



# LAKE ERIE REGIONAL GRAPE PROGRAM

## *Electronic Crop Update for September 6, 2012*

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**From the Desk of James Taylor, Ph.D., Post-Doctoral Fellow**

Go to <http://lergp.cce.cornell.edu/EventsCalendar.htm> for a detailed calendar of events including maps via Google calendar! Scroll to the bottom of the page for Google calendar and click on the event. Please remember to RSVP for those events that require one! UPCOMING EVENTS are also listed toward the bottom of this Electronic Update.

Please remember to let us know if you have changed or are in the process of changing your email address so we can keep the Electronic Crop Update coming to your inbox!  
[Please email Edith at: emb35@cornell.edu.](mailto:emb35@cornell.edu)

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### **GRAPE INTEGRATED PEST MANAGEMENT: Tim Weigle**

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Things seem to be shaping up, from an IPM point of view, for a decent harvest across the belt (with the exception that there are not enough grapes), and for the next growing season. There is limited disease pressure across the belt, although we are starting to see downy mildew foliar infections creeping in on some of the more susceptible varieties. Considering the limited crop size, weed management has been very good this year in a majority of vineyards. The biggest concern right now is late season grape berry moth damage.

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There has been a running commentary on the potential for high levels of grape berry moth damage this season due to a fourth generation. Checking the NEWA web site we are past the start of the fourth generation (2430 DD) in most of the locations in the Lake Erie Region. Keep in mind that at this time of year, results from the predictive model found on NEWA for timing of GBM sprays are not good predictors of timing for the fourth generation, as the overlap between generations becomes longer with every generation. When the timing for the fourth generation is reached, it may be necessary to make multiple insecticide applications to cover the extended egg-laying.

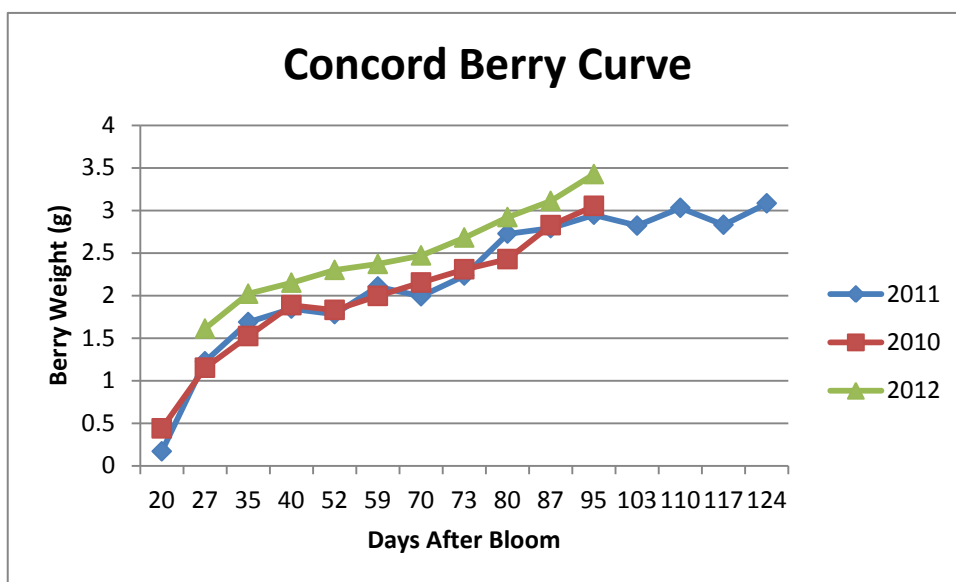
As we get into harvest, day to harvest intervals for insecticides really come into play. A good strategy for limiting late season grape berry moth damage would be to harvest blocks where grape berry moth pressure is high as early as possible. This may be the most practical way to reduce the amount of late season grape berry moth damage this year. Develop a plan ranking vineyards, or areas of vineyards, according to risk of grape berry moth damage. Use this list with your harvest schedule to get a strategy of how effectively the high risk GBM areas can be harvested. Use insecticide applications only in the high-risk vineyard blocks that are to be harvested toward the end of the season.

Again, before applying an insecticide, check the label for the days to harvest interval. Also, make sure your sprayer can provide the coverage necessary for control of GBM at this point in the season. If you cannot get material into the clusters, the chance of control is greatly diminished.

**GRAPE CULTURAL PRACTICES: Jodi Creasap-Gee, Ph.D.**

Grape Cultural Practices

Growers are facing the grim reality of the spring freezes this harvest season. Harvest is upon us – nearly a full month ahead of last year, and some have even suggested we should have started sooner. The CLEREL crew assayed the acid levels on Concord this week, and we were all surprised to see them at about half of what they normally are. We have a high Brix, low acid year, likely due to the hot days and warm nights. The usual hot days and cooler nights allow for the fruit to ripen while the acids remain high, and sugars tend to be lower than what we are seeing this year. The characteristic “Lake Erie Concord” is not easily found this year, with fruit being somewhat bland in flavor, although still quite sweet.



Concord Berry Weights and Diameters and Brix for 87 Days after Bloom (DAB) 2010-2012

	Berry weight (g)	Berry diameter (mm)	Brix
2010 (98 DAB)	3.05	15.78	Not recorded
2011 (96 DAB)	2.95	16.02	16.4
<b>2012 (94 DAB)</b>	<b>3.42</b>	<b>17.08</b>	<b>17.4</b>
<i>As a reminder, last week's numbers:</i>			
<b>2012 (87 DAB)</b>	<b>3.11</b>	<b>16.84</b>	<b>15.6</b>

[Veraison to Harvest](#)

Collections for the Veraison to Harvest newsletter began last week, and the first newsletter is available [here](#). As always, the fruit maturation table at the bottom of the newsletter contains berry weight, Brix, pH, TA, and YAN. Regional updates across the state of New York are also provided.

***Harvest Begins, For Better Or Worse***



With this crop update, harvest begins in earnest. At this point my captive audience is likely limited to growers without harvesters. Some isolated spots of high yields and brix have been harvested. On the other end of the spectrum, the challenge of crop estimation left other blocks below ½ ton to the acre when 1-2 tons was estimated. Crop estimation can be a real challenge during a freeze year. There will be a number of growers that need to make an economic decision, whether to harvest or not.

For those of you that do not own a harvester, at least the math is simple. The custom harvester charges between \$130 and \$200 per acre to harvest. Knowing that and the expected yields and value of the crop is all it takes. Crop estimation can give you a good idea of where any higher yields might be hiding. Starting there could limit the number of acres you need to harvest, while maximizing your harvested yield.

To help make these decisions in the field knowing the approximate acreage of each row can be particularly helpful. When you drop below 2/3 of a ton mark it may be time to start considering sending the harvester on his way. At times I think there can be some confusion regarding which party makes the harvesting decision. Harvesters may be reluctant to invest a lot of time in small crops. Growers may be reluctant to push a harvester to do the same.

I think it can be established that the average harvester, when charging by the acre, operates at a break-even price. That is usually a fair arrangement, as it gives him the opportunity to profit at a higher rate when the grower can most afford to pay the harvester. If a harvester needs to raise his minimum to break even, or profit, that is his responsibility. As a grower paying for the service, it is your responsibility to find what acres maximize your harvested tonnage, while minimizing the acres harvested. Otherwise, the yield may not even cover the cost of harvest. Since that is your expense, it is your decision to make.

In reality, an hourly rate would be the most equitable way to charge for custom harvest. Expenses incurred by the operator are nearly all related to the time it takes to harvest. Yield is a rather poor predictor of his expense. Yield only reflects the grower's ability to pay. The psychological issue with charging hourly rates is the sticker shock of the hourly cost. On average the operator yield around \$500 per hour. When yields are very high, operators are pulling in over a thousand dollars per hour. When charging by the acre the hourly rate dips down below \$300. In doing so, some operators are losing money. They're willing to do so because of the profits large crops bring in. An hourly rate would even out their expenses and profits on an annual basis. High yielding growers might be slightly more profitable as well, although some of those growers receive discounts and favors to make up the difference.

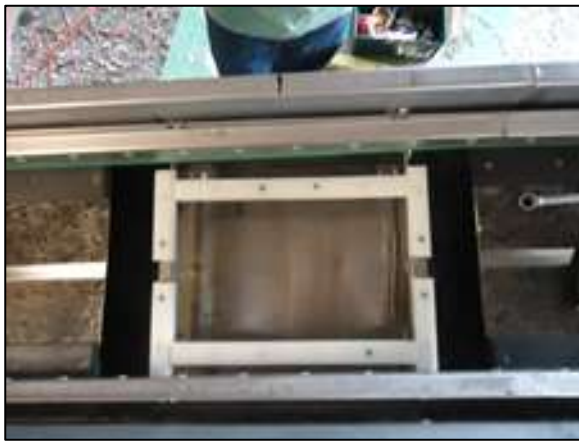
**FROM THE DESK OF... James Taylor, Ph.D., Post-Doctoral Fellow**

***Yield monitoring at CLEREL.***

The vintage has begun and this year we are using a new load-cell based yield monitor to monitor and map yield patterns at CLEREL. The yield monitor will provide high-resolution information on yield variation within blocks. When this information is coupled with the canopy sensor data (that tells us about vine size), we are able to produce maps of how vine balance (crop to vine size ratio) varies within vineyard blocks.

The yield monitor that we are using this year is a new system for this part of the world. The system uses a weigh-frame embedded in the discharge conveyor belt to measure the mass of grapes that are travelling over the discharge conveyor. The actual yield measurement is performed by load cells. The measurements from the yield sensor are linked to a GPS unit so we can record location and yield together and then make a yield map.

***IMAGES OF THE LOAD CELL GRAPE YIELD MONITOR.***



*Image 1 Top Left: The weigh-frame embedded into a hole cut into the discharge conveyor belt tray. The front lip is set slightly higher than the tray so that the conveyor belt rests on the weigh-frame lip.*



*Image 2 Top Right: The externally mounted load cell sensor. The weigh frame sits on the visible cross bar transferring the load of the belt (and grapes) onto the load cell.*

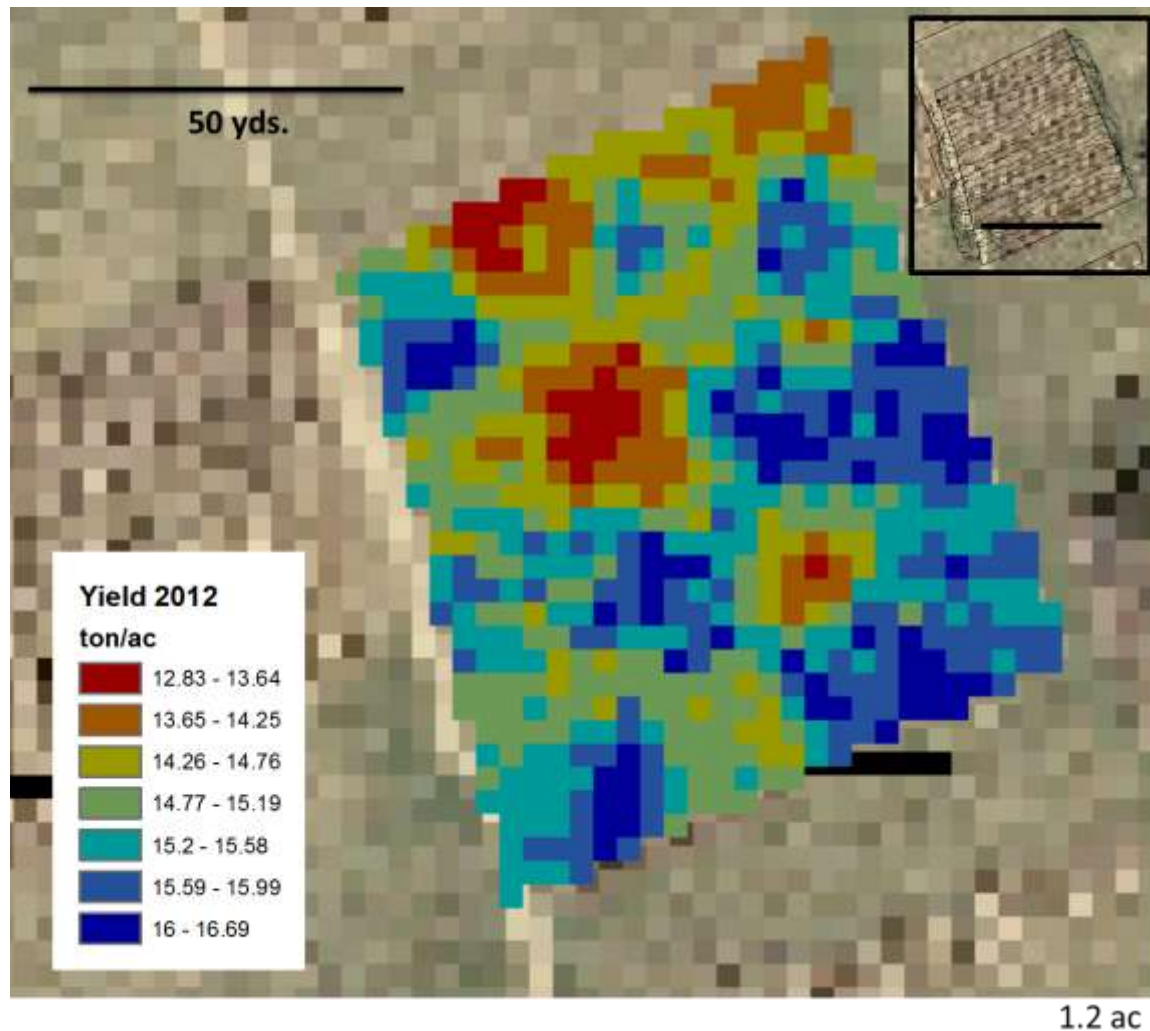


*Image 3 Left: The sensor (covered by a guard) in operation.*



*Image 4 Right: Grapes being offloaded from the discharge conveyor over the yield monitor.*

We have just begun our juice grape harvest and on Wednesday (Sep 5<sup>th</sup>) harvested a 1.2 ac block of Niagara grapes at the Fredonia vineyard. The map generated from the yield sensor information is shown below. To our knowledge this is the first ever yield map in Niagara grapes that is produced by a yield monitor. The raw yield points from which the map was generated are shown in the inset.



The yield map over this small area shows distinct patterns. The low spots (red areas) are areas where potassium deficiency is readily observable in the field at this stage (and seems to have impacted on yield). The yield in the block is extremely high (and yes the values given are correct) due to a combination of factors including little frost damage, a very low yield last year and high bud number retention (the block was machine-pruned with no follow up).

The yield monitoring systems will continue to operate over the coming weeks at CLEREL. It is not a secret. Interested growers are always welcome to visit CLEREL and to inspect the system and discuss it with the LERGP team whenever they have the opportunity. We hope that we will have further updates on the system, its accuracy and application in juice grapes as the vintage progresses.





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***PLEASE NOTE: Next Electronic Crop Update will be Thursday, September 13, 2012***

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***THE LAKE ERIE REGIONAL GRAPE PROGRAM at CLEREL***

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