

SPRING 2009



# THE NEWSBEET

M I C H I G A N   S U G A R   C O M P A N Y



**GOING  
NARROW**





*By Mark Flegenheimer,  
President and CEO*

What are we planning to do now that we have produced a record breaking 29-ton crop? More research! Certainly seed varieties and Mother


Nature had a lot to do with the bountiful crop we harvested in 2008, but new and ever evolving agronomic practices also played a key role. Michigan Sugar Company's research department along with Sugarbeet Advancement, Michigan State University, and the University of Guelph are constantly looking for ways to improve the productivity and profitability of our shareholders in raising their beet crop. Researching and testing new and different sugarbeet growing techniques is critically important to achieving superior results.

An enormous effort is made by our agriculture personnel each and every year testing new seed varieties, spray programs, field preparation techniques and pest management plans. The results from these trials are compiled and distributed as quickly as possible and then discussed during a number of winter meetings. I hope you had a chance to attend one of these sessions and have reviewed the 2008 Research Results book. If you were unable to attend the reporting sessions and have an agronomic issue you are struggling with, or have a problem you would like researched, I encourage you to contact our agricultural staff for assistance.

As we look to the future, we want to maintain our current strong yields while increasing the sugar content and quality of the sugarbeet crop. New seed

variety approval standards requiring higher RWST, while maintaining current or even better yields, were recently adopted by the Co-op's Seed Committee and Board of Directors. As costs on the farm and in the factory continue to increase, it is essential that we improve the quality of our crop. We make and sell granulated sugar, not tons of beets. We need to research ways to grow beets with a higher concentration of sucrose in each beet without sacrificing yield.

One of the ways our agronomic and research personnel feel we can reach the goal of improving quality while maintaining or improving yield is by planting beets in narrow rows. This year we needed to invest in a new research planter so we decided it was a good opportunity to make the switch to a narrow row setup. We realize that only about 25 percent of our growers currently utilize narrow rows on their farms, but we feel it is important to "practice what we preach." There is a lot of compelling research on the benefits of planting in narrow rows (see story on page 20). Also, the vast majority of sugarbeet production in the United States and throughout the world utilizes narrow row programs.

I understand changing to narrow rows is not easy and requires numerous changes on a variety of equipment, but I ask that you keep an open mind and a willingness to learn about this farming practice. Research and testing new and different agronomic methods has allowed our industry to reach heights we thought were unattainable just a decade ago. Change is never easy, but change is the only way we will progress and succeed. 

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# 2008 CROP UPDATE



*By Paul Pfenninger,  
Vice President of Agriculture*

In Crop Year 2008 we had a fantastic growing season, a challenging but very successful harvest, and through February, a very good storage season. How much better can it be in Crop Year 2009?

Our goal is to improve on all three areas, and we have begun by approving a wide selection of varieties which all have something bigger and better to offer. Our early indication is that 97 percent of our crop will be planted to Roundup Ready® varieties with approximately 64 percent of that total comprised of the three varieties planted last year; HM 27RR, 28RR, and 29RR. In addition to the ACH RR827 sold last year, we have added ACH RR824 along with Beta 17RR32, 17RR62, and HM 42RR, and 50RR. What a lineup!

Based on our variety approval program, the new varieties have the genetic potential to yield much higher than the old standards. How exciting! Genetics alone cannot guarantee a successful crop, but good management, along with genetic potential, goes a long way toward improving our chances.

Our long range goals are even more aggressive. Michigan Sugar Company's Seed Committee is work-

ing to set higher standards for the seed companies between now and 2015. The goal is to improve the overall quality of our crop by at least four percent in RWST and ten percent in RWSA. Sugar content has averaged just over 18 percent for several years and it is our intention to get that average much closer to 19 percent over the next six years, without compromising the crop in other areas. Disease resistance is a major concern along this path of improvement, and we have not lost sight of how important a good disease package is to all of us.

In 2008, we produced the following crop:


Harvested Acres	142,376
Yield (tons per acre)	28.89
RWST (per ton)	272 lbs
Grower Sugar	18.15%
Clear Juice Purity	95.64%
Total Tons Received	4,113,767

For Crop Year 2009, the Co-op Board approved a ten percent reduction in base acres, which means we expect to plant 146,900 acres of beets. Our goal is to reach the four million ton mark once again and produce a crop as good, or better, in overall quality. We are preparing to start the 2009 harvest on Thursday, September 10. Last year, we moved the startup date to September 15 because of the big crop, only to have Mother Nature dump about two inches of rain on us the weekend prior to startup and foil our plans for an early start.

What can we do to facilitate another record-setting crop in 2009? Here is a list of areas where we have some control of our crop:

- Select the proper varieties for your operation
- Plant early if weather permits
- Manage applied nitrogen levels
- Plant for final stand counts of 170 beets per 100 feet of row

Control Cercospora leafspot with timely applications of fungicides

Now, if we can only hope to receive the bountiful and timely rains like last year, we have the formula for another successful year. 

## THE NEWSBEET

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# A NEW ADMINISTRATION AND NEW FARM BILL WHAT LIES AHEAD?



*By Ray  
VanDriessche,  
Director of  
Community &  
Government  
Relations*

**A New Administration:** In pre-election campaign speeches President Obama made it clear that as a Senator from Illinois, a state known for a large agricultural base, that he was a supporter of the recently passed farm bill. However, he has also made it clear that he has a list of priority issues and reforms that need to be addressed within the U.S. Department of Agriculture. With the U.S. economy in a free fall and the agricultural industry being one of the very few bright spots left contributing positively to local and Federal revenues and job retention, picking the right man to head up the USDA was critical. Well before President Obama was sworn in as the 44th President of the United States on January 20, he was carefully selecting the Cabinet members of his new administration. One of the first Cabinet choices that he made was that of former Iowa Governor Tom Vilsack as Secretary of Agriculture to head up the United States Department of Agriculture. In addition to dispensing farm subsidies, the USDA controls millions of acres held in conservation programs, regulates meat safety, oversees the Forest Service, subsidizes school lunches, and provides food stamps and other forms of nutrition assistance. Secretary Vilsack has made a commitment to focus on

## **ASGA WEBSITE**

You can be kept up-to-date on issues important to our industry by visiting the ASGA website: [www.americansugarbeet.org](http://www.americansugarbeet.org). You will find information and links to other industry and government sources that will be useful to you, as well as details on the ASGA Annual Meeting.

## **ASGA INTERNSHIP**

The ASGA is now accepting applications for the Cleavinger Internship for 2009. If you have a son or daughter (preferably a junior or senior in college) who would like to work in the Washington office for six to eight weeks next summer and have an absolutely tremendous experience, please visit the ASGA website ([www.americansugarbeet.org](http://www.americansugarbeet.org)) and click on Internship for an application. The application must be submitted no later than March 30.

the President's call for budget reform of farm program payments and a nutrition program based on healthier foods at reasonable prices. This task is not easy while at the same time trying to balance the uncertainty of wildly fluctuating grain markets. Colorado Senator Ken Salazar was named to be Interior Secretary having jurisdiction over all federally owned lands.

Vilsack, who is well known to be a staunch supporter of biotechnology as well as renewable fuels, believes that a continued focus on alternative sources for fuel is essential to the economic stability of rural communities. This is also very important for the sugar industry in conjunction with the new farm Bill provision to convert sucrose to ethanol to keep the U.S. market in balance as a result of excess imports.

**The House and Senate Ag Committee in 111th Congress:** Congressman Collin C. Peterson of Minnesota as Chairman will lead the House Ag Committee made

up of 28 Democrats and 17 Republicans, many of whom are freshman legislators. Congressman Mark Schauer of Michigan is among 11 of the freshman representatives who will serve on the House Ag Committee. The Senate Ag Committee Chairman is Senator Tom Harkin from Iowa. As of this writing, the Senate Ag Committee appointments have not been completed.

**Legislative Visits:** Each year around the first of March sugar-beet grower representatives from around the U.S. make Capitol Hill visits to legislative offices to educate members about our industry and bring them up to date on our issues. This is critically important in 2009 with such a large number of new legislative members in the U.S. Congress, in addition to the new Obama Administration appointees. One of the key goals of the Hill visits will be to ensure the implementation of the new sugar policy provisions legislated in the 2008 Farm Bill. The new

sugar provisions included in the farm bill are: (1) the first increase in the loan rate since 1985 of  $\frac{3}{4}$  of a cent over three years, 2009–2011, (2) a sucrose to ethanol conversion provision to address excess imports and keep the market in balance, (3) better management of increases of imports to tariff rate quota holders by the USDA, (4) a guarantee of 85 percent of the U.S. sugar market based on current consumption numbers to be allotted to the U.S. domestic sugar industry. This was not the case in the past when the quota holders were given preference and the U.S. industry was the supplier of last resort.

Legislators will have a daunting task in implementing the 600 provisions and 17 titles that were legislated in the 2008 Farm Bill after two Presidential vetoes were overridden.

**Michigan Legislators:** A similar effort to establish relationships and educate legislators took place on the state level around the middle of February when Michigan Sugar Company representatives hosted a Legislative Luncheon. In the state's November elections, 46 new Michigan state representatives were elected to office and in the next state election cycle 31 State Senators will be term limited out.

**Trade Agreements:** The 111th Congress and the Obama Administration will have a significant impact on the international trade negotiations. Former Dallas Mayor Ron Kirk was chosen to be the United States Trade

Representative to serve as the lead negotiator in trade agreements. In the November elections, a number of Senators and House members lost their seats in part because of their support for free trade agreements like NAFTA and CAFTA. It is believed that these seats were lost in an effort to elect those who would have more of a "fair trade approach" to trade. This clearly shows that people are fed up with bad trade deals and are removing members of congress for supporting them. Legislative momentum for trade agreements slowed following the 2008 elections, when Democrats took over the majority of both Houses. Democrats promise to move much more slowly on pending agreements due to greater concerns with labor and environmental provisions.

**The World Trade Organization:** WTO negotiations, or the "Doha" Round as it is known, was "on again off again" through 2008. President Bush wanted to leave office with a legacy of having completed the Doha Round. Fortunately, enough pressure was exerted by concerned agricultural commodity organizations and legislators onto former UTSR Trade Ambassador Susan Schwab to not accept a deal that would only put U.S. agriculture at a disadvantage. The main goals of the negotiations are to expand trade by lowering import tariffs, increase imports, reduce domestic support in developing countries and eliminate export subsidies. These negotiations have huge implications for the U.S. sugar industry. The U.S.

already imports 1,154,192 metric tons of sugar from 41 countries in addition to NAFTA obligations. There are efforts underway to restart the WTO discussions sometime in April of 2009, but there are many hurdles to overcome for the 153 nations involved in the negotiations.

### **Mexico/U.S. Industry**

**Discussions:** Ongoing discussions between the U.S. and Mexico sugar industry representatives continue in an effort to better understand each other's industries. Both governments have recently legislated new provisions in their respective sugar programs which affect internal markets and trade flows. The discussions offer a number of opportunities for cooperation under one North American sweetener market which resulted from the elimination of NAFTA tariffs as of January 1, 2008. One of the key concerns for both the Mexican and U.S. industries is third world sugar coming into Mexico from Guatemala causing excess supplies and weakening market prices in both countries. As a result of the discussions, every effort will be made to make recommendations to our respective governments to keep the North American market in balance. In campaign speeches, President Obama expressed an interest in re-examining the NAFTA agreement and met with Mexican President Calderon prior to the inauguration causing speculation on both sides of the border on how future trade may be impacted. 🌿



# ANNUAL SHAREHOLDER MEETING



*By Julie Perry,  
Executive  
Assistant,  
Administration*

On January 13, 2009, Michigan Sugar Company held its Seventh Annual Shareholder Meeting in Saginaw Valley State University's Curtiss Hall. Approximately 200 stockholders attended along with other invited guests and employees.

Attendees were welcomed by Chairman Rick Gerstenberger, who recapped the past year in the sugar industry. His topics included Roundup Ready® sugarbeets, the farm bill, rising input costs, competing crop prices, and Michigan Sugar Company's rise to be the second largest producer of sugarbeets in the United States. He stressed that the "success of a cooperative can never be based solely on one part of the coopera-



*Richard Gerstenberger,  
Chairman,  
Michigan Sugar Company  
Board of Directors*

tive, or one person, but rather the cumulative efforts of the people in which it involves." Chairman Gerstenberger went on to say that things will change in our industry, but we will continue to work hard for the success of our cooperative.

Our Co-op's financials were reviewed by Chief Financial Officer, Brian Haraga. Jerry Coleman, Vice

President of Marketing & Sales, spoke on value-added marketing, and Jim Eichenberger from Midwest Agri-Commodities presented marketing reports on co-products.

President & Chief Executive Officer, Mark Flegenheimer, discussed the progress that has been made to improve our Co-op's health (balance sheet, increased



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slice, beet payment trends), and what can be done to provide steady growth going forward.

Our keynote speaker was James Wiesemeyer, of Informa Economics, who spoke about the effect of recent elections on the sugar industry, the current economic environment, signs of recovery, the farm bill implementation and other issues facing the agriculture industry in the near future.

Elections took place as a result of the nominations made at the district meetings held in December of 2008, as well as the re-election of our Outside Director, Dr. H. Christopher Peterson.

Exiting directors Richard Maurer (East District) and Clay Maxwell (West District) were presented with plaques by Chairman Gerstenberger recognizing and thanking them for their many years of dedicated service to the Cooperative and the sugar industry.

The Co-op Board of Directors, at their reorganization meeting, named Richard Gerstenberger as Chairman, Charles Bauer as Vice Chairman, William Herford as Secretary and Richard Sylvester as Treasurer. Above is an overview of our current Board of Directors as well as the District Boards. 🌱







EFFECT OF ROW WIDTH  
AND PLANT POPULATION  
ON ROUNDUP READY  
SUGAR BEET

5813-08

Page: \_\_\_\_

Planting Date May 1  
Application Date  
4" weeds June 17

Funding provided by:

  
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Funding provided by:

  
Project GREEN  
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RESEARCH





# REPORT

## MANAGING HIGH YIELD POTENTIAL HIGH DISEASE RISK VARIETIES



By Corey Guza, PhD  
Agronomist

With the transition to Roundup Ready® varieties, new opportunities to improve sugar production in grower fields are available. Four varieties were sold for 2009 that top the charts in terms of Recoverable Sugar per Acre (RWSA) and Recoverable Sugar per Ton (RWST); however, those same varieties are closer to the bottom of the chart in terms of Cercospora leafspot and Rhizoctonia crown rot disease resistance. When placed in the right field and managed for disease, ACH varieties 827RR and 824RR, and BetaSeed varieties 17RR62 and 17RR32 will yield well for growers and increase sugar production for Michigan Sugar Company.

When comparing the Michigan Sugar Company official variety trial (OVT) data for the four high yielding varieties to an “old” high yielding standard, such as BetaSeed 5833, as much as 1,200 lbs of RWSA and 13 lbs of RWST could be gained from planting the new varieties. The new varieties, however are more susceptible to Rhizoctonia crown rot and Cercospora leafspot compared to 5833 (Table 1).

To attain the top yield with 827RR, 824RR, 17RR62, and 17RR32, growers need to place

the varieties in fields that will allow them to reach their full potential. Fields with low disease pressure would be best. It is also advisable to apply Quadris or Proline for Rhizoctonia crown rot. For Cercospora leafspot, it is advis-

able to use BeetCast and follow the fungicide application recommendations of your agriculturist.

When examining Michigan data, Quadris has been shown to be more effective than Proline for managing Rhizoctonia crown rot

**TABLE 1**

**OVT DATA AVERAGE OF ALL LOCATIONS**

VARIETY	RWSA	RWST	CLS*	Rhizoc**
ACH 827RR	9225	262	4.0	6.2
ACH 824RR	8901	259	4.2	6.2
Beta 17RR62	8977	261	4.0	6.0
Beta 17RR32	8787	256	3.8	6.2
Beta 5833	7749	247	3.3	5.3

\*CLS = Cercospora leafspot rating, lower number = greater resistance.

\*\*Rhizoc = Rhizoctonia crown rot rating, lower number = greater resistance.

**TABLE 2**

**2008 QUADRIS & PROLINE TRIAL**

TREATMENT	RWSA	TONS/ACRE	RHIZ. COUNTS 1175 Ft. of Row	% Control
Quadris & Proline	6585	25.02	257	56%
Quadris	6277	23.83	291	50%
Proline	5754	21.51	426	27%
Check	4802	18.53	584	—
LSD (5%)	1562	5.66	242	—

Sugarbeet Advancement – Gratiot County

Variety C-RR827



(Table 2). Quadris can be applied in-furrow T-band or to two to six-leaf sugarbeets at 10.5 fl oz per acre, in a seven-inch band, for 28 to 30-inch rows. If growers are in narrow rows, the rate of Quadris is 14.3 fl oz per acre in a seven-inch band. Growers can broadcast Quadris at 45 fl oz per acre for Rhizoctonia control, but that can be expensive. If Quadris is applied in-furrow and the band width is reduced, reduce the rate of Quadris accordingly. For example,

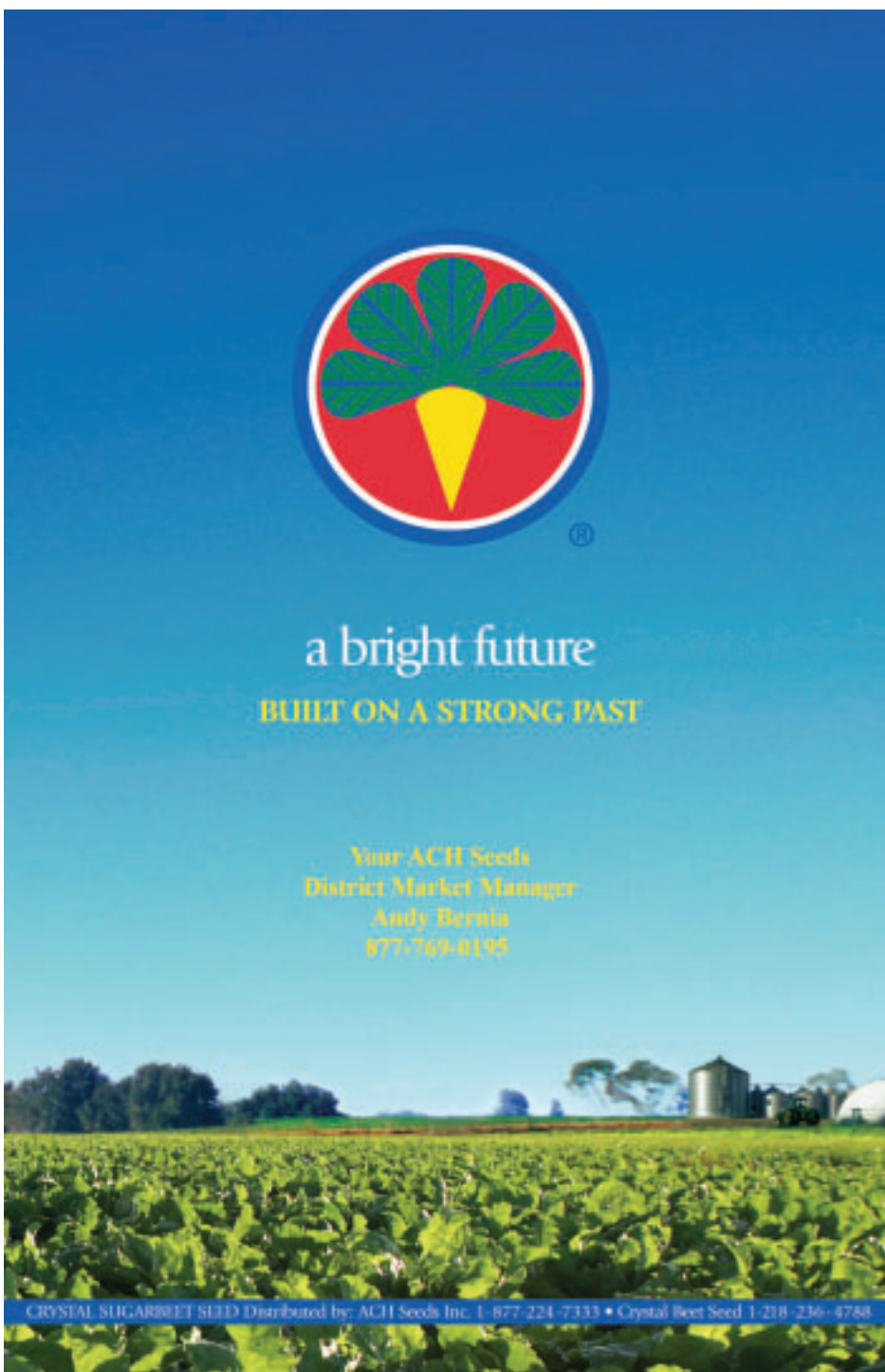
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*Some holdback in emergence can occur by applying Quadris in-furrow. Please consult an agriculturist if choosing this method of application.*

---

if the band width is three inches and the row spacing is 28 inches, the Quadris rate is 4.5 fl oz per acre.

Growers can expect high yields from planting ACH 827RR and 824RR, and BetaSeed 17RR62 and 17RR32 as long as disease is not an issue. Having a good management plan and consulting regularly with an agriculturist will reduce risk and lead to reward with these varieties. 🌱



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# CONTROLLING RHIZOCTONIA CROWN ROT IN SUGARBEETS



By Steve Poindexter,  
MSU Extension,  
Sugarbeet  
Educator,  
Sugarbeet  
Advancement

Rhizoctonia crown rot (*R. solani* AG-2-2) is a significant problem in many sugarbeet producing areas of the United States. Research conducted by Michigan's Sugarbeet Advancement (SBA) program indicates this fungal disease can reduce yield by as much as 10 tons per acre and affect beet quality.

Predicting Rhizoctonia incidence in each field on a yearly basis is far from a perfect science; however, major strides have been made in managing this disease to minimize negative economic impact.

Producers currently have the option of managing Rhizoctonia crown rot by using fungicides, planting resistant varieties or doing a combination of the two strategies. Before selecting management options, it is important to determine the probability of Rhizoctonia incidence on an individual field basis. Based on our current understanding of Rhizoctonia biology, it is possible to increase the odds of predicting the incidence in a field by answering a few simple questions.

First, how would you rate the Rhizoctonia level the last time beets were grown in that field? If the

field had moderate to severe levels, this indicates a high inoculum potential. What was the previous crop? In Michigan, sugarbeets planted after soybeans and dry beans almost always have higher disease levels than those following corn or wheat. Soybeans and dry beans are Rhizoctonia hosts and can actually increase the inoculum level in a field.

Has soil been moved to the crown of the plant, or will it be moved there? Rhizoctonia can infect sugarbeet plants through the petioles, crowns and roots. Soil deposited in the crowns during cultivation, wind blown soil, and high intensity rain events all have the potential to increase the disease levels.

How is the field's soil tilth or health? Does the field have sugar-

beet cyst nematode problems? The incidence and severity of Rhizoctonia crown rot appears to be correlated to nematode levels. Any soil factors that may stress plants such as compaction, improper tillage or low organic matter levels can increase disease severity. As with any disease, proper environmental conditions must exist for infection to occur. High temperatures and moist soil conditions allow more infection to occur and for an existing infection to spread.

When at-risk fields are identified, control methods need to be determined. Be aware that varieties vary greatly in their resistance to Rhizoctonia. Sometimes the most resistant varieties may be lacking another important trait, so be careful to not trade one problem for another. Plant the most resistant

TABLE 1

COMBINED RHIZOCTONIA FUNGICIDE TRIALS  
Three Trials – Severe Infestation

TREATMENT VARIETY	RWSA	T/A	Rhiz.* Beets 1200 Ft.	% Control
RH-5 In-Furrow	5397	20.84	64	93
RH-5 Check	4483	17.47	290	68
E-17 In-Furrow	4473	17.42	353	61
E-17 6-8 Leaf	3850	14.86	473	48
E-17 Check	3011	11.40	904	—
LSD (5%)	1131	4.01	303	—

\*Dead or Dying Beets per 1200 Foot of Row. Sugarbeet Advancement – 2002-2003-2004





*Rhizoctonia crown rot control with Quadris.*



*Rhizoctonia crown rot in the untreated check plot.*

varieties in fields with the greatest potential for disease. Varieties with moderate *Rhizoctonia* resistance are often adequate in less severe conditions.

Using fungicides to control *Rhizoctonia* is also a good option. Michigan research indicates that under severe disease conditions, in-furrow Quadris applied in a three to seven-inch T-band at planting provided the best control. A properly timed two to eight-leaf stage foliar application in a seven-inch band or less has also provided good control for a susceptible variety with heavy disease pressure (Table 1). For foliar applications, applying Quadris to four-leaf stage sugarbeets is optimum. Research in Montana (Jacobson) and North Dakota (Kahn) indicates that the optimum Quadris

application timing seems to be when average soil temperatures reach 65°F at a four-inch depth. Sugarbeet Advancement and Michigan Sugar Company research indicates that using leaf stage to time Quadris applications works as well as using soil temperature. Foliar applications of Quadris work the best when the product is deposited on the crown and leaves of sugarbeets. For this reason band width can be narrowed if the spray pattern is reaching the crown of the beet.

A word of caution — Quadris applications cannot be mixed with micro-rates, as severe foliage burn will occur. Ideally the fungicide should not be applied any closer than three days before or after a micro-rate application. Do not dribble Quadris in the furrow

alone or with pop-up fertilizer, as emergence issues and lack of *Rhizoctonia* control can occur. Pay special attention to application rates as they pertain to row widths. The recommended rate for Quadris in 30-inch rows is 10.5 fl oz per acre and 14.3 fl oz for 22-inch rows in a seven-inch band. Band widths wider than recommended can dilute the product reducing control. Quadris banded over the row at emergence or pre-emergence is not effective. Treatments for most effective control should be applied before or at the time of infection.

Sugarbeet producers now have effective options for controlling *Rhizoctonia* crown rot either through variety resistance, fungicide applications or a combination of the two. SBA research conducted

## CONTROLLING RHIZOCTONIA CROWN ROT IN SUGARBEETS (CONT'D.)

under severe Rhizoctonia pressure has shown a combination of planting a Rhizoctonia resistant variety and a fungicide application can give up to 93 percent control. The best control for a susceptible variety under heavy pressure was two applications of Quadris, the first applied in-furrow and the second applied to six to eight-leaf stage sugarbeets. This combination increases Rhizoctonia control to 73 percent when compared to the susceptible check. Knowing your field history, variety resistance, and proper fungicide timings are important components for best control. SBA trial data on susceptible varieties at 18 locations over four years, with natural Rhizoctonia

infections, indicates a good to excellent economic return when

Quadris is applied to two to eight-leaf stage sugarbeets (Table 2). 🌱

**TABLE 2**
**RESPONSE OF QUADRIS APPLIED TO 6 to 8 LEAF SUGARBEETS  
AT DIFFERENT RHIZOCTONIA INFECTION LEVELS\***

Infection Level	# of Locations	RWSA		TONS		% Sugar		Gross \$ Return
		Check	Quadris	Check	Quadris	Check	Quadris	
Low	8	5221	5515	20.64	21.49	17.73	17.92	\$ 41
Medium	5	4638	5076	17.59	18.84	18.29	18.42	\$61
Heavy	5	3472	4473	13.42	17.16	17.60	18.05	\$140

\* Average Gross Revenue Enhancement compared to un-sprayed check Sugarbeet Advancement Summary – 2001 – 2004 (18 trial locations)





# REPORT

## ROUNDUP READY® RESEARCH UPDATE



*By Jim Stewart,  
Director of  
Research*

We are rapidly transitioning to Roundup Ready sugarbeet varieties in Michigan and expect around 97 percent of the crop to be Roundup Ready this season. Our responsibility in research is to develop best management practices for Roundup Ready sugarbeet production. These best management practices can be broken down into two main categories, variety improvement and weed management.

### VARIETY IMPROVEMENT

We have established short-term and long-term goals for the Roundup Ready varieties. The first generation of varieties that we utilized were from Hilleshog, HM 27RR, HM 28RR and HM 29RR. These varieties are high yielding, low sugar varieties and have good disease tolerance. Resistance to root aphid is only moderate. These varieties have performed well for Michigan Sugar Company growers in 2008, but do not meet approval standards. Several new varieties (HM 50RR, HM 42RR, HM 55RR, HM 51RR, HM 39RR and SX 1260RR) have met our short-term approval goals. Limited quantities of HM 50RR, HM 42RR and Seedex 1260RR will be sold in

2009. These varieties have yields comparable to HM 27RR, HM 28RR and HM 29RR, but with much improved sugar levels. These new varieties have less Rhizoctonia tolerance than Hilleshog 27RR, 28RR and 29RR. Several BetaSeed and ACH varieties have been granted limited approval for 2009. In general, these are very high yielding and very high sugar varieties, but are less tolerant of Cercospora leafspot and Rhizoctonia crown rot. Resistance to root aphid is very good with these varieties. Beta 17RR32 is a little higher yielding than ACH RR827, but has a little lower sugar. Beta 17RR32 has a somewhat better disease package than ACH RR827.

The Seed Committee and the Cooperative Board have established longer term goals for variety improvement, which will require the seed companies to raise the sugar level of varieties significantly without sacrificing tonnage. Our present required RWST level is 99.7 percent of our four check varieties and we are requiring that level to be raised to 104 percent, over a five-year period. Plant breeding is a complex process which involves a considerable amount of give and take among the various plant characteristics, such as yield, quality, disease resistance, root aphid resistance, etc. We do not want to give up yield and we believe that

Cercospora leafspot is the most manageable of the diseases and pests that the plant breeders are dealing with; therefore, we are willing to raise our Cercospora level from 113.7 percent of check to 125 percent of check to allow the plant breeders a better chance of meeting the sugar goal of 104 percent.

### WEED CONTROL RESEARCH APPLICATION TIMINGS

Research conducted by Michigan Sugar Company over the past three years has demonstrated that the first glyphosate (Roundup WeatherMax) application should be applied by the time sugarbeets have two to four-true leaves.

Depending upon the weed species, this would correspond to approximately two to four-inch size weed heights. If the weed density is heavy, the glyphosate application needs to be on the early side or yield loss could occur. In situations where the initial glyphosate application was delayed until the six-leaf stage, yield loss was severe under heavy weed pressure. Single applications of glyphosate, regardless of application timing, failed to adequately control weeds. In general, we have determined that two to three well timed glyphosate applications will be necessary to provide close to 100 percent weed control in sugarbeets.

# RESEARCH

## ROUNDUP READY® RESEARCH UPDATE (CONT'D.)

### TANK MIXES

We have been conducting Roundup Ready sugarbeet tank mix trials in Michigan for several years. None of the herbicides tested with glyphosate (Roundup WeatherMax) such as Dual Magnum, Outlook, Select, Stinger or UpBeet have interfered with weed control or caused crop injury. Glyphosate mixed with Quadris has caused minor speckling; however, the symptoms disappear over time and sugarbeet yield and quality have not suffered. Glyphosate has been tank mixed with the common Cercospora leafspot fungicides such as Headline, Gem SC, Eminent, Inspire, Enable, Dithane, Topsin, Penncozeb and Super Tin. There have been no problems with any of these tank mixes with respect to crop injury, weed

control or Cercospora control. A few nutritional sprays seem to cause minor problems when mixed with glyphosate. Manganese sulfate (but not manganese chelate) and Solubor caused minor leaf spotting and interfered slightly with weed control.

### FUTURE ROUNDUP READY WORK

Variety improvement is moving forward at a rapid pace. There were several varieties submitted in 2008 with better characteristics than our newly approved varieties. We are expecting ongoing improvements in RWST, Cercospora leafspot resistance, Rhizoctonia crown rot resistance, root aphid resistance, nematode resistance, etc.

We will continue to investigate better ways to apply glyphosate

including nozzle types to control drift, evaluating liquid AMS substitutes and spray timings based on growing degree days. We are also looking at ways of combining Quadris or Proline applications for Rhizoctonia crown rot control with glyphosate.

Roundup Ready sugarbeets will be a big boost to Michigan Sugar Company. It will make it easier for growers to grow a good quality crop. We need to be sure we get the most from the Roundup Ready system. A lot of good information is already available from the Michigan Sugar Company agricultural staff and from Michigan State University and Ridgetown College University of Guelph. The benefits can be huge, so let's do it right. 🌱





# REPORT

## SPRING RESEARCH UPDATE



*By Lee Hubbell,  
Research  
Agronomist*

### WHEN TO REPLANT AND AT WHAT POPULATION?

Over the past 20 years, grower stands have increased as well as the stand growers are willing to keep without replanting. The seed spacing has decreased over 34 percent from 6.54 inches in 1982 to about 4.3 inches now. Grower stands before harvest have increased significantly. The five-year average is 159 beets per 100 feet of row. The average ten years ago was 139 beets per 100 feet and the average 20 years ago was 109 beets per 100 feet.

Population trials conducted in recent years concluded that stands from 120 to 270 beets per 100 feet of row all produced similar results and that the ideal population is 180 beets per 100 feet. The question raised is what stand should be kept rather than replant and could this be affected by the planting date?

Michigan Sugar Company conducted a replant plant population trial in 2008, comparing four planting dates and seven populations. The purpose was to confirm the stand that should be kept versus replanting. The beets were planted thick and hand thinned to stands of 50, 65, 80, 100, 125, 150, and

175 beets per 100 feet of row. The four planting dates were; April 18, May 6, May 25 and June 13. As expected, the thick stands produced the best yield; 125, 150 and 175 beets per 100 feet. Also the earlier planting dates resulted in the highest yield (Table 1). The trial also compared plant population by planting date (Table 2).

To summarize the data: The first planting date should be replanted if there are fewer than 80 beets per 100 feet of row. The second planting date should be left unless

the stand is less than 65 beets per 100 feet. With the third planting date, even 50 beets per 100 feet is better than any stand planted at the fourth planting date. A sugar-beet stand with even spacing at 125 beets per 100 feet or greater are generally worth keeping. Keep in mind this is only one year of data.

### HEADLINE AS A YIELD ENHANCER

Headline is an effective fungicide for controlling Cercospora leafspot. It has also been promoted as a yield enhancer beyond a fungicide.

**TABLE 1**

#### REPLANT TRIAL BY POPULATION & PLANTING DATES Sugarbeet Populations

TREATMENT	RWSA	RWST	TONS/A	% SUC	% PURITY
175 Beets/100 Ft	5718	230.8	24.17	16.33	93.14
150 Beets/100 Ft	5618	231.5	23.76	16.53	92.74
125 Beets/100 Ft	5511	228.2	23.66	16.34	92.66
100 Beets/100 Ft	5110	218.0	22.78	15.93	91.87
80 Beets/100 Ft	4854	218.0	21.68	15.79	92.29
65 Beets/100 Ft	4454	203.1	21.65	14.87	91.74
50 Beets/100 Ft	4201	206.8	19.78	15.20	91.78
LSD 5%	423.3	14.0	0.94	0.83	0.82

#### Planting Dates

TREATMENT	RWSA	RWST	TONS/A	% SUC	% PURITY
1st Planting	7058	245.2	28.75	17.08	93.58
2nd Planting	5957	231.0	25.73	16.50	92.78
3rd Planting	4564	215.4	21.16	15.69	92.14
4th Planting	2687	186.3	14.35	14.16	90.77
LSD 5%	320.0	10.6	0.71	0.63	0.62

## SPRING RESEARCH UPDATE (CONT'D.)

Some growers use Headline for yield improvement on other crops. In the Red River Valley, growers are encouraged to apply Headline later in the year as their last fungicide application for Cercospora control. Michigan Sugar Company has tested this claim for four years and Sugarbeet Advancement tested this idea in two locations for one year.

Sugarbeet Advancement applied either Headline or Eminent as the last fungicide application for Cercospora control. They found no advantage to Headline applied last compared to Eminent applied last at two locations. Michigan Sugar Company research compared Headline to Eminent, other strobilurin fungicides, and a check. Cercospora was controlled with Super Tin and Topsin plus Penncozeb, and the Headline, Eminent and other strobilurin fungicide treatments were applied as an extra application not needed to control Cercospora. The results from Michigan Sugar Company research indicated no improvement in yield from late season Headline applications if Cercospora leafspot control was not an issue. In conclusion, there was no benefit found to applying Headline as a yield enhancer for sugarbeets in Michigan.

### FERTILIZER APPLICATION METHOD AND TIMING

Michigan Sugar Company conducted a fertility trial in two loca-

tions in 2008, Auburn and Sebewaing, Michigan, testing fertilizer rate, application timing and application method. More than one year of testing will be needed

to fine tune recommendations but there are interesting observations from this year. The Auburn location had soil test levels at optimum or above of Phosphorus (P),

**TABLE 2**

REPLANT TRIAL					
TREATMENT	RWSA	RWST	TONS/A	% SUC	% PURITY
175 Beets/100 ft - Plant 1	8201	267.9	30.58	18.17	94.86
125 Beets/100 ft - Plant 1	7868	261.3	30.14	18.11	93.84
150 Beets/100 ft - Plant 1	7615	258.4	29.53	17.71	94.42
80 Beets/100 ft - Plant 1	7180	247.6	29.03	17.28	93.67
100 Beets/100 ft - Plant 1	7114	249.1	28.58	17.50	93.35
150 Beets/100 ft - Plant 2	6605	244.8	26.96	17.20	93.40
175 Beets/100 ft - Plant 2	6473	243.8	26.54	16.97	93.86
100 Beets/100 ft - Plant 2	6343	231.4	27.40	16.51	92.84
125 Beets/100 ft - Plant 2	6126	229.7	26.66	16.64	92.20
50 Beets/100 ft - Plant 1	5752	234.5	24.51	16.77	92.68
65 Beets/100 ft - Plant 1	5675	197.6	28.90	14.02	92.20
65 Beets/100 ft - Plant 2	5652	229.1	24.66	16.49	92.48
80 Beets/100 ft - Plant 2	5507	224.0	24.57	16.10	92.60
150 Beets/100 ft - Plant 3	5109	229.9	22.31	16.47	92.65
125 Beets/100 ft - Plant 3	5062	226.5	22.40	16.09	93.13
50 Beets/100 ft - Plant 2	4998	213.9	23.33	15.60	92.11
175 Beets/100 ft - Plant 3	4910	215.3	22.88	15.50	92.62
100 Beets/100 ft - Plant 3	4577	208.5	22.00	15.65	90.94
80 Beets/100 ft - Plant 3	4209	214.3	19.56	15.72	91.78
65 Beets/100 ft - Plant 3	4125	206.1	19.93	15.23	91.67
50 Beets/100 ft - Plant 3	3953	207.6	18.99	15.14	92.17
175 Beets/100 ft - Plant 4	3286	196.2	16.66	14.70	91.23
150 Beets/100 ft - Plant 4	3142	193.0	16.23	14.75	90.47
125 Beets/100 ft - Plant 4	2987	195.4	15.43	14.53	91.49
80 Beets/100 ft - Plant 4	2521	186.2	13.55	14.04	91.09
100 Beets/100 ft - Plant 4	2406	182.9	13.15	14.05	90.35
65 Beets/100 ft - Plant 4	2367	179.4	13.12	13.73	90.61
50 Beets/100 ft - Plant 4	2102	171.2	12.30	13.29	90.17
LSD (P=.05)	841.3	27.2	1.84	1.61	1.62
CV	14.5	10.9	7.15	8.86	1.54
Grand Mean	5066.5	219.5	22.50	15.86	92.32





# NARROW ROW RESEARCH IN ROUNDUP READY SUGARBEETS

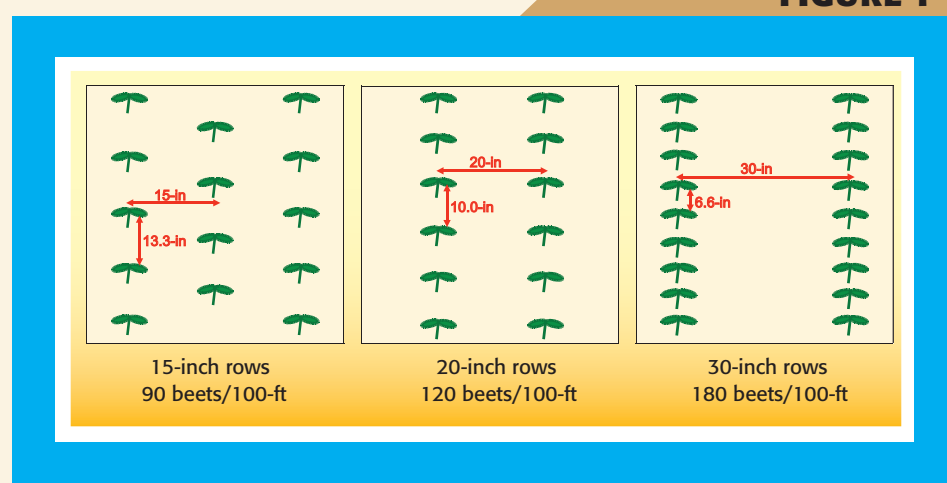


*Joe Armstrong, Graduate Research Assistant, and Christy Sprague, Associate Professor, Department of Crop and Soil Sciences, Michigan State University*



The recent introduction of Roundup Ready sugarbeet varieties has provided Michigan sugar-

beet growers a valuable new tool to improve and simplify weed control. However, with the higher costs for Roundup Ready seed, growers will be looking for ways to reduce weed control costs and maximize sugarbeet yield and quality. One potential way to accomplish these goals may be to plant sugarbeets in narrow rows. To test this theory, in 2006 we conducted a preliminary trial at the Saginaw Valley Bean and Beet farm comparing weed control and sugarbeet yield of Roundup Ready sugarbeets planted in the "traditional" 30-inch rows to sugarbeets planted in 15-inch rows at three different populations. In this trial we observed a 7.7 ton/A increase averaged across all populations for sugarbeets planted in 15-inch rows (34.1 tons/A) compared with 30-inch rows (26.4 ton/A). While it may be more difficult to switch to planting and harvesting sugarbeets in 15-inch rows, the conversion to 22- or 20-inch rows may be more practical. With this in mind, in 2007 and 2008, with



*Figure 1. Comparison of across-row and within-row plant spacing for a stand of 31,000 beets/A in 15-, 20-, and 30-inch rows. In narrower row widths, within-row plant spacing is wider. At this population, sugarbeets planted in 15-inch rows are nearly equidistant across and within the row.*

the support of the Michigan Sugar Company, we expanded this research to determine if there were any advantages to planting Roundup Ready sugarbeets in narrow rows for weed management, and sugarbeet yield and quality. Research trials were conducted at the MSU Saginaw Valley Bean and Beet Research Farm, on growers' fields, and at the MSU Agronomy Research Farm in East Lansing.

## ROW WIDTH AND SUGARBEET POPULATION

In the first study, we compared wide- (30-inch) and narrow-rows (15 and 20-inch) at populations of 22,000; 31,000; 41,000; and 50,000 beets per acre to determine the effect of row width and plant population on sugarbeet row closure, yield, and quality. Due to equipment constraints, only 15 and 30-inch rows were evaluated at the East Lansing location. All plots were maintained

weed-free throughout the growing season with applications of Roundup WeatherMax starting when weeds were 2-inches tall. Once sugarbeets were in the four-leaf growth stage, all plots were thinned to the desired populations. Populations were held constant across the three row widths to evaluate the effect of row width. This meant that even though populations were the same for the different row widths, the individual plants would be spaced differently. For example, at a given population, sugarbeets in 15-inch rows were spaced twice as far apart within the row as sugarbeets in 30-inch rows (Figure 1).

When averaged over all populations, root yields were highest in 20-inch rows. Planting in 20-inch rows provided a 6 percent increase in root yield (38.9 tons per acre) over 15-inch (36.5 tons) and 30-inch rows (36.4 tons). There was also a trend toward



increased recoverable white sugar per ton (RWST) as row width narrowed from 30-inches to 15-inches (Figure 2). RWST did increase as sugarbeet population increased. Recoverable white sugar was 231 pounds per ton at sugarbeet populations of 22,000 beets per acre and 240 pounds per ton at populations of 50,000 beets per acre (Figure 2). As a result, the highest recoverable white sugar per acre (RWSA) was also observed in 20-inch rows. Root yield and sugar quality were similar among 15 and 30-inch rows at the East Lansing location.

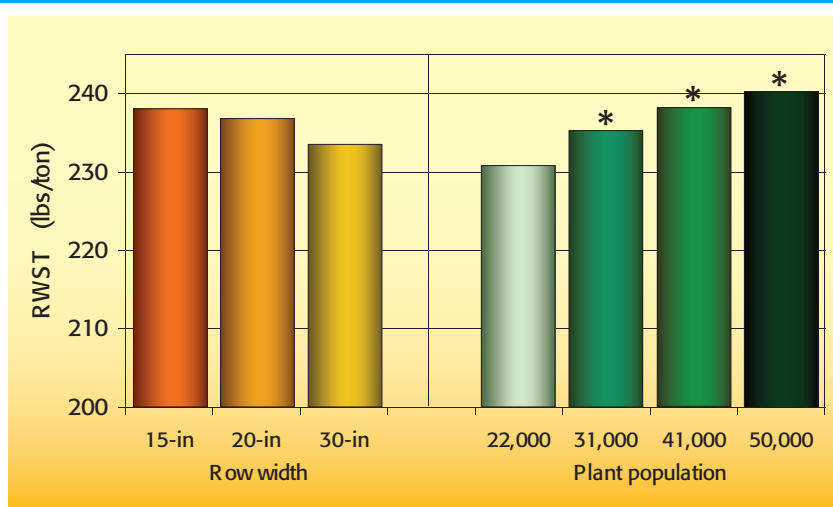
Early row closure (canopy cover) of sugarbeets is advantageous because it allows for maximum sunlight interception for sugarbeet growth and can aid in weed control by shading out weeds that may emerge late in the season. In these trials, sugarbeets planted in 15 and 20-inch rows provided earlier and denser canopy cover compared with sugarbeets planted in 30-inch rows at all populations (Figure 3).

From our row width and plant population comparison, the highest root yields were in 20-inch rows. Plant population did not have an effect on root yield; however, RWST increased with higher plant populations in all row widths.

#### WEED CONTROL WITH GLYPHOSATE IN NARROW ROWS

While our standard recommendation is to apply glyphosate when weeds are 2-inches tall in Roundup Ready sugarbeets, we wanted to determine what effect

**FIGURE 2**



*Figure 2. Recoverable white sugar per ton (RWST) in 15-, 20-, and 30-inch rows, averaged over population, and in stands of 22,000; 31,000; 41,000; and 50,000 beets per acre, averaged over row width. Bars with an asterisk indicate the statistically similar RWST values among plant populations. Due to higher root yields, 20-inch rows also resulted in the highest RWSA.*

**FIGURE 3**



*Figure 3. Differences in canopy cover of Roundup Ready sugarbeets planted in 15-, 20-, and 30-inch rows. Photos were taken June 24, 2008.*

# NARROW ROW RESEARCH IN ROUNDUP READY SUGARBEETS (CONT'D.)

narrow row widths may have on weed control in Roundup Ready sugarbeets. In this trial, standard rates of Roundup WeatherMax (22 fl oz/A) + ammonium sulfate (17 lbs/100 gallons) were applied at three timings, based on weed height. Applications were made when weeds averaged 2, 4, or 6-inches in height. Follow-up glyphosate (Roundup WeatherMax) applications were applied in the 2-inch and 4-inch treatments when weeds were 4-inches tall.

When averaged over the three row widths, root yields were similar to the weed-free control for the two treatments when the initial glyphosate application was made when weeds were 4-inches tall or less (Figure 4). The lowest yields were observed with a single glyphosate application when weeds averaged 6-inches in height. Early season competition with weeds caused significant sugarbeet stunting and reduced sugarbeet yield. Similar to other Roundup Ready crops, glyphosate applications need to be made early to reduce early season weed competition and to achieve maximum yield and weed control.

When averaged over all glyphosate application timings, root yields were highest in the 15- (34.7 tons) and 20-inch rows (34.4 tons) compared with 30-inch rows (32.8 tons) (Figure 5). At East Lansing, the 15-inch rows (25.3 tons) also out-yielded the 30-inch rows (21.5 tons). Sugarbeet populations were held constant at 31,000 plants per acre in these trials.

**FIGURE 4**

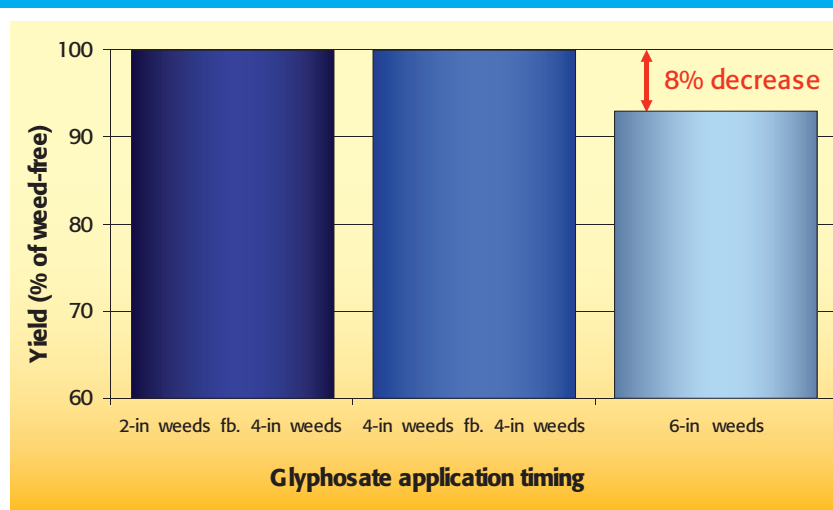


Figure 4. Sugarbeet root yields compared to the weed-free control for various glyphosate application timings based on average weed height. Data were averaged across all row widths. Initial glyphosate applications should be made when weeds are less than 4-inches tall and subsequent applications should be made before additional weed flushes are four inches tall.

**FIGURE 5**

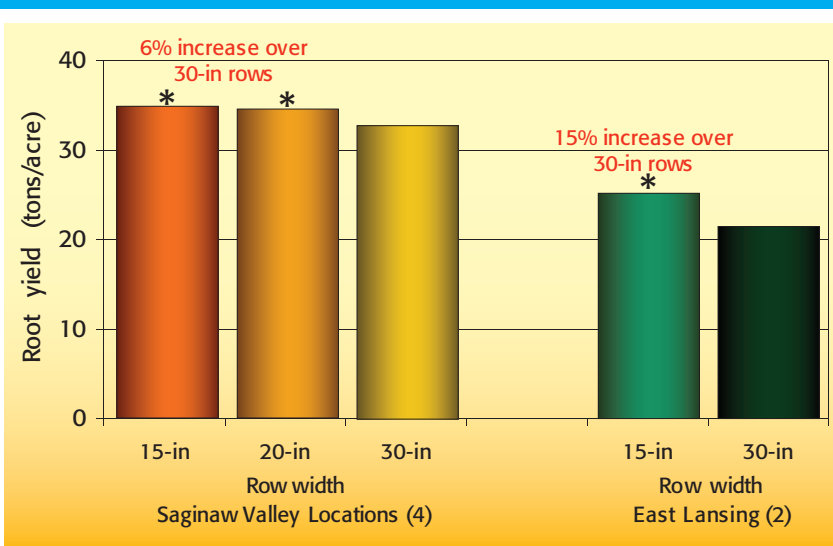


Figure 5. Sugarbeet root yields for 15-, 20-, and 30-inch rows averaged across all glyphosate applications. Bars with an asterisk indicate a significantly higher yield compared with the other row widths. At a constant population of 31,000 beets/A, narrow rows provided significantly higher yields than 30-inch rows.



Weed growth was also measured in plots where we made a single glyphosate application when weeds averaged 4-inches in height to investigate if narrow rows could help suppress late-season weed growth. Subsequent weed growth following the initial glyphosate application was reduced by at least 65 percent in the 15 and 20-inch rows compared with 30-inch rows. As we observed in the row width and plant population study, sugarbeets planted in narrow rows provide an earlier and denser crop canopy, making the crop more competitive against emerging weeds, which will help to shade out and suppress late-season weed growth. The crop canopy provided by narrow rows may also reduce the number of postemergence applications necessary for satisfactory weed control.

In our weed control trials, the 15- and 20-inch row widths provided higher yields compared with 30-inch rows. The need for early-season weed control to achieve maximum yields was similar for both narrow and wide-rows. Though we achieved high yields with only two glyphosate applications, it is likely that multiple glyphosate applications will be necessary.

#### **MSU RECOMMENDATIONS FOR ROUNDUP READY SUGARBEETS**

Roundup Ready sugarbeet varieties will be a useful tool to improve weed control and possibly allow growers to take advantage of narrow rows for higher yields and suppressed weed

growth. Regardless of row width, it is important to make the initial glyphosate application when weeds

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*In our weed control trials, the 15- and 20-inch row widths provided higher yields compared with 30-inch rows. The need for early-season weed control to achieve maximum yields was similar for both narrow- and wide-rows. Though we achieved high yields with only two glyphosate applications, it is likely that multiple glyphosate applications will be necessary.*

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are 2-inches in height to reduce early-season weed and crop com-

petition to preserve maximum yield and to ensure good weed control. Follow-up treatments should be applied before additional weeds reach 4-inches in height. It is also important to always use appropriate rates of glyphosate (0.75 lbs of a.e./A) and to always add ammonium sulfate at a rate of 17 lbs/100 gallons of spray solution before adding glyphosate. Further recommendations for weed control in Roundup Ready sugarbeets and a full listing of all glyphosate products that are labeled for use can be found in the 2009 MSU Weed Control Guide for Field Crops.

**ACKNOWLEDGMENTS:** We would like to thank Gene Robinson and John Spero for providing land for these trials and Michigan Sugar Company and Project GREEN for providing funding and labor. 🌱



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# NARROW ROW RESEARCH

## MICHIGAN SUGAR COMPANY



*By Lee Hubbell,  
Research  
Agronomist*

Farmers have found an advantage and have profited from planting sugarbeets in narrow rows across the country. Growing sugarbeets in rows closer than 28 inches is the standard in most areas other than Michigan and Ontario. Current research from Michigan State University has indicated an advantage by growing sugarbeets in narrow rows particularly when planting Roundup Ready® sugarbeets (see pg 20).

Starting in the Spring of 2009, Michigan Sugar Company's research will be planted in 22-inch rows. The switch started with the need for a new planter. Both 6-row planters used in the past consisted of Heath brand row units that have not been manufactured for many years. The planters were first used in the mid-1980s. They are now worn out and parts are not available. Aside from the inability to find parts, the Heath row units will not plant the larger sized seed that is now available.

The planter being purchased is a 12-row 22-inch Monosem

planter that has been modified for research by the Seed Research Equipment Company. It is designed to be convenient for research with the ability to quickly change seed varieties. The planter can handle any size sugarbeet seed and also other crops if ever needed. The planter is also designed to handle the reduced tillage conditions becoming more common with growers. A new tractor is also on our capital needs list. A JD 6430 tractor will also be purchased to pull the 12-row planter and provide the required hydraulic flow.

Michigan Sugar Company has two other 4-row planters used for agronomic trials, such as fertilizer and seed treatment trials. Many of you may remember the models; a JD 70 and an IH 185. Both are plate planters and do not have plates to fit the common seed sizes produced today. To upgrade from those planters, a used 6-row 22-inch Monosem planter will be purchased. It will also be equipped to handle the many different types of trials the research program conducts.

These planters are not the cheapest part of the conversion, but they will be the easiest part. The remaining equipment will not be replaced, but modified for nar-

row rows. This includes; cultivator, sprayers, crust buster, harvesters, defoliators and alley markers. The other tractors we use already have narrow tires, but will need special spacers and wheels to straddle four 22-inch rows.

Michigan Sugar Company conducts trials throughout the growing area and hauls tractors and implements on trailers from one location to another. The tractor wheels will now have 88-inch centers and will measure about 100 inches to the outside of the tires. The trailer decks currently used are only 96 and 102 inches wide. The trailers will need to be wider to safely drive the tractors on and off. The trailers will be extended in a way that allows them to fold. By having the extensions fold, new trailers will not need to be purchased and when carrying a narrower load, oversize load signs will not be needed. This will result in convenience and safety during travel.

Look for us while we are conducting research around the growing area this year to see how our narrow row setup is working. We will be caring for our plots from planting through harvest. 🌱





# MANURE APPLICATIONS CAN ENHANCE SUGARBEETS



*By Natalie Rector,  
Nutrient  
Management  
Educator, Michigan  
State University  
Extension*

"Some of the best beets I have ever seen came from fields with a history of manure applications," says Steve Poindexter, MSU Extension sugarbeet educator. Poindexter suggests that sugarbeet ground could use more manure or cover crops (or both!) to improve soil quality, and he even believes this will have a positive impact on diseases, specifically Rhizoctonia.

Steve and I have been colleagues in Extension since we both graduated from college, and lately we've discovered that our two specializations have many mutual benefits.

As a nutrient source, manure may be better suited for sugarbeets than many other crops. Bean crops produce their own nitrogen, and although they will preferentially utilize manure nitrogen (N), the economic value of the N is misplaced on a legume crop. Corn needs substantially more nitrogen than phosphorus. When manure nutrients aren't in the correct ratio for crop utilization, it creates a lost opportunity for valuable nutrients.

Sugarbeets need 80 to 120 pounds of nitrogen per acre for maximum performance. Reasonable manure rates would generally put N in this needed range and at the same time supply phosphorus and potash at levels that the plant can utilize.



*Lakke-Ewald Farms near Unionville inject manure in wheat stubble for a future sugarbeet crop.*

Manure may also be well-suited for sugarbeets because of the inherent soil quality benefits of added organic matter, including increased microbial activity, nutrient recycling and water infiltration, all of which create better soil structure for crop roots. Soil amendments with manure slurry or poultry compost have shown improved plant establishment and suppressed root disease in some crops. Michigan State University (MSU) research on farms and at research stations has shown this soil quality improvement in potato and green bean rotations (Snapp et al., 2003; Nyiraneza and Snapp, 2007). In other states, research indicates that sugarbeet root health is improved when compost is applied. It may take years to pinpoint the exact interactions that cause Poindexter to say that beet fields with a history of manure look better, but this research suggests that beet growers might want to be considering manure.

Timing is everything, and maybe manure's time has come for sugarbeet growers. Most crop producers can think of several reasons to quickly discredit manure applications—odor, inconsistency of nutrients, unwanted neighborhood attention, fear of soil compaction and weeds, to name a few. But beet growers have struggled with soil structure issues for years. Add that to skyrocketing fertilizer prices and you might want to look beyond perceived negative aspects and concentrate on the positive.

Let's start with the benefits to your bottom line. Manure has valuable nitrogen, phosphorus and potassium (N, P and K). Sugarbeets need an average 100 lbs. N, 30 lbs. phosphorus and 80 lbs. of potash. That will cost over \$100 in commercial fertilizer per acre. Let's assume that soil tests show that you have enough residual phosphorus on some fields. Nitrogen and potash will still be

# MANURE APPLICATIONS CAN ENHANCE SUGARBEETS (CONT'D.)

needed and make up about 85 percent of the total fertilizer cost.

The sugarbeet fertility requirements fit nicely with typical manure nutrient values. If you're not a livestock farmer, you could benefit from working with a neighbor who has excess manure.

Sugarbeets have a specific need for N, but applying too much can lower beet quality. Therefore, achieving proper timing and rates of nitrogen—whether as manure or fertilizer—must be a top priority. Calculating expected N from a manure analysis and following up with a presidedress nitrate soil test are critical to success and saving money on purchased fertilizers.

Use soil tests to direct manure to fields that will benefit the most from additional P and K. Summer and fall manure applications are good for supplying phosphorus and potash as they don't volatilize or leach as nitrogen does. Applying manure after a small grain harvest is also good for reducing risks of soil compaction. Unfortunately, hot weather and risk of ammonia losses make this one of the least predictable times to estimate next year's nitrogen credit.

Part of the nitrogen in manure is much like that in commercial fertilizer. Urea, 28% UAN and anhydrous all contain the ammonium form of nitrogen, which can quickly volatilize when not incorporated, especially under hot and dry conditions. Unlike commercial fertilizer, however, manure also has a portion of nitrogen in the organic form, which breaks down over time. To preserve ammoni-

um-N, manure should be injected or incorporated the same day it is applied, especially during hot weather. Success will improve if fall applications of manure are done after the soil cools to 50°F.

Even when manure is injected and volatilization losses are minimal during the summer and fall, it is still a long time until next summer when the beets need the nutrient. Creating a system for manure, plus a fall cover crop to retain and recycle nitrogen, will create a synergistic benefit for nutrients and soil quality. Visit [www.animalagteam.msu.edu](http://www.animalagteam.msu.edu) for more info on using cover crops in concert with manure.

If you receive manure from a neighbor, ask them for a manure analysis to help determine the best rates, considering your soil test, crop plan and yield potential. There is a big difference in manure values. Manure from finishing hogs and milking cows has a higher nutrient content, and probably less bedding, than manure from young stock. Poultry manure will need to be applied at one to two tons per acre with equipment capable of achieving these rates. Manures also have a wide range of variation in the ammonium-N and organic N content. In short, be sure to work from a manure test.

Beets are sensitive to compaction. Hauling manure can create compaction, just as any trip across a field will. Manure applications will probably occur with some form of tillage, relieving any compaction that may be created, as will spring tillage. Again, a

cover crop will also help with any compaction issues.

Every crop producer is concerned about manure bringing in weed seeds, but it's important to weigh the risk with the long-term benefits. All soils have a weed seed bank. Any form of tillage and added nutrients can trigger germination, whether the seeds were recently introduced or had lain dormant for years. Manure will provide nutrients that make both weeds and the crop grow lush and fast, but herbicides can help curb the weeds.

There may be fewer viable weed seeds in manure than you expect. Before manure is created, the feed stocks have passed through an animal, which takes a toll on weed seed viability. Then the manure is put in storage, with plenty of microbial activity, and uric acid, which also reduces the likelihood of germination. Feed stuffs may have passed through a fermentation process in a silage bunker or through a pelletizing process—both processes are hard on seed viability. There is a potential for weeds, but the biggest issue is that the weeds that are there might grow a little faster and require quicker control than those in non-manured fields.

What about neighbors? Manure applications are always an easier sell in neighborhoods that have livestock farms. Odor is the main issue, but environmental responsibility is also closely scrutinized. For both odor reduction and nitrogen retention, same-day incorporation or injection is the obvious and desirable answer. Incorporation

*continued on page 28*





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# CROP RECORDS 2009



By Corey Guza, PhD  
Agronomist

To improve profitability on the farm, growers are beginning to manage fields and areas within fields differently to maximize economic return. Michigan Sugar Company is continuing to develop a crop recordkeeping system that will help growers identify the reason for yield differences between fields. By identifying yield differences, sugarbeet growers can begin to change management strategies to improve yields on individual fields.

In 2008, the first phase of the crop records system was initiated. The first phase included keeping records on inputs along with yield and quality information on individual fields. Most of Michigan Sugar Company's growers opted to deliver sugarbeets at the field level. Grower feedback from this procedure was generally positive and many growers suggested they would like payment information at the field level as well; however, few growers entered insecticide,

The screenshot shows a web-based interface for the Michigan Sugar Company Crop Records system. It features a navigation bar with links like Home, Reports, Crop Records, and Grower. The main content area is titled 'Grower Field Report' and displays a table with columns for Field/Contract Name, County, Township, Section, Acres, Status, and various input and yield data. The table lists multiple fields with their respective details.

Grower harvest information reported on the field level.

herbicide, fungicide, seed variety, and fertilizer information into the crop record program. In fact, only 98 members entered information on herbicides, 74 members entered information on fungicides, and 134 members entered information on fertilizer.

To improve the value of the crop records system, it is important to have more information. As more information is entered into the system, data can be sorted and trends in yield improvements and production practices can be developed. This will help individual growers improve production on individual fields.

In 2009, Michigan Sugar Company will continue to improve the crop records system to make it more user-friendly and helpful for growers. The crop records system is available online at [www.michigansugar.com](http://www.michigansugar.com) through the login portion of the website. If growers need help with their crop records, they should contact their agriculturist. Grower feedback is also appreciated to help with improvements to the system. It would be great to see the majority of growers entering their information directly into the crop records system in 2009. 🌱

*continued from page 26*

not only maximizes N availability but also reduces odor. The addition of a cover crop, beyond the agronomic and soil quality benefits, will also project a green attitude to the neighbors.

What about legal and regulatory responsibilities? To receive protection against nuisance lawsuits, you must follow the manure GAAMPs (see <http://www.michigan.gov/mda/>). Make sure manure doesn't

run off into creeks, ditches and streams; keep it from reaching tile lines; and ensure it doesn't travel with melting snow. These things are not only important environmental considerations—they are good for your bottom line; if manure nutrients are lost, so is their dollar value. You should also have current soil tests, take credit for the manure values and reduce fertilizer accordingly, and not apply

manure on any soil testing more than 150 ppm (300 lb) P per acre.

Visit [www.animalagteam.msu.edu](http://www.animalagteam.msu.edu) for more info on manure and cover crops, or contact Natalie Rector at [rector@msu.edu](mailto:rector@msu.edu) or (269) 781-0908. 🌱

###

*Want to learn more about manure management? Subscribe to The Scoop, a monthly e-newsletter from MSU Extension, by sending an e-mail to [stuever@msu.edu](mailto:stuever@msu.edu) with "subscribe" in the subject line.*





*By Roger Elston  
Agriculturist,  
Central District*

Steve Krohn grew up on a family farm east of Elkton, Michigan. He farmed with his dad and brother until he graduated from Elkton-Pigeon-Bay Port High School. After receiving his two-year degree in Agricultural Business Management at Michigan State University, he interned with Country Mark.

His next position was with Farmers Cooperative of Hudsonville as sales manager. He enjoyed working in that area, but he began to miss his extended family. He moved back to the Elkton area in 1993, going back to work on the family farm with his father, Terry Krohn, growing corn, dry beans, soybeans, wheat and alfalfa.

In 1996, they researched information about growing narrow row sugarbeets provided by Jim Lecureux. At that time, a lot of beet growers were switching over to 22-inch rows. Krohn's were thinking about growing beets and wanted to be sure that they would get the yield increase needed to justify the cost of the necessary equipment to make the change to narrow rows on their farm.

Finally in 2000, they added narrow row sugarbeets to their rotation. The first year they planted 150 acres, but they had to replant about half of them because there was a poor stand. The replants were lost to the winds that spring. They did prove to themselves that



*Steve Krohn*

they could successfully raise sugarbeets by growing over 30 tons per acre on the remaining acres.

In 2002, Steve bought 50 percent of his dad's part of the operation. He and his father invested in Michigan Sugar Company, each purchasing 200 acres. Later, Steve increased that to include another 50 acres.

Today, Steve farms 3,000 acres. A good part of his acreage is sandy ground that blows very easily. He grows about 200 acres of alfalfa along with 1,000 acres of corn, some of which is used for silage for a neighboring 600-head Jersey dairy operation. The manure from the dairy operation is applied to his fields to keep the soil fertile and prevent it from blowing.

They abandoned the use of a moldboard plow years ago. He now uses a disk ripper to work his ground in the fall and does the same thing in the spring with one pass. This disk ripper is used on all his acres. It leaves a good amount of crop residue on top of

the soil, which aids in holding the soil in place until the sugarbeets get big enough to keep the wind from blowing them out.

In 2003, Steve purchased a 24 row 22-inch planter to replace his 16 row 22-inch planter. This enabled him to plant his acreage in a shorter period of time. Fifty percent of his acreage was planted to Roundup Ready sugarbeets. In 2009, he will be planting all Roundup Ready sugarbeets. In 2008, Steve averaged 33.87 tons per acre. His six-year average is 25.15 tons per acre. These are impressive averages.

Looking forward to 2009, Steve has prepared a 40-acre field to plant into a stale seed bed. Approximately 4,000 acres of sugarbeets were successfully planted in the area this past season using this practice.

Along with farming his 3,000 acres of land, he manages to keep busy with his other civic duties. Presently, he serves as treasurer of the Huron Country Corn Growers,



Steve Krohn's Elkton area home.

also on church boards and on the Elkton Area Chamber of Commerce. His wife, Mandie, works as a CPA at Nietzke & Faupel PC CPA's in Pigeon. After his farm work is completed for the season, Steve also helps at the accounting firm.

In between times, Steve and his wife, Mandie, are busy with their four daughters who are fifteen, eleven, six and a new four-month old. The older ones attend classes at Elkton Pigeon Bay Port Schools.

Steve's farm operation is a good example of where I believe the future practices of growing sugarbeets should be headed. Many of the growers that I have worked with over the years have successful operations. I believe that narrow rows will enable those not using the practice yet to increase tons per acre as well as sugar per ton. I compared yield records from

growers with narrow rows to growers with wide rows from 1987 though 2007. Results have proven that sugar, as well as tons per acre, are higher with beets planted in narrow rows than those planted in wide rows.

Here are some reasons why narrow rows can produce a yield advantage over wide rows:

- Narrow rows canopy faster than wide rows allowing for more sunlight capture.
- The 28 or 30-inch rows never cover the soil completely resulting in greater potential for new weeds to emerge late in the season.
- You have a better chance of having a good stand in a poor emergence year.
- Plants are spaced to use fertilizer more efficiently. 🌱



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# FACTORY CAPITAL PROJECTS



*By David Noble,  
Vice-President,  
Operations*

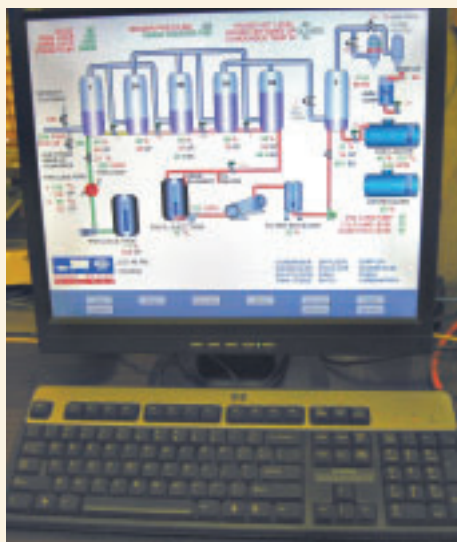
Factory capital spending is a core part of the long-term success of our Cooperative Investment in maintaining and upgrading the factories ensures both current and future capacity is in place to efficiently process the crop that is delivered. To do that, capital funds are used to cover a wide range of projects from repairing 100-year old buildings to installing the latest technology controls. It requires balance between long-term asset maintenance and tackling major challenges such as reducing energy to stay competitive. In this article, the past year investments (2008) will be discussed along with plans for the current year (2009).

In the Fall 2008 issue of *The Newsbeet*, major investments in new sugar packaging equipment were highlighted. Other major projects were the purification upgrade at Croswell and the tower diffuser bullgear replacement at Sebewaing.

Croswell completed the third and final part of their purification system. Juice from diffusion must be treated to remove impurities and to stabilize its condition prior to evaporation and sugar crystallization. In prior years, the preliming and cold liming systems were upgraded. Last year, new second carbonation and reaction tanks were installed along with juice heater changes. The payback on



*(Top) New packaging machine (Bay City).  
(Bottom) Control screen (Caro).*



these multi-year investments is that Croswell now operates with one of the lowest, if not the lowest, lime usage in the United States which results in major cost savings. It can also handle a wide range of beet quality and still produce a high quality juice, allowing the factory to maintain throughput when others are challenged.

Sebewaing's diffuser bullgear had shown increasing numbers of



*(Top) Sand separation (Caro).  
(Bottom) Boiler scrubber system (Croswell).*



hairline cracks over several years. If too deep or too plentiful, these cracks would ultimately lead to gear failure, stopping the whole factory. As a proactive solution, Michigan Sugar Company purchased a replacement gear, which the factory themselves installed last summer. The drives and steelwork on top of the diffuser were dismantled, the new gear installed, and then everything reinstalled over a eight-



week period under the supervision of a German engineer from the diffuser manufacturer. Carrollton maintenance technicians helped overhaul the drives. The project was completed well ahead of schedule and significantly under budget due to the help of Sebewaing and Carrollton resources. The new, stronger gear has allowed the factory to pack the diffuser tighter, reducing the water needed to extract the sugar. This has led to more slice throughput and lower energy costs for evaporation.

In total, there were 23 factory capital projects ranging from a new laboratory analytical instrument, building and foundation repairs such as the Caro boiler stack, to dust control and energy reduction projects. Another notable process improvement was the sand separation work at Caro on the diffuser and pulp dryer systems. Sand entering the factory with the beets traditionally accumulated in the pulp drier system. This plugged the furnace and ducts, literally turning into glass in the extreme temperatures. Juice and air cyclones were installed to remove sand from the process, plus the pulp dryer was insulated and sealed allowing a lower operating temperature. The combination of work has resulted in no plugging, no dryer downtime, elimination of fan damage and lower energy use. This will allow Caro to produce 50 percent more pulp shred tons which sell for a premium over pulp pellets.

For 2009 there are 30 factory capital projects split between all



*Carbonation tanks at Croswell.*

locations. About 45 percent of the spending is directed to reducing boiler energy consumption. Even with the recent drop in oil and gas prices, energy is by far the largest budget component for the whole company. Examples of the energy projects slated for the inter-campaign period are Croswell boiler controls and seals, process heat recovery at Bay City, a larger, more efficient cossette mixer at Caro, and a heater project at Sebewaing.

Two major projects are the Caro cossette mixer and a larger pulp press at Sebewaing. Caro's 1960s "hot juice" mixer, which comes just ahead of the tower diffuser in the process, will be replaced with a larger, counter-current "cold juice" mixer. By achieving better heat exchange between the juice and cossettes, the factory can

become more energy efficient by using low-grade heating sources. These low temperature vapors and condensates were traditionally wasted as they could not be matched to a low temperature juice. The extra time in the mixer will also allow better diffusion, which in turn will allow less water usage, so boiler energy will be reduced in two ways.

Sebewaing will be replacing a current smaller pulp press with one having two to three times the capacity. The new, used press was originally purchased from Irish Sugar three years ago to use the gearbox on a similar press which had failed during campaign. Since then, the damaged gearbox was rebuilt as a spare, and the rest of the press is being refurbished this campaign. The "as new" press

## FACTORY CAPITAL PROJECTS (CONT'D.)

will be installed this summer, helping to reduce pressed pulp moistures.

All the projects discussed involve extensive planning and detail. Projects can take two to three years from concept through design, planning and permitting, bidding equipment and contract work, installation and operation. The factory maintenance crews and supervision play an essential role installing and operating the capital equipment. Behind the scenes, is a small dedicated group of five engineers who handle all the other aspects of each project. Engineers Jerry Grevel, Rod Brocke, Phil Allen, and Mark Wedding are specialists in electrical, mechanical, chemical and technical drawing, respectively. These gentlemen work for our Director of Engineering, Jim Martin, who not only oversees the group, but also handles multiple projects himself.

Due to the varied nature of projects each year and scope of different detail within projects, the engineers have developed experience across multiple disciplines. In addition to the long project list, the engineers are also on call year-round to help with factory issues. Examples are design and specification of major maintenance repairs such as evaporators or buildings. Campaign examples this year have been the backup generator rental at Caro and support for the Cossette Mixer repair at Sebewaing.

Typically, the big ticket items draw the money and attention. But there are multiple capital



*Diffuser bullgear replacement at Sebewaing.*

projects every year to maintain, improve and enhance the factory operations. As stated at the beginning of the article, capital investment ensures capacity is in place to process the crop. It is also an important statement by the share-

holders that they see a long-term future for the Co-op. The shareholders want to see continuous improvement in performance and an organization appropriately funded and challenged to deliver on their behalf. 🌱

The logo for Dave Hausbeck Trucking, Inc. is displayed on a dark blue background. It features the letters 'D', 'H', and 'T' in a large, white, serif font, stacked vertically. Each letter has three horizontal white lines extending to the right. Below the letters, the company name 'Dave Hausbeck Trucking, Inc.' is written in a white, bold, sans-serif font. To the left of the text, there is a graphic of a truck wheel and tire, also in white, showing a multi-spoke hubcap.



# VENTILATION UPDATE



*By Corey Guza, PhD  
Agronomist*

In an effort to improve pile storage and preserve a record-breaking crop, Michigan

Sugar Company added ventilation equipment to the Caro and Croswell locations for the 2008-2009 campaign. With the additional ventilation, Michigan Sugar Company currently has 350,000 tons of ventilated beets or approximately 16 slice days. Bay City has 130,000 tons of ventilated beets and Sebewaing has 120,000 tons. Caro initially had 20,000 tons of ventilated beets. An additional 40,000 tons of beets were ventilated this fall, for a total of 60,000 tons. Croswell has a total of 40,000 tons of ventilated beets.

Due to the large 2008 crop, it was decided to move up the installation of ventilation equipment from the Summer of 2009

to the Fall of 2008. While this plan provided some challenges, it was a great opportunity to preserve beet quality in a long campaign. The main issue was getting the tubes on time. Jensen Bridge and Steel did a great job of making the tubes and sending them to Croswell and Caro to ensure that we could place them without needing to slow down beet receiving. The next challenge would be placing the tubes so that the fans and manifolds could be attached after the tubes were already buried in the pile. Typically, the fans and manifolds are used as guides for placing the tubes. A template or "jig" was created to ensure that the tubes were spaced properly so the fans and manifolds could be positioned as they arrived at each location. The template worked very well and the fans and manifolds were attached to the tubes without issue.

This fall was the first time sugarbeet pile ventilation was

installed in Croswell. Due to the rapid nature of installing the ventilation equipment, the Croswell group had a steep learning curve. They had a great group of people who were enthusiastic about the project and that helped to make the installation successful. Both the Croswell and Caro groups accepted the challenge of rapidly installing the ventilation equipment with enthusiasm, ensuring that all of the equipment was operational before Thanksgiving.

The ventilated beets have stored well for the 2008-2009 campaign. The December and February warm-up did not have a large impact on beet storage. Due to the colder than normal weather in January, the fan runtime has been reduced. When the temperatures are under 28°F the fans are set to stay off to avoid freezing the beets. The ventilation equipment was a successful tool for preserving beet quality at the end of the campaign. 🌱





# ONTARIO SUGARBEET PILE RECOVERY INNOVATION PROJECT



*By Keith Kalso,  
Agricultural  
Manager, Croswell*

An innovative method to load transfer beets from large long-term beet storage piles has been successfully operating at the Dover (Canada) beet receiving station since 2007. The new loading method utilizes a Maus (mobile beet loading machine built by Ropa of Germany) that was adapted to load trucks from large sugarbeet piles, thereby eliminating the need of a large-wheeled loader.

The Maus is a machine built to recover (load) and clean small sugarbeet piles from farm fields; a typical practice in Europe. The

Maus machines used in Europe have a header, much like a combine, that picks up sugarbeets from farm fields, a grab-roll screen, much like a sugarbeet piler, that cleans out soil and debris and a conveyor, similar to a piler boom that can move in almost any direction to convey beets up and into trucks.

The first Maus came to North America in 2002 to complement the unique beet field storage system in the Lambton, Ontario growing area. Since that time, two other Maus machines have been put into service in other Michigan Sugar Company growing areas for loading and cleaning field piled sugarbeets. In the Summer of 2005, a prototype header to recover piled beets from large

long-term storage piles was built in Canada by John Noorloos, a Michigan Sugar Company shareholder. This header was built to accommodate the large volume and mass of long-term stored sugarbeets, a totally different application than the stock header that comes with the Maus from its German manufacturer. The prototype header was tested at the Dover, Ontario sugarbeet storage yard in 2005 and 2006 with very favorable results. Recovery of the beet pile was around the outside exterior or pile shoulders of each pile instead of recovery from the ends of each pile, which is the common industry-wide practice.

In January of 2007, the Maus was used to load all transfer loads for a 15-day trial period at the





**TABLE 1**

**IMPACT OF STORAGE REMOVAL DATE  
ON SUGARBEET QUALITY FOR ALL VARIETIES.\***

	Purity (%)	Sugar (%)	RWST
Maus Pile	94.7a	19.5a	288.5a
Intact Pile	91.0b	18.5b	249.7b

\*Within each column, removal timings with a different letter indicate a statistical difference. Purity, sugar content and resulting RWST were all significantly reduced in the "intact" pile. This suggests that continual rind removal maintains sugar quality in beets stored in large piles.

Dover, Ontario beet storage site. During that time, 32,012 tons of beets were loaded out and over 2,000 tons of excess soil was screened out by the Maus. The freight savings alone from not shipping the excess tare soil was \$19,788.50. Besides a significant savings in freight costs, it was realized how beet storage benefited by pile shoulder removal and how factory performance could be impacted from this system.

Michigan Sugar Company partnered with Ropa North America in the Summer of 2007 by entering into a three-year lease of a new Ropa Maus. Company employees were trained to operate the machine and daily manage the transfer operation. The entire Dover receiving station's 2007 and 2008 sugarbeet crops have been successfully loaded out with the Maus machine.

During the 2007–2008 campaign, 154,900 tons of beets were loaded and shipped to the Croswell factory by the Maus machine. More than 8,664 tons of tare soil was removed during loading by the Maus, equating to a freight savings of \$97,905.46 in excess soil not shipped, plus a loading savings of \$8,339.94. The upfront savings in freight are offset by several added inputs when compared to the typical wheeled loader. Extra costs include:

- Auxiliary pay loader to remove tare and rake pile sides
- Labor to operate Maus and loader
- Fuel for Maus and loader
- Tare disposal

After all expenses and credits were applied, a profit of over \$16,000 was realized with the use of the Ropa recovery system for the 2007–2008 campaign.

The Maus recovery system requires the use of an auxiliary payloader to daily rake down pile sides so the beet pile doesn't cave in on top of the Maus and to remove tare soil left behind by the Maus.

The path the Maus follows in storage pile recovery is along the pile sides (shoulders). The machine works around the outside of the piles, not like the industry-wide procedure of removing pile ends using a wheel loader. The pile shoulder removal has proven very valuable by increasing natural pile ventilation, retarding pile deterioration and improving sugar recovery at the factory. Since pile shoulders are continually being "loaded out," their deterioration due to freeze-thaw cycles and heat from the sun, especially south facing sides, are minimal. Typically, untouched pile outer side (rind) quality deteriorates, throughout the beet campaign and when mixed with pile interiors, which

are normally higher quality, an overall lowering of quality is experienced at the sugar factory.

The University of Guelph Ridgetown campus in Ontario carried out several detailed research studies pertaining to beet quality during the 2007–2008 campaign. The Interim Report #2 entitled "ADV0253 Enhancing Sugar Beet Storage Quality" quantified what was happening to beet quality over the time of the entire campaign. The research group placed samples of beets in two separate beet piles, one left intact with no shoulder removal and one continually shoulder stripped by Maus system. (Table 1)

The beets removed from the shoulder removed piles (Maus system) retained an additional 38.80 pounds of sugar per ton. This is a very large amount of sugar available for factory extraction. This extra sugar more than pays for this new beet recovery system. Of the 150,000 tons of beets stored and recovered at Dover in 2007–2008, a potential 3.4 million more pounds of sugar may have been processed using

# ONTARIO SUGARBEET PILE RECOVERY INNOVATION PROJECT



*Recovery of beets using the Maus.*

the Maus system instead of leaving the piles intact based on the Ridgetown College research. With a conservative price of \$30 per cwt for sugar sales, the system may have produced one million more dollars than the traditional recovery methods!

The use of the Ropa Maus has proven to be a favorable way to handle and load long-term stored sugarbeets. Since the nature of the system is to remove pile sides instead of pile ends, sugarbeet quality is maintained and ultimately sugar recovery is improved with this system. The documented value of 38.80 more pounds of sugar per ton of sugarbeets when compared to traditional recovery of stored beet techniques makes this system very attractive. The removal of excess tare soil by the Ropa Maus has reduced grower and company freight costs substantially and improved efficiency on the beet end of the sugar factory. Since this innovative system maintains sugar quality, economic returns to the Cooperative can increase as the use of the system continues and is refined. 🌱

## OTHER RESULTS EXPERIENCED BY THE MAUS RECOVERY SYSTEM:

- A. Reduced contamination and factory maintenance costs due to less soil being shipped in the transfer loads.
  - Slight productivity gain observed following Maus loaded beets at the sugar factory.
  - Factory soil disposal costs reduced significantly.
- B. Reduced sugarbeet root damage compared to wheeled loader application.
- C. Reduced damage to the beet storage yard.
  - When wheeled loaders are used, excessive damage occurs to gravel pad and base each year during the beet haul. Loader bucket and wheels damage the yard.
  - Maus use showed very little damage to the yard surface since the machine travels very slowly and the header floats on the yard surface.
  - Wheeled loaders can load out a significant amount of gravel surface due to the digging action of the loader bucket. This activity creates unnecessary costs by “shipping out” valuable gravel; increased freight costs by hauling gravel mixed with beets and causes extra costs for its removal at the factory.
- D. Removed tare soil returned to agricultural use.
  - Most of the excess soil from the Maus process was returned to adjacent farmland — a form of soil enhancement.
  - Composting of soil could be evaluated.
  - Tare soil shipped to sugar factory in transfer trucks usually is not returned for agricultural use.
- E. Less soil transported means less fossil fuel consumed (besides freight cost reduction).
  - In the 2007–2008 campaign, there were 206 fewer truckloads since 8,664 tons of soil were not transported with beets.
  - Savings of over 6,500 gallons of truck fuel.
- F. All frozen chunks of sugarbeets were broken apart when entering the Maus. Wheel loaders have difficulty breaking up chunks. Frozen chunks greatly hamper factory productivity.
- G. The truck loading process is much safer for both men and machines with the Maus system.
- H. Unloading (dumping) of trucks at the sugar plant is safer due to tare being removed at the time of loading. Excess tare can freeze in trucks causing unsafe dumping conditions.
- I. Use of an In-Line weigh scale on the Maus.
  - This technology was integrated into the machines computer and conveyor system prior to the 2008-2009 campaign.
  - A very accurate system which reduces labor and overweight trucks.



## 2008 HIGH SUGAR PRODUCER AWARD — EAST DISTRICT

Recognizing high producers has been a practice in the East District for many years. High sugar percent was the standard for awards before the new quality provision in the Grower Agreement was adopted. Since the quality change has taken place, the recognition is based on recoverable white sugar per ton (RWST).

The East District's High Sugar Producer for Crop Year 2008 was James Pohl. Jim produced 301.86 pounds of RWST this past growing season. A wooden plaque with a beet knife attached was presented to him to recognize his accomplishment at the East District Annual Meeting held on December 10, 2008. 🌱

*Jim Pohl (left) receiving the award from Keith Kalso.*



## 2008 HIGH SUGAR PRODUCER AWARD — WEST DISTRICT

Through hard work, dedication, and attention to detail, Kern Farms of Birch Run won this year's High Sugar Producer Award in the West District with over 300 pounds of recoverable white sugar per ton. Ken, Kurt, and Jason strive for quality, not only in their sugarbeet crop, but in the whole farm operation, demonstrated by the appearance of their sugarbeet field and the time they put into their farming operation.

The Kerns' winning field was planted to Beta 1643N on April 23. During planting, they also put down Quadris in a T-band for *Rhizoctonia* control. Kerns ended up with over 200 plants per 100 feet of row in this field. In addition to lime, this field had about 100 pounds of nitrogen applied with about 200 pounds of potassium and 30 pounds of phosphorus. The weeds were controlled with two broadcast applications of conventional herbicides using the micro-rate program. They also

*Ken, Kurt and Jason Kern.*



applied fungicides twice for *Cercospora* leafspot.

The Kerns farm about 500 acres of sugarbeets as well as corn, soybeans, and alfalfa, stretching from Montrose to north of Frankenmuth. Along with growing crops, they also run a sizeable dairy farm operation. They use manure from the dairy on the fields close to the barn, which helps in adding organic material back to the soil. This keeps the Kern family very busy throughout

the year. The Kern family achieved the top grower award for their attention to detail, such as knowing which variety to plant in which field, and their dedication to growing the highest quality sugarbeets possible. Ken said that one of the best things about being in the Cooperative and growing sugarbeets is that it is the only major crop he grows and does not have to market. All he has to be concerned with is growing the best beets he can. 🌱

# YOUTH PROJECT REPORT

## CENTRAL DISTRICT (CARO AREA)

The Caro area Youth project started out in late winter with the signing of a one acre planting assignment. An orientation meeting was held to begin each participants' sugarbeet project. Several other club meetings were held throughout the year.

Caro and the West district shared a field day held at the Blumfield Beet Receiving and Research Station on July 28, 2008. All attending participants were interviewed, took a written test and were able to view several informational stops for weed identification, sugarbeet diseases and instruction on how to choose and clean a sugarbeet sample for the area county fairs. The event started at 9:30 AM and ended at noon with a hot dog lunch. All members in attendance received credit toward winning one of the awards that are presented at the annual banquets. Members also had to enter three uniform beets at a county fair to receive points towards one of the awards.

The annual Awards Banquet was held at the Brentwood in Caro on the evening of December 1, 2008. Everyone enjoyed a wonderful meal. Jennifer Mossner, from the Tuscola Beetniks, led the group in the Pledge of Allegiance and the 4-H Pledge. Ray VanDriesche, Director of Community & Government Affairs and Kent Houghtaling, Central District Director and Youth Project committee member, were guest speakers for the group.

All participants received a carry bag, logo mug, and a logo sugar

bag pencil holder. Prestige winners were Joe Bublitz, parents Curt and Ann; Nathan and Michael Bednarski, parents Carl and Lisa; and Hillary Zwerk, parents Charlie and Deborah. They received a very nice digital camera. Premier winners were Eric Schian, Levi Bauer, Matt Stracz, Jessica Hecht, Bryce Hecht, Landon Zwerk, Jennifer Mossner, Dave Houghtaling, Courtney Reinbold, and Abigail Hecht. They received a sleeping bag and LED flashlight.

It was a very good year for sugarbeets averaging 28.85 tons per acre with 18 percent sugar. The club leaders are a big part of the Youth Projects' success; therefore thanks go out to: Viola and Gordon Bierlein, Roy and Marilyn Knoll, and Carl and Lisa Bednarski.

## CENTRAL DISTRICT (SEBEWAING AREA)

Sebewaing's youth sugarbeet project banquet was held at Immanuel Lutheran Church in Sebewaing on Monday, December 15. The participants and their families were provided a slide presentation of different sites and aspects of Thailand by Bryce Armbruster. The prestige award winners for the year were Bryce Armbruster, son of Dave and Debra Armbruster; Andrew Harrington, son of Gene and Wendy Harrington; and Lance Schuette, son of Troy and Leanne Schuette. These individuals represented the area's best performing participants for the 2008 growing year. These prestige award winners are seniors at their respective high schools.

## EAST DISTRICT

The East District held their Sugarbeet Youth Project Awards Banquet in Sandusky on January 12, 2009. There were 30 participants in this season's project resulting in six Premier Award recipients and two Prestige Award recipients. The Banquet was held at Woodland Hills Country Club in Sandusky. Dave Kujat provided entertainment by featuring solo saxophone and contemporary music, which was enjoyed by all in attendance.

Harbor Beach High School senior, Travis Volmering, was the master of ceremonies for the evening. All participants received a Pioneer Sugar carry bag, sugar bag desk pencil holder, and an insulated Pioneer sugar coffee cup.

Those receiving Premier Awards were Scott Grekowicz; Lisa Volmering, Jessica Roggenbuck, Courtney Maurer, Travis Volmering, and Katie Gentner. The Premier award was a Michigan Sugar sleeping bag and a LED flashlight.

Receiving top honor Prestige Awards and recognition were Ashley Talaski, (parents Fred and Julie) and Heidi Grekowicz (parents Chris and Michelle). The Prestige award was a digital camera with case.

## WEST DISTRICT

The annual Youth Project Awards Banquet was held on January 7 at the Trillium Banquet Center in Saginaw. This year, 34 students were involved in the youth projects, which resulted in eight Premier Grower Awards and three





*Joe Bublitz*



*Hillary Zwerk*



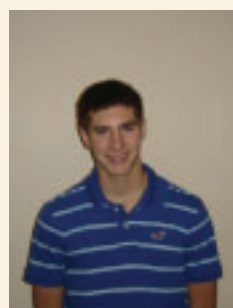
*Nathan Bednarski*



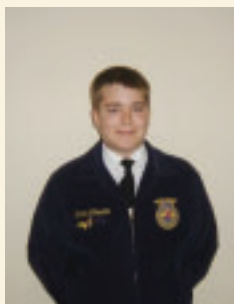
*Michael Bednarski*



*Bryce Armbruster*



*Andrew Harrington*



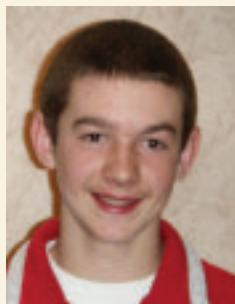
*Lance Schuette*



*Ashley Talaski*



*Heidi Grekowicz*



*Bryce Frahm*



*Amy Hecht*



*Steven Merrell*

Prestige Grower Awards. Even though the roads and weather conditions were not the best, over 80 participants, family and guests attended the banquet.

Scoring for the award winners was based on a written test, interviews by company personnel, project books with a written story, District Agricultural Day attendance and county fair participation. All participants received a book bag, a sugar bag pencil holder and a coffee mug made from renewable resources. The Premier Grower Award winners were given a sleeping bag and a special function flashlight, while the Prestige Grower Award winners received a digital camera.

Participants receiving the Premier Grower Awards were Jackie Albosta, Kyle Crumbaugh, Logan Crumbaugh, Lance Frahm, Kelly Hecht, Jason Leach, Justin Leach, and Heidi Reinbold. Those receiving the top honor of the Prestige Grower Award were Bryce Frahm (parents Eric and Teresa), Amy Hecht (parents Tim and Gloria), and Steven Merrell (parents Craig and Elaine). The evening's entertainment was provided by Joel, a juggler and comedian. It was a night of fun, good food and special conversation.

#### **ALL DISTRICTS**

This past year, activities for our Youth Project participants included

an educational morning at the Blumfield Twp. piling grounds. Students received information on weed identification, sugarbeet cyst nematode issues in beets, Rhizomania, Rhizoctonia crown rot and Cercospora leafspot. Participants were also given their written test and were interviewed by the local field staff. The summer fun day was held at Michigan Adventure. Buses picked up participants and some family members early in the morning for the long trip across the state. The youth group returned home late after a beautiful day full of water, sunshine and fun. 🌿



*By Ray  
VanDriessche,  
Director of  
Community &  
Government  
Relations*

The 2008 sugarbeet crop, which yielded a company average of 28.9 tons to the acre, was considered by most Michigan growers to be unattainable. Reaching this plateau did not happen by accident, it was a direct result of a willingness to learn and change long established practices. Let's take a quick look at the history of some of the major changes in the production of sugarbeets in Michigan.

Sugarbeet seed available from the turn of the century to the 1970s was the old monogerm seed, which had few varieties to choose from, was planted very thick and then blocked and thinned by hand labor to ensure a decent stand. Today's highly advanced seed varieties are pre-germinated for excellent stands, coated for consistent size and have traits to address disease, nematodes and weed control issues. The planters used to plant today's high tech seeds use precision seed spacing with row widths that vary from 30 to 22 inches. These modern planters, some guided by GPS and planting as many as 48 rows in one pass, are a far cry from the four-row planter Dad had on our farm in the 1950s.

Current weed control programs, which include timely spraying combined with modern herbicides, have reduced and, in most cases, eliminated the need for hand labor

and multiple cultivation passes equating to less chemical injury and soil compaction. What a change from 40 years ago when the old standard was a blocking and thinning followed by two hand-labor weedings and three to four cultivations throughout the summer. Combine the weed control program with the BeetCast disease control program, which keeps growers constantly updated on conditions conducive to Cercospora leafspot, and you have the potential to maximize yields year in and year out.

Hand in hand with significantly increasing beet yields, the industry has increased the ability to harvest and haul the beets quickly and in almost all weather conditions. Dad's first beet harvester was a one-row International mounted on the frame of a Super M tractor and his goal was to be done harvesting 30 acres of beets in time to go deer hunting on November 15. Today's average beet harvester lifts six rows at a time, with some as large as 12 rows, capable of harvesting 40 acres a day or more. Many of the trucks back in the '50s were single axle trucks hauling eight to ten tons per load or a tandem axle hauling 14 tons, which was considered to be a big rig. Today, 90 percent of the trucks are semis hauling an average of 25 tons per load with some units hauling as much as 40 tons on one trailer. The increased capacity of today's harvesters and trucks was evident on October 23 when a new, one-day delivery record was set by growers delivering 296,548 tons on 12,053 truck

loads. That equates to seven percent of the total crop delivered in one day, which is a testimony to the growers' ability to deliver and the company's ability to handle the crop at the delivery sites.

In looking to the future, Michigan Sugar Company has purchased a new 22-inch row planter for research plots. Although some of the production, especially in the Thumb area, has already converted to 22-inch rows, we are seeing a renewed interest from other growing regions to research the viability of narrow rows. This research is a natural fit with today's quality-based grower payment, which has resulted in increased factory efficiencies and a greater net return to the shareholders of Michigan Sugar Company.

This fall, again we saw the growers' foresight and an openness to change when the existing Saginaw Valley Bean and Sugar Beet Research Farm was donated to Michigan State University. This generous donation by the sugarbeet and dry bean industry in Michigan was key to the purchase of a new and larger research farm in the Richville area.

My Dad worked as an agriculturalist for Monitor Sugar Company from 1946 until 1975. If he were alive today, he would be truly amazed by today's technology and the record yields we have achieved in such a short time, but he would not be surprised at the growers' willingness to learn and advance. 🌱





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# THE NEWSBEET

Spring 2009

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