree Day Calculator
Get degree day results for all the base temperatures used in NEWA tools using physical weather station data. Select the location, date range, base temperature, and formula to get the accumulated degree days and a chart plotting degree day accumulations over time. This tool focuses on recent data and includes the 5-day forecast.
If you don't find a nearby NEWA station, try this Growing Degree Day (GDD) Calculator provided by Cornell University partner program Climate Smart Farming (CSF). The CSF GDD calculator uses interpolated (estimated) temperature data, instead of on-farm microclimate data, to provide current season accumulation with historical climate comparisons.
Get a Weather Station
NEWA is compatible with special configurations of Onset and KestrelMet weather instruments. See what your options are.
Buy a Weather Station
Have a question?
Reach out to our support center and ask questions to get support for NEWA tools, resources, and weather stations.
Contact the NEWA Help Desk
More Info on NEWA Tools
https://newa.cornell.edu/degree-day-calculator
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Y'all Fescue@LynnS... | Insect Pest Photos... | Vegetable weevil -... | ID websites | Vegetable & Fruit R... | Creating habitat fo... | Web of Science Help | Registration Revie... | National Hurricane...

NEWA

WATCH TUTORIAL

All Stations

Georgetown (REC), **DE**

Start Date

01/01/2023

End Date

03/10/2023

Degree Day Type

Base 39°F

Also try the **Cornell Climate Smart**

DATE	DAILY	FROM JAN 1
Mar 2	13	370
Mar 3	12	381
Mar 4	13	394
Mar 5	5	399
Mar 6	4	403
Mar 7	6	409
Mar 8	2	411
Mar 9	3	414

Accumulated Degree Days

Download PNG

Type here to search

44°F Clear

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11/12/2023

Regulatory Update

- Chlorpyrifos: November 2, 8th Circuit Court of Appeals vacated EPA's decision to revoke all food tolerances. EPA will be issuing a rule to revoke all tolerances except for 11: alfalfa, **apple**, asparagus, tart cherry, citrus, cotton, **peach**, soybean, **strawberry**, sugarbeet, and wheat
- Court's mandate has not been officially published as of Dec 19, EPA will act on restoring tolerances once it has.
- Most useful use for fruit growers is against peach tree borer

Acknowledgements

- USDA NIFA CPPM EIP 2021-70006-35651

- 2023 Crew: **Morgan Malone,** Calista Turman, Irene Ernest, Danielle Watkins, Jase Hudson, Richard Monaco

- **Bennett Orchards, Fifer Orchards, Redemption Farms Thousand Acre Farm**