Lake Erie Regional Grape Program- *Vineyard Notes*

April 2016

In this issue:

Lake Erie Regional Grape Program

Cornell University Cooperative Extension

PENNSTATE College of Agricultural Sciences

The figure below is to be used for reference to the article written by Kevin Martin:
Labor Supply and Demand in Juice Grape Production

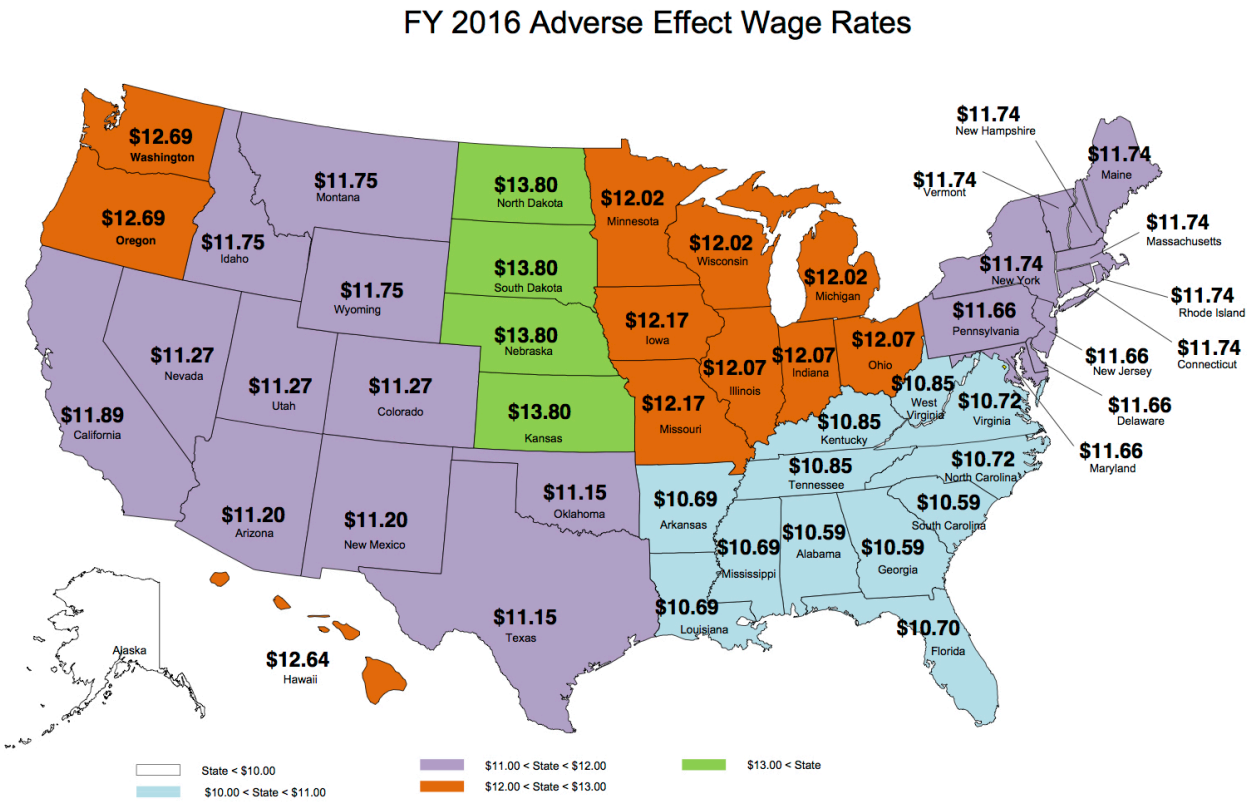


Figure 2: AEWR labor costs are based on average farm labor costs by state. Figure 2 shows that current labor markets are regional and commodity driven wages, rather than wages driven by states with higher minimum wage. It is not known exactly how significant the impact of a $12.50 minimum wage will have on AEWR. We do know that raising the minimum wage to $10.00 shows has no discernable effect.

Labor Supply and Demand in Juice Grape Production

Kevin Martin, LERGP, Business Educator

State and Federal policies have impacts on the supply and demand curves of local farm labor. In relation to the state, proposed policies in New York were quickly evolving. With the budget passed, the region has some clarity going forward.

The amount of actual vineyard labor required by the juice grape industry is small, overall. Supply and demand constraints exist because of the seasonal nature of the work. For example, 40% of non-hand labor is dedicated to the six-week harvest operation.

NYS Minimum Wage

In a recent crop update, I contemplated the impact a NYS minimum wage proposal would have on the grape industry. Near the bottom end of the earning pool are the laborers that prune and renew vineyards. I say near because most of them have been making significantly more than Federal minimum wage for the last 15 or 20 years.

Negotiations have slowed the adoption of a $15 minimum wage in upstate New York. In upstate it will rise to $12.50 by 2021. Thereafter it may continue to rise without legislative approval, up to $15.00. It would not be surprising if the $15 minimum wage was reached by 2025 if political support for minimum wage increases continues.

The implications of a $12.50 minimum wage are complicated. We know pruning wages are always higher than minimum. However, given the large gap between the minimum wage and prevailing wage there is room to negotiate. Pruners currently make about $1 more than the 2021 minimum wage. By 2025 the minimum wage will exceed current pruning rates.

Realistically, this would increase the cost of pruning to 42 cents per vine by 2025. Without a link between food prices and commodities, the increase in labor costs will eliminate hand pruning by 2021 in all sustainably profitable Concord vineyards. Reasonably priced hand-follow-up costs will increase from 13 cents per vine to 19 cents per vine. Not only would I work this into my business plan as a NY grower, I'd do the same in Erie county, PA. Unless there is a surplus of labor, they'll have the ability to negotiate similar rates of pay.

Farm Workforce Retention Tax Credit

In an effort to limit the impact of a rising minimum wage, NYS will offer moderate tax credits to farms. The credits will begin in 2017 at $250 for each employee that works more than 500 hours. By 2021 the credit will be $600 per employee. For many farms the value of the credit is diluted as workers tend to work 3000 hours per year. For vineyards, the opposite could be the case. To keep your operation flexible growers may find many of their workers do not qualify for the credit. Tracking hours and making sure nobody is laid off with 500 hours would be beneficial.

As previously stated I expect the minimum wage increase to have some impact in Erie county, PA. Obviously most of those farms will not be able to take advantage of the credit, despite the impact.

Expanding Labor Market

Temporary work visas issued for agriculture are known as H-2A laborers. H-2A programs got a slow start in the Finger Lakes. It remains confined to the wine industry, with a seasonal labor demand that extends well into the summer. Currently, labor prices in the Finger Lakes are high enough that under the right circumstances H-2A labor is on par or less expensive than traditional migrant labor.

H-2A workers must be paid the adverse effect wage rate (AEWR). This wage rate is equal to the annual

weighted average hourly rate for field and livestock workers, published by USDA. In New York the rate is $11.74 and in PA it is $11.66. Currently there is no relationship between AEWR and minimum wage variation amongst the states.

2016 AEWR wages are based on 2015 data. In 2015, no state had a minimum wage above $9.50 per hour. States with higher minimum wages had AEWR wages much closer to minimum wage than states that remain at $7.75. H-2A wages should always be higher than minimum wage. At no point is the NYS minimum wage forecasted to rise above AEWR wages, which tend to grow as the economy grows. H-2A will not provide a safe harbor from minimum wage requirements. The costs of H-2A labor, however, should not increase significantly faster than it would have otherwise.

Certain types of equipment and technology have an impact on the size of the labor pool available to complete a vineyard task. Investments in bulk harvest operations, for example, lower the skill level demanded of harvest crew. On the other hand, multi-row equipment increases the skill level demanded of an operator. Investments that ask less of operators will adequately solve any issues in a shortage of vineyard labor typically completed by operators and family members.

Monetary compensation is the most typical way a firm tries to move its location on the supply curve and access additional labor. Direct compensation is thought of best as a brake that can upset the employer/employee relationship, not a tool for accelerating the relationship. I do think the rising minimum wage will slow the adoption of H-2A.

Current Labor Market

Both migrant and traditional labor markets are tightening. Regional unemployment rates come down from recent highs of 10% to 5%. The regional labor market is similar to the national market in that underemployment rates remain higher than historical averages. However, most farm labor would be considered a state of underemployment. It often demands highly variable hours, lower pay and a lack of benefits. In periods of low unemployment grape growers may struggle to find reliable tractor operators, mechanics and even general laborers.

Migrant labor continues to reflect the economic impact Immigration, Customs and Enforcement have on the available supply of labor. Relatively stagnant wage growth for legal migrant workers have also contributed the grape industry being less and less competitive compared to other industries that demand their services.

Across the U.S. the migrant labor force began to decline with the financial crisis in 2007. Somewhat unexpectedly, perhaps due in part to ICE, the labor force continues to decline. The national trends reflect similar trends in NYS and PA.

Increasing Worker Productivity

In an effort to mitigate the negative impacts of the current labor market, one strategy is to increase worker productivity. The bulk of efficiency investment has concentrated on tractor and operator efficiency. While the economics of such investments often make sense, they do little to limit the exposure to a volatile labor supply.

Increasing the labor productivity of hand labor has not been done in the juice grape market. Some minimal pre-pruning to speed up hand pruning is an unusual practice. High quality pruning shears including air and electric assist have only been used in winery operations. Even shoot positioning, once a common practice, is now unusual. While the ability to increase productivity is real, the ability for growers to invest and share in the cost savings is limited. Growers would first need to build a relationship that more closely resembles a traditional employer/employee relationship.

Increasing labor productivity for tractor work should be focused first on harvest operations. Not only are

investments a low hanging fruit from a cost perspective, but also the share of labor impacted is greatest.

Decreasing Labor Demand

Investments in decreasing labor demand should usually concentrate on areas where seasonal overload exist. Investments should also concentrate on hand-labor; as such reductions will dramatically increase flexibility and the available pool of labor.

The industry will continue to see pruning evolve toward mechanization, despite the viticultural challenges imposed by mechanically assisted pruning.

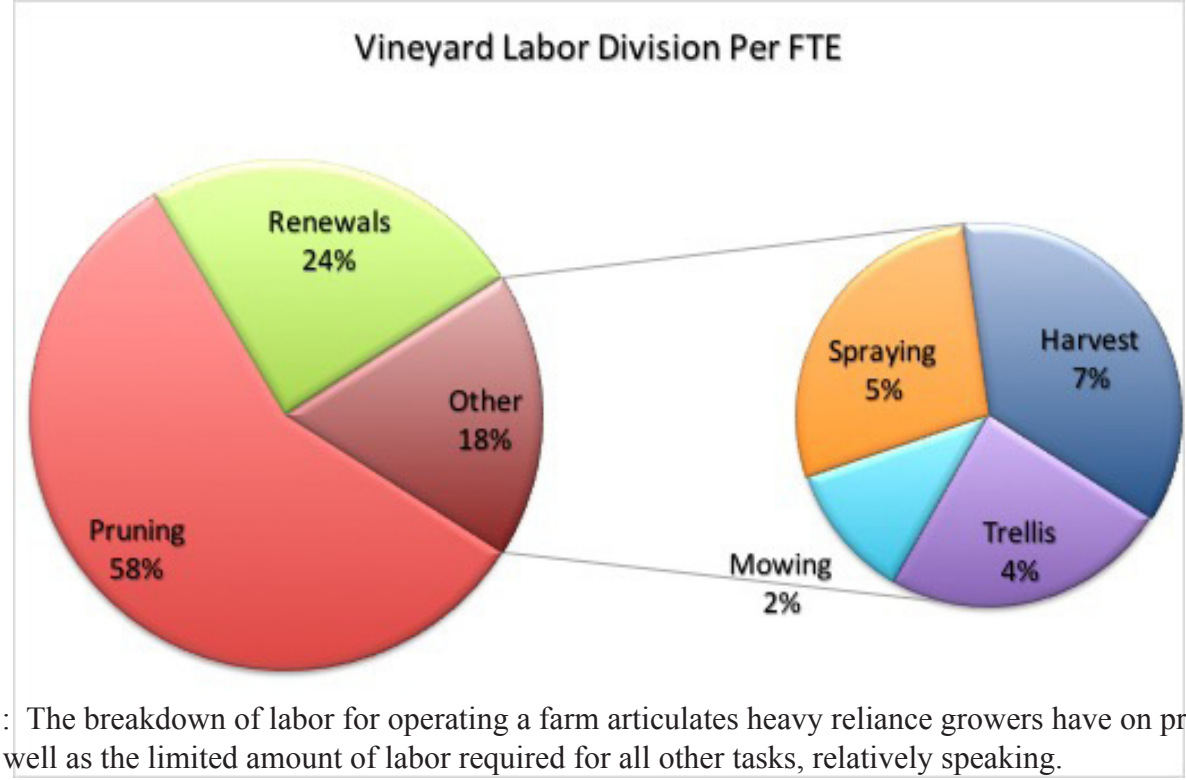


Figure 1: The breakdown of labor for operating a farm articulates heavy reliance growers have on pruning labor as well as the limited amount of labor required for all other tasks, relatively speaking.

Deacclimation and Bud Hardiness

Luke Haggerty, LERGP, Viticulturalist

During the months of March and April it can be difficult to determine the amount of time until bud break and the temperature threshold a bud can withstand before injury. The mild winter and unseasonably warm March would suggest that bud break will occur early. However, during the first week in April there was a shift in the jet stream dropping temperatures region wide. Concerns shifted from early bud break to bud hardiness.

The vine has an internal clock that is geared to prevent the vine from environmental damage. Temperature and light (day length) are the two main contributors responsible for flipping the 'ON' and 'OFF' switch that starts and stops metabolic process that tell the vine to grow or to stay dormant. When temperatures increase in the spring, vines begin the deacclimation process where grape buds transition from cold hardy to cold sensitive (figure 1) as they ready for bud break and active growth.

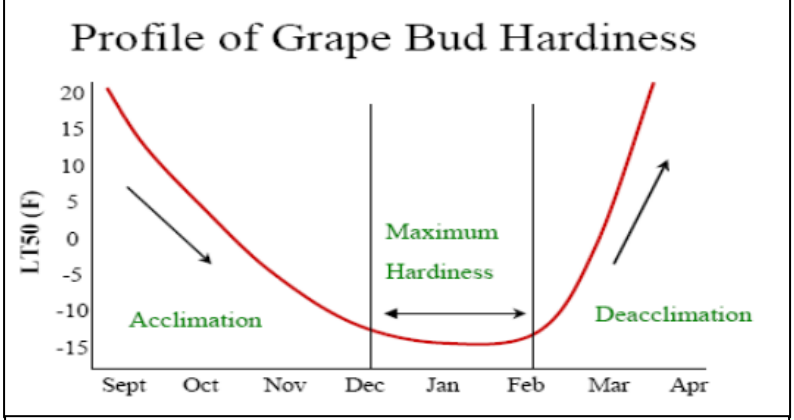


Figure 1. Profile of grape bud hardiness, Zabadal 2007(1).

All vines go through the deacclimation process, but different varieties will vary on when they start the process and the deacclimation rate they progress at. Varieties that deacclimate at an accelerated rate and break bud early (Concord, Marquette, and Chardonnay) are more susceptible to spring frost and freeze damage during the deacclimation process. Damage normally occurs when the vine experiences a sudden shift in temperatures during the deacclimation process and vines are unable to respond with fail safe mechanisms that help prevent injury(2). The current question is "how hardy are the buds"?

Bud Hardiness Data: As part of the 'Bud Hardiness Project', canes from different grape varieties grown in the Lake Erie region are sent to the New York State Agricultural Experiment Station in Geneva for bud hardiness evaluation. See the following link for more information on those results: (http://grapesandwine.cals.cornell.edu/extension/bud-hardiness-data/). The evaluation consists of a differential thermal analysis (DAT) used to estimate the temperature a bud can withstand before death by recording the 'Low Temperature Exotherms' (LTE). For example, DTA is used to predict the lethal temperature that would kill 50% (LT50) of the buds of a specific cultivar.

The last bud samples of the year were sent off on Monday (March 28th). Results showed (figure 2) another big jump and that the vines are at the peak of the deacclimation process. The cold temperatures in early April may have slowed down this process and delayed bud break.

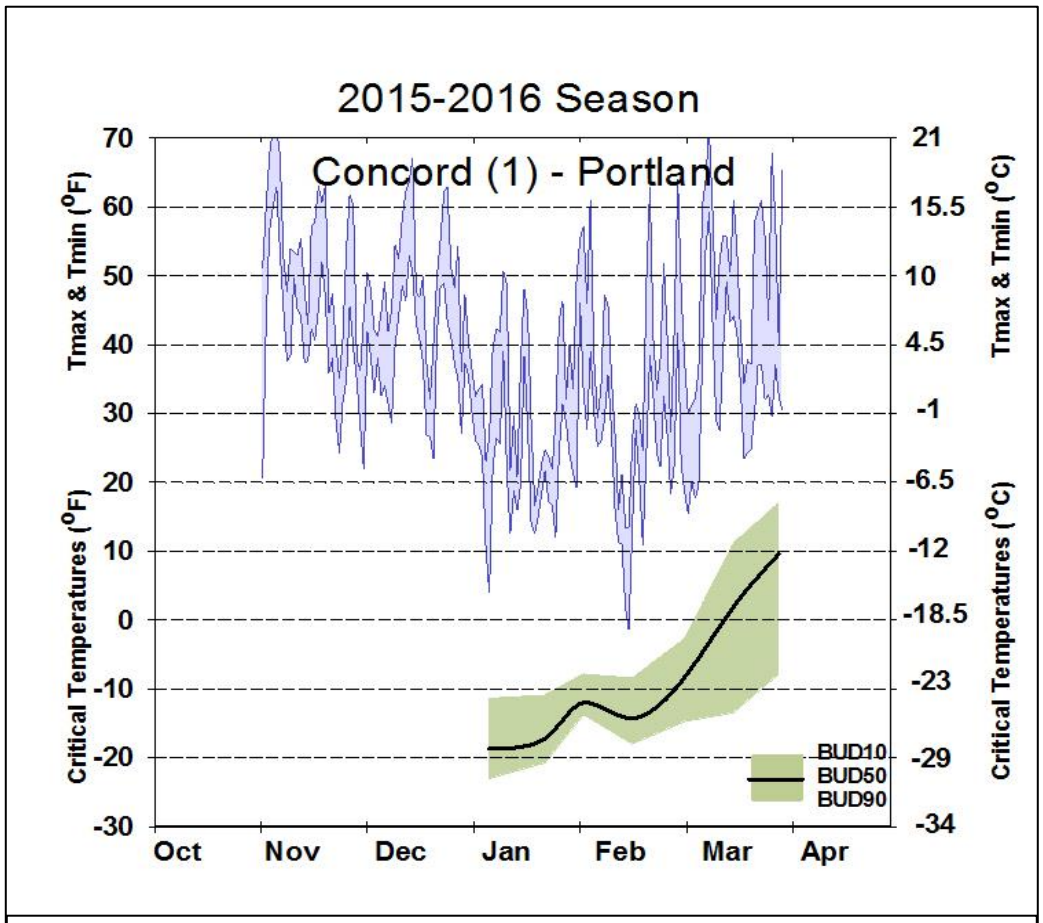


Figure 2. Bud hardiness for 'Concord' in Portland NY (3)

References:
1. Winter Injury to Grapevines and Methods of Protection, Tom Zabadal 2007 – Michigan State University, 44pp.: http://migarden.msu.edu/uploads/files/e2930.pdf
2. What Does Deacclimation Mean to Me, Kevin Ker & Ryan Brewster – KCMS Applied Research and Consulting 2011.
http://www.kcms.ca/pdfs/KCMS%20Deacclimation%20Article%20Mar%202011.pdf
3. Bud Hardiness Data, T. Martinson – Cornell University
http://grapesandwine.cals.cornell.edu/extension/bud-hardiness-data/

Bang For The Buck, Early Season IPM

Tim Weigle, NYSIPM, LERGP

Early in my career, when I was trying to convince growers that calendar spraying may not be the best way to do things, I heard the phrase "cheap insurance" quite a bit. As in, 'I throw insecticide in the tank each time I spray because it is cheap insurance'. As the cost of vineyard inputs become more and more expensive, we all keep looking at how we can get the biggest 'bang for our buck' or the largest return on our investment in an IPM strategy.

If you have been a member of the LERGP for any length of time you have read, and heard, time after time that block by block record keeping and scouting is the basic foundation of good vineyard management. Therefore, if you are looking for the biggest bang for the buck you should take the time now to map out your vineyard, *(if you do not have a good GIS map of your vineyard operation, please contact our office to set up an appointment with Kim)* locate your trouble spots (to the best of your recollection), and develop a record keeping system, as well as a strategy for getting out into the vineyard on a regular basis to see what is going on so you can start collecting information for your records.

Once you have your maps completed and record keeping system in place you can start to determine what problems are present in what areas. Whether it be weeds, insects, diseases, nutritional deficiencies or drainage problems, you will have a better handle on how wide spread the problem is and how to vary your strategy (and the amount of money you put into it) for each area of your vineyard operation.

You can put your new maps and record keeping system in place first thing this spring as buds swell and we start worrying about our first pests. Climbing cutworms and steely beetle are two early season pests that do not require treatment each year, but in years with delayed bud push they can create a significant amount of damage in a short time frame. If we continue the cycling of warm/cold periods into the growing season, keeping us in the bud swell to 3-inch shoot growth stage for an extended amount of time, it could be a banner year for steely beetle and climbing cutworm. Start scouting for both of these pests at bud swell.

Steely beetle is often found at the vineyard edges adjacent to brushy areas or woods. The steely beetle feeds directly on the bud, hollowing it out and destroying it. Scout the edges of vineyards where steely beetle has been a problem in the past and treat if damage reaches 2% bud damage or above for balanced pruned vines. However, the more buds that are left on the vines after pruning is completed the higher the damage threshold could be raised. While both steely beetle and climbing cutworm are secondary pests they should not be ignored as they have the ability to cause economic damage quickly. As shown in the photo, steely beetle can reduce bud numbers on vines to the point where it appears a freeze event has killed the vegetation (note that a few rows over from the edge the canopy is growing normally).

Climbing cutworm does its feeding at night and moves down into leaf litter or into areas of vegetation on the vineyard floor during the day. Therefore, vineyards with

poor weed control last year should be targeted for scouting as this can dramatically improve the habitat for climbing cutworm. We have seen in the past that vineyards with weed growth up to the base of the vine are much more prone to damage from climbing cutworm than are vineyards that have a weed free strip under the row. Climbing cutworm also prefer lighter, sandier soils. Scouting for climbing cutworm will involve looking for the distinct damage of the shoots being fed on and "cut" off the shoot. For balanced pruned vines a threshold of 2% bud damage has been used to trigger treatment against this pest. As with steely beetle, in those vineyards where more buds are available after pruning, a higher threshold should be used.

Switching to early season diseases, research conducted by Wayne Wilcox, NYSAES, Geneva, showed that early season applications against Phomopsis significantly reduced rachis infections, increasing yield through retention of more cluster shoulders. Applications at 3- to 6-inches of shoot growth were also shown to be key in protection against shoot infections which are a source of inoculum for years to come as they are found mainly on the first three internodes and are very difficult to remove during pruning.

With the limited amount of green tissue that you are shooting for at 3- to 6-inches of shoot growth, you can adjust your sprayer to put the application just in the zone where green tissue is present. With top wire cordon training systems this can dramatically reduce the amount of water per acre that is needed to get good coverage. Remember not to be fooled when you see the spray appear to go four rows over. It is quite common for growers to go every other row this early in the season, as there is not much leaf tissue to intercept the spray but do you really know if you are getting the coverage that you need? Take the time to calibrate your sprayer whenever you change the amount of water per acre, the amount of air used or the area that is being sprayed (reducing the number of nozzles for example). Every sprayer is different so take the time to determine how effective your sprayer is by using water sensitive spray cards in the canopy of rows directly adjacent to the sprayer and one, two, and three rows over. You may be surprised at how quickly the coverage becomes commercially unacceptable. With the costs of spray material going up it is even more important to ensure that it is getting where you want it to be. One resource that will help you to do that is the 2016 New York and Pennsylvania Pest Management Guidelines for Grapes. In chapter 7.1 Preparing the Airblast Sprayer for Work, Dr. Andrew Landers provides some great advice to help you check your sprayer over and get it calibrated and in top running shape prior to its first use of the season.

eNEWA for Grapes

Would you like to see the current weather and grape pest information found on NEWA (Network for Environment and Weather Applications) http://newa.cornell.edu without having to click through the website? Then eNEWA is for you. eNEWA is a daily email that contains current weather and pest model information from a station, or stations, near you. The email will contain; 1) high, low and average temperature, rainfall, wind speed and relative humidity 2) the 5-day forecast for these weather parameters, 3) GDD totals (Base 50F), 4) 5-day GDD (Base 50F) forecast and 5) model results for powdery mildew, black rot, Phomopsis and grape berry moth. The weather information is provided for not only the current day but for the past two days as well.

We will continue testing of eNEWA for Grapes in 2016. You can choose from any number of stations located near you for delivery of this information via email each day at a time specified by you. Please keep in mind that you will receive a separate email (approximately 3 pages in length) for each station you choose. Once during the growing season and again after harvest, you will be asked to complete a short survey to assist us in improving the eNEWA for grapes email system. If you would like to be a part of this project just fill out the form found in this newsletter and return to: Tim Weigle CLEREL 6592 West Main Road Portland, NY 14769. Or you can scan it and send it to me at thw4@cornell.edu

Portland - September 10, 2015

Past & Current Weather Data

	Sep 8	Sep 9	Sep 10
Avg Temp (°F)	79.0	74.0	67.0
High Temp (°F)	84.0	78.0	74.0
Low Temp (°F)	73.0	70.0	61.0
Rain (in)	0.0	0.07	0.0
Wind (mph)	5.8	5.3	6.0
RH (hrs ≥ 90%)	0.0	5.0	1.0

5-day Forecast

	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15
Avg Temp (°F)	66.0	62.0	60.0	59.0	63.0
High Temp (°F)	75.0	67.0	65.0	67.0	73.0
Low Temp (°F)	58.0	60.0	56.0	55.0	56.0
Rain Chance (am|pm)	2|40	70|67	58|50	30|15	11|2
Wind (mph)	4.7	5.6	9.0	8.9	7.6
RH (hrs ≥ 90%)	0.0	1.0	0.0	0.0	0.0

2016 eNEWA Grape Project Subscription Sign-Up

Subscriber information

Name_____

Email address _____

City_____

Select Location(s) (circle as many as you like, or write in below)

_____

Lake Erie Region	**Sheridan**	**Lakemont**
Appleton, North	**Silver Creek**	**Lansing**
Appleton, South	**Versailles**	**Lodi (Lamoreaux)**
Dunkirk	**Finger Lakes Region**	**Lodi (Shalestone)**
Erie	**Aurora**	**Lodi (Standing Stone)**
Harborcreek	**Branchport**	**Penn Yan**
North East Escarpment	**Dresden (FLGP/FLCC)**	**Romulus (B. wood Grove)**
North East Lab	**Dundee (Weimer)**	**Romulus (Thirsty Owl)**
Portland	**Fayette 3 Brothers**	**Varick (Swedish Hill)**
Portland Escarpment	**Geneva**	**Watkins Glen**
Portland Route 5	**Geneva (Bejo)**	**Watkins Glen (Lakewood)**
Ransomville	**Hector**	
Ripley	**Interlaken (Airy Acres)**	

Select eNEWA Delivery Times (write in times below) Delivery requests should be on the hour.

_____

Mail to: Tim Weigle, CLEREL, 6592 West Main Road, Portland, NY or scan and email to thw4@cornell.edu

NYS IPM PROGRAM WELCOMES DAMIAN DODD

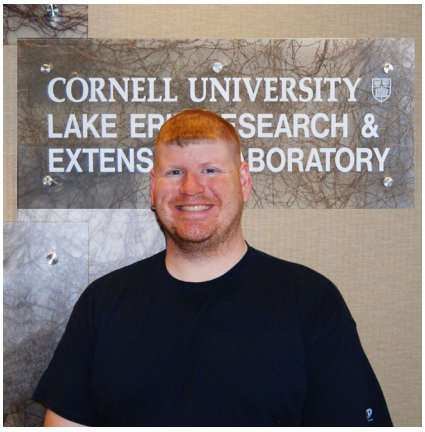
The NYS IPM Program, a partner in the Lake Erie Regional Grape Program (LERGP), is excited to announce the addition of Damian Dodd to the extension team as Extension Aide. Damian comes as a media specialist who will be responsible to generate video and social media content of the research conducted as part of the $6 million Specialty Crop Research Initiative grant awarded to Dr. Terry Bates of the LERGP at CLEREL. He is also responsible to develop and maintain a website to display that content.

Damian hails from Maryland and currently resides in Westfield, New York with his wife and daughter. He has a BS in Business from Towson University and also attended the Portfolio Center (an advertising trade school) in Atlanta, Georgia. Over the past 23 years Damian has worked as an Art and Creative Director for various advertising agencies ranging from 6,500 employees to freelancing on his own. Damian is most excited about engrossing himself in learning about viticulture and "geeking-out" regarding the technology involved, especially as pertains to the USDA SCRI grant. He looks forward to informing the public in a way that is entertaining and educational.

Damian's role in the USDA SCRI "Efficient Vineyard" grant will be to create the interface for the transfer of research-based information developed by the research and extension teams to the public via the website and other social media, as well as keeping the information presented in a way that is interesting and keeps you coming back for more.

****

LERGP Research Team Welcomes Andy Joy



The Lake Erie Regional Grape Program at Cornell's Lake Erie Research and Extension Laboratory (CLEREL) is pleased to announce the addition of Andrew Joy to their staff. Andy has been hired to fill the Field Tech III Research assistant position which makes him responsible to; provide technical and research support to CLEREL research staff; participate in completing vineyard, farm, and facility operations with specific attention to station farm equipment, implements and vehicles; and coordinate pesticide use and reporting at CLEREL.

Andy is a native of Fredonia, New York and comes to us with a lifetime of experience. He currently runs 30+ acres of his own grapes as well as continuing to work with his parents on their family farm of over 100 acres. In addition to grape farming, he is familiar with various other crops and livestock. His farm boasts hogs, meat chickens, laying hens and a herd of more than 40 meat goats. Andy has earned an AS in Diesel Tech and a BT in Ag Engineering from SUNY Cobleskill. He is excited about working in the grapes and other crops at CLEREL and using his education and experience to work alongside the LERGP/CLEREL staff in their current projects and precision agriculture. In relation to the recent USDA grant that was awarded to work on Specialty Crop Research Initiative (SCRI), Andy will be responsible to work with researchers to perform the variable rate techniques required in any trials performed at CLEREL.

News Release
Conservation Technology Information Center 30
CTIC champions, promotes, and provides information about conservation and sustainable agricultural systems that are beneficial for soil, water, air, and wildlife resources and are productive and profitable for agriculture.

Farmers Urged to Participate in CTIC, SARE and ASTA Cover Crop Survey

A nationwide survey of farmers on cover crop use is seeking insight from growers around the country — whether or not they plant cover crops.

"This survey provides us with a great perspective on why farmers do or do not plant cover crops, what they expect to gain from the practice, and what their concerns are," says Chad Watts, project director at the Conservation Technology Information Center (CTIC) in West Lafayette, Indiana, which administers the survey. "Results from the survey help guide policy, research and education on cover crops. In recent years, data from cover crop surveys has been used in testimony on Capitol Hill, featured in the New York Times, and cited in academic journals. People are very eager to hear how farmers view cover crops."

The survey can be taken online at http://tinyurl.com/ccsurvey2016 until May 1, 2016. All answers to the survey are anonymous, Watts points out. Participants who complete the survey — an easy process that takes no more than 15 minutes, and even less depending on your crop rotations and diversity — have the option of entering into a drawing for a $100 gift card.

The project is the fourth annual cover crop survey conducted by CTIC in conjunction with USDA's Sustainable Agriculture Research and Education (SARE) program, and the American Seed Trade Association (ASTA) with help from Penton Media. Sponsors within ASTA include Albert Lea Seed, CHS, The CISCO Corporation, LaCrosse Seed, Mountain View Seed, Allied Seed, Curtis & Curtis Inc., Grassland Oregon, Justin Seed and Seedway.

Anyone interested in seeing results from the 2013, 2014 or 2015 crop year surveys and other related projects, click here. Also, please visit our website www.ctic.org.

The Conservation Technology Information Center (CTIC) is a national, public-private partnership that champions conservation agriculture and serves as a clearinghouse for information on conservation farming issues and practices, as well as a facilitator for training and workshops. For more information, visit www.ctic.org.

Brookside Society of Professional Consultants

DAVID J. MAILLE
Phone: (814) 898-0755
Cell: (814) 572-5781
maillecon@aol.com

MAILLE CONSULTING SERVICES

Agricultural-Environmental

JARED MOSIER
Phone: (301) 512-3977
jsmosier1@gmail.com

7653 Dutton Rd.
Harborcreek, PA 16421

NORTH EAST FRUIT GROWERS INCORPORATED EST 1937

2297 KLOMP ROAD, NORTH EAST, PA 16428
PHONE: 814.725.3705
OPEN MONDAY – FRIDAY 8AM – 5PM & SATURDAY 8AM - NOON

SPECIALIZING IN:
FERTILIZER
(BULK & BAG)
CHEMICALS
VINEYARD & ORCHARD
SUPPLIES &
MUCH MORE

CHECK OUT OUR PRUNING SUPPLIES FROM THESE TRUSTED BRANDS!
LOWE
FELCO SWISS MADE
CORONA SEASON AFTER SEASON

MORE FLAVORS AVAILABLE!
LOVED BY BIRDS AND BIRD LOVERS

The Original MUCK BOOT COMPANY
LARGE SELECTION! LOW PRICES!

MEN'S, WOMEN'S & KID'S SIZES AVAILABLE!

FIND US ON FACEBOOK AT: NORTH EAST FRUIT GROWERS INC

Clover Hill Sales LLC.
10401 Sidehill Road
North East, PA 16428
814-725-3102
www.cloverhillsales.com

WOODS Woods Equipment Company
DURAND WAYLAND SPRAYING, PACKING & LABELING SYSTEMS
STOLTZFUS Spreaders
EDWARDS EQUIPMENT COMPANY
CENTRAL BOILER
TISCO

Harvester Parts and Belting
Southern Yellow Pine Posts
And So Much More!!

2016
LERGP Coffee Pot Schedule

May 4- 10:00am Betts 7365 East Route 20, Westfield NY 14787

May 11-10:00am Ann & Martin Schulze-2030 Old Commer Rd. Burt NY 14028

May 18-10:00am John Mason 8603 W Lake Rd. Lake City PA 16423

May 25-10:00am Dan Sprague- 12435 Versailles Plank Rd. Irving NY 14081

3:00pm Peter Loretto-10854 Versailles Plank Rd. North Collins NY 14111

June 1-10:00am Phillip Baideme- 7935 Route 5, Westfield NY 14787

3:00pm Tom Meehl Cloverhill Farm 10401 Sidehill Rd North East PA 16428

June 8-10:00am Earl & Eileen Blakely 183 Versailles Rd. Irving NY 14081

3:00pm- Paul Bencal 2645 Albright Rd Ransomville NY 14131

June 15- 10:00am Leo Hans-10929 West Perrysburg Rd. Perrysburg NY 14129

3:00pm -Evan Schiedel/Roy Orton- 10646 West Main Rd. Ripley NY 14775

June 22-10:00am Archer Pratz 9210 Lake Rd North East PA 16428

3:00pm-Alicia Munch-761 Bradley Rd. Hanover NY 14136

June 29-10:00am Kirk Hutchinson-4720 West Main Rd. Fredonia NY 14063

3:00pm Fred Luke 1755 Cemetery Rd. North East PA 16428

July 6- 10:00am David C. Nichols Farm 1906 Ridge Rd. Lewiston NY 14092

July 13-10:00am Beckman Bros. 2386 Avis Dr. Harborcreek PA 16421

July 20-10:00am Brant Town Hall- 1294 Brant North Collins Rd. Brant NY 14027

July 27-10:00am Tom Tower 759 Lockport Rd. Youngstown NY 14174

6592 West Main Rd., Portland, NY 14769 (716) 792-2800
662 North Cemetery Road, North East, PA 16428-2902 (814) 725-4601
850 East Gore Road, Erie, PA 16509-3798 (814) 825-0900

This publication may contain pesticide recommendations. Changes in pesticide regulations occur constantly, and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. Questions concerning the legality and/or registration status for pesticide use should be directed to the appropriate extension agent or state regulatory agency. Read the label before applying any pesticide. Cornell and Penn State Cooperative Extensions, and their employees, assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsements of products are made or implied.

Cooperatively yours,

Timothy Weigle
Statewide IPM
Senior Extension Associate

Andy Muza
County Extension Educator

Kevin Martin
Business Management Educator

Luke Haggerty
Area Viticulture Extension Associate

Building Strong and Vibrant New York Communities

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Contact the Lake Erie Regional Grape Program if you have any special needs such as visual, hearing or mobility impairments.

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Director, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-2801, Tel 814-865-4700/V, 814-863-1150/TTY.

Cornell Cooperative Extension
LERGP
6592 W Main Rd
Portland NY 14769

Helping You Put Knowledge to Work