In the Vineyard

The earliest varieties in our Teaching Vineyard to reach budbreak every year are Jupiter (seedless variety) and Marquette. Their typical budbreak dates over the past several years have been in the first week of May, although they were about one week earlier than that last year. Based on their progress at this point, it looks like they will reach this first phenology stage right about when they usually do. For our purposes, we declare the date of budbreak to be when 50% of the buds on our sentinel vines have the tip of the first leaf starting to pull away from the rest of the bud. The picture of the Jupiter buds (below left) shows one that is right at this stage.

Most of the other varieties at the Vineyard are at various stages of budswell thanks to this past weekend’s warmth, with most having at least pushed bud scales off at this point. A grower at last night’s Spring IPM Meeting said that he had seen wild grape buds well past budbreak yesterday, so ready or not, here comes the 2022 season.

Temperatures Tuesday April 26, stayed just above freezing according to the NEWA weather stations located in several vineyards around the Finger Lakes. There is still the chance of low temperatures going below 32°F Wednesday and tonight night in some colder spots, particularly around Keuka Lake. The greatest potential for damage at this point would be in cultivars that have deacclimated the most and are closest to budbreak, and particularly on buds closer to the ground where cold air can settle. Later varieties like Riesling, Cabernet franc, Vidal and others should be at pretty low risk based on the current forecasts. Growers with wind machines might want to be sure that they are set up to operate in case temperatures get lower than the current predictions.
Thanks again to everyone who participated in yesterday’s Spring Grape IPM Meeting. I especially want to acknowledge and thank:

- John Wagner and everyone at Wagner Vineyards for hosting the meeting in their new enclosed space off the tasting room and helping us get things set up for the meeting.
- Ginny Lee and her crew from the Ginny Lee Café for the great food and their hospitality.
- Our sponsors who helped to support the meeting this year:
  * Nutrien Ag
  * NYS Wine Grape Growers
  * JMS Flower Farms
  * AgBiome
  * FMC
  * Crop Growers
  * Certis Biologicals
  * BioSafe Systems
  * LandPro Equipment
  * Marrone Bio Innovations
- Our speakers – Katie Gold, Lynn Sosnoskie, Greg Loeb and Chris Wainwright
- Donald Caldwell and Brittany Griffin with the FLGP

It was great to have this meeting in person and seeing everyone in three dimensions again after two years of holding it over Zoom. It’s my favorite event that we hold, and based on the registration and turnout yesterday, it’s still pretty popular with grape growers in the Finger Lakes as well.

I have included electronic versions of the handouts distributed by Katie Gold (Disease Management) and Lynn Sosnoskie (Weed Management) at yesterday’s IPM meeting with this week’s Vineyard Update.

Katie’s annual Grape Disease Update newsletter is also available now at [https://blogs.cornell.edu/goldlab/lab-news/annual-grape-disease-control-update-spring-2022/](https://blogs.cornell.edu/goldlab/lab-news/annual-grape-disease-control-update-spring-2022/)

*Pest Management Concerns at Budswell* (links to online version of the Grape IPM Guidelines; requires paid subscription)
fully developed and separated, the pests are not much of a threat to them, meaning there is a fairly short window where they could have an impact.

Climbing cutworm larvae emerge from the litter and soil at the base of the vine at night to feed on the buds, and return to the ground before dawn. When they are done feeding on the bud, it can look like a small cup was left where the bud used to be (see photo to left).

Grape Flea Beetles overwinter as adults and also emerge in the early spring, feeding on swelling grape buds before laying their eggs. The larvae will feed on young leaves later in the spring. Like cutworms, we rarely see enough of them to justify any insecticide applications, but it is not unheard of for large numbers to show up out of nowhere. Again, some quick scouting can help to determine if there is enough damage in order to take action.
Grape Disease Control, Spring 2022

Katie Gold
Assistant Professor of Grape Pathology, Cornell University
katiegold@cornell.edu

Read my full Spring 2022 Grape Disease Control Guide by taking a picture of the above QR code or visiting the below link:
https://blogs.cornell.edu/goldlab/lab-news/annual-grape-disease-control-update-spring-2022/

Fungicide News

Cevya: Cevya (mefentrifluconazole) is a DMI fungicide (FRAC 3) from BASF recently labeled for use in NY as of the 2020 season for powdery mildew and black rot control. All variety restrictions have been removed from the Cevya label - it is now available for use on Concord and other juice grape varieties. All new product shipping now has the new label on the jug. Any product sitting in inventory from last year still has the old label on it, however product from 2021 can be used on all grape varieties if the grower has the new label on hand when they are making applications to those previously restricted varieties. Cevya provided good-excellent powdery mildew control over four years of trials at Cornell. In a one-year trial at Penn State University it provided excellent black rot control.

Howler: Howler is a new biopesticide from AgBiome recently labeled for powdery mildew, downy mildew, and Botrytis control. The active ingredient is the bacteria *Pseudomonas chloroaphis* strain AF5009. We tested this product for powdery mildew, downy mildew, and Botrytis control in 2020, 2021, and will again in 2022. Howler performed well in rotation with commercial standard for PM control, provided good Botrytis control, and moderate downy mildew control.

Romeo: Romeo is a new biopesticide from Wilbur-Ellis recently labeled in grape for powdery mildew and downy mildew control as of the 2020 season. Romeo provides moderate powdery mildew control and fair downy mildew control (2y of study), we are evaluating it this year for black rot and Botrytis control.

Stargus: Stargus is a recently released biopesticide from Marrone BioInnovations. The active ingredient is the bacteria *Bacillus amyloliquefaciens* strain F727 and was selected intentionally to improve the performance of Marrone’s workhorse product Regalia. Stargus is labeled for use in grapes and was tested at UC-Davis for Botrytis efficacy (moderate). We tested this product in 2020 and it provided good powdery mildew control. In 2021 we saw that a Stargus+Regalia combo provided excellent powdery mildew control.

An Effective Spray Program....

1) ....starts with cultural control.
   a. ALL fungicides work better when disease pressure is lower!
   b. **Train and prune** to increase airflow and spray penetration
   c. Early season sanitation to remove initial inoculum
   d. Calibrate your sprayer annually!
   e. Scout early and often

2) ....is simple.
   a. Simultaneous control of the most important diseases
   b. Fungicide resistance management
   c. Economic sustainability

3) ....is diverse.
   a. A robust and durable spray program will include both contact AND systemic materials!

Disclaimer: No endorsement is intended for products mentioned, nor is lack of endorsement meant for products not mentioned. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to $7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by appropriate state authorities and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance of application.
**Period of Peak Susceptibility**
- The most critical time of year for downy mildew, black rot, and powdery mildew control is **immediate pre-bloom through 2-3 weeks post-bloom**. Cover *vinifera* from 4-5" shoots through pea sized fruits, (usually 2-3 weeks post-bloom), maintain cover when weather is wet/humid
- Berries become resistant to DM, PM, and BR by about 4 to 5 weeks after bloom
- **Use the best fungicides, highest rates, and strictest intervals during this period!**

![Immediate pre-bloom](image1)  ![Bloom](image2)  ![Pea-sized fruits](image3)

**Fungicide resistance stewardship practices for commonly used products**
- **SDHI products** (FRAC 7) such as the Luna family, Aprovia, Miravis Prime, Pristine, and Endura, no more than 3x/season and never twice in a row
- **QOI products** (FRAC 11) such as Abound, Azaka, Reason, Sovran, Topguard EQ, Flint Extra, Intuity, Pristine, and Quadris no more than 3x/season & never twice in a row
- **DMI products** (FRAC 3) such as difenoconazole (the “Top” in common combos), Cevya, Inspire Super, Mettle, Rally, Procure, Rhyme, tebuconazole, and Topguard EQ no more than 3x/season & never twice in a row
- **Revus and Zampro** (FRAC 40) no more than 3x/season & never twice in a row – with caution, as resistance is now well documented
- **Vivando and Prolivo** no more than 2x/season and never twice in a row
- **Gatten, Torino, or Quintec** no more than 2x/season each and never twice in a row
- **Ridomil** NEVER more than once per season

**Example combo products and their components**
- Luna Experience: SDHI (7) & DMI (3)
- Luna Sensation: SDHI (7) & QOI (11)
- Pristine: QOI (11) & SDHI (7)
- Revus Top: Group 40 & DMI (3)
- Topguard EQ: QOI (11) & DMI (3)
- Quadrid Top: QOI (11) & DMI (3)

**Considerations for managing FRAC-40 resistant downy mildew**
1) Start your season with at least two rounds of broad-spectrum fungicide (such as mancozeb) before moving to site specific fungicides.
2) Do not rely on FRAC-40 chemistries alone for DM control during the critical immediate pre-bloom to immediate post-bloom control period.
3) When possible, double up your actives by tank mixing. For example, half of Zampro is still effective against FRAC-40 resistant downy mildew. Tank mixing with another DM product will help protect the still-effective active ingredient remaining in Zampro as well as help prevent against “escapes.”
4) Be aggressive in your early season control program when pressure is lowest to prevent infections from establishing. Many aspects of resistance management can distill down into simple numbers games: if there is abundant disease, then there are more spores. If there are more spores, it is more likely that a resistant individual is present.
5) Remember your cultural control! Training and pruning improve both spray penetration and air flow.
6) Request a resistance testing kit as soon as you see ANY downy mildew. Email Dave Combs dbe10@cornell.edu with your name and address to coordinate either a visit or a mailed kit.

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General considerations for reviewing and evaluating a spray program:

Sourced from FRAME Networks Eastern Program Design Workshop, Spring 2022

1) **When the program starts.** Spray programs should always consider vine phenology, or stage of development, when determining when to start spraying for the season. They should also consider what diseases are of greatest concern during that phenological stage. Certain diseases, such as powdery mildew, downy mildew, and Botrytis bunch rot, do not warrant management approaches pre-budbreak. Other diseases, such as the various trunk diseases, Phomopsis, and anthracnose, may benefit from pre-bud break sprays. But you might also consider additional cultural practices to manage these diseases, such as the use of double pruning, or ensuring infected debris is removed from the vineyard.

2) **When the program ends.** Each grapevine disease has a different window for when it impacts the vine the most. While a spray program for all diseases may span the entire growing season, what you need to spray for will likely change as the season progresses. There are often distinctions between managing for disease on the fruit and managing for diseases on the canopy – and if you do a good job of managing disease on the fruit that may result in very little disease being able to spread to the canopy. As the season progresses, ask yourself - Are these extra sprays needed for the disease I am targeting?

3) **Products that are pre-mixes.** Some chemical manufacturers sell fungicides that are pre-mixes of two or more FRAC groups. This is done to either expand the range of diseases the new combined product can target, or to help with fungicide resistance management against a single target disease. But this can also make FRAC group rotations difficult, if you are not paying close attention to both the FRAC code and active ingredient. For example, if one were to spray Inspire Super (FRAC 3 + 9), followed by Revus Top (FRAC 40 + 3), not only have you sprayed a FRAC 3 back-to-back, you sprayed the same FRAC 3 product (difenconazole).

4) **Product choices at different times of the year.** Not only do products have different FRAC groups, they also have different basic properties. Some work as contacts, which mean they can only impact the target disease if they come into direct contact with it. Contact products can be very effective, but they typically need very good coverage, which can be hampered by rain, wind, and very rapid vine growth. Some products are systemic, which means they can be absorbed by the plant and move locally within the plant to the target disease. This ability to be absorbed means they can withstand things like rain better than contact products. There needs to be sufficient grape tissue present for the product to be absorbed (i.e., sprays are not optimized if applied at very early season), and they can become diluted in the plant if applied right before a period of rapid vine growth. **PREHARVEST INTERVALS (PHI):** There are some products that have very long pre-harvest intervals (over 30 days). This means that if these products are sprayed, the fruit cannot be harvested until that preharvest interval is met. Thus, products with long preharvest intervals should be avoided after the fruit set period, just to ensure harvest is not delayed due to a product application.

5) **Product intervals in response to disease pressure.** When disease pressure is high, which occurs when the plant has susceptible tissue and the weather is favorable for the pathogen, the shorter intervals listed on the label should be used. When disease pressure is low, such as the case when grapevine tissue ages (for some diseases), or when weather conditions are not favorable, the longer intervals on the label may be appropriate.

6) **Inherent resistance in the grapevine.** As mentioned above, the grapevine is not susceptible to all diseases, all season long. Sometimes, tissue is simply protected from infection due to slow growth or physical barriers such as lot of leaf hair. Sometimes the tissue itself develops an actual resistance response to infection. Know when / if the grapevine is susceptible to the diseases you are targeting, and only spray for during periods of susceptibility.

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Weeds and Weed Control in Grapes

Weed Identification Resources:

PHONE APPS: PictureThis, PlantNet, LeafSnap, Seek, iNaturalist, others. Check App Store on your phone for operating system compatibility

Herbicides and How They Work:

<table>
<thead>
<tr>
<th>WSSA</th>
<th>Type</th>
<th>Mode of Action</th>
<th>Duration</th>
<th>Spectrum</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ACCase inhibitors</td>
<td>POST</td>
<td>Grass specific</td>
<td>Interferes with lipid biosynthesis → inhibits membrane formation, cell metabolism.</td>
<td>Clethodim, fluazifop, sethoxydim</td>
</tr>
<tr>
<td>2</td>
<td>ALS inhibitors</td>
<td>PRE / POST</td>
<td>Broad spectrum</td>
<td>Interferes with amino acid biosynthesis → inhibits protein formation, cell metabolism.</td>
<td>Rimsulfuron</td>
</tr>
<tr>
<td>3</td>
<td>Microtubule inhibitors</td>
<td>PRE</td>
<td>Stronger on grasses</td>
<td>Interferes with microtubule expansion → inhibits cell division.</td>
<td>Oryzalin, pendimethalin. Pronamide is PRE/POST.</td>
</tr>
<tr>
<td>5 (previously 7)</td>
<td>PS II inhibitors</td>
<td>PRE</td>
<td>Broadleaves, some grasses</td>
<td>Blocks electron transport → buildup of reactive oxygen species (ROS).</td>
<td>Diuron, simazine.</td>
</tr>
<tr>
<td>9</td>
<td>EPSPS inhibitor</td>
<td>POST</td>
<td>Broad spectrum, including perennials</td>
<td>Interferes with amino acid biosynthesis → inhibits protein formation, cell metabolism.</td>
<td>Glyphosate.</td>
</tr>
<tr>
<td>10</td>
<td>Nitrogen metabolism inhibitor</td>
<td>POST</td>
<td>Broad spectrum</td>
<td>Inhibits conversion of glutamate and ammonia to glutamine → ammonia buildup.</td>
<td>Glufosinate.</td>
</tr>
<tr>
<td>12</td>
<td>Carotenoid biosynthesis inhibitors</td>
<td>PRE</td>
<td>Stronger on grasses</td>
<td>Inhibits production of carotenoids, which protect chlorophyll → buildup of ROS.</td>
<td>Norflurazon.</td>
</tr>
<tr>
<td>14</td>
<td>PPO inhibitors</td>
<td>PRE / POST (depends on chemical)</td>
<td>Stronger on broadleaves</td>
<td>Inhibits production of chlorophyll, heme → buildup of ROS.</td>
<td>Flumioxazin, oxyfluorfen, carfentrazone.</td>
</tr>
<tr>
<td>15</td>
<td>VLCFA inhibitors</td>
<td>PRE</td>
<td>Stronger on grasses</td>
<td>Interferes with lipid biosynthesis → inhibits membrane formation, cell metabolism.</td>
<td>Napropamide.</td>
</tr>
<tr>
<td>22</td>
<td>Electron transport diverter</td>
<td>POST</td>
<td>Broad spectrum</td>
<td>Competes for electron transfer in PS I → buildup of ROS.</td>
<td>Paraquat.</td>
</tr>
<tr>
<td>29 (previously 20, 21)</td>
<td>Cellulose inhibitors</td>
<td>PRE</td>
<td>Broad spectrum</td>
<td>Inhibits cellulose biosynthesis → interferes with the formation of plant cell walls.</td>
<td>Indaziflam, dichlobenil.</td>
</tr>
</tbody>
</table>

Herbicides and General Thoughts:

PRE-EMERGENCE: Must be incorporated into the soil solution. Leaves and standing vegetation can reduce herbicide-soil contact. With few exceptions (e.g. dichlobenil), perennials (except for germinating seedlings) are not affected. Vine age and soil restrictions. Rates can be dependent on species. Limits on numbers of sprays and amounts applied/year. Longevity can vary in response to chemistry, soil type/OM, microbial composition, sunlight, soil moisture and temperature. Direct contact can cause injury.

POST-EMERGENCE: Weeds are best controlled when small and NOT STRESSED. Pay attention to spray tank additive recommendations/requirements/water quality (pH, hardness). Optimal spray volumes (more is not always better, e.g. glyphosate) and nozzle selection vary among herbicides. Direct contact can cause injury.

Contact: Lynn M Sosnoskie, lms438@cornell.edu
**Weeds and Weed Control in Grapes**

**Why Doesn’t my Herbicide Work?**
- Ineffective herbicide against target species
- Incorrect rate or spray volume
- Lack or improper use of spray additives
- Antagonism
- Other spray solution issues (e.g. hard water)
- Weed size at time of application
- Plant stress
- Environmental factors affecting herbicide deposition
- Environmental factors affecting herbicide activation
- Microbial shifts that degrade chemistries and reduce efficacy
  - Herbicide resistance
    - More than 500 cases worldwide
    - 266 species, 164 herbicides
    - Almost 30 cases occurring in orchards/vineyards
    - Paraquat-resistant marestail in 2 NY sites

**Do I have Resistant Weeds?**
- Was the correct herbicide applied at the correct rate and in the correct spray volume with the correct adjuvants at the correct time?
- Were there any environmental/weather conditions that could have affected herbicide performance?
- Are there any patterns that could suggest a clogged or malfunctioning nozzle or other application issue?
- Are there live plants intermixed with dead plants of the same species or other susceptible species and were the plants all the same size when treated?
- Is this a problem that is getting worse over years?
- Are there known cases of resistance nearby?

Don’t dismiss perennial weeds. Perennial weeds can also vary in their responses (i.e. more sensitive to more tolerant) to herbicides.

Don’t dismiss soil applied products. Resistances can also develop to residual chemistries.

We can also select for weeds that are tolerant of physical control practices, such as mowing.

Contact: Lynn M Sosnoskie, lms438@cornell.edu

2021-2022 trials are looking at vision-guided spraying for sucker, weed control

2022 trials are looking at electrical weed control
I believe that Chris Wainwright said at the Spring IPM Meeting that you must register by **this Friday** to participate in this spring’s CleanSweep.

The Spring 2022 CleanSweep NY collection event will take place in four locations along the I-90 corridor. The four drop-off sites are in Niagara, Monroe, Seneca and Onondaga Counties. Farmers and pesticide applicators/technicians from neighboring counties are encouraged to participate at these locations.

Participants **must register** to participate in this waste collection program and registration forms can be requested at the following phone number or e-mail address:

**Telephone:** 518-225-8146  
**E-Mail:** info@cleansweepny.org

The collection dates and locations are as follows:

- **Lockport, NY**  
  Tuesday, May 10, 2022
- **Spencerport, NY**  
  Wednesday, May 11, 2022
- **Waterloo, NY**  
  Thursday, May 12, 2022
- **Camillus, NY**  
  Friday, May 13, 2022

**CleanSweep NY Services are Not Available to Homeowners.**

CleanSweepNY services are provided to farmers and owners of former farms, all categories of NYS certified pesticide applicators, cemeteries, golf courses, marinas, schools, landscapers and lawncare providers, nurseries, greenhouses, and other entities possessing unwanted or unusable pesticides and other waste chemicals. Each participant is responsible for transporting their materials to the collection site.

CleanSweep NY results in enhanced stewardship of the environment through the improved management and proper disposal of unusable pesticides and other chemical wastes. These materials may pose human health risks upon exposure and represent a potential hazard to New York State’s groundwater and surface water resources.

The collections are scheduled and organized by NYSDEC with the collaboration of NYSDOT who generously provides sites for the collection of these unwanted chemical materials. CleanSweep NY is supported by Cornell Cooperative Extension, the Agricultural Container Recycling Council, Soil and Water Conservation Districts, New York Farm Bureau, and other related grower associations.
Look who’s happy to retire...

Retirement Party for Tim Martinson

Friday May 20th
6:00pm

Anthony Road Wine Company

1020 Anthony Rd
Penn Yan, NY 14527

Details and RSVP coming soon!
Upcoming Events

Don’t forget to check out the calendar on our website (http://flgp.cce.cornell.edu/events.php) for more information about these and other events relevant to the Finger Lakes grape industry.

FLGP Virtual Tailgate Meeting

*Tuesday, May 3*  
*4:30 – 6:00 PM*

*Via Zoom*

Our first virtual Tailgate Meeting of 2022 will be held on Tuesday, May 3. As always, the agenda for these meetings is very loose, so please come with your questions, observations, opinions about what’s going on in the vineyard.

Participants will need to register before attending their first virtual meeting in order to receive the Zoom link. Registration for the online Tailgate Meetings is only required once – the link you receive when you register will work for all four online meetings this year.


The virtual and in-person Tailgate Meetings have been approved for 0.75 pesticide recertification credits. We will also need to receive an image or photocopy of your pesticide license before the first meeting that you attend. These images/copies can be sent to Brittany Griffin at bg393@cornell.edu. More information will be included in your confirmation email.

FLGP In-Person Tailgate Meeting

*Tuesday, May 17*  
*4:30 – 6:00 PM*

*Vine Country Farms*  
*8531 County Route 74, Prattsburg, NY 14873*

Our first in-person Tailgate Meeting for 2022 will be held on Tuesday, May 17 at Roy and Gordon Taft’s farm (Vine Country Farms) in Pulteney. The agenda for these meetings is very loose, so please come with your questions, observations, opinions about what’s going on in the vineyard. The DEC has approved the meeting for 0.75 pesticide recertification credits (Categories 1a, 10, 22).

Respirator Fit Testing Clinics

*Thursday, May 12*  *Ontario County*  
*Friday, May 13*  *Yates County*  

NYCAMH will be offering respirator fit testing clinics across the state this year. For more information, contact NYCAMH at 800-343-7527 or fittest@bassett.org.
## 2022 GDD & Precipitation

<table>
<thead>
<tr>
<th>Date</th>
<th>Hi Temp (F)</th>
<th>Lo Temp (F)</th>
<th>Rain (inches)</th>
<th>Daily GDDs</th>
<th>Total GDDs</th>
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</thead>
<tbody>
<tr>
<td>4/20/2022</td>
<td>53.6</td>
<td>36.3</td>
<td>0.00</td>
<td>0.0</td>
<td>31.0</td>
</tr>
<tr>
<td>4/21/2022</td>
<td>55.9</td>
<td>38.5</td>
<td>0.00</td>
<td>0.0</td>
<td>31.0</td>
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<td>4/22/2022</td>
<td>56.1</td>
<td>41.5</td>
<td>0.00</td>
<td>0.0</td>
<td>31.0</td>
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<tr>
<td>4/23/2022</td>
<td>59.7</td>
<td>39.0</td>
<td>0.00</td>
<td>0.0</td>
<td>31.0</td>
</tr>
<tr>
<td>4/24/2022</td>
<td>83.1</td>
<td>44.8</td>
<td>0.00</td>
<td>14.0</td>
<td>44.9</td>
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<tr>
<td>4/25/2022</td>
<td>79.2</td>
<td>59.4</td>
<td>0.00</td>
<td>19.3</td>
<td>64.2</td>
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<tr>
<td>4/26/2022</td>
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<td>45.1</td>
<td>0.12</td>
<td>3.0</td>
<td>67.2</td>
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<td>Weekly Total</td>
<td></td>
<td></td>
<td><strong>0.12”</strong></td>
<td><strong>36.2</strong></td>
<td></td>
</tr>
<tr>
<td>Season Total</td>
<td></td>
<td></td>
<td><strong>1.99”</strong></td>
<td><strong>67.2</strong></td>
<td></td>
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</tbody>
</table>

GDDs as of April 26, 2021: 61.8

Rainfall as of April 26, 2021: 1.66”

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**Seasonal Comparisons (at Geneva)**

<table>
<thead>
<tr>
<th>Month</th>
<th>2022 GDD (^1)</th>
<th>Long-term Avg GDD (^2)</th>
<th>Cumulative days ahead (+)/behind (-) (^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>58.3</td>
<td>62.9</td>
<td>+3</td>
</tr>
<tr>
<td>May</td>
<td>254.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>484.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>645.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>595.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>359.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>112.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2515.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Accumulated GDDs for each month.

\(^2\) The long-term average (1973-2021) GDD accumulation for that month.

\(^3\) Numbers at the end of each month represent where this year’s GDD accumulation stands relative to the long-term average. The most recent number represents the current status.
## 2022 GDD & Precipitation

### Precipitation

<table>
<thead>
<tr>
<th></th>
<th>2022 Rain</th>
<th>Long-term Avg Rain</th>
<th>Monthly deviation from avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>1.97”</td>
<td>2.83”</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td></td>
<td>3.12”</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td></td>
<td>3.55”</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td></td>
<td>3.43”</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td></td>
<td>3.20”</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td></td>
<td>3.49”</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td></td>
<td>3.40”</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1.97”</td>
<td>23.02”</td>
<td></td>
</tr>
</tbody>
</table>

4 Monthly rainfall totals up to current date  
5 Long-term average rainfall for the month (total)  
6 Monthly deviation from average (calculated at the end of the month)
Additional Information

Become a fan of the Finger Lakes Grape Program on Facebook, or follow us on Twitter (@cceflgp) as well as YouTube. Also check out our website at http://flgp.cce.cornell.edu.

Got some grapes to sell? Looking to buy some equipment or bulk wine? List your ad on the NY Grape & Wine Classifieds website today!

Finger Lakes Grape Program Advisory Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Company/organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eric Amberg</td>
<td>Grafted Grapevine Nursery</td>
</tr>
<tr>
<td>Bill Dalrymple</td>
<td>Dalrymple Farm</td>
</tr>
<tr>
<td>Matt Doyle</td>
<td>Doyle Vineyard Management</td>
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<tr>
<td>Eileen Farnan</td>
<td>Barrington Cellars</td>
</tr>
<tr>
<td>Chris Gerling</td>
<td>Cornell University Extension</td>
</tr>
<tr>
<td>Mike Collizi</td>
<td>E &amp; J Gallo</td>
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<tr>
<td>Tina Hazlitt</td>
<td>Sawmill Creek Vineyards</td>
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<tr>
<td>Cameron Hosmer</td>
<td>Hosmer Winery</td>
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<td>T.J. Brahm</td>
<td>Randall Standish Vineyards</td>
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<td>Harry Humphreys</td>
<td>Overlook Farms</td>
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<tr>
<td>Gregg McConnell</td>
<td>Farm Credit East</td>
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<td>Herm Young</td>
<td>Young Sommer Winery</td>
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<td>John Santos</td>
<td>Hazlitt 1852 Vineyards</td>
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<td>Steve Sklenar</td>
<td>Sklenar Vineyard</td>
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<tr>
<td>Justine Vanden Heuvel</td>
<td>Cornell University</td>
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<tr>
<td>Peter Weis</td>
<td>Weis Vineyards</td>
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<tr>
<td>Kim Marconi</td>
<td>Three Brothers Wineries &amp; Estates</td>
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</tbody>
</table>

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The Finger Lakes Grape Program is a partnership between Cornell University and the Cornell Cooperative Extension Associations in Ontario, Seneca, Schuyler, Steuben, Wayne and Yates Counties.