Lake Erie Regional Grape Program

Pink bud in CLEREL Vineyard-
5/1/2023 Kim Knappenberger

CROP UPDATE
May 4, 2023

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

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2023
LERGP Coffee Pot Meeting Schedule

May 3, 2023	**10:00am**	**Double A Vineyards** **10317 Christy Rd. Fredonia NY 14063**
May 10, 2023	**10:00am**	**Niagara Landing Wine Cellars** **4434 Van Dusen Rd. Lockport NY 14094**
May 17, 2023	**10:00am**	**John Schultz & Sons** **9510 Sidehill Rd. North East PA 16428**
May 24, 2023	**10:00am**	**Brian Chess Farm** **10289 West Main Rd. Ripley NY 14775**
May 31, 2023	**10:00am**	**Sprague Farms** **12435 Versailles Rd. Irving NY 14081**
June 7, 2023	**10:00am**	**NO COFFEE POT MEETING**
June 14, 2023	**10:00am**	**Betts' Farm** **7365 East Route 20 Westfield, NY 14787**
June 21, 2023	**10:00am**	**Paul Bencal Farm** **2645 Albright Rd. Ransomville NY 14131**
June 28, 2023	**10:00am**	**Gary Young Farm** **8401 Gulf Rd. North East PA 16428**
July 5, 2023	**10:00am**	**NO COFFEE POT MEETING**
July 12, 2023	**10:00am**	**Zach & Alicia Schneider Farm** **771 Bradley Rd. Silver Creek NY 14136**
July 19, 2023	**10:00am**	**Schultze Winery** **2090 Coomer Rd. Burt NY 14028**
July 26, 2023	**10:00am**	**Westfield Ag & Turf** **7521 Prospect Rd. Westfield NY 14787**

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Click here to watch Podcasts

The Lake Erie Regional Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extensions in Chautauqua, Erie and Niagara county NY and in Erie County PA.

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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

Photo 1. Frost damaged buds from a vineyard in Ripley, NY

In the Vineyard

We had our first Coffee Pot Meeting of the season at Double A Vineyards on Wednesday and it was a great start to the season. We had a great meeting discussing timely viticulture, business management, and integrated pest management. Thank you to PSU's Bryan Hed for co-hosting with me! We also had a visiting viticulture and enology professor from France, and a Food Systems Specialist from Harvest New York join us at the meeting and each of them were impressed with the conversations and work that our industry is doing. Kudos to you!

Unfortunately, there are some vineyards that have experienced frost damage last week. If you experience damage, then you should be able to notice it in the vineyards now. Please see the photo of some buds that I took this week that are no longer viable (photo 1). If you experienced damage, then please reach out and let me know so that we can track the progression. I would be interested in an email that contains the approximate acreage that was damaged. For example, you have a five-acre block of Concords, and you estimate that you lost 25% of that acreage that sits in a low, wet spot. Please send along where the vineyard is located so that I could check it out.

The Lake Erie Regional Grape Program held an Advisory Committee meeting this week to receive feedback and suggestions on future research and outreach educational efforts. We had sixteen growers and industry representatives present for this very productive meeting. A topic of discussion was for more training on how the MyEV Tool can be used and implemented into farm operations. Attendees expressed interest in a hands-on workshop and asked that it happen as soon as we could so they could use it during the growing season. Dr. Terry Bates, Nick Gunnar, and I were able to coordinate schedules and we will be holding a **MyEV Tool Workshop on Thursday, May 11, 2023, from 9 AM until 12 PM**. That is next Thursday. The Efficient Vineyard project is an ongoing national effort to advance the use of precision viticulture in wine, juice, and table grape production. One of the most important tools that has emerged from that project is the My Efficient Vineyard mapping platform (MyEV), which lets growers easily and quickly apply any kind of spatial data to a map using a simple interface. This session will provide growers with an introduction to the MyEV system and help them get started with this powerful yet easy-to-use tool. The workshop will be appropriate for growers who are new to MyEV as well as those who have had some experience using the system already. This will be a hands-on workshop, so growers should bring their own laptops or tablets to work on along with their cellphone. We will start the morning inside and the second half of the workshop will be outside, providing an opportunity to collect data out in the field and then finish back inside so attendees will leave confident that they have a set of skills to begin using MyEV in their vineyards.

Terry Bates, Senior Research Associate, Cornell Lake Erie Research and Extension Laboratory
Terry Bates is a senior research associate with Cornell University's School of Integrative Plant Sciences and the Director of the Cornell Lake Erie Research and Extension Laboratory in Portland, NY. Terry's research program focuses on production viticulture for the juice and wine grape industries of western New York. He currently heads the "EfficientVineyard" research theme in precision viticulture https://www.efficientvineyard.com/.

Nick Gunner, Owner, Orbitist
From 2007-2011 Nick received his Bachelor of Science Degree in Communications and Earth Science at the State University of New York at Fredonia. During that time, he started building online content management systems and digital mapping platforms. He continued developing these skills as a web developer, videographer, and social media director at the State University of New York at Fredonia where he spent 2012-2016 as their New Media Manager. Throughout that time, Nick pursued freelance work as a public radio producer, freelance documentary filmmaker, and web developer. In the Summer of 2015, Nick founded Orbitist LLC, to create cloud-based mapping software. Orbitist has since partnered with Cornell University on the development of myEV (my.efficientvineyard.com), a suite of easy-to-use viticulture mapping tools. Moving forward, Nick aims to make digital mapping technology as accessible to vineyards as possible.

Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

NEWA

Versailles is finally back on the NEWA network and accessible at newa.cornell.edu.

The Portland station is still the old Rainwise AgroMet station, but we have a new KestrelMet 6000 station that has been added to the network as well. We are testing this new wifi station at the bottom of R block at the CLEREL lab. The range extender for the wifi arrived on April 13th so we decided to test the limits by putting it as far away as possible – that took us to the bottom of R block at the northern edge of the property next to the railroad tracks. (we are still having a few hiccups in connection, so you will see some estimated data on the website). It is exciting to have this station in such a low area to monitor the temperature differences that are experienced there, in addition, there are soil moisture and temperature sensors installed at 6", 18" and 27". You can find this station by searching Portland (R Block) NY in the station search bar. The soil data is still not available on NEWA, but hopefully will be soon.

Historical weather data on the mesonet stations (Fredonia and Burt) is currently not allowed to be displayed on NEWA. Users are directed to the NYS Mesonet website where you can fill out a form to request specific weather information (http://www.nysmesonet.org/weather/requestdata) You can still view current weather information and use the models on NEWA, but in order to dig any deeper you will need to go to the link above. If you would like to see the data displayed directly from the mesonet stations you can click the following links:

- http://www.nysmesonet.org/weather/local#network=nysm&stid=fred for the Fredonia Station or
- http://www.nysmesonet.org/weather/local#network=nysm&stid=burt for the Burt station.

VIP

Reminder: The Vineyard Improvement Program has been extended for two more years. Applications continue to be accepted on a rolling basis. This program is a reimbursement program to remove Concord vineyards in eligible New York counties and then to replant an agricultural commodity. If you are interested in finding out more about this program please visit our website at https://lergp.com/about-vip.

Now is the time to check it out before it's gone! All removal and replant work will need to be completed by the end of the growing season in 2024.

The application can be found online at https://lergp.com/vip-application. If you have any other questions please contact Kim at ksk76@cornell.edu.

PA Update

Bryan Hed, Research Technologist, Lake Erie Grape Research and Extension Center

Weather: For the month of April, we recorded 3.77” of rain (a little above average) and about 106 growing degree days, also above average. The vast majority of warmth in April occurred during the first half of the month and vine development has been reduced to a crawl since April 16. A frost event on April 27 damaged some vineyards in eastern Erie county PA, sort of centered along route 20 and about halfway from there to the lake. Vineyards farther south and along the lake, appear to have faired better, though I have not had an opportunity to make an extensive assessment yet. With very little gdd accumulation since then, its hard to tell how severely affected the “touched” buds are at this point (figure below). Warm drier weather this weekend will move things farther along, making the extent of the damage easier to determine.

Damaged (off color, brownish, dull in color) and healthy (bright pink and green) Concord buds in a vineyard along route 20 in Harborcreek PA, after a frost event on April 27.

Phenology: At our location, Concords in our Cemetery road block (where we typically track Concord development) reached about 50% bud break on April 21. Two weeks later we only have about 0.5-0.75 inch shoots. In years with similar bud break dates for us, Concord bloom generally occurred during the second week in June.

Diseases: Some of this section is a repeat from 2 weeks ago, as it is still relevant.

This is your annual reminder that our first disease issue during early shoot growth is Phomopsis cane and leaf spot. New shoots are vulnerable to infection just after shoot growth begins, and inflorescences are generally first vulnerable at about 3" of shoot growth. If you're trying to decide whether or not to put that early shoot growth mancozeb spray on, let me remind you that the research indicates that **this early spray is probably the most important one for Phomopsis**. Wetness/rainfall during early shoot growth releases spores of Phomopsis from overwintering wood sources and creates the conditions for development of this disease that can leave scabby black lesions and cankers on the first few nodes/internodes of shoots and, most importantly, on inflorescences. Infections on stem tissue of inflorescences can result in fruit rots during later stages of ripening, months after the infection period took place: early infections of the cluster stem tissue can progress into berries during ripening and cause fruit to shell before or during harvest. After fruit are formed, they are generally at risk of direct infections until a couple weeks or so after bloom, when inoculum sources normally get 'milked out'. Heavy infection at the base of the shoots (Figure 1) may result in weakening of the shoot and shoot breakage under windy conditions. Leaf infections are far less serious, appearing as pinhead sized black spots surrounded by a yellow halo (Figure 2), but they do indicate the presence of an overwintering source of the Phomopsis fungus.

Fig. 1 Lesions at the base of the oldest internodes result in scabby areas that weaken the shoot.

Fig. 2 Leaf infections of Phomopsis cane and leaf spot on Concord grape. These are rarely consequential, but they do indicate the presence of overwintering inoculum in the trellis.

Fig. 3 Phomopsis fruit rot on ripe Vignoles and Niagara grapes; from infections of the cluster that occurred months earlier.

Phomopsis management with fungicides should begin at about 2-5" inches of shoot growth, but this is a ball-park figure. In early spring, this stage of development is a swiftly moving target, so monitor your crop daily and watch weather forecasts, paying close attention to the prediction of lengthy wetting periods during this early shoot growth period. Fortunately, our forecast from this day forward looks to be dry and warmer, giving shoots a chance to jump out those first few inches without threat of an infection period until…..maybe Wednesday of next week….we'll see. Keep an eye on the forecast, as vines may move quickly into that 2-5" shoot stage and you'll need to apply that first mancozeb spray for Phomopsis, before the next rain. Other materials like Captan and Ziram can also be used for Phomopsis control. These are all protectant type materials that have no "reach back" activity; they have to be applied *before* an infection period, to do their job. You don't have to use full rates of these 'protectants' for that first early shoot spray to be effective.

And finally, here's a repeat of the information regarding powdery mildew materials to look for later this spring. I hope you find it useful.

1. NEW POWDERY MILDEW STUFF COMPETITIVELY PRICED FOR JUICE GRAPE GROWERS

Gatten – FRAC U13. This is that 'new' powdery mildew fungicide we've been talking about that has shown to be very effective in Cornell trials. It is unrelated chemically to anything we've used before, so no resistance issues to be concerned with…yet, and powdery mildew is all that it controls. Use it sparingly and with a view to managing resistance (limit to 2 applications per season) and always rotate with other FRAC groups. It should do a "bang up" job against powdery mildew for juice and wine growers alike. If you use it just once this year, I would recommend using it around bloom for fruit protection, probably at first post bloom. It has a 12-hour reentry interval and a 14-day pre-harvest interval. 'Restricted use in NY'.

Cevya – FRAC 3. Cevya is a relatively new DMI fungicide that is registered for use on all varieties of grapes (since the new label in 2022). In NY and PA trials, the unique chemistry in Cevya's active ingredient has been very effective at controlling powdery mildew and black rot (despite widespread powdery mildew resistance to the FRAC 3 fungicides). Cevya has a 12-hr REI and a 14-day PHI and is competitively priced for use on juice and wine grapes. **I believe this one is also 'restricted use in NY'.**

Endura – FRAC 7. Endura is an older succinate dehydrogenase inhibitor (SDHI) that has been on the market for decades. However, Endura is "new" to juice grape culture because of the relatively cost-prohibitive price…until now. The 4.5 oz rate should provide good to excellent control of powdery mildew at an affordable price. Applications of FRAC 7 materials should be limited to a maximum of two applications per year and should be used only in rotation or in mixtures with unrelated materials. Endura has a 12-hr re-entry interval and a 14-day preharvest interval.

2. RELATIVELY NEW MATERIALS FOR POWDERY MILDEW, BUT MAY BE PRICEY

Aprovia/Aprovia Top - FRAC 7 (Aprovia) and FRAC 7 + 3 (Aprovia Top). Aprovia is a relatively new member of the SDHI fungicides, with excellent activity against powdery mildew. Aprovia is also labeled for control of anthracnose, Phomopsis, and black rot. However, it has provided only modest control (suppression) of black rot in our field trials, and there is little local experience or published results of trials with anthracnose and Phomopsis in North America. Therefore, powdery mildew is the only disease against which this fungicide should be used with confidence. It is recommended that use of all Group 7 products be limited to two applications per season. Aprovia has a 12-hr REI and a 21-day PHI. **Restricted use in NY.**

Aprovia Top is a combination product of Aprovia (above) and difenoconazole (a relatively new FRAC 3 material). Difenoconazole should not be applied to Concord grapes and certain other varieties!!....read the label! This product is VERY effective against powdery mildew and also black rot (because of the difenoconazole). ***If you're a premium (vinifera) wine grape grower, a tank mix of this product with sulfur around bloom should provide outstanding powdery mildew control.*** **Restricted use in NY.**

Miravis Prime - FRAC 7 + 12. This product is a combination of a new SDHI fungicide (FRAC 7) and an older phenylpyrrole active ingredient (FRAC 12), introduced about 25 years ago. In NY and PA trials, Miravis Prime has shown excellent activity against powdery mildew and good to excellent activity against black rot and Botrytis. Miravis Prime is also labeled for control of anthracnose and Phomopsis cane and leaf spot, but there is little to no local experience with control of these other diseases using this product. The activity against powdery mildew and black rot are primarily from the SDHI component (pydiflumetofen). On the other hand, fludioxonil (the FRAC 12 component), also found in another combination product called Switch, is what provides the Botrytis control. Miravis Prime is said to accumulate in the waxy cuticle and "translocate through the leaves". Miravis Prime has a 12-hr REI and a 14-day PHI. Again, we recommend that use of all Group 7 products be limited to two applications per season. '**Restricted use in NY.'**

3. OLDER, STANDARD POWDERY MILDEW MATERIALS FOR JUICE GRAPE GROWERS.

Some of these materials may be suffering from resistance development by the powdery mildew fungus, which may explain their perceived reduced effectiveness by growers. However, there are few reports of actual documented resistance to date…I hope to get some clarification on this soon from researchers in Michigan and New York.

Torino - FRAC U6. Torino represents a new class of chemistry, with activity only against powdery mildew. It has given good to very good control of this disease when applied at 14-day intervals in multiple NY and PA trials. Because it is unrelated to any other product used on grapes in North America, it can be rotated with all existing products for resistance management purposes. The new label allows for a single application at double the old rate of 3.4 fl oz/A. It is suggested that the higher 6.8 fl oz/A application could be useful to span an extended period when conditions are favorable for powdery mildew development, but unfavorable for maintaining a regular or tighter spray schedule. The higher rate will be quite pricey but will provide longer residual control of powdery mildew. Torino has a 4-hr REI and a 3-day PHI when applying at the 3.4 fl oz/A rate, and a 7-day PHI when using the 6.8 fl oz rate. The label restricts its use to two applications at the 3.4 fl oz rate or one application at the 6.8 fl oz rate. Trial results suggest that it might be used most effectively in rotational programs to manage foliar infections during mid- and late summer. I believe we got first use of this fungicide in 2013 and to my knowledge, there has been no perceived or documented reduction in activity yet of this active ingredient, for powdery mildew control.

Quintec – FRAC 13. Quintec was the first fungicide in a relatively new chemical family, the azanaphthalines (quinolines), and I believe we started using it around 2004 (?), so it's been out there for quite a while. It is unrelated to any other grape fungicide currently registered here and has provided excellent control of powdery mildew in multiple NY trials and commercial vineyards. However, Quintec is at risk for resistance development, so it should not be used more than two times per season, and it should always be used in rotation with other effective powdery mildew fungicides. Quintec does not provide control of any disease other than powdery mildew. It is strictly a protectant fungicide that must be present before the powdery mildew fungus begins the infection process; it does not provide any post-infection or eradicative activity. I can think of only one report of documented Quintec resistance, but more reports of perceived reduced activity by growers. I have also seen its activity fade in our research trials here too, but not the extent that Vivando has faded (more on that below). I hope to be able to report more on the resistance issue soon. Quintec has a 12-hr re-entry interval and a 21-day preharvest interval.

Vivando – FRAC 50. Vivando has provided excellent results in multiple trials in NY and other states in the past. It is unrelated to any other fungicide product currently on the market, so should be very useful in rotational programs for resistance management purposes. I believe we started using it in 2011 (2012 in NY), and to limit the risk of developing resistance to Vivando, we have recommended no more than two applications per season, rotated with other materials. This was a 'big gun' powdery mildew material when it first arrived for us in 2011, but its performance has been poor over the past few years at our research site. In fact, we've seen little to control of powdery mildew from it in the past few years, even at the highest rate, in our trials here at the North East lab. I know of no *documented* powdery mildew resistance to Vivando yet, but there is growing evidence of resistance from researchers in other areas as well: hopefully more information will be available on this soon. Vivando has a 12-hr REI and a 14-day PHI.

Luna experience/sensation – FRAC 7 + 3 (Luna Experience); FRAC 7 + 11 (Luna sensation). Both of these "Luna" products contain fluopyram, an "SDHI" (Group 7) fungicide and either a sterol inhibitor (tebuconazole; Luna experience) or a strobilurin (trifloxystrobin; Luna sensation). The fluopyram is great for powdery mildew control, and the tebuconazole or trifloxystrobin make these products effective for black rot control…*but only at the higher, more expensive rates.* Just keep in mind that the tebuconazole and trifloxystrobin partners in these products are probably not helping much anymore with powdery mildew control, due to widespread FRAC 3 and 11 resistance. Limit these products to two applications per season. Also keep in mind that trifloxystrobin in Luna sensation (essentially what we know as "Flint") is not for use on Concord grapes.

Strobilurins (Abound, Sovran, Flint, Pristine) – FRAC 11. There is widespread powdery mildew resistance to all the strobilurins throughout the eastern US, including the Lake Erie region. PLEASE DO NOT USE THE STROBILURINS FOR POWDERY MILDEW CONTROL!!!!!!! Combination materials like Pristine will still work, provided there is not mildew resistance to the other component of that product.

PA Update

Megan Luke, Penn State Extension Viticulture and Tree Fruit Educator

PA Update

Cool weather in recent weeks has kept most insect activity to a minimum, but with warm sunny weather in the forecast for the weekend now is the time to scout for Grape Flea Beetle (GFB) and Climbing Cutworm. Each of these pests feed on swollen buds and have an economic treatment threshold of 2% damage to buds. By about 1/2" growth the threat of economic loss from these pests is negligible, so many vineyards are probably in the clear, HOWEVER, if your primary buds are < 4.5 (Modified Shaulis Field Score) OR if your primary buds sustained damage from frost last week and secondary buds are developing, it is quite possible that you are still at risk. Keep an eye out for this pest while assessing your vineyards in the coming week. Some hybrids with fruitful secondary buds that tend to overcrop may be able to handle higher damage levels without a reduction in overall yield.

Grape flea beetle – GFB, also known as "steely beetle", (*Altica chalybea*) overwinter in the adult stage and emerge as grape buds begin to swell. Beetles are small (3/16") and metallic blue in color (Figure 1). The most significant injury caused by this pest is due to overwintering adults feeding on swollen grape buds, often consuming enough tissue to destroy the developing primary bud (Figure 2). The largest populations of flea beetles are most often around wooded or overgrown edges of vineyards. Scout vineyard rows bordering these areas frequently during the bud swell stage. Examine canes for injured buds and for the presence of adult beetles. Beetles are most active on warm, sunny days and will jump like a flea when disturbed. Treatment threshold is 2% bud damage. Leaf damage later in the season is typically not of economic concern.

Grape Flea Beetle fact sheet:


Figure 1


Figure 2

Photos by Eric Burkness, University of Minnesota

Climbing Cutworm – Nearly a dozen different species of cutworm larvae have been documented in vineyards and all of them may feed on grape buds during the swell stage (Figure 3). The larvae are immature stages of several noctuid moths. The spotted cutworm (*Amathes c-nigrum*) is frequently observed in New York and Pennsylvania. Larvae of all species have similar coloration: brown to gray with darker stripes or dots along the body (Figure 4). Larvae hide under leaf litter or weeds beneath vines during the day and climb vines to feed at night. Vineyards on sandy soils or with grass and weed cover under the trellis are at greater risk for injury. If bud injury is detected, examine weeds/soil beneath vines, as well as the vines themselves (including the bark) for presence of larvae with a flashlight after dark to confirm cutworm damage.

Climbing Cutworm fact sheet:

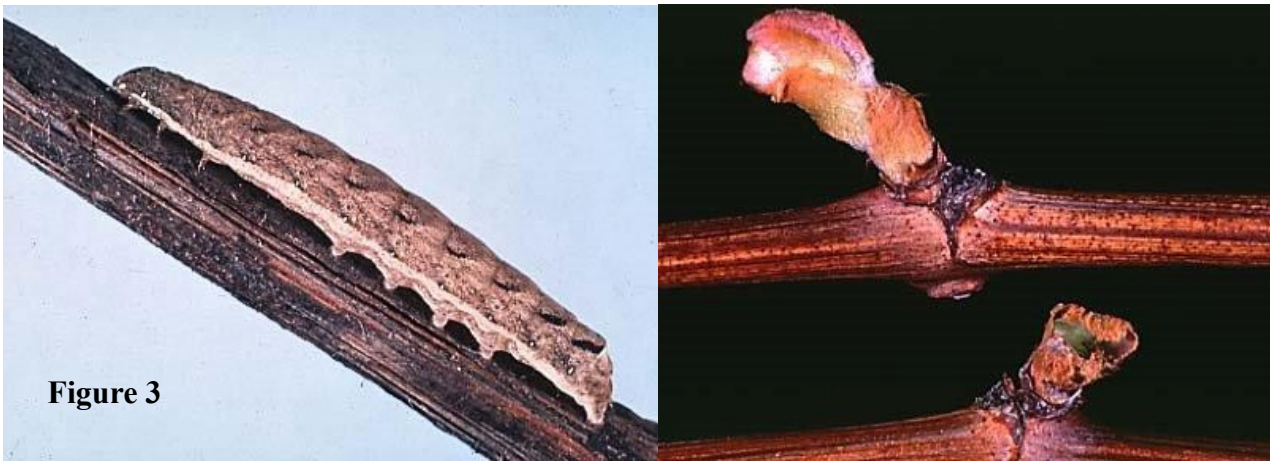

Figure 3

Photos from Cornell Climbing Cutworm fact sheet (linked above)

If you are a PA grower the Penn State Wine and Grape Team has an important survey out regarding herbicide drift. Our goal is to help both grape growers and herbicide applicators by identifying if knowledge gaps exist; if identified, these will be used as future focus points for Penn State Extension specialists. Please consider taking our survey - even if you think you have not: (1) caused herbicide drift; and/or (2) been impacted by herbicide drift.

Herbicide drift survey:

Final update: For the Pennsylvania LERGP members: the *2023 NY-PA Pest Management Guidelines for Grapes* is now available! Please contact me or meet me at the office to receive your copy, I will also have a few at the upcoming Coffee Pot meeting. Shipping will begin next week for those who cannot make it in.

Office schedule (*May 8th-12th*)
M/W 8am-4:30pm CLEREL Portland, NY
T 9am-5pm LERGREC North East, PA
Th 9am-5pm Erie Co. Cooperative Ext. Summit Municipal Bldg. Erie, PA

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