The Lake Erie Regional Grape Program

PENNSTATE

Crop Update for September 18, 2014

The harvest season is upon us.
The season of meetings and events has come to a close and the focus has shifted to preparing for the harvest.

Events will be posted as they arise in the coming months.

Tuesday, September 23, 2014 is the first day of our beautiful fall season here in Western NY!

Business Management

Kevin Martin
Penn State University, LERGP,
Business Management Educator

Farmer Cooperatives

New York State Farmer Cooperatives saw substantial growth in 2013. In general, a growing agricultural industry and high commodity prices contributed to that growth. The analysis of farm cooperatives illustrates that the challenges facing cooperatives extend across industries. One of the key strengths of cooperatives revolves around economies of scale. Scale takes size and size takes membership.

Increasing the number of members is often the easy way to meet goals revolving around economies of scale. Patron proceeds and a timeline for return on investment relate directly to the composition of cooperative membership. Small and young cooperatives, by their very nature, typically consist of growers with similar goals and ROI timeframes. As cooperatives age and grow, diversity amongst member goals requires careful board leadership.

Diversity of opinion is no stranger to the grape industry. In many ways, amongst other industries the grape cooperatives serve as a rather successful model. The attached article cites equity allocation as a source of conflict,

> *Long-term members will have more equity in the cooperative business than new members but the services to each may be the same. Members may be faced with a realization that the return on the equity investment in the cooperative is less than what might be achieved if similar funds could be invested elsewhere for higher returns.*

Three local juice cooperatives all have a different strategy for dealing with this potential conflict but they all address it. For some, equity is marketable. For others, ROI is variable, and as a third option equity is kept to an absolute minimum. In their own ways, this tends to minimize the need for equity investment and, sometimes, maximize the opportunity for interested growers to increase equity allocations.

Chapter 3. Cooperatives

Roberta M. Severson, Extension Associate

Farmer cooperative sales throughout the United States and New York State set new records in 2012, which demonstrates the vitality of the nation's farmer-owned cooperatives and the important role they play in the agricultural sector. Total net business volume of cooperative businesses (excludes sales between cooperatives) grew by 14.6 percent nationally and 1.7 percent in New York State. Noteworthy research has been conducted over the past several decades to document the importance of cooperative businesses. Similar to investor-owned firms, cooperatives must adapt to a variety of external and financial factors in order to remain profitable and add value to the businesses of their producer members. The following chapter provides an overview of cooperative activity within the United States and New York State and provides insight into the critical issues facing cooperatives in the future.

U.S. Situation – Farmer Cooperatives

In 2012, 2,238 U.S. farmer cooperatives owned by 2.1 million members had a record-breaking year with over $234 billion in gross business volume (includes sales between cooperatives) and nearly $899 million returned to member owners in patronage refunds (Table 3-1). Grain and oilseed sales by co-ops increased more than $7 billion, more than offsetting the drop of $500 million in dairy products marketed. Gross business volume (excluding the Farm Credit System) increased by 7.9 percent from the previous record high of $216.8 billion set in 2011. Table 3-1 compares volume of cooperative business between 2011 and 2012 (Ali, 2013).

TABLE 3-1. U.S. FARMER COOPERATIVES, COMPARISON OF 2011 AND 2012

Item	2011	2012	Change
	($ billion)	*($ billion)*	*percent*
Gross Business Volume			
Marketing	$131.0	$137.4	4.8
Farm Supplies	81.4	91.9	13.0
Services	4.4	4.7	6.8
Total	**$216.8**	**$234.0**	**7.9**
Balance sheet			
Assets	$79.4	$82.9	4.4
Liabilities	51.3	53.0	3.3
Equity	28.2	30.0	6.5
Income Statement			
Sales (Gross)	$216.8	$234.8	8.3
Patronage income	0.6	0.9	46.6
Net income before taxes	5.4	6.1	12.9
Employees	(Thousand)	(Thousand)	
Full-time	130.8	129.2	-1.2
Part-time, seasonal	52.8	56.0	6.0
Total	**183.6**	**185.2**	**0.0**
Membership	(Million)	(Million)	
	2.3	2.1	-7.4
Cooperatives	(Number)	(Number)	
	2,299	2,238	-2.7

Source: Ali, Sarah and E. Eldon Eversull, *Rural Cooperatives, USDA Rural Business Cooperative Service, September/October 2013 Vol. 80 No. 5 pg. 5, Washington, D.C.*

While not shown, net business volume (excludes sales between cooperatives) grew by 8 percent or $14.6 billion from $187 billion in 2011 to $201.6 billion in 2012. Most of this (8%) can be attributed to increasing grain and oilseed prices. Net business volume for supply cooperatives increased $7.0 billion, with increasing prices paid for feed, fertilizer, and petroleum accounting for 43% of the increase. Net business volume increased $1.3 billion, $2.2 billion, and $2.6 billion for feed, fertilizer, and petroleum products, respectively.

The aggregate cooperative balance sheet shows total assets increased by $3.5 billion or 4 percent and liabilities increased by $1.7 billion or 3 percent between 2011 and 2012. Equity improved by $1.8 billion or slightly over 6%. Net income before taxes increased $0.7 billion or 13 percent between 2011 and 2012.

Nationally, farmer marketing cooperatives account for 53.8 percent of all farmer cooperatives with 31.0 percent of all memberships. Supply cooperatives account for 40.7 percent of all U.S. farmer cooperatives and 67.2 percent of all memberships. Farmer service cooperatives make up the balance; i.e. 5.4 percent of cooperatives with 1.7 percent of memberships. Membership numbers exceed farm numbers as a farm business can belong to one or more cooperative enterprises. Previous studies show farmers as members of up to three cooperatives. The total number of cooperatives declined modestly between 2011 and 2012 (-2.7 percent), reflective of continued industry consolidation (Table 3-1). While farmer cooperative members have also trended downward over the last decade, total memberships decreased modestly between 2011 and 2012 by 7.4 percent.

The number of full- and part-time workers remained relatively constant in 2012 at 185.2 thousand workers, with a slight decrease (1.2 percent) in full-time workers to 129.2 thousand and an increase (6.0 percent) in part-time, seasonal workers of 3.2 thousand (Table 3-1). Marketing cooperatives employ 60 percent of the farmer cooperative labor force, followed by supply cooperatives at 39 percent, and service cooperatives at 1 percent. Grain and oilseed marketing cooperatives employed 32,200 employees, with an increase of 1.5 percent from 2011 to 2012. Likewise, dairy cooperatives employed 22,000 employees in 2012, with an increase of 1.4 percent over 2011. Fruit and vegetable marketing cooperatives employed 29,300 employees in 2012, a decrease of less than 1 percent over 2011. Dairy, fruit and vegetable, grain and oilseed sectors employ approximately 45 percent of all farmer cooperative workers.

New York State Situation

Data for agricultural cooperatives headquartered in New York State were obtained through a USDA Rural Development Cooperative Service survey. The most current state-level information available is for years 2011 and 2012. Table 3-2 summarizes cooperative businesses headquartered in New York State.

Between 2011 and 2012 the total number of farmer cooperatives remained relatively stable (54) and cooperative memberships (5.7 thousand) decreased by 11 percent. The number of dairy cooperatives and the number of fruit and vegetable cooperatives decreased by one in each category. The number of "other product" marketing cooperatives remained the same.

Reflective of a slight increase in milk production coupled with prices comparable to 2011, net business volume for dairy cooperatives increased by nearly $311 million or 14.5 percent from previous year levels. New York State dairy cooperatives market approximately 75 percent of the milk produced within the state. Net business volume for fruit and vegetable cooperatives increased by 4.1 percent to $77.9 million in spite of a 50 percent decrease in memberships. USDA data now reflects the termination of ProFac Cooperative. Net business volume for all reporting marketing cooperatives increased by $425.5 million or 18 percent. Five "other products" marketing cooperatives is the calculated difference between the USDA reported total number of marketing cooperatives and dairy and fruit and vegetable cooperatives.

TABLE 3-2. NEW YORK STATE AGRICULTURAL COOPERATIVE NUMBERS, MEMBERSHIPS AND NET BUSINESS VOLUME, 2011 and 2012[1]

Major Business Activity	Number & Membership (000) Headquartered in State				Net Business Volume	
	2011		2012		2011	2012
	No.	Members (000)	No.	Members (000)	($ million)	
Marketing:						
Dairy	30	3.5	29	3.1	$2,143.4	$2,454.3
Fruit & Vegetable	8	1.0	7	0.5	74.8	77.9
Other Products[2]	5	0.3	5	0.4	184.8	296.3
TOTAL MARKETING	43	4.8	41	4.0	$2,403.0	$2,828.5
Supply:						
Crop Protectants					$22.9	$23.0
Feed					74.3	77.0
Fertilizer					31.4	31.4
Petroleum					2.3	2.2
Seed					3.6	2.9
Other Supplies					27.5	27.4
TOTAL SUPPLY	6	1.4	5	1.4	$162.0	$163.8
TOTAL SERVICE[3]	6	0.2	8	0.3	$31.5	$37.3
TOTAL	55	6.4	54	5.7	$2,596.6	$3,029.6

Source: *Cooperative Statistics* 2012, USDA Rural Development, http://www.rurdev.usda.gov/BCP_Coop_DirectoryAndData.html

[1] Totals may not add due to rounding.

[2] Includes wool, poultry, dry bean, grains, livestock, maple syrup, ethanol, and miscellaneous cooperatives.

[3] Includes those cooperatives that provide services related to cooperative marketing and purchasing.

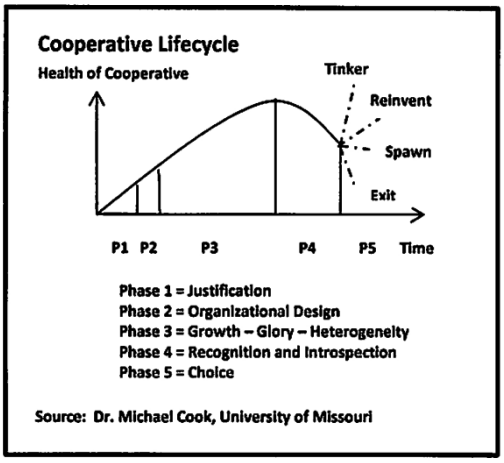
The database indicates that there are five farmer supply cooperatives and eight farmer service cooperatives in New York State. Producers experienced slightly higher costs for inputs in 2012 over 2011. These comparable costs are analogous business volumes for crop and livestock inputs in supply cooperatives. Net business volume from seed sales decreased 20 percent and net business volumes from crop protectants and fertilizer were similar in 2011 and 2012. In total, net business volume for supply cooperatives increased by $1.8 million, or 1.0 percent. The strong increase in farmer cooperative services resulted in net business volume increasing from $31.5 million to $37.3 million or 18 percent. Overall, net business volume for those cooperatives headquartered in New York State increased by $433 million or 17 percent.

The USDA Rural Development Cooperative Survey does not include activity of the Farm Credit System. On January 1, 2010 Farm Credit of Western New York, ACA merged into First Pioneer Farm Credit, ACA to create Farm Credit East, ACA. Farm Credit East, ACA service area includes New York State, New Jersey, Massachusetts, Connecticut, Rhode Island, New Hampshire, and customers in several other states. As such there are no figures specific to New York State; however 52 percent of the loan portfolio is based in New York State. The 2012 Farm Credit East ACA annual report notes that loan volume increased 7.8 percent to $4.7 billion. Net income before taxes rose from $141.4 million to $142 million. The board of directors determined that $40.0 million be returned in cash refunds, the cooperative's 17th consecutive patronage distribution.

The top 50 dairy cooperatives market almost 80 percent of the milk within the United States. Eight of the 50 cooperatives have members inside and outside of New York State. These cooperatives accounted for 40 percent of milk marketed by cooperatives. These cooperatives accounted for 36 percent of the memberships of the top 50 cooperatives (Hoard's Dairyman (2013).

Issues for Agricultural Cooperatives – The Five Phases of the Cooperative Life Cycle

The history of agricultural cooperatives is universal. They were formed by farmers to achieve economies of scale necessary to level the competitive field in the marketplace. In spite of consolidation in the farm sector through time, farm businesses are relatively small, family-owned production units, which still supply the majority of farm-level output. Cooperative-structured businesses supply needed services, build the bargaining power of farm owners, and share profits through patronage returns. In contrast, large agribusiness firms supply the majority of inputs that farmers use and control the processing, marketing and distribution of farm outputs to end users. Present day cooperatives continue for the same reasons, to address an economic challenge, to market product collectively, to achieve economies of scale, and to share profits with their members in proportion to use.



When a cooperative is created members are similar in their perspectives on the value of the cooperative, the economic problem it will address and the goals of the cooperative to be achieved. Many members are of the same age, live near one another, with businesses of similar size and scale. "The short-run effect of successful cooperative formation is transformative, providing balance and opportunity in the marketplace to a formerly disadvantaged group. In the long run, however, competitors respond to generate new market dynamics." (Hueth, 2011) Through time the cooperative changes as does its membership. The cooperative may expand into new territories with new members requiring pricing differentials different from other members. The size and scale of each members business may change and with those changes, the expectations of the cooperative change. New generations of members join the cooperative and older cooperative members retire. With this change comes new expectations and views on equity, how it is accumulated, allocated, and revolved.

The evolution of the cooperative is the cooperative life cycle. The concept of business life cycles has been studied for over 50 years. An organizational life cycle predicts that an organization moves from inception to growth, to maturity, to decline OR redevelopment. The literature suggests that these phases are sequential in nature, occur in a hierarchal progression and become increasingly complex through time. Dr. Michael Cook, University of Missouri suggests that a cooperative-structured business passes through five phases. The first phase is the Justification phase. In this phase the reason for the cooperative business is identified, i.e. reduce risk, create economies of scale in purchasing, marketing, secure needed services, etc. At this phase some cooperatives develop a defensive strategy in the marketplace to best position their members and generally operate at breakeven. Other cooperatives choose a more offensive strategy, working to achieve above breakeven profits with a membership culture that is more investor oriented.

Phase 2 of the cooperative life cycle is the Organizational phase where 'property rights' come into play. This part of the life cycle addresses who owns the cooperative, who controls the cooperative, and who will benefit from the cooperative. The people involved in Phase 1 were united in the common need, the goals to be achieved, and in the actual formation of the cooperative. In Phase 2 the cooperative is formally organized. Differences between members (heterogeneity) emerge as they articulate their perspectives on equity capital acquisition policies, distribution of patronage refunds, and representation rules. "The process of constructing the cooperative constitution tests the scope and degree of member heterogeneity through formulation of policies and rules affecting principal-agent relationships, collective decision making processes, and risk bearing responsibilities." (Cook, 2009).

Phase 3 of the cooperative life cycle is the Growth and Glory phase. Growth may be defined in numerous ways – growth in revenue, patronage refunds, membership, market share, and profitability. With growth come changes such as new locations or market channels in which the cooperative will operate, characteristics of desirable members, benefits to be accrued to members, and how to monitor and evaluate change itself. With growth comes change in the membership. Growth of membership implies economies of scale and improved bargaining positions for the cooperative business. It can also be a source of new leaders making creative decisions that build on the success of the cooperative. Long term members change as well. Some members who delivered 100 percent of their crop to the cooperative may seek alternative markets for a portion of their crop. Some members will expand the size and scale of their individual businesses as a result of a next generation owner and others will retire from the industry. As new issues arise it becomes evident that the same view of the cooperative is not shared by all members. This view will be influenced by the personal circumstances of each of the members. It is the first indicator that the cooperative leadership will have to address a diversity of member needs and expectations.

These diverse views are not an indicator of future failure of the cooperative. Creative solutions need to be identified, explored, and implemented to address these views. Through time heterogeneity will increase due to factors such as disproportionate equity allocation, patron drift, membership growth, substitution effects, and diversification.

- Disproportionate equity allocation – Long term members will have more equity in the cooperative business than new members but the services to each may be the same. Members may be faced with a realization that the return on the equity investment in the cooperative is less than what might be achieved if similar funds could be invested elsewhere for higher returns.

- Patron drift – Early members formed the cooperative to address a specific economic need. New members may create conflict within the organization as they are not aware of, nor did they experience the economic challenge that the cooperative worked to overcome. They may not believe that similar circumstances could happen in the future. Cooperative businesses may exert minimal effort to address or resolve negative effects of heterogeneity in the quest for growth of the business.

- Membership growth – Growth increases the likelihood of divergent interests among member-users. Increased membership growth compounds the cost of gathering and transferring information among members; increases the probability that inappropriate member behavior will avoid sanctions; and creates incentives to not monitor management, which increases the diversity of competing member interests. The board of directors needs to set and implement policies in response (Cook, 2009).

- Substitution effect – Through time, new competition in the marketplace may erode the competitive advantage of the cooperative. Members may be attracted to other firms performing similar functions. The cooperative may overcome the economic challenge it was formed to address and the need for the organization no longer exists or the need is not easily visible to present day member-owners.

- Diversification exacerbating transitional differences – Cooperatives may look for new opportunities to address or additional member needs to serve. Each new opportunity for products or services has the potential to intensify member heterogeneity to the point where membership will be polarized. "When cooperative decisions affect different members differently, the cooperative runs the risk of subsidizing the formation of distributional coalitions each time a new product or service is introduced. Thus, the bundle of goods that the cooperative provides may include certain 'selective goods' which favor a portion of the membership while having neutral or negative impact on farm-level profitability of the remaining member patrons." (Cook, 2009).

Cooperatives may retain excess cash flow in reserve fund accounts as a risk management strategy to finance all positive net-present-value projects and reduce debt capital needs. These funds are known as free

cash flow. These funds may be used to subsidize lesser-performing divisions. Extended subsidies can distort financial performance and fortify the divisive opinions of a fractured membership. These reserved funds are a legitimate strategy for risk reduction. However, they provide a convenient and strong argument for cooperative leadership to refuse to pay out earnings to members. They also create an opportunity for cooperative leaders to utilize the funds for low-return projects. Cooperative boards and management may be pressured to utilize these funds as risk capital. Financial slack refers to liquid assets and unused debt capacity in excess to what is needed for current operating and debt servicing needs. A decision to invest should take into account the return on the investment to the cooperative and the return on equity to the member. Cooperative leadership needs to balance the financial resources to be retained in the cooperative with the expectations of members to receive patronage refunds.

Phase 4 of the cooperative life cycle includes recognition and introspection. According to Cook, members seem to fall into 4 categories – apathetic, targets with preference to rival alternatives, those vacillating between the cooperative and a rival, and the loyalist. The first three groups combined most likely outnumber the loyalists. Fragmented coalitions build and the purpose and direction of the cooperative business becomes less focused and more ill-defined leading to a downward spiral. Tensions between various factions rise. "Recognizing in a transparent manner, analyzing the causes of, and contemplating options to the phenomenon of rising ownership costs is the activity of Phase 4. The end of this phase draws near when the cooperative leadership presents or membership demands explicit action to remedy perceived or real challenges." (Cook, 2009).

Phase 5 allows members and their leaders the option to tinker, reinvent, spawn or exit the cooperative business. Tinkering redesigns constitutional or operational mechanisms to align preferences and incentives of the membership. Choosing the tinkering option suggests no significant change in ownership rights. It often entails a change in bylaws, operating practices or policy that reduces friction." Reinvention means that ownership rights of the member will change. Altering the redeemability of shares or reassigning rights to investors rather than to patrons are examples of reinvention. Spawning refers to a situation where individuals formerly affiliated with a 'parent' cooperative organize a separate entrepreneurial venture. Exit means that member patrons change membership rights of the entity. The ownership rights are no longer based on patronage. Various options might unfold. It could mean conversion to an investor rather than patron driven firm, conversion to a hybrid where the member patrons loose majority residual control rights, entrepreneurial harvesting, or total liquidation (Cook, 2009).

The work by Dr. Michael Cook and others suggests that the presence of heterogeneity is a prelude to concerns of ownership costs and needed changes in the cooperative business. If heterogeneity is acknowledged and addressed, cooperative leadership possesses the potential to manage this change as they tinker or reinvent the cooperative to continue into the next life cycle.

Cooperative Outlook for New York

Cooperatives headquartered in or doing business within New York State have the potential to build upon the previous year's record performance. Weather conditions were more favorable in 2013 than 2012 resulting in record breaking fruit and vegetable yields. Dairy farmers were plagued with rainy conditions at the end of the planting season and during hay harvest. The weather compromised the quality of hay crop. Prices of grain decreased from record high levels in 2012 in expectation of larger acreages of corn and soybeans planted throughout the United States. Milk prices are expected to remain at levels similar to 2013 in early 2014 but will decrease later in the year. With lower grain prices, margins on dairy farms should be favorable in early 2014 and tighten by year end. The number of dairy cows remained constant between 2011 and 2012 and production increased slightly.

New York State became the dominate player in the yogurt market in 2012 producing an estimated 16 percent of all yogurt in the United States. Between 2008 and 2013 Greek yogurt production nearly quadrupled. Since 2000, the number of yogurt processing facilities increased from 14 to 29. Between 2005

and 2011New York yogurt plants doubled production. During the same time period the amount of milk used to make yogurt in New York State increased 7-fold from 158 million pounds of milk to 1.2 billion pounds of milk. Most of the increase is due to Greek yogurt production, which requires three times more milk than traditional yogurt production. "The large farm milk production sector in New York State is an important factor in the development of the product segment, but the proximity of this large production area relative to the demographically large, rich and diverse population centers of the northern Atlantic coast is even more important." (Boynton, 2013).

Boynton and Novakovic estimated that in 2011, milk used for Greek yogurt added a modest $0.03/cwt. to farmers' blend price in Federal Milk Marketing Order No. 1. Production of Greek yogurt presents several opportunities for cooperatives. "Milk or milk components sold to Greek yogurt processors commands a high over-order premium (these premiums are a component of the plant pay price above Federal Order minimum class price and are negotiated by a dairy cooperative or cooperative bargaining agency). If dairy farmers are members of a cooperative that itself makes Greek yogurt, it represents a strong in-house profit/margin opportunity for the cooperative and its members relative to the alternative uses for the milk. Serving yogurt processors may reduce balancing costs for cooperatives. Milk deliveries to yogurt plants follow farm milk production patterns quite well for the first 7 months of the year while in the last part of the year their demand exhibits a pattern that at least partially offsets opposite movements in the fluid milk sector. The net effect of supplying yogurt processors (and fluid milk processors too) would seem to make for less need to move farm milk in and out of balancing plants in the fall." (Boynton, 2013). Processors of low- and non-fat Greek yogurt generate large volumes of cream. The price of cream has decreased and cooperatives with butter manufacturing capabilities operate at higher capacity with improved margins.

Greek yogurt has strong appeal across several consumer sectors – dieters, health conscious, athletes, gourmands, and home chefs. Indications are that it is a mainstream dairy product and not a fad. Growth trends in the short run will continue but upward trends in the future will level out (Boynton, 2013).

Farm Credit East, ACA and Farm Credit of Maine, ACA announced plans to merge. Final approval needs to be given to the merger by the Farm Credit Administration. The newly merged organization is expected to begin operations on January 1, 2014 under the legal name Farm Credit East, ACA. The organization will serve agricultural producers, forest product businesses, commercial fishermen, and other rural landowners with combined assets of more than $5 billion and a loan portfolio in excess of 14,000 loans.

Dairylea Cooperative Inc. announced plans to merge with Dairy Farmers of America effective April 1, 2014. Member information meetings were held in November and December 2013 with a membership vote in February 2014. Dairylea spent 3 years in a comprehensive review process soliciting member input and guidance from the '2020 Group,' a committee formed in 2010 to gather ideas on generating value beyond the traditional cooperative structure. Among many topics, the group explored how to create market opportunities for members that peer cooperatives with investments in processing were attaining.

Fruit cooperatives processed a record-breaking harvest for its members in 2013. Picking schedules were modified resulting in higher quality grape juice at the end of the harvest season. New uses and markets have been found for Niagara grape juice. A major grape juice processing cooperative is poised to unveil another product innovation in 2014. The cooperative business structure is gaining momentum with people interested in purchasing local foods. Consumers are interested in purchasing products from businesses owned by local farmers. They view cooperatives as achieving the triple bottom line, people, planet, profitability.

Profitability is key for any business to remain viable into the future. Member satisfaction is critical to the longevity of a cooperative-structured business. Many of the cooperatives doing business in New York State were formed over 50 years ago. They will remain in business as they tinker and reinvent themselves. Consolidation continues in the farm and food sector. Cooperative mergers are one means to respond to the consolidation. Cooperatives require an engaged and informed membership to elect a board of directors who

have the ability to work with management to balance the needs of the cooperative with the best interests of the members. New York State cooperatives are well-positioned for solid performance in 2014.

References

Ali, Sarah and E. Eldon Eversull, "Grain, Farm Supply Sectors Lead Way as Ag Co-ops Set Sales, Income Records," *Rural Cooperatives,* USDA Rural Development, September/October 2013, 80(5).

Boynton, Robert D. and Andrew M. Novakovic, "*Industry Evaluations of the Status and Prospects for the Burgeoning New York Greek-style Yogurt Industry,"* Program on Dairy Markets and Policy Research Paper Series, Research Paper Number RP13-01, October, 2013.

Cook, Michael L. and Molly J. Burress, "A Cooperative Life Cycle Framework," University of Missouri, Columbia MI, Draft: June 11, 2009.

Farm Credit East, ACA. *Impact from Field to Economic Engine, Farm Credit East Annual Report* 2012.

Hueth, Brent and Anne Reynolds, "A Life-Cycle Perspective on Governing Cooperative Enterprises in Agriculture," *Choices, The Magazine of Food, Farm and Resource Issues,* 3rd Quarter 2011, 26(3).

USDA. Annual Farmer, Rancher, and Fishery Cooperative Statistics, 2012, Office of Rural Development accessed November 20, 2012 at http://www.rurdev.usda.gov/BCP_Coop_DirectoryAndData.html.

Cultural Practices

Luke Haggerty, LERGP,
Viticulture Extension Associate

Pre Harvest Numbers & Nutrient Deficiencies

Sampling data for the 9-site study collected by Kelly Link and our CLEREL staff shows another jump in brix for 'Concord' this past week. The averaged brix from the regions' 80 sample sites shows that the total average increased from 12.4 to 13.7 °brix. Even with cool temperatures in the forecast I would expect to see a .5 to 1°brix increase for next week. To follow veraison to harvest for other grape cultivars see weekly updates at http://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest

Lake Erie Region Average Concord Soluble Solids	
Location	BRIX
E. Rt5	12.9
E.Rt 20	14.2
E. Escarpment	13.7
C. Rt 5	13.4
C. Rt 20	14.6
C. Escarpment	14.8
W. Rt 5	13.9
W. Rt 20	13.3
W. Escarpment	13.2
Samples Taken on 9/15/14	

This is a great time of year to look for nutrient deficiencies and foliar disorders in the vineyard. Now that harvest is moving into full swing you have a chance to get a good look at your entire vineyard as you harvest. Potassium and magnesium are two of the more noticeable deficiencies found on leafs. Magnesium deficiency show chlorosis or yellowing in leafs while the area close to the main veins stays green (Picture 1). Magnesium deficiency most often occurs in soils that have a pH below 5.5 where potassium becomes more available.

Picture 1. Magnesium deficiency in Concords

Potassium plays an important role in many regulatory plant biochemical functions including carbohydrate or sugar production. Severe potassium deficiency will show necrotic or dead leaf tissue and have scorched appearance (Picture 2). Potassium deficiency can occur in soils that are high in calcium and magnesium and where potassium is less exchangeable.

Picture 2. Potassium deficiency in Concords

Other nutrient deficiencies and or foliar disorders to be on the lookout for are, nitrogen deficiency and nitrogen spray burn, acidic soil damage, iron deficiency, crown gall, spray damage, and symptoms of drought. If you see symptoms and would like soil or petiole samples taken, bring samples into the Cornell Lake Erie Research and Extension Laboratory (CLEREL) at 6592 West Main Road Portland, NY 14769. The cost per sample is $30.00 for petiole sample (bring in 50 petioles) and $17.00 for soil samples.

If you have questions about taking petiole and or soil samples or if you would like to set up a site visit, where I can assist in taking samples, please get ahold of me. Call me at (716) 792-2800 Ext. 204 or email me at llh85@cornell.edu.

Weather Data

DATE/YEAR	HIGH	LOW	DAILY PRECIP	GDDs	TOTAL APRIL GDDs	TOTAL JAN GDDs
Week of 8/27/2014	79	64.60	0.00	152.5	2072.5	2072.5
Week of 09/4/2014	82	64.40	0.21	162.5	2251.5	2251.5
Week of 09/11/2014	79.7	60.70	0.09	141.5	2373	2373
Week of 09/18/2014	**64.4**	**53.60**	**0.13**	**63**	**2436**	**2436**
Average(from 1964)	72.8	54.90	0.20	97	2412.5	2437.4
Sept Precip- Wk 1=1.45" Wk 2= .51" wk 3= .94"						
Total Precip: May = 5.5" June = 5.05" July = 4.47" Aug= 2.58"						

IPM

Tim Weigle, NYSIPM, LERGP Team Leader

Tim is on vacation. We will hear from him when he returns.

From Erie County PA.

Andy Muza, Extension Educator, Erie County, PA Cooperative Extension

Grape Berry Moth –

By far the most widespread and important pest problem this season is grape berry moth.
Growers that have not been scouting, monitoring the GBM Degree Day Model in NEWA, and spraying adequately this season, may be unpleasantly surprised by the amount of GBM injury at their sites.

Although the time has passed for an insecticide application for GBM to be effective, scouting for GBM is still beneficial before harvest begins. I urge growers to scout their blocks a final time before harvest. This end of season scouting for GBM and other pests will enable you to determine the efficacy of this season's pesticide applications. This information can be used to prepare for changes that need to be made for next season's pest management program.

If scouting reveals that GBM injury is much higher than expected then consider:
1) harvesting these areas first, as berry loss and rot will continue to increase as the season progresses;

OR

2) harvest the problem areas now and bury or dump and cover infested berries with soil, away from vineyard sites, to prevent GBM emergence next season.

While harvesting, dumping areas with infested berries in the vineyard will not alleviate your GBM problems but only contribute to high population levels the following season, thus continuing the cycle.

GBM Cluster Injury

Closeup of GBM Cluster injury

Shelling of berries due to GBM injury

From the North East, PA Lab

Bryan Hed, Research Support Technologist in Plant Pathology
Penn State University

Weather: We have recorded 2.92 inches of rainfall so far in September. Our growing degree day total (gdd) from April 1 through September 17 is 2287.5. Our Concord vines are averaging between mid 13s to mid14s for brix. Our Minnesota varieties in our NE1020 variety trial will be the first of our wine grapes to come off…probably next week. Our Vignoles is currently at 21 brix and we are hoping the weather remains relatively dry to help manage the rots that inevitably develop in that variety. As always, pre-bloom cluster zone leaf removal in our Vignoles block (which loosens tight clusters) has done far more to limit rots than any pesticides we apply. Is this a shameless promotion of leaf removal for rot control? Yes! Of course, combining leaf removal and pesticides is *most* effective on rots. Other hybrids like Chancellor are holding up well, despite an explosion of crown gall at the base of most trunks. On the other hand, crown gall in Chambourcin is definitely taking its toll in the form of collapsed vines and slow ripening where vines are surviving, in spite of our efforts to thin the crop. I suspect many of these Chambourcin vines will not survive the winter and we have some major renewal to do in that variety over the next year.

Disease: The threat of downy mildew lingers on for susceptible varieties: if you scout your vineyard and find healthy white sporulation of the downy mildew pathogen on the undersides of leaves, the disease can spread. If you feel you need to control it on your wine grapes with a fungicide, pay close attention to pre-harvest intervals. This disease can strip wine grape canopies of their leaves and leave you with a boatload of over-wintering inoculum for new disease cycles next spring. Once canopies are functionally compromised by this disease, ripening of the crop and of canes effectively ends. Don’t allow your wine grapes to head into winter with anything but maximum cold hardiness, as this winter may be another harsh one.

LERGP Website Links of Interest:

Table for: Insecticides for use in NY and PA:
http://lergp.cce.cornell.edu/submission.php?id=69&crumb=ipm|ipm

Crop Estimation and Thinning Table:
http://nygpadmin.cce.cornell.edu/pdf/submission/pdf65_pdf.pdf

Appellation Cornell Newsletter Index:
http://grapesandwine.cals.cornell.edu/cals/grapesandwine/appellation-cornell/

Veraison to Harvest newsletters:
http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/index.cfm

Go to http://lergp.cce.cornell.edu/ for a detailed calendar of events.
Please remember to RSVP for those events that require one!

Lake Erie Regional Grape Program Team Members:
Andy Muza, (ajm4@psu.edu)Extension Educator, Erie County, PA Cooperative Extension, 814.825.0900
Tim Weigle,(thw4@cornell.edu) Grape IPM Extension Associate, NYSIPM, 716.792.2800 ext. 203
Kevin Martin, (kmm52@psu.edu) Business Management Educator, 716. 792.2800 ext. 205
Luke Haggerty, (llh85@cornell.edu) Grape Cultural Practices, 716.792.2800 ext. 204

THE LAKE ERIE REGIONAL GRAPE PROGRAM at CLEREL
6592 West Main Road
Portland, NY 14769
716-792-2800

Cornell University
Cooperative Extension

Lake Erie Regional Grape Program

PENNSTATE
College of Agricultural Sciences