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THE NEWSBEET EDITORIAL STAFF:

Publisher: Mark Flegenheimer
Senior Advisor: Paul Pfenninger
Editor: Julie Perry
Contributing Editor: William Gough
Circulation and Advertising: Barb Wallace
Creative Director: Karen Gerhardt
Cover Design: Karen Gerhardt

SEND INQUIRIES TO:

Editor, *The Newsbeet*
 2600 S. Euclid Ave., Bay City, MI 48706
editor.newsbeet@michigansugar.com

CONTRIBUTORS:

Greg Clark
 Mark Flegenheimer
 David Ganton
 Brian Haraga
 Lee Hubbell
 Keith Kalso
 Chuck Lippstreu
 David Noble
 Paul Pfenninger
 Steve Poindexter
 James Ruhlman
 James Stewart
 Ray VanDriessche
 Amanda Zaluckyj

CIRCULATION & ADVERTISING:

Barb Wallace, *The Newsbeet*
 2600 S. Euclid Ave., Bay City, MI 48706
barb.wallace@michigansugar.com

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Heidi A. Bolger, CPA/ABV, MAFF, CMAP
Principal
989.797.8306
heidi.bolger@rehmann.com



James R. Gerding, CPA
Principal
989.799.9580
james.gerding@rehmann.com



ROOT OF THE BUSINESS

by Mark Flegenheimer, President and Chief Executive Officer

sus·tain·able

We often hear the terms “sustainable” or “sustainability” thrown around by large corporations these days who are trying to improve their image or sell more of their products. It is important that all members of society, both companies and individuals, live and operate in a sustainable manner, but what does it mean to be “sustainable?” Or in Michigan Sugar Company’s case, how can we grow beets and produce sugar in a sustainable manner?

Merriam-Webster dictionary defines sustainable as “able to last or continue for a long time.” The United States government (see story on Page 13) states that, in order for growers and ranchers to have sustainable agriculture, they must have an integrated system of plant and animal production practices having a site-specific application that will last over the long term.

As I look at these definitions, it appears that Michigan Sugar and its growers have been operating by these principles even before the terms were in vogue. The Co-op and its growers have been growing sugarbeets and producing sugar for 115 years in Michigan — by all measures, that is a long time! In fact, less than 10% of the 5,000 largest companies in the U.S. are over 100 years old!

While “sustainability” is all the buzz in the businessworld today, it has been a core principle of Michigan Sugar Company since our founding. We have always believed, we must:

- 1) Do more with less
- 2) Eliminate waste
- 3) Managing our natural resources
- 4) Be profitable

As we look at each of these principles, it is apparent we have made great strides and progress over the years, but there is always opportunity to improve.

As a company, we have continuously focused on **doing more with less**. A recent

example which I marvel at is the progress we have made reducing our fuel use in the

factories while producing more sugar. Equally impressive are amazing yield increases on the farm, which has allowed us to reduce acreage. We attempt to **eliminate waste** throughout the process and commercialize and not dispose of any part of the beet. Until a few years ago, we had no use for the calcium carbonate or lime after it was used in the factories as a filter aid. Today, we sell nearly 200,000 tons annually to local growers as a soil enhancement and to mushroom growers as a growth medium. Also, 100% of the beet which is delivered to the factories is either sold or returned to nature (see story on Page 26). Our growers have always been excellent stewards of the land and **manage our natural resources** to the best of their ability. Growers have implemented practices such as stale seedbeds or eliminated cultivating sugarbeets as a means to minimize soil erosion.

Lastly, when certain groups talk about sustainability, they sometimes shy away from discussing **profitability**. I feel the two go hand-in-hand — a company cannot be sustainable without being profitable, and a company cannot be profitable without being sustainable. Michigan Sugar Company and our growers have done a commendable job of being both profitable and sustainable over the last century. Can we improve from where we are today and become “more sustainable”? I think we can. Higher yields and sugar contents, utilizing the beet leaves for feed or fuel production, generating our own electricity, are small examples of opportunities which remain unrealized. These type of opportunities must be exploited and capitalized upon if and when additional money can be generated from those activities for our shareholders’ benefit.

Good luck with your 2015 crop.





Wow! What a crop year! Who would have predicted a record-setting crop back in May or even June, with only one-third of our acreage planted in April? We were still struggling to get acres planted around Mother's Day, May 11, and had the last 50,000 acres planted in late May, around Memorial Day. It was the persistent rains over the course of the entire growing season that made this crop a record breaker. Unfortunately, the persistent summer rains that created this crop also created havoc with harvest conditions. There is no doubt that the 2014 crop was a challenging crop to plant and a challenging crop to harvest.

2014 CROP YEAR SUMMARY

Certified Acres Planted	160,856
Acres Harvested	159,519
Total Tons Received	4,727,302
Grower Sugar	18.37
Grower Clear Juice Purity	96.23
Grower Recoverable White Sugar Per Acre	278.94
Average Grower Yield	29.63

The average yield per acre is a record-breaking number. The previous record was set back in 2012 when we planted 60% of our acres in March. The 4.72 million tons is our second largest next to 2012 when we received 4.75 million tons and had a grower yield of 29.3 tons per acre. It is important to note that we harvested over 3,000 additional acres back in 2012 versus this year. We can only wonder what the potential of a crop may be if we could combine an early planting season along with another stress-free growing season.

Can we expect next year's crop to be just as good or better? Why not? If we look at our crop records, we can find a number of reasons to be optimistic about our crop years ahead.

Some observations we can make while reviewing our records:

- Take a look at our variety selection — our Official Research Trials and our Road to 19 initiatives have created varieties that fit our practices. Seed selection along with seed treatments have improved our ability to get a crop established. Is nematode resistance the key? It sure adds to our success story with all the other disease packages.
- Consider our current plant population as compared to our planting intentions just a few years ago. Remember when 100 beets in 100 feet of row was an acceptable stand and the norm? Today, we are pushing 200 beets in 100 feet of row and we have 40% of our acres planted in narrow rows. It was not that long ago that 28" and 30" rows were the norm.
- Cercospora leafspot control — a late planted crop usually has less pressure from Cercospora, but that did not stop growers from spraying control measures. Our crop records show 92% sprayed at least once, 86% sprayed twice and 48% sprayed their crop a third time with 4% spraying a fourth time. A Cercospora "hot" variety in a "hot" DSV zone still needs attention and growers took care of those acres. We believe all of this was done while keeping resistance management in the forefront.

We all know that Mother Nature can make or break a crop, but we also know that a good "systems approach" to sugarbeet production greatly improves our chances of growing another record-setting crop.

We also want to thank all growers for reporting their finished acres into crop records in a very timely manner. As we contemplated setting aside acres this past fall, this section of crop records was the most watched version of all. For some of us, it was not uncommon to check "finished contracts" at least twice a day. The decision to harvest all acres, with the expectation that we would not exceed 4.8 million tons, was made easier with the excellent participation by growers accurately reporting the fields as finished in a very timely manner.

Thank you to all who made the effort to keep our crop records up to date and accurate. As we develop better records, we hope to improve on our overall production and keep setting records in the years to come.

Give yourselves an "attaboy" and pat on the back, while counting our blessings and hoping that we have a good storage season and successful campaign of slice and extraction.

Wow! What a year! ■



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Mid-Term Elections Provide New Opportunities and New Challenges

by Ray VanDriessche, Director of
Community and Government Relations



Mid-Term Elections

The November elections resulted in a shift in majority leadership, a reorganization of committee assignments and a significant number of freshman legislators. What does this mean for the U.S. sugar industry? Education of new legislators and their staffers is a critical priority as efforts by the users coalition to introduce anti-sugar legislation will continue even more intensely after a very narrow margin of victory by the sugar industry in the 2013 Farm Bill Process. The Michigan Sugar Grower PAC Funds are critical to providing that opportunity to educate freshman legislators as well as keeping established legislators informed and updated on our current issues. A number of Michigan Sugar Company Co-op Board Members will be visiting the Hill in early March as a part of this education process.

Anti-Dumping and Countervailing Cases (AD/CV)

Cases were filed with the Department of Commerce (DOC) and the International Trade Commission (ITC) by the U.S. sugar industry against Mexico in March of 2014. The cases were prompted by excessive imports from Mexico which significantly oversupplied the market and dropped prices by almost 50% in the last year and a half. After preliminary findings in favor of the U.S. sugar industry by the DOC, the U.S. and Mexican governments signed a suspension agreement for both the antidumping and countervail cases that would put limits on the amount and types of sugar that could that could be exported to the U.S. market. On December 19, the suspension agreement was finalized and the American Sugar Alliance released the following statement –

"The final suspension agreement should achieve U.S. sugar producers' main goal by stopping Mexico from dumping subsidized sugar onto the U.S. market and violating U.S. trade law. It is a good deal for U.S. producers, U.S. taxpayers, and U.S. consumers. Like our counterparts in Mexico, we want NAFTA to operate as intended and to foster free and fair trade in sugar between the countries."

In early January, the suspension agreements were challenged by certain cane refiners in the U.S. Results of those challenges will be known in late March.

The Trans-Pacific Partnership (TPP) trade agreement

The TPP being negotiated by United States Trade Representatives (USTR) with New Zealand, Australia, Singapore, Chile, Peru, Malaysia, Vietnam, Canada, and Mexico creates additional exposure for an increase of foreign imports coming into the North American sweetener market. Industry representatives have been working closely with USTR to keep any additional access to a minimum. Disagreements between the U.S. and Japan on agricultural issues have stalled the progress of the negotiations but the Obama Administration's goal is to complete the negotiations by the end of 2015.





Biotech Labeling Initiatives

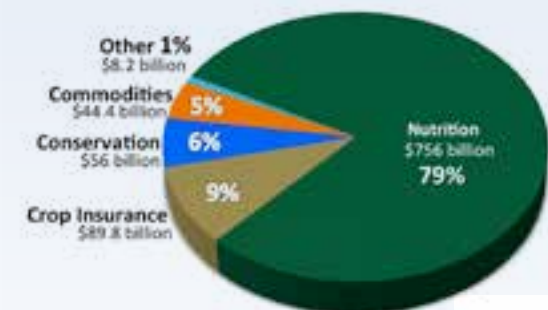
Vermont became the first state to pass legislation that requires biotech labeling of food ingredients derived from a biotech plant but there have been legislative proposals or ballot initiative efforts in approximately 30 other states by anti-biotech groups and organic activists. Attempts at passing labeling legislation in California, Washington State, and Oregon were all defeated, but with a tremendous amount of time and money expended to do so.

In an effort to stop individual states from adopting a hodge-podge of labeling rules, which would be a nightmare for commerce, the Pompeo-Butterfield "Safe and Accurate Food Labeling Act of 2014" will be introduced and voted upon in the 2015 Congressional session. The legislation would create uniform legislation which would define and regulate the labeling of genetically engineered foods and stop individual states from imposing any requirements that are not identical to these federal requirements.

USDA Farm Program Signup

As part of the 2013 Farm Bill, new and more complex commodity programs were implemented which will require growers to study closely which program option is best suited for their individual farm operation. With reduced staffing, the Farm Service Agency is encouraging growers to visit their local FSA office as soon as possible to have questions answered about the ARC or PLC programs to ensure that they meet the signup deadline. No signup extension is expected at this time. ■

Projected Farm Bill Spending, 2014-2023



Source: Congressional Budget Office Projections, January 2014



Ray VanDriessche, Michigan Sugar Company's Director of Community and Government Relations, is also a third-generation farmer in mid-Michigan. He travels to both Lansing and Washington D.C. often to follow and advise on political activity that will affect agriculture in Michigan.

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The Great (GMO)

5 Tips for Successful Discussions About Biotechnology from the Farmer's Daughter

by Amanda Zaluckyj, Ag-vocate and Blogger

I hate controversy. That may not be what you expected to hear from a girl that runs a blog inviting controversy, but it is true. In the past, I have shied away from conversations involving agriculture, especially when it comes to modern production methods. I can be (a bit) passionate about those subjects and I wasn't always so good about talking to people outside of agriculture about them.

I suspect that many farmers feel the same way. It is a whole lot easier to stay hidden away in tractor cabs and animal barns than to be interrogated. But at a point in time when many Americans seem hopelessly confused and actually curious about our production methods, it is vital that we act as our own public relations agents. If we fail to explain to consumers the truth about what we're doing, someone else will gladly step in and sell them fear. Nowhere is this more prevalent than in discussions about biotechnology.



Amanda Zaluckyj is from Southwest Michigan where her family farms 2,000 acres of corn and soybeans. For 26 years, Amanda and her family ran and supplied a roadside market selling their own fresh fruits and vegetables. After graduating from college, Amanda attended law school at Michigan State University College of Law and is now a practicing lawyer. She also "ag-vocates" at her blog TheFarmersDaughterUSA.com about issues facing modern agriculture.

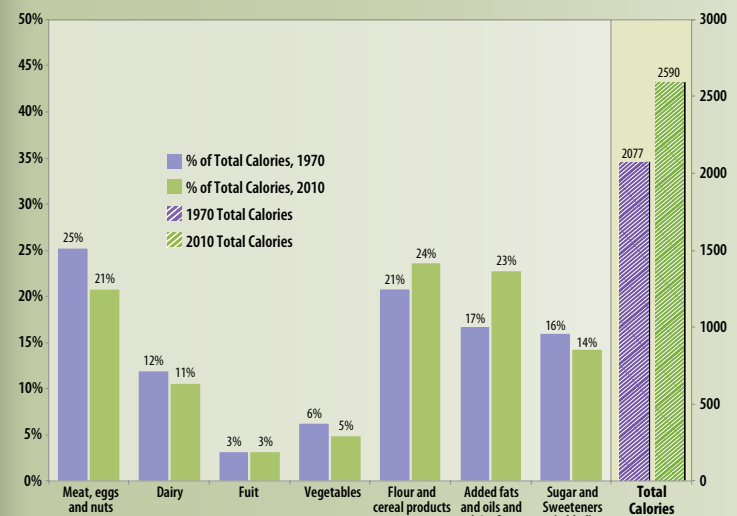
Revealing the Truths: Sugar & Obesity

The increasing obesity rates amongst children and adults in America are alarming, but sugar is not the cause of this epidemic. Despite dramatic accusations by the media, the facts and the science simply do not support the notion that sugar is the reason waistlines in the United States are bulging. Since 1974, childhood obesity rates have tripled while adult rates have more than doubled. What has changed in the last 40 years? If the “experts” and the news media took the time to see how much sugar Americans consumed in 1970 and compared it to the number of calories we take in today from caloric sweeteners, they would realize SUGAR IS NOT THE CAUSE of obesity.

As the chart below shows, total daily caloric intake, according to USDA data, is up dramatically (513 calories) over the last 40+ years, but the number of calories from sugar has barely changed. The vast majority of the increase is from two groups of foods: Fats and Oils (up 243 calories); and Grains (up 186 calories). While the increase in daily calories consumed by Americans is alarming, sugar should not be made the scapegoat.

U.S. Per Capita Daily Calorie Consumption Comparison

Caloric intake rises by 513 calories from 1970 to 2010, but sugar and sweeteners' share of the total drops by 2%



Also, when the “experts” are vilifying sugar as the primary cause of weight gain they rarely, if ever, discuss the lack of exercise by today’s children and adults as compared to 40 years ago. The sedentary lifestyle of Americans today who sit in front of television and computer screens for hours on end certainly contributes to the obesity epidemic. The following facts from the President’s Council on Fitness, Sports & Nutrition are eye opening:

- Only one in three children are physically active every day.
- Less than 5% of adults participate in 30 minutes of physical activity each day; only one in three adults receive the recommended amount of physical activity each week.
- More than 80% of adults do not meet the guidelines for both aerobic and muscle-strengthening activities, and more than 80% of adolescents do not do enough aerobic physical activity to meet the guidelines for youth.
- Children now spend more than seven and a half hours per day in front of a screen (e.g., TV, video games, computer).
- Only about one in five homes have parks within a half-mile, and about the same number have a fitness or recreation center within that distance.
- Only six states (Illinois, Hawaii, Massachusetts, Mississippi, New York and Vermont) require physical education in every grade, K-12.
- 28% of Americans, or 80.2 million people, aged six and older are physically inactive.
- Nearly one-third of high school students play video or computer games for three or more hours on an average school day.

When trying to combat the very real issue of obesity, Americans would be better served if the “experts” and media looked at the facts and promoted a balanced diet, eating all foods in moderation while emphasizing the importance of daily exercise. ■

1 Be relatable.

It’s easy to repeat facts. “Biotech allows us to use less inputs and gives us higher yields.” “Biotech is good for the environment and safe for human consumption.” It is far better to share a story with consumers and connect with them on a personal level. Demonstrate your passion for agriculture. Let people know why you adopted the technology and how it benefits your own farm!

2 Recognize the limitations.

If a consumer is dead set against the use of genetic engineering in agriculture, one conversation is probably not going to change his or her mind — but don’t give up! Establish a relationship and keep that conversation going. Over time, you can earn the consumer’s trust and eliminate those fears. Just take it one step at a time.

3 Keep the conversation focused.

I have had many conversations with GMO skeptics that start out on topic and then quickly disintegrate into a slew of unrelated and irrelevant arguments. For example, when explaining how Bt sweet corn works, your skeptic might try to attack the business practices of a particular biotech company or assert that GMOs are banned in other countries (not true!). As explained before, changing someone’s mind will take a few conversations, so don’t fall for the bait-and-switch tactic and stay on topic.

Debate

4 Try not to take it personally.

This one can be hard. We work hard growing these crops, taking care of our farms, and being good stewards of the land. So when someone not involved in agriculture accuses us of poisoning our fields, contaminating our water supplies, and making people sick, we automatically react defensively toward them. Next time someone lobbs an insult about agriculture your way, try to figure out why they have that misconception and how you can explain it to them to avoid a shouting match.

5 Remember, we are the best “ag-vocates” for our industry!

There are a whole lot of people talking about agriculture these days who have zero credentials to do so. Have they even stepped foot on a farm? That makes it that much more important for us to stand up and speak out about our industry. Farmers are the most qualified and hands-down best “ag-vocates.” If someone has questions about a production method, they need to know that real farmers are available and willing to discuss those methods and explain why and how they work. ■



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Sustainable Sugarbeet Production in the Great Lakes Region

by Steve Poindexter, Senior Sugarbeet Educator
Sugarbeet Advancement, MSU Extension

Michigan sugarbeet growers have implemented a variety of site-specific production practices based on soil characteristics, proximity to water, topography and climate. The result has been an improvement in soil and water quality, reduction of off-site movement of fertilizers and pesticides and increasing yields.

The legal definition of “sustainable agriculture” (U.S. Code Title 7 Section 3103) is an integrated system of plant and animal production practices having a site-specific application that over the long term:

- Satisfy human food and fiber needs.
- Enhance environmental quality and the natural resources based upon which the agriculture economy depends.
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- Sustain the economic viability of farm operations.
- Enhance the quality of life for farmers and society as a whole.

That definition is the central element of the legislation of the Sustainable Agriculture Research and Education (SARE) program of the USDA National Institute of Food and Agriculture. In simple terms sustainable agriculture has environmental, social and economic dimensions.

The main principle of sustainability is that we must meet the food and fiber needs of the present without compromising the ability of future generations to meet their own needs. This is important as world populations grow. In 2009, the world population was about 6.7 billion and projected to rise to about 9.2 billion people by 2050. In order to meet the needs of a hungry world, food production (including sugar) must increase in that period of time on similar acres as we have today.

continued



continued from page 13

Efficient use and management of water resources must be part of sustainability. The Great Lakes sugarbeet industry is located in the heart of one of the world's largest fresh water reservoirs. Because of this, we farm in what is termed an "environmentally sensitive" area. In Saginaw County alone, there are over 1,800 miles of open drains. It is critical that both ground and surface water remain potable. Pesticide, phosphate, nitrate, and coliform bacteria contamination are the largest concerns in the Great Lakes growing region. Overuse or improper management by any of the four can spell disaster. Farming must be compatible with the natural resources surrounding it. If production of food or fiber degrades the natural resource base (soil or water), it decreases the ability of future generations to flourish.

Have the Great Lakes sugarbeet producer's done a good job over the last 30 years of adjusting production aspects that have improved sustainability? In many ways, we have. Sugarbeet growers have implemented a variety of site specific production practices based on soil characteristics, proximity to water, topography and climate. The result has been an improvement in soil and water quality, reduction of off-site movement of fertilizers and pesticides and increasing yields. The Michigan sugar industry has averaged an annual yield improvement of six-tenths of a ton per acre since 1997, at the same time improving beet quality.

Productivity has increased, even though very little acreage is irrigated.

Proper soil management protects and enhances productivity and includes using cover crops, manures and reduced tillage. Over time, growers have reduced tillage operations including converting from mold board plowing to chisel plowing and/or some type of conservation tillage. Conservation tillage systems are good for the environment by keeping soil and water from running off fields and improving soil organic matter. In the last ten years, cover crops, such as oilseed radish, clover and cereals, have become commonplace. We now have a much better understanding of how to apply manure responsibly. Building soil organic matter is a sustainable long-term process that will improve soil health, tilth and soil microbial life.

We are fortunate, in the Great Lakes growing region, to have the opportunity to diversify in many crops and livestock enterprises. Many areas in the United States do not have the option of growing sugarbeets, dry beans, cucumbers, or even winter wheat. Diversified farms are usually more economically and ecologically resilient. Longer rotations reduce insect, disease and weed problems. Longer rotations will generally improve yields and offer economic diversity. These alternative crops also spur economic diversity. Examples of this are Michigan Sugar Company, Star of the

West Milling and multiple pickle and bean companies.

Site specific technology and practices are widely utilized and are now considered the "norm" in agriculture. We used to treat each "farm" differently when it came to fertilizers and lime. Now each "acre" can be grid sampled and nutrients are applied accordingly. Growers now are selecting specific varieties for specific fields. These varieties may have certain disease resistance or nematode tolerance. The ability to use genetic resistance can reduce pesticide use and improve yield/quality. Sustainable agriculture systems do not mean "no" use of crop protection chemicals or fertilizers. It does mean, through good, sustainable, management practices, that pesticides/fertilizers are used appropriately along with "natural processes". Examples would be clover cover crops that reduce nitrogen fertilizer. Genetics have improved resistance to pests, which can reduce crop protection sprays.

Have we done all that we can to farm in a sustainable and responsible manner? Naturally, the answer to such a question is always no. As sustainable technology improves, there is always more to do. After all, sustainability in farming is a direction, not a destination. ■



Steve Poindexter is the Senior Sugarbeet Educator with Sugarbeet Advancement, MSU Extension. Steve has been the Director of Sugarbeet Advancement for 16 years.





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Improving Sugarbeet Production with Proper Soil Drainage

by Greg Clark, Agronomist

Suitable drainage is always vital, especially so during wet springs like the one we experienced in 2014. In Michigan, excess water is the principal problem for “damping-off” diseases (e.g. *Pythium*, *Aphanomyces* and seedling *Fusarium*, *Rhizoctonia*, etc.), on acres of sugarbeet cropland. If you are thinking of using seed treatments as a one-stop shop remedy, just remember seed treatments only last four weeks; thus, other options need to be considered to help lessen pathogens survivability in the soil.

Producers and landowners need to carefully observe the low areas, wet spots, and poorly draining soils

that affect some of their fields. While many soils are naturally well-drained, others must be drained artificially to make them suitable for efficient crop production.

The growth of most crops is severely affected by continued saturation of the root zone or by ponded water on the surface. While the water itself may not kill the plant or its roots, saturation of the root zone causes deficiency of oxygen and accumulation of contaminated gases. Generally soils, even with a short period of oxygen deficiency, can diminish water and nutrient uptake and root respiration,

thus causing a buildup of toxins that kills plant and root cells and ultimately the entire plant.

There are four vital objectives of drainage for most Michigan soils: (1) to increase the yield or quality of a crop, thereby improving the soil quality to allow production of a higher-valued sugarbeet crop; (2) to provide a proper balance of soil, water, and air in the root-zone, therefore, encouraging ideal plant growth; (3) minimize “damping-off” diseases caused by water saturated soils; and (4) to provide better conditions for planting and harvesting sugarbeets.

Why do we want soils to drain quickly? Draining soils removes surplus water from the field by means of surface or subsurface conduits. According to Dr. Richard Cooke, Department of Agricultural and Biological Engineering, University of Illinois, “A good rule of thumb is that a drainage system should be capable of removing water from the soil surface and lowering the water table to about 12 inches beneath the soil surface in 24 hours and to 21 inches in 48 hours”. The photo on this page shows a sugarbeet root that was directly over a tile system compared to sugarbeet roots that were in-between the tile system three weeks after a four-inch rainfall. The root over the tile system is healthier and larger in size compared to the roots that were in-between tiles. The roots in-between the tile system are stunted and showing signs of “damping-off” diseases and showing more feeder roots to overcome deficiency of oxygen.

By installing a drainage system on poorly-drained fields, research shows that growers can accomplish the following advantages: improved soil structure and health; lower disease pressure, especially “damping-off” diseases; higher yields, thereby improving crop quality for storability; better soil aeration and greater oxygen concentration; and enhanced root development. ■



Difference in growth in sugarbeets over a drain tile system and in-between a tile system.



Greg Clark is an Agronomist at Michigan Sugar Company. He has 17 years of experience in agronomy. He specializes in entomology, plant physiology, and plant pathology. Greg joined the Company in October 2010.

Lime Application on High pH Soils

by Lee Hubbell, Research Agronomist

Lime is not a new product. It is applied to fields when soil pH is low. Why do some farmers apply one ton or more every three years and think it pays? There are claims that applying lime, when not needed to raise pH, will help soil health and production. There are a number of products that make a claim like that and it is easy, from past experience, to be skeptical. Some crop consultants are concerned about making micro-nutrients less available by applying excess lime.

We started an extensive plan to do lime research three years ago. We used fields that were already high in pH and applied 0, 2, 4, 6, 8 and 12 tons of factory lime per acre. The lime was applied in the fall before sugarbeet planting in the spring. We are also collecting data from rotation crops at each test location until beets are planted the next time. Soil samples were taken before lime application and each following year in the summer. Tissue analysis is done from the sugarbeets and each rotation crop. Three locations have been started each year for three years. We have taken hundreds of soil samples and tissue tests, harvested beets from nine locations and also harvested corn and soybeans from the rotation crops in 2014.

Only about one-half of the data has been collected from this extensive trial on lime use. The trial will not end at each location until we test sugarbeets a second time as they are planted by the grower in his rotation and before that the other rotation crops will continue to be sampled.

Results: In tissue test results of sugarbeets, lime application caused lower manganese (Mn), lower zinc (Zn), but at the higher rates of lime, potassium was increased. Mn decreased in the plant at three locations of corn and increased at one location. There was no difference in any plant nutrient levels in soybeans. In one year of navy beans the no lime treatment had the lowest Mn and nitrate was higher with lime application.

As expected, after lime application, soil analysis showed higher pH and calcium levels. Two other changes we found were, the Cation Exchange Capacity increased at eight of nine locations and Mn increased at six of nine locations. All other changes were not consistent over locations. The pH averaged 7.45 at the nine locations before lime applications. The pH decreased .32 with no lime application and the highest increase in pH was .36 with twelve tons applied per acre.

In yield results for sugarbeets at nine trial locations, there was a significant advantage to all rates of lime over no lime application in tons per acre, recoverable white sugar per acre and dollars per acre, **Figure 1**. Stand, beets per 100 feet, was lowest with no lime applied and was significantly better at the three higher rates of lime. Lime application treatments did have the largest increase in stands at the two locations where seedling disease was noticeable. Most of our trial locations have not had significant seedling disease, but one location in 2013 has been the worst and shows the potential advantage of lime application for better emergence, **Figure 2**. We have yield data from one year of rotation crops. Two locations of soybeans had no significant difference in bushels per acre. In four locations of corn, only one location had a significant difference, that was the four and 12-ton rates of lime produced less than the no lime application.

In sugarbeets, there were decreased tissue levels of Mn and Zn, but after nine trial locations, there was a significant advantage in sugarbeet production after lime application. In the limited yield data on other crops, there has not been an advantage to lime application, but lime application has also not caused a problem. ■

Figure 1. Effect of Lime Applications on Grower Income • Dollars Per Acre

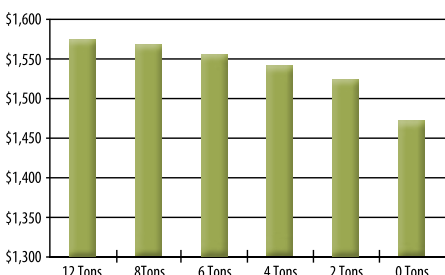
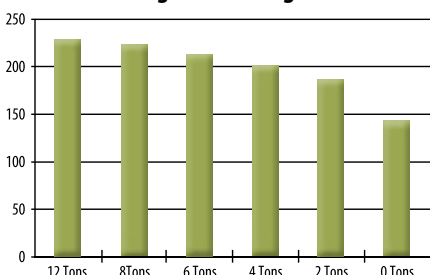


Figure 2. Effect of Lime Applications on Sugarbeet Emergence • Beets/100 Feet



Lee Hubbell, Research Agronomist, is a specialist in sugarbeet variety and agronomic testing and was with Michigan Sugar Company for 30 years before his retirement this year..

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Cover Crops, Soil Health, and

by Jim Stewart, Director of Research

Many Michigan sugarbeet growers have discovered advantages of utilizing cover crops prior to establishing their sugarbeet crop. Research trials have found that the use of cover crops improves soil structure and increases sugarbeet yields. When a primary crop is not growing, a cover crop will protect the soil from pounding rains which destroys the soil structure, creates impenetrable crusts and erodes away topsoil. Cover crops also protect the soil from wind erosion.

Soil particles (sand, silt and clay) are very small and in a soil with “good soil structure” will be aggregated together into larger pieces with pore spaces for air and water. Natural forces such as freezing and thawing, wetting and drying, microbial activity, plant roots and animal life such as earthworms contribute towards building up soil structure. Organic matter and adsorbed cations help bind the aggregates together. Tillage, rainfall and compaction are main contributors to the breakdown of soil structure.

Research has demonstrated that cover crops increase soil organic matter, preserve nutrient levels, improve aggregate structure, reduce crusting, increase water infiltration rates and reduce soil erosion from water and wind.

Cover crops are compatible with sugarbeet production. Our growers use several types of cover crops including filter strips (CREP), cereal crops for wind protection, frost seeded clover for soil building and oilseed radish for nematode suppression.

Filter strips consist of grasses or other permanent vegetation planted around the edges of fields to reduce soil, nutrient and pesticide runoff into drainage ditches. Wildlife also benefits from filter strips. This is a government-sponsored program which pays growers to establish and maintain filter strips. Growers agree not to drive on or allow grazing or other uses that damage the filter strips

The utilization of cover crops often goes hand in hand with reduced tillage. Most sugarbeet growers conduct primary tillage operations in the fall and make only a single shallow tillage pass in the spring to create a seedbed. A significant number of growers prepare the seedbed in the fall and plant in the spring without tilling (stale seedbed). Growers who utilize stale seedbeds often plant a cereal crop such as wheat, oats or rye in the fall to keep the seedbed intact. In the spring, the cover crop is sprayed out with Roundup®, leaving enough stubble to protect small sugarbeet seedlings from strong winds.

Frost seeding red clover into a winter wheat crop will build the soil, supply nitrogen, reduce soil crusting and increase sugarbeet yields. Frost seeded clover will not reduce the wheat yield but after the wheat harvest the clover will grow vigorously. Clover should not be worked down until late in the year when temperatures are cool so that nitrogen will be preserved



Replanting

Growers utilizing stale seedbeds often plant a cereal crop in the fall such as the winter wheat pictured above to keep the seedbed intact.

for the spring crop. A good stand of clover will supply around 50 pounds of nitrogen, and growers should subtract that amount from their nitrogen fertilization so that they don't drive their quality down. Manure will provide similar benefits for growers who are close to a dependable manure supply.

Sugarbeet cyst nematode is a pest that infests most of our fields and reduces sugarbeet yields and quality. The problem is worse around the factory sites where sugarbeets have been grown for over 100 years. Oilseed radish varieties designed to be sugarbeet cyst nematode trap crops will decrease nematode numbers, improve soil structure, reduce soil crusting and significantly increase sugarbeet yields. Oilseed radish roots grow deep and bring nutrients back closer to the soil surface,

which the following crop can use. Fields that were once considered unsuitable for growing sugarbeets have been reclaimed, especially when oilseed radish is used in conjunction with nematode tolerant varieties.

Our cooperative has made significant advances in recent years with new higher yielding and higher quality varieties that also have better pest tolerance. Roundup Ready® has made growing sugarbeets more fun and profitable and the trend towards growing cover crops and practicing minimum tillage has also pushed yields higher. Better quality soils equates to better stands and less replanting. I heard one farmer say, "If you take care of your soil, it will take care of you." I'm pretty sure he was right. ■

Jim Stewart, Director of Research, coordinates the agricultural research activities at Michigan Sugar Company and specializes in weed, disease and pest control, soil fertility, and other sugarbeet production practices. He has been employed with the company for 16 years.

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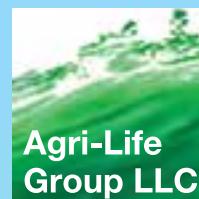
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National Sugarbeet Research and Industry Tour 2014

by Lee Hubbell, Research Agronomist

Michigan Sugar Company (MSC) hosts a national sugarbeet tour in August that, each year, visits a different sugarbeet growing area. The tour was attended by 51 individuals from across the United States and Canada including; researchers from sugar companies, universities, USDA and private companies. Steve Poindexter, Senior Sugarbeet Educator with Sugarbeet Advancement, MSU Extension, organized the tour that emphasized sugarbeet research in Michigan. The first evening, guests were treated to a reception and dinner provided by MSC at the Dockside Restaurant on the Saginaw River in Bay City.

The first full day of the tour started at the Saginaw Valley Research and Education Center as a field day observing research and interacting with local growers. As the tour continued, there was much interest in another local specialty crop when we observed a pickle harvest at Laracha Farms. The last research stop that day was to view the Michigan Sugar Company *Rhizoctonia* and *Cercospora* nurseries at the Blumfield research location. Greg Clark, MSC Agronomist, explained how we control these diseases in Michigan (Photo 1). In these nurseries, variety tolerance is rated to each disease. The day ended with a dinner cruise down the Saginaw River with members of the MSC Agricultural staff and Cooperative board members. The tour was attended by many local industry representatives from over 20 companies who sponsored the dinner cruise.

The second day was a tour around the Thumb of Michigan with 12 stops that included Sugarbeet Advancement research and highlights of MSC research. The Sebewaing factory yard was toured and details were explained by Paul Pfenninger, Vice President of Agriculture. The other non-research stop was a grower field as an example of the *Rhizoctonia* root rot disease problem experienced by our growers. We stopped long enough to get a photo of participants while viewing the shores of Lake Huron (Photo 2). Research observed covered many areas; variety yield evaluation, *Cercospora* leafspot control, *Rhizoctonia* crown and root rot control, cyst nematode control and fertility trials. MSC research was explained by Lee Hubbell, MSC Research Agronomist. Dr. George Bird, Michigan State University Nematologist, explained his trial at one of the cyst nematode trial locations (Photo 3).

The tour was a success. Everyone who attended, even those of us doing research in Michigan, learned from discussions with other researchers, seed producers, and suppliers. ■



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Benefits of Early Delivery

by Brian Haraga, CFO

The most significant driver to maximizing annual shareholder earnings is producing and selling the most sugar possible. A simple breakeven analysis illustrates the increased grower earnings resulting from increased production and sales. **Figure 1** measures fixed costs, variable costs, sales and production over time. Fixed costs are those costs that the Company spends, every year, regardless of crop size, such as repairs and maintenance, insurance, asset depreciation, interest expenses, and administrative costs. The line on the chart is flat and constant over time and production.

The variable costs are driven by the actual product production. In **Figure 1**, these costs increase as volume increases and are added to fixed costs, producing a total cost line. Variable costs include beet receiving, beet freight, boiler energy, labor and operating supplies (chemicals, limestone, anthracite, etc.). The earnings from the sale of co-products are netted against those costs.

As production and sales volume increase with time, the contribution margin (beet payment) increases. **Figure 2** illustrates the significant increase in the gross beet payment when with slice begins September 3 vs October 1.

The two circles in **Figure 2** illustrate different results, one from a shorter campaign and the other from a longer processing season. Based on an average gross beet payment of \$50 per ton, the benefit of a longer campaign and increased production significantly improves the total payment available to growers. Also, starting early greatly increases the early delivery cost. The company average payment per acre beginning September 3 is approximately \$100 greater than the later October 1 start date.

An analysis comparing the start date, in **Figure 3**, reveals a number of facts demonstrating the benefit of an early delivery program, thus achieving the objective of increased throughput and ensuring both the early delivery grower, as well as the regular delivery grower, are made whole, financially. In both scenarios, the tonnage of beets delivered during regular (permanent pile) harvest is the same. Whether the start date is September 3 or October 1, the regular harvest begins October 22.

This analysis also assumes the beets will grow about a ton a week and RWST increases approximately 9 1/2 pounds per ton, per week. Early start recognizes that yield and RWST is adjusted daily based on the Early Delivery Formula. The starting yield for September 3 will be approximately four tons per acre less than the starting yield on October 1. The average RWST beginning one month earlier is nearly 20 pounds per ton lower. The average yield of all beets delivered in September are less than one ton per acre than that of October 1.

The average yield for regular harvest will provide the same tonnage in either scenario. The start date only impacts the amount of early beets delivered. The analysis considers any beets sliced after March 10 at risk. Using a harvest date, beginning September 3, the Company can harvest approximately 27,000 more acres than an October 1 start.

Based on these assumptions, almost 1.6 million cwt. of sugar is processed and generates approximately \$60 million revenue during September. With this additional production, there are associated variable costs. Fixed costs remain fixed. In other words, as more sugar is generated and sold, there are no increases to fixed cost. Fixed costs remain approximately \$155 million for any start date. Based on the model's revenue and variable cost estimates, the longer campaign will generate an increased gross payment available to all growers by almost \$50 million, or over \$5 per ton.

Early Delivery

Based on the assumed tons delivered over the early delivery period and using the Early Delivery Formula, the early delivery premium for September 3 is expected to reach \$7.5 million. For regular growers, that is approximately \$2.25 per ton cost against the base payment. Early Delivery beets would receive, on average, an estimated \$7.25 per ton delivered premium. Using a later October 1 start date, the early cost to regular

Figure 1. Theoretical Breakeven Analysis

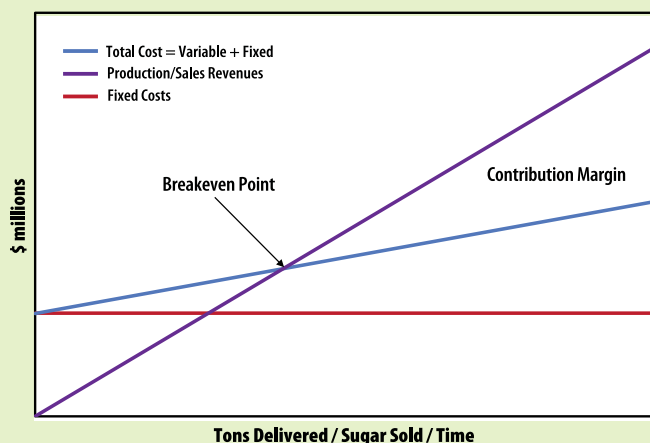


Figure 2. Gross Beet Payment Comparison

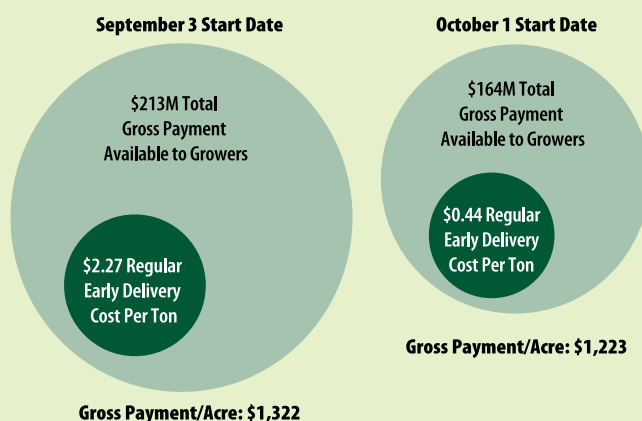


Figure 3. Michigan Sugar Company Start Date Analysis

	September 3	October 1	Change
Start Day Yield	19.78	23.70	3.92
OCTOBER 21 - COMPLETE HARVEST			
Acres	117,000	117,000	-
Regular Tons	3,250,000	3,250,000	-
Average Yield	27.80	27.80	-
Finish Campaign	10-Mar	10-Mar	-
EARLY DELIVERY			
Acres	44,000	17,000	(27,000)
Early Tons	1,008,000	420,000	(588,000)
Average Yield	22.9	24.7	1.8
TOTAL			
Acres	161,000	134,000	(27,000)
Total Tons	4,258,000	3,670,000	(588,000)
Average Yield	26.4	27.4	0.9
Regular RWST	278.80	278.80	-
Early RWST	246.22	264.84	18.62

growers is less than \$0.50 per ton and early delivery growers would receive a base payment premium of less than \$3.50 per ton, on average.

Although the cost/premium per ton appears to be disproportionate, we need to examine the effect on a per acre basis. The September startup would have both the regular grower and early grower receiving approximately the same payment per acre. The later October start, would have regular growers generating more than the early delivery grower by \$40 per acre.

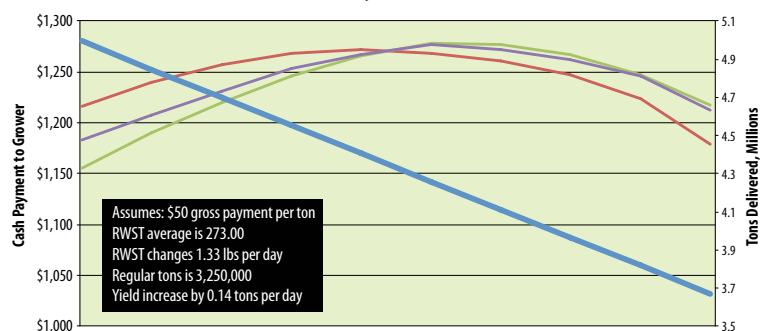
Figure 4 examines the early delivery cost and premium associated with the total payment, regular payment and early payment on a per-acre basis. The chart looks at delivery dates from July 30 through October 1 and uses all of the above assumptions to give a very clear picture on time, tons delivered and earnings per acre. Based on the following early delivery premium per day:

Aug	Sept 1	Sept 2	Sept 3	Sept 4	Sept 5	Sept 6	Sept 7	After Sept 7
1.800%	1.600%	1.575%	1.550%	1.525%	1.500%	1.475%	1.450%	1.40%

The chart in **Figure 4** shows the relationship between the early payment, per acre, to the regular payment and total payment. If harvest began October 1, the payment per acre shows that the early delivery payment is significantly less than the regular tons. On the other extreme, should early delivery start July 30, early delivery premium would exceed regular beets per acre delivered by over \$60. The point where early delivery and regular delivery intersect is the week of August 27; that is, the early delivery beet payment, per acre, is equal to the regular beet payment, per acre.

The Michigan Sugar Company Early Delivery Program is an essential tool that encourages growers to deliver early and provides fair monetary compensation to all participants while maximizing the total payment. ■

**Figure 4. Cash Payments to Grower Analysis
Start Date and Per Acre Payment**



	30-Jul	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	1-Oct
ED per Acre	\$1,216	\$1,240	\$1,258	\$1,269	\$1,272	\$1,268	\$1,261	\$1,247	\$1,223	\$1,178
Reg per Acre	\$1,155	\$1,190	\$1,220	\$1,246	\$1,266	\$1,277	\$1,277	\$1,267	\$1,247	\$1,217
Base Payment/Acre	\$1,183	\$1,208	\$1,231	\$1,253	\$1,267	\$1,276	\$1,272	\$1,262	\$1,245	\$1,212
Tons	4,993,000	4,846,000	4,699,000	4,552,000	4,405,000	4,258,000	4,111,000	3,964,000	3,817,000	3,670,000
Total Acres	204,000	195,000	186,000	177,000	169,000	161,000	154,000	147,000	140,000	134,000



Brian Haraga, Chief Financial Officer, has been with Michigan Sugar Company for 12 years.

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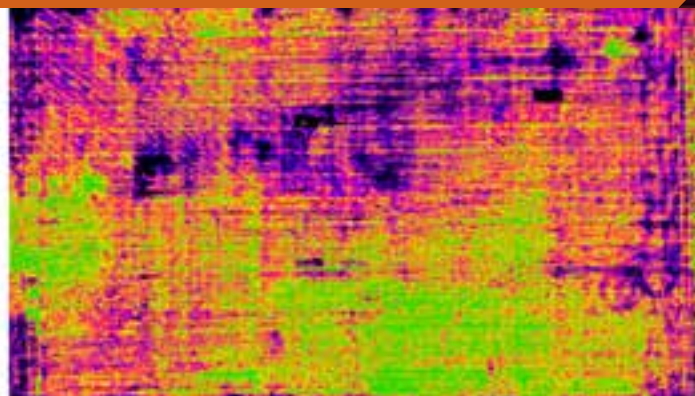
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YOUNG FARMER OF THE YEAR

The Michigan Sugar Company Young Farmer Program has created an excellent opportunity for young producers to network with one another and learn more about our company, and our industry.

— Peter Maxwell, Young Farmer of the Year Award Recipient (2014)



Third Generation Growing Strong

by Peter Maxwell

Last summer, Michigan Sugar Company's Vice President of Operations, David Noble, spoke to the young farmer group in the Conference Center at the Bay City factory. His presentation was very educational and whenever I am in the Conference Center, I always catch myself admiring the "old time" photographs on the wall. As a third-generation sugar producer, these are a reminder of the rich heritage that both myself and many producers in our Cooperative have in sugar production. I never had the opportunity of meeting my namesake and grandfather (Pete), but have certainly enjoyed the stories from my father and uncles. Both my father (Clay) and grandfather devoted much of their lives towards sugar production in Michigan. Grandpa Pete spent many hours on grower boards as well as being a member of the American Sugarbeet Growers Association. My father was one of the first members of the Board after the merger with Monitor Sugar. I am very proud of them and look forward to carrying on the tradition of sugar production in Michigan.

My mom's father was born in 1916 and was another good source of "old time" harvest stories. He came from the days when the family "hand lifted" their crop of five acres of beets every fall. The amount of labor involved was simply unbelievable: planting raw seed, hand thinning multi-germ varieties, constantly hoeing for weed control, hand digging and topping with a beet knife, and my favorite, hand loading those five yard trucks (just like the ones pictured on the wall in the Conference Center) with a beet fork. He always said a big day was three, six- to eight-ton loads; four was nearly unheard of.

Fast forward to today. We have 12-row harvesters, self-propelled harvesters, field loading operations, 60-ton beet carts, six-, seven- and eight-axle trailers, auto-steer, and the list goes on! What would Grandpa Pete say about all of the advances in the last 100 years? He probably wouldn't believe we no longer need to mechani-

cally weed our crops. I am also amazed by the advances I have witnessed in my short beet growing tenure. Where would our industry be without RoundUp Ready® technology or nematode tolerant varieties? We now have varieties that have excellent disease tolerance with yield and sugar performance, and there is more on the way.

This technology and other future advances hang in the balance. What will be the outcome of the next 100 years? As producers of sugar, and more importantly as farmers helping to feed the world, we must protect these advances in our industry. The importance of communication with friends, family, consumers and legislators about what we do and why is paramount. With agriculture and biotechnology at the forefront of various domestic discussions, we must continue to tell our story. Where would our industry be without a strong sugar policy? It seems with every farm bill we feel like we are one vote away from our industry slipping from our grasp. The Michigan Sugar Company Young Farmer Program allows myself and other young producers the training and knowledge to support these causes. It has created an excellent opportunity for young producers to network with one another and learn more about our company and our industry. I am very appreciative of the opportunities and experiences the young farmer program has afforded me. This program, along with other programs like 4H, FFA, and Michigan Farm Bureau Young Farmer's program, are helping future leaders of our industry surface.

I often catch myself wondering where my son, Mason, will be in 30 years. Will he be planting winter beets at ten miles per hour, harvesting them in July with 30-foot self-propelled harvesters? One can only imagine. One thing is for certain, we must continue to work hard and remember how we got here and why. Hopefully, Grandpa's beet fork stays hanging on the wall. ■

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Sustainability in the Factory

By David Noble, Vice President of Operations

A sugarbeet freshly delivered to a factory is made up of the following components:

Sugar.....	17%
Water.....	73%
Pulp.....	5% (cellulose and pectin material)
Non-sugars.....	2%
Topsoil.....	3%

All these components must ultimately be converted into products, or must be recycled or utilized as a byproduct for sustainable processing.

The vast majority of the sugar is extracted and shipped as bulk or retail granulated sugar. Some of the sugar exits in two process byproducts; pulp and molasses. Pulp from the diffusion process becomes a valuable animal feed, which can be fed directly to cattle or can be dried for long-term storage and used throughout the year or in pet foods. Molasses is a combination of the non-sugars in the beet with a portion of the sugar. It is primarily used in fermentation processes to create yeast. Molasses can be further processed to recover more sugar and to produce two byproducts; betaine and raffinose. Betaine is a naturally occurring nutrient that accumulates in the beets and is used to supplement animal feeds. Due to its concentration of natural non-sugars, raffinose has a low melting point and has become a key ingredient in more environmentally friendly road de-icers.

Prior to starting the sugar process, the topsoil is removed through dry screening and then washed. Dry soil can be returned directly back to the fields thereby replacing the lost topsoil from crop harvesting. Soil from washing is settled and dried in ponds then dug out after processing ends. This soil is used by contractors in construction and landscaping projects, or returned and spread over fields to supplement or improve existing soil.

The largest component of beets, water, is evaporated off and condensed into clean, hot water across the sugar refining process as the sugar progresses from a juice stream to solid crystals. This valuable water is used as feedwater to steam boilers, used in diffusion to dissolve and recover sugar, becomes a cleaning source (instead of using city water) for washing equip-

ment and floors, plus is used in heat exchangers to warm cold juices. So the water in the beets becomes a multi-recycled and utilized source to save both city water use and to reduce energy consumption. Ultimately, any remaining water from the process plus rainwater from around the factory sites is accumulated, treated onsite, and returned to a local river.

During the processing of the beet, impurities must be removed. To purify the juices, limestone from the quarries near Rogers City, Michigan, is calcined in a kiln at the factory then added to the sugar process. After reacting with the impurities in the juice, the fine lime particles are settled and filtered out. Most of this lime byproduct is used by Michigan farmers as a soil enhancer. The lime and captured juice nutrients

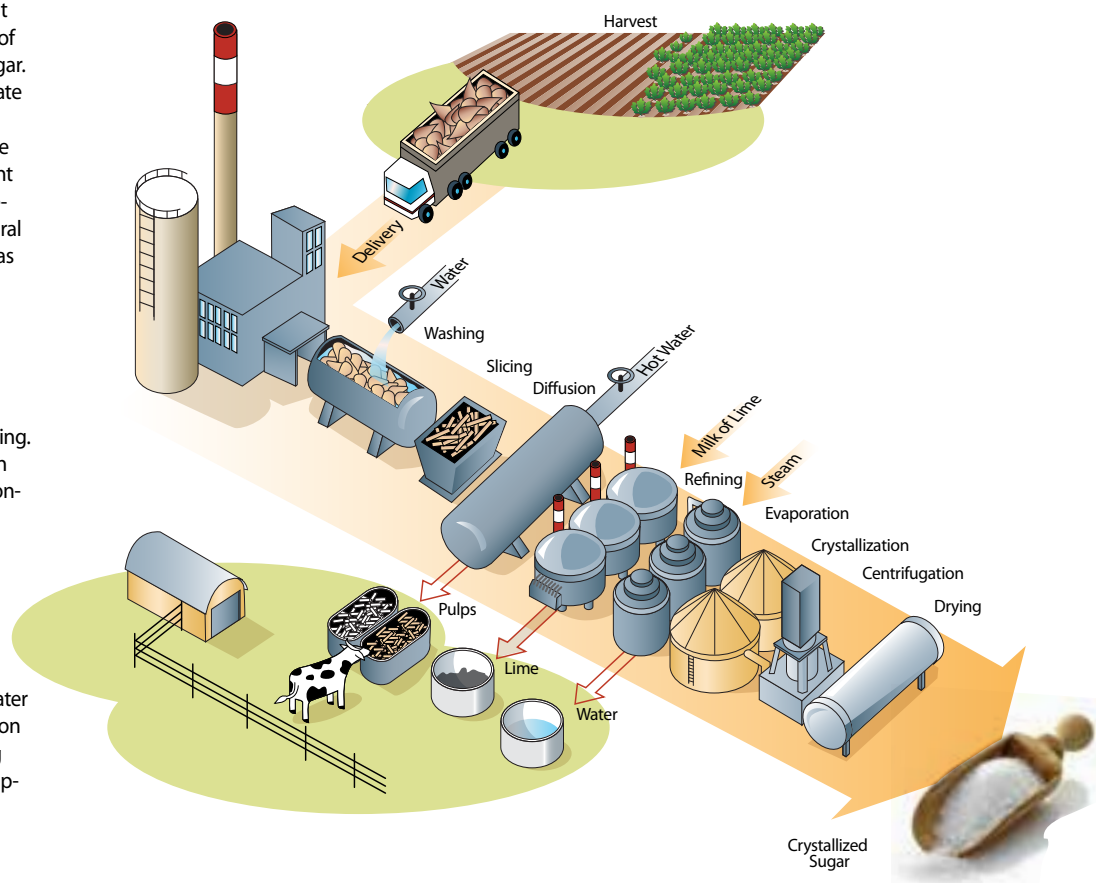
balance soil pH, promote higher crop yields, and help to reduce plant disease. Other uses of the lime include mushroom farming and as an additive in road asphalt.

All components of the sugarbeet either become direct saleable manufacturing products, such as sugar and pulp, or byproducts for further processes, such as molasses. The beet sugar process is a model of material recycling and sustainable processing. ■



David Noble, Vice President of Operations for Michigan Sugar Company, has been with the company for six years.

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Sustainable Agriculture on Trombley Farms

by David Ganton, Agriculturist

Dave and Pam Trombley are a husband and wife team in the West District of Michigan Sugar Company's growing region. The Trombleys have been farming in the Reese-Munger area since 1990. Dave comes from a long line of farmers as his father and grandfather both worked Trombley Farms since the 1930s. Pam did not come from farming roots, but she is a hands-on partner in the business of cash cropping since they took over Dave's family farm. Dave and Pam work hand-in-hand in the daily operation of the farm; ripping, fitting, planting, spraying, harvesting, and transporting the crops. Pam does the bookkeeping in addition to operating any of the farm's tractors or trucks. Dave handles the basic running of the operation and is the onsite repairman for most non-major mechanical issues.

The farm produces a hearty crop of sugarbeets on 200 of their 1,400 acres, with the balance of the acreage shared among corn, dry beans, soybeans, and wheat. Dave feels that growing wheat is an integral part of their sustainable crop rotation. Not only does wheat provide a cover crop for winter, but with the addition of mammoth and red clover, it also provides a green manure plowdown to enrich the soil for future crops.

In the agriculture business today, implementing sustainable practices in farming is a must. In doing

so, we will continue to produce crops for food and protect our environment for future generations to come. At Trombley Farms, Dave and Pam think it is important to continually practice sustainable agriculture in order to preserve the land and provide good soil health for future generations.

Another practice that Dave feels strongly about is the exclusive use of their ripper, as it not only provides the fracturing of the soil, but it also leaves enough residue to keep the soil from eroding.

Dave envisions cover crops for his sugarbeets in the future. The problem lies in how to incorporate the cover crop into his growing sugarbeets at the proper time so he would not see a yield drag along with achieving the catch with the cover crop. Dave is doing his best at being a sustainable farmer; however, there is not an exact formula, so much is trial and error. He is confident that, in the near future, this industry will find ways of overcoming hurdles and achieving its goals and will again find ways to continue to secure the future of agriculture and its land.

Dave plants his sugarbeets into ripped cornstalks. This helps to ensure that the young seedlings and small plants are not disturbed by the wind and weather.

Dave feels this practice also helps with Rhizoctonia control. Once again, Dave thinks this method is not only profitable, but responsible.

The Trombleys are proud members of their sugar-beet cooperative. They follow their guidelines and support their decisions. They feel being part of a strong cooperative is not only profitable, but necessary to continue to build a strong future.

Dave and Pam take pride in knowing that their sustainable practices help to build their rich Saginaw Valley soil, safe from attrition, and will help to provide agronomic profitability for future generations.

On a personal note, I have been Dave and Pam's agriculturist for most of 25 years. I not only have had the pleasure of knowing them on the farm, but in the community as well. I have gained a great respect for their contributions to both. Sometimes in this job, the intangibles are the most important part of the job. The Trombleys have not only enriched their soil, but the lives of those around them. ■



David Ganton is an Agriculturist with Michigan Sugar Company for the past 25 years and is responsible for over 11,000 acres of sugarbeet production in the Reese area.

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High Sugar Producers Receive Sweet Rewards

East District • Helena Farms

The East District's High Sugar Producer for Crop Year 2014 was Helena Farms. Helena Farms is comprised of Mike and Pat Roggenbuck with two of their sons and spouses as full-time partners; Doug and Debbie; and Jim and Stacy. Two of Doug and Debbie's children, Shawn and Krista, have joined the farm operation since recently graduating from high school. The 151-acre field that the Roggenbucks harvested yielded 324.17 pounds of recoverable white sugar per ton (RWST). The field was planted on April 27, 2014, with the Beta 184N seed variety. The field was harvested on November 4, yielding over 36.7 tons per acre and 21.12% sugar.

Most of the land that the Roggenbucks work is located in the Ruth and Harbor Beach areas. Their farm encompasses 5,500 acres of tillable land of which 1,500 acres are sugarbeets. Other crops grown are corn (1,500 acres), edible beans (1,500 acres), and wheat (1,000 acres). Besides crops, the Roggenbucks feed over 1,600 beef cattle. Row crops are planted in 20-inch rows using a 24-row RTK assisted planter. Mike started farming at a very young age; the family farm has been in existence for over 50 years. Both Jim and Mike have been involved in local East District Board leadership over the years; Jim currently serves as District President.

Mike, Jim and Doug were the first Michigan growers to use the imported Ropa technology from Germany to harvest and clean their beet crop. In 2003, the farm purchased a Ropa Tiger self-propelled beet harvester. They saw the value in using the Ropa equipment to produce more efficient work with less manpower and equipment. The results they obtained were so positive that a second Tiger was brought to the farm for the 2005 harvest. In 2007, the Roggenbucks purchased a Ropa Maus to field load and clean their beet crop. An agreement back then was worked out with Michigan Sugar Company to deliver their entire acreage to the Caro factory's wet hopper; thereby removing some 40,000 tons from the Ruth receiving station. The noticeably less truck traffic and beets stored at Ruth without the Roggenbuck tonnage has benefited all growers who deliver to Ruth. The Caro factory has received the Roggenbuck beets every harvest since. Over 53,000 tons of beets from 1,540 acres were harvested, field piled, field cleaned, field loaded, and hauled to the Caro factory this past harvest season by Helena Farms.

Congratulations to Helena Farms for their high sugar achievement.

Central District • Richmond Brothers Farms, LLC

The Central District's High Sugar Producer for the 2014 crop year was Richmond Bros. Farms, LLC, of Bay Port, Michigan. They farm 527 acres of sugarbeets and have included sugarbeets in their crop rotation for four generations. Their high sugar field yielded 29.29 tons/acre with a sugar content of 20.78% and a recoverable white sugar per ton (RWST) of 322.43. The majority of the 36.7 acre field was planted with Crystal-RR059 (Silver) however; there was a 10-acre variety trial within the field.

The field was planted on April 24 on ground that was prepared stale seedbed the previous fall. This allowed Richmond Bros. to plant their sugarbeet crop three to four days earlier, since they did not have to do any tillage before planting. Richmond Bros. plants 22-inch rows and planted this field at a seeding rate of 67,500. The previous crop in this field was wheat and oilseed radish. By incorporating an oilseed radish cover crop program on their farm, they benefit from lowering their Cyst nematode populations as well as improving the soil health of their fields.

Additionally, Richmond Bros. Farms attributes their high sugar to seed technology, foliar feeding, and timely fungicide, herbicide, and insecticide applications. The seed treatments available increase the ability of the sugarbeet to reach its full genetic potential. Foliar feeding the sugarbeet crop essentially spoon feeds the nutrients it needs throughout the growing season. Also, they apply Quadris in-furrow as well as band it on at the six- to eight-leaf stage to control Rhizoctonia. They applied four timely fungicide applications for Cercospora leafspot. Lastly, they manage competitive weeds and insects by scouting regularly and applying a timely herbicide or insecticide application. These factors are all very important in achieving a quality sugarbeet crop.

Congratulations to Richmond Bros. Farms, LLC, for their high sugar achievement!



Jim Roggenbuck, above, represented Helena Farms.



Mike Richmond represented Richmond Bros. Farms. Inset photo, Mike receives the award from Brian Rayl.



Above, sharing in the Crumbaugh Legacy award is the Crumbaugh family, (left to right), Kyle, Clay, Christina and Logan; At right, Clay receives his High Sugar Producer award from Bill Meylan.

West District • Crumbaugh Legacy

The 2014 High Sugar Producer for the West District belongs to Crumbaugh Legacy of St. Louis, Michigan, with a RWST of 316.27. Clay and his wife, Christina, live between Breckenridge and St. Louis, approximately two miles north of M46. They have two children, Kyle and Logan. Their crop rotation consists of corn, wheat, soybeans and sugarbeets covering 3,800 acres.

Clay earned an Associate's Degree in Crop Production from Michigan State University. He was a past director for the Monitor Sugarbeet Growers Association from 1996 through 2004. Clay serves on many committees for Michigan Sugar Company, including Seed Committee Chairman.

Christina Crumbaugh studied at Davenport University. She earned an Associate's Degree in Sales & Marketing and went on to Central Michigan University where she earned a Bachelor of Science Degree in Business Administration and Economics. She currently sits on the board of directors of Farm Credit Services. Christina works full time on their family's farm, managing many aspects of Crumbaugh Legacy, including accounting, marketing, insurance and federal regulations.

Conservation tillage, zone tillage, and stale seedbed are all incorporated into their operation. The combination of early planting and stale seedbed has certainly attributed to the development of a healthy root structure for their beet crop. Soil compaction has been a concern and Clay has made a big turnaround in this area by utilizing more tiling, planting oilseed radish, keeping heavy trucks out of the field, carting beets to the road, completing fewer passes across the field utilizing RTK technology, and applying zone tillage.

Focusing on preserving organic matter also plays a part to better soil health, not to mention the economic benefits — reducing trips, fuel use, plus diseases and pests of the sugarbeet including nematodes, Rhizoctonia, and Cercospora (which are all threats to growers in Gratiot County). Resistant sugarbeet seed varieties have been a key factor and are a huge decision to make when it comes to combatting these issues.

Time management is also a critical tool of the Crumbaugh's operation. Early delivery and, on occasion, 24-hour delivery are critical. Clay enjoys working with all the staff, management and board members of Michigan Sugar Company. They are all very professional and seem to have the same thing in mind; working together and making sound decisions to move our Co-op forward.

Congratulations to the Crumbaughs on their High Sugar Award for the West District! ■

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Youth Sugarbeet Project Helping Shape Our Future Growers



ABOVE, TOP TO BOTTOM: East District Project participants wait to be evaluated (Near Harbor Beach, August 2005); Amanda Kalso (Croswell) showing her winning Sanilac County Fair exhibit (2005); Impressive sugarbeet display at the Highgate Fair (Ontario, 2014). These are the first sugarbeet exhibits there since before 1969!

by Keith Kalso, Agricultural Manager, Croswell

An important way our industry has promoted itself and cultivated interest for future growth over the years has been through educating the younger generation. The Youth Sugarbeet Project, formerly called the 4H and FFA Sugar Project, has been around for several generations now. Before the days of our Cooperative, both Michigan Sugar Company and Monitor Sugar Company had similar programs that they administered. Back then, participants were required to have membership in either a 4H Club or an FFA chapter and have signed a contract. The pre-Cooperative Sugarbeet Project participants were exclusively children of the growers.

Fast forward to 2014, Michigan Sugar Company has been a cooperative for 12 years running and gone through many changes and improvements. A few improvements have come upon the Youth Project as well. Participants today are no longer required to be a 4H member or FFA chapter member and students are not required to sign a sugarbeet contract. These two small changes have given more of our youth opportunities to participate and are allowing the Project to further its reach beyond our grower-owner group. We are seeing increased participation from children of employees, friends of grower-owners' children and other "outside" youths.

Today, the Project continues to promote education and interest in the sugarbeet industry. Whether participants pursue agriculture-related fields upon graduation from high school, or non-agriculture fields, they leave the program being more familiar with the industry than had they not participated. Participants learn cultural and agronomic practices of sugarbeet production, processing the crop, political issues facing the industry, Cooperative structure and function.

Project requirements:

- Must be between the ages of 8-18.
- Attend a Youth Sugarbeet Project orientation meeting prior to starting the Project.
- Make an exhibit or presentation at a local county fair.
- Attend the annual Youth Project Field Day held at the Saginaw Valley Research and Education Center. This is a very informative day that the young people learn about research, diseases of the beet, beet production practices, and county fair beet display preparation.
- Complete the Sugarbeet Project booklet, take a written test, and be interviewed by an Ag staff employee.

Besides learning, the Project has benefits and awards:

- Every summer, a trip is planned and offered to each participant. Past places visited have been the Henry Ford Museum, Greenfield Village, Dow Diamond for a Great Lakes Loons baseball game, Detroit Zoo, and Comerica Park for a Detroit Tigers game.
- Award Banquets are held each January to recognize the participants and award them for their accomplishments.
- All participants receive participation gifts for being in the program. Those who excel receive awards as Premier and Prestige Growers.

The Youth Sugarbeet Project has been a valuable experience for many young people over the years. Many of the participants have developed skills necessary for success not only in growing sugarbeets, but for many facets of their lives. Whether it is learning beet cultural practices at a young age, taking a written test (sometimes quite challenging), being interviewed by adults (challenging as well), or just being more rounded, this program continues to contribute. Over a 30-year period, this author has witnessed many young people mature and become successful members of society with the Sugarbeet Project somehow assisting them in small but important ways.

If you have young ones or know others who have children between the ages of 8-18, I would encourage them to contact a local Michigan Sugar Company agronomist and ask about joining our Youth Sugarbeet Project. ■



Keith Kalso, Croswell Agricultural Manager, has worked for Michigan Sugar Company for 30 years.



East District Prestige Award winners, left to right, Kara Maurer, Lauren Maurer, and Jennifer Gentner.



Central District Prestige Award winners, left to right, Hans Bierlein, Eric Mossner, Aaron Maust, Emma Maust, Shawn Gayari, and Abbie Bauer. Inset photo, Jordan Maust.



West District Prestige Award winners were Chris Ratajczak and Kayla Ratajczak

2014 Project Award Winners Announced

EAST DISTRICT

The East District held their annual Sugarbeet Youth Project Awards Banquet on January 5. The 2014 Project saw 32 young people participating. Seven Premier Award recipients and three Prestige Award recipients were honored at the banquet held at Woodland Hills Country Club of Sandusky. All participants received a Michigan Sugar Company logo umbrella and a premium LED flashlight.

Lauren Maurer, a senior at Harbor Beach High School, was the master of ceremonies for the evening. Prestige winners were Lauren Maurer and Kara Maurer (parents Duane and Diane); and Jennifer Gentner (parents Craig and Mary Kay). The Prestige Award gifts were a wall plaque with beet knife and a radio/device docking station.

Those receiving Premier Awards were Derek Thom, Justin Thom, Luke Gehring, Matthew Leen, Hannah Leen, James Weber, and Justine Roggenbuck. The Premier award recipients also received a radio/device docking station.

A brand new Sugarbeet Youth Project (East District) was started this past spring in Ontario, Canada! Thanks to Rob and Maureen McKerrall of Chatham, Ontario, for starting this new group. The McKerralls, who are Cooperative members, have a son who showed an interest, as well as several neighbors. The group had 18 members this first year. Not all of the youths in the Ontario group are related to growers, but have shown a keen interest in learning about the sugarbeet industry.

The Ontario Youth Awards Banquet was held January 12, 2015, at the Country View Country Club in Oungah, Ontario. In this inaugural year, the youths participated in an orientation presentation at the Saginaw Valley Research & Education Center and were not required to be tested or interviewed.

CENTRAL DISTRICT

The Caro Area Youth Project of the Central District had 38 participants in 2014. The Pioneers and Tuscola Beetniks were the two clubs in the area. The Tuscola Beetniks were led by Ashley Laux and Genevieve Hecht; the Pioneers by Jason Hecht.

The awards banquet was held on January 7 at the Gardens at Grice's, south of Caro. Prestige winners for the Caro area were Eric Mossner (parents Mark and Pam); Hans Bierlein (parents Brian and Karen); and Abbie Bauer (parents Bryan and Christine). The Premier winners were Willie Keinath, Samantha Hecht, Jessica Hecht, Cassandra Keinath, Jennifer Mossner, Nathan Bublitz, Heidi Bierlein, and Abigail Hecht.

The Sebewaing Area Youth Project of the Central District had 54 participants in 2014. The four Prestige winners were Aaron Maust and Emma Maust (parents Brent and Emily); Jordan Maust (parents Ben and Beth); and Shawn Gayari (parents Steve and Michelle). There were also 11 Premier winners: Mitchell Richmond, Sydney Richmond, Alexis Bushey, Luke Retford, Alexis Schuette, Isaac Elston, Andrew Smith, Alex Smith, Grant Gremel, Mitchell Schuette, and Adam Retford.

WEST DISTRICT

The 2014 Youth Project Awards Banquet was held on January 6 at the Trillium Banquet Center in Saginaw. This year, 26 students were involved in the Youth Project which resulted in five Premier Awards and two Prestige Awards.

Scoring for the award winners was based on a written test, interviews by company personnel, Project books, a written story, summer educational event attendance, and county fair participation. The night was topped off by a number of participants reading their written stories.

Those receiving the top honor of the Prestige Awards were Kayla Ratajczak and Chris Ratajczak (parents Chris and Karla). Participants receiving the Premier Awards were Kelly Ratajczak, Josh Haubenstricker, Katie Ratajczak, Lance Frahm and Bryce Frahm. ■

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Improving Water Quality in the Saginaw Bay Watershed

*by Chuck Lippstreu, Strategist
Byrum & Fisk Advocacy Communications
Michigan Agri-Business Association*

Chuck Lippstreu is our invited guest writer for this Ray's Ramblings. Prior to joining the Byrum Fisk Advocacy Communications team in 2013, he served as a White House appointee at the U.S. Department of Agriculture for five years, most recently serving as lead speechwriter for Agriculture Secretary Tom Vilsack. In this capacity, Chuck communicated a diverse range of policy issues, including production agriculture, conservation, renewable energy, rural economic development, food safety and international trade.

Water quality has always received a special focus in Michigan because of our proximity to the Great Lakes. When it comes to protecting and improving lakes and streams in the state, Michigan agriculture has shown a commitment to bring proactive solutions to the table.

This is important, because focus continues to grow on water quality concerns. Last August, the shutdown of the Toledo drinking water supply shined a light on water quality issues in the Western Basin of Lake Erie. Many different factors played a role in the harmful algae bloom that impacted the Toledo water supply — including outdated municipal wastewater facilities, malfunctioning sewer systems, climate change and invasive species like zebra and quagga mussels.

Agriculture also played a role, and the Toledo situation served as a wake-up call that water quality will remain a critical part of the conversation for years to come.

While we know there is no magic bullet that will solve water quality concerns in the Great Lakes region, it is critical that agriculture partner with others to keep making progress. We know that we must be proactive.

The Regional Conservation Partnership Program (RCPP), a new program championed by U.S. Senator Debbie Stabenow in the 2014 Farm Bill, has emerged in the Saginaw Bay region as an important tool to get the job done.

In May 2014, Senator Stabenow and U.S. Department of Agriculture (USDA) Secretary Tom Vilsack announced the new program right here in Michigan, at an event in Bay City. USDA invited new, innovative partnerships including private companies, agriculture and commodity groups, nonprofits and others to work together on finding new ways to improve water quality in critical areas across the nation.

In the ensuing months, the Michigan Agri-Business Association worked together with The Nature Conservancy to lead a proposal under the new program to engage private sector companies in promoting USDA conservation programs throughout the Saginaw Bay watershed.

We're focused on the Saginaw Bay watershed because it represents the largest watershed basin in the state of Michigan, spanning 5.5 million acres and 22 counties. The ecological health of Saginaw Bay and its tributaries is critically important to not only Lake Huron fisheries and water quality, but the entire Great Lakes ecosystem.

We were proud to include nearly 40 partners from across the scope of Michigan's agriculture sector — including support from Michigan Sugar Company.

The project proposes working with farmers and agribusinesses to develop and demonstrate innovative science, tools, and delivery systems while linking agricultural conservation practices to measurable ecological outcomes.

Specifically, the project enables Certified Crop Advisors (CCAs) to promote and implement National Resources Conservation Service (NRCS) conservation programs on farms across the Saginaw Bay area. Resources from The Nature Conservancy and Michigan State University's Institute of Water Resources, will allow us to identify the highest-impact areas in the watershed and target the location of conservation practices to have maximum benefit.

And thanks to the scientific expertise at The Nature Conservancy and MSU, we will be able to track the outcomes of this work — enabling agriculture to share the results of this positive effort in the Saginaw Bay area.

The effort undertaken in constructing the RCPP proposal by such a diverse range of partners shows the long-term commitment within our industry to take water quality seriously and provide modern solutions. We believe that the partnership between agriculture, the conservation community, private companies and higher education organizations marks a paradigm shift in sustainability and water quality.

While this effort remains in its early stages, we're proud of the work achieved by organizations across the state to propose an innovative new approach in the Saginaw Bay Watershed. At a time of heightened awareness regarding water quality, it is more important than ever that we work together to achieve results. ■

Chuck Lippstreu has been a strategist with Byrum & Fisk Advocacy Communications in East Lansing, Michigan since 2013. He provides strategic advice and communications support for a wide range of clients and issues, with a focus on agriculture and the environment — including the Michigan Agri-Business Association.

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William Herford, Michigan Sugar Company Board of Directors, Secretary • Elkton, Michigan

William ("Bill") Herford's farm is two miles north of Elkton, Michigan. Bill farms with his brother, Jim; sons, Adam and Luke; nephew, Brandon; and stepson, Tim. In 2014, they farmed approximately 5,000 acres, growing sugarbeets, corn, wheat, dry beans, soybeans, alfalfa, and oats. They also have 5,000 head of cattle and calves on feed at various locations. In addition, they also do some custom work for local dairies and custom sugarbeet loading for two local farmers and have a contract with Michigan Sugar Company for Early Delivery Direct Haul.

Bill has been growing sugarbeets for 44 years. He and his brother, Jim, are fourth-generation farmers. He says, "Beets have been very profitable over the years and they are very important to our operation, because they give us both diversity and profitability to keep our business moving forward. Sugarbeets have also been my favorite crop to grow over the years."

Bill and his wife Barb's family consists of Bill's children, Adam and Luke (Rita); one daughter, Beth (Rick); and Barb's children, Justin (Angie), Matt (Syndia), and Tim (Jessica). They have eight grandchildren.

Bill was on the Michigan Sugar Company Founding Board, and still serves today as its Secretary. He is also on the County Farm Bureau Board, is a former Elkton Co-op Director and is on his church council. He spends a good deal of his time representing the sugar industry (through Michigan Sugar Company and the American Sugarbeet Growers Association) which he says has been very rewarding to him. "I am extremely happy that the Michigan and Canadian beet growers are able to own their own company. I enjoy farming, every day, and helping the next generation as they take over the family business."

As if he doesn't have enough to keep him busy, he is hoping to someday start restoring old beet equipment with other interested growers! ■



Mark Richards, Michigan Sugar Company Board of Directors, Treasurer • Dresden, Ontario

Mark Richards is a fourth-generation farmer who farms with his cousin, Mike Richards, father, Phil, and Uncle, Ken Richards, in an operation located on the northwest corner of the Town of Dresden, in Chatham-Kent, Ontario. Together, the group manages sugarbeets, processing tomatoes, processing peas, corn, soybeans, and wheat on over 2,000 acres of ground each year. The operation uses no till in the soybean and wheat crop and has adopted strip tillage systems for corn and sugarbeets. They use controlled traffic for tomato production.

Mark and his wife of 21 years, Kristina, reside in the original farmhouse with their 16-year-old daughter, Emma.

The Richards' families have grown beets since the first opportunity offered by Michigan Sugar Company in 1997. They saw the opportunity to diversify the operation with another higher value crop in the operation and felt they could manage it successfully. Over the 17 years of producing beets they have been, on average, a positive contributor to the bottom line of the operation.

Mark came to the Michigan Sugar Company Board table with experience gained by participation in provincial (Ontario) and national producer organizations. The Ontario Federation of Agriculture, the Canadian Federation of Agriculture and the Canadian Young Farmers Forum were the more notable boards over the years. Currently, Mark sits on the Board of Directors of the Agricultural Credit Corporation in Ontario in addition to his duties on the Board at Michigan Sugar Company.

Mark tends to look at the 'bigger picture' when discussing issues affecting any organization and enjoys serving on the MSC Board for that very reason. "When we make decisions at the board level, we have to consider the whole picture, not just what effect it will have on our own operations, but the overall effect it has on all members of the Cooperative."

Mark is also known for his thirst for technology and desire to make use of the tools available to producers and organizations in order to improve efficiency, operations, and management. ■

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Kinde	Farmers Co-operative Grain Co	338 Main St	Kinde	MI	989-874-4200	Jeff Kreh
Forest	Lakeside Grain & Feed	7858 Rawlings Rd	Forest	Ontario	519-490-5442	John Waters
Petrolia	Lakeside Grain & Feed	4525 Petrolia Lane	Petrolia	Ontario	519-490-5460	Brian Hoven

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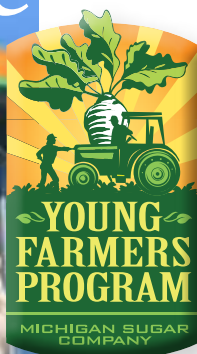
THE NEWSBEET Winter 2014-2015

Michigan Sugar Company
2600 South Euclid Avenue
Bay City, MI 48706

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Looking to the Future of Sugarbeet Farming



Now, more than ever, it is imperative that we encourage and develop the next generation of sugarbeet growers to sustain our industry for the future. Michigan Sugar Company's **Young Farmer Program** provides a forum for young sugarbeet growers between the ages of 18-35 who are interested in learning more about the sugar industry and Michigan Sugar Company while developing leadership skills. The **Young Farmer Program** gives growers of a similar age the opportunity to network and discuss issues common to the next generation of farmers.

This program is open to all Michigan Sugar Company sugarbeet shareholders, or individuals (son, daughter, niece, nephew, hired help), sponsored by a shareholder. This group of next generation sugarbeet farmers have the opportunity to participate in activities specifically designed to help them gain an enhanced understanding of our cooperative. These young farmers also learn how to become more successful sugarbeet growers and future leaders in our industry.

If you are interested in becoming part of Michigan Sugar Company's **Young Farmer Program**, you can apply online at www.michigansugar.com.



If you have any questions, please contact Ray VanDriessche, Director of Community and Government Relations, Michigan Sugar Company by calling (989) 686-1549, ext. 203, or by email at Ray.VanDriessche@MichiganSugar.com.

Young Farmer Program
2600 S. Euclid Ave.
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