PIONEER NEWSBEET

Fall 2003

root of the BUSINESS

LEVERAGING OUR CO-OP STRUCTURE

By Mark Flegenheimer, President and CEO

As our second crop under grower ownership begins to mature, we continue to adapt, adjust and most importantly realize efficiencies of our new cooperative structure. It continues to be a learning experience for the management, employees and growers alike. The Co-op structure, however, very clearly proves the old adage is true, "People have been known to achieve more as a result of working with others than against them."

Let me cite a couple of examples of how we have utilized our new structure to our (growers and company) advantage:

Early delivery. We have put together a new, enhanced early delivery program. We have also shared critical operating data with our grower-owners on the risks and costs of running campaign too late into the spring, or stated another way, not starting early enough in the fall. See the article in this issue, by Robert Braem entitled *Early Delivery Enhanced—An Important Success Strategy*, that examines those very issues. With the new early delivery program in place and the knowledge of the risks and costs of not starting in a timely fashion, we should have plenty of beets to slice in September.

Joint marketing. Utilizing the Capper-Volstead exemption that allows cooperatives to jointly market, we have entered into a partnership with the three Red River Valley Co-ops (Minn-Dak, Southern Minnesota and American Crystal) to market our pulp and molasses. Michigan Sugar Company and those co-ops now co-own Midwest Agri-Commodities, which markets all of the by-products of its four owners. In total, Midwest Agri-Commodities globally markets over 1.5 million tons of beet pulp, beet molasses and raffinates, annually giving us substantial clout in the marketplace.

These are just two small examples of how we have leveraged our new ownership structure. As a cooperative, we are working together with a common interest. Since you, the growers, own the company, all financial benefits ultimately accrue to you. These benefits may be in the form of increased share value and/or increased beet payments. We will continue to seek out and leverage the advantages of our new co-op structure which will make your company, Michigan Sugar Company, strong and viable for many, many years.

Have a safe and bountiful harvest.

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ABOUT THE COVER

The Michigan Sugar Co. research and agricultural departments work closely with researchers from universities, government and private industry. Here Steve Poindexter from Sugarbeet Advancement and Corey Guza from Michigan Sugar Co. are observing test plots at the Saginaw Valley Bean and Beet Research Farm.

2003 CROP UPDATE

GREAT START, GREAT WEATHER, GREAT GROWING

by Robert Braem, Vice President of Agriculture

The 2003 sugarbeet crop got off to a great start and has continued growing very well through the mid-season. As of this writing, our crop has progressed steadily without any significant setbacks or periods of slow growth. Traveling throughout the area, I am hard pressed to find fields that don't look great. Many growers and staff believe this crop looks as good now as any they have ever seen.

Planting began during the first week of April, but progressed very slowly up to April 15. Previously wet soil conditions improved and 20% of the crop went in during that next week. The last eight days of April were ideal, allowing growers to plant 96% of their crop by May 1. The remaining acreage was planted between rain showers within a two-week period. Growers planted 127,000 acres, including 2000 acres of authorized overplants.

Spring weather conditions were ideal for plant emergence and early growth. Growers have increased their seeding rate and reduced secondary tillage in an effort to improve plant population and sugarbeet quality. The result this year is the highest established stands ever recorded. Cool temperatures in May and early June slowed early growth, but row closure was achieved near the normal time.

Growers used new information and methods to micro-rate spray sugarbeets this spring. Research has indicated post-spraying based on growing degree days (GDD) improves timeliness and ultimately weed control. Many of those growers tracking GDD applied their first spray more timely and got very good weed control. Because of the cool temperatures in May, growers spread their timing between applications when they saw GDD were accumulating slowly. Growers achieved cost savings from the reduced number of applications and less sugarbeet injury. In another year, if temperatures are higher and GDD accumulate quickly, growers who monitor GDD will be alerted and can spray more timely to control fast growing weeds. The outcome of all weed control efforts this year is a clean and healthy sugarbeet crop.

Growers between Caro and Saginaw are testing a new Cercospora leafspot spray model called BeetCast (an article explaining the details is included in this issue). BeetCast has been tested by Sugarbeet Advancement for the last two years. Adapted from use in tomatoes, it monitors temperature and leaf wetness to predict the right conditions for Cercospora leafspot to develop. The system model software calculates Disease Severity Values (DSV) for each day beginning in mid-May. Results are posted on the website www.michiganbeets.com for growers, agribusiness and agricultural staff to follow. Early research indicates better control is achieved when growers begin spraying at 55 DSV, which is often before the first spots can be found on leaves. Growers then apply subsequent sprays between 35 and 55 DSV, depending on how aggressively they try to control the disease.

Research plots and grower fields are being sprayed this year using BeetCast. Some excellent data and testimonials will be available later this year and after harvest results are in. BeetCast will be another important tool growers can utilize to improve sugarbeet quality and enhance profits. Michigan

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PIONEER NEWSBEET
FALL 2003 • VOLUME 17, NO. 2

NEWSBEET TECHNICAL ADVISORS:
Managing Editor: Robert Braem, Vice President—Agriculture
Editor: William Gough, Agricultural Manager—Carrollton
Technical: Corey Guza, Chief Agronomist
Assistant Editor: Julie Perry, Executive Assistant—Administration
Advertising: Sherri Adams, Executive Assistant—Agriculture

***PIONEER NEWSBEET* PUBLISHED BY MICHIGAN SUGAR COMPANY**
Agricultural Office, P.O. Box 107, Caro, MI 48723

COMMUNICATIONS SHOULD BE ADDRESSED TO:
Editor, Pioneer Newsbeet, P.O. Box 107, Caro, MI 48723
Email: editor.newsbeet@michigansugar.com

THE SWEETENER INDUSTRY
HOW IT IS REPRESENTED

By Dick Leach, Director of Community and Government Relations

Most folks who grow sugarbeets and corn, or work in the caloric sweetener industry, as I do, don't give a lot of thought about how the industry is represented in Washington and elsewhere. We should, however, because each grower of sugarbeets, sugar cane, or corn pays a share of the cost of the different associations needed to defend the industry and provide the public and lawmakers with the true facts about the importance of our industry to the health of our people and the economy of our country.

I am not a registered lobbyist, but I have represented Michigan's agriculture in Washington, D.C., for many years and the sugarbeet industry since 1996. The sugar industry is the most well organized commodity industry in the U.S. To comprehend the size and structure of the industry's representation on political matters in Washington, D.C., see the chart on the following page.

In addition to the American Sugar Alliance (ASA), which handles political matters, we are represented by the Sugar Association on consumption related issues and on agronomic and processing matters by BSDF (Beet Sugar Development Foundation).

American Sugar Alliance

The ASA is a national coalition of sugar cane, sugarbeet and corn farmers, processors, suppliers, workers and others dedicated to preserving a strong domestic sweetener industry and it is the umbrella organization for the industry. The ASA and its member associations work to assure that farmers and workers in the U.S. sweetener industry survive in a world of heavily subsidized sugar. The ASA provides economic data and gives testimony on behalf of the industry whenever and wherever needed. The ASA is located in the Washington, D.C., area and is supported by its member associations.

BEET SUGAR

Beet sugar is produced in 12 states and accounts for over half of the domestic sugar production. The beet sugar sector is represented by the American Sugarbeet Growers Association (ASGA) and the U.S. Beet Sugar Association (U.S. Beet), both located in Washington, D.C.

- The ASGA is made up of local grower associations and grower cooperatives. The ASGA has a very active political action committee. Luther Markwart, ASGA's Executive Vice President, works closely with congressional agricultural staff and with the USDA regarding the sugar program.
- U.S. Beet is comprised of sugarbeet processors and it represents them in the collection and distribution of authentic information concerning our industry. It promotes the honorable, economical, efficient, and useful conduct of the beet sugar industry and represents them in government activities. U.S. Beet and ASGA work closely together on numerous issues.

CANE SUGAR

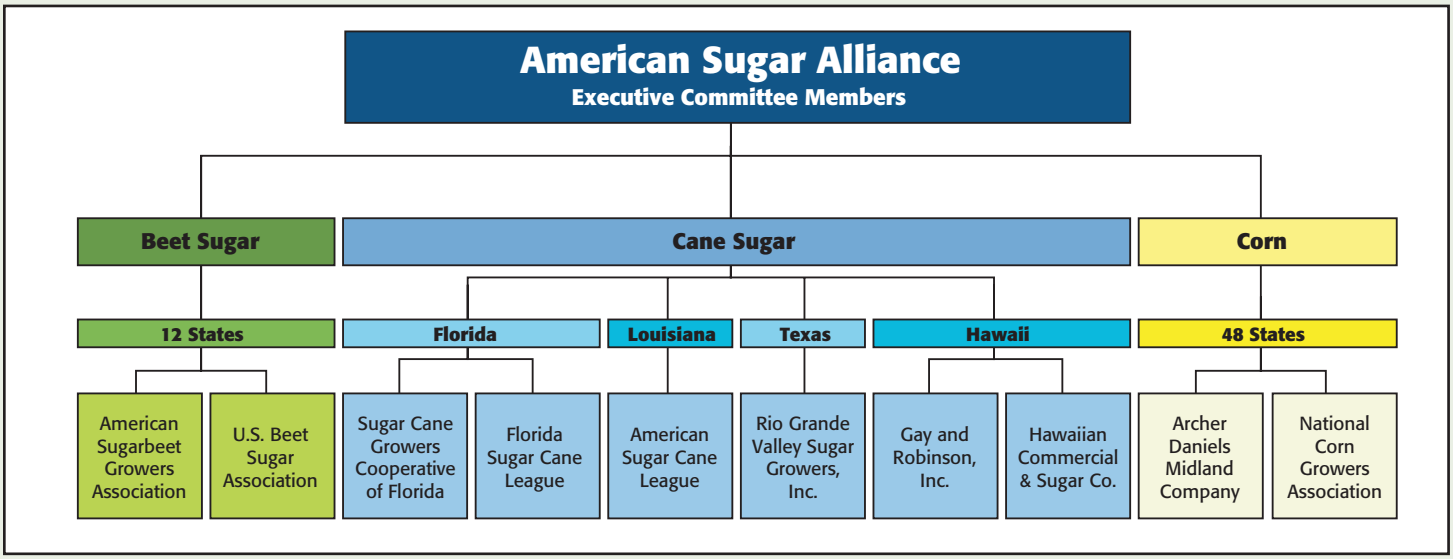
Cane sugar is produced in four states; Florida, Louisiana, Texas and Hawaii.

- Florida has two organizations; the Sugar Cane Growers Cooperative of Florida and the Florida Sugar Cane League. They represent cane growers and mill operators in Florida and are active in all aspects of the cane sugar and sweetener industry.
- The Louisiana sugar cane industry is organized through the American Sugar Cane League. Its main focus is on research, legislation, product promotion, education and public relations. The League represents both Louisiana cane growers and cane processors in matters on the federal level. The League is located in Thibodaux, Louisiana.
- Texas has one cane sugar mill, owned and operated by the Rio Grande Valley Sugar Growers, Inc.
- Hawaii has only two commercial cane sugar companies left; Gay & Robinson and Hawaiian Commercial & Sugar Company. These companies both grow and process cane sugar and are members of the ASA.

CORN

In 2002, U.S. growers produced corn in 48 states, accounting for more than 9 billion bushels.

- The National Corn Growers Association is a federation of state organizations, corn boards, councils, and commissions developing and implementing programs and policies on a state and national level to protect and advance the corn producers interests.
- Archer Daniels Midland (ADM) is the largest producer of high fructose corn syrup and is also a member of the ASA as a processor.



Sugar Association

An organization of great value to the sugar industry is the Sugar Association, Inc. (SAI), located in Washington, D.C. SAI's purpose is to promote good public relations, promote sugar as a pure and natural sweetener with only 15 calories per teaspoon, provide scientific data regarding all aspects of sugar, and defend sugar against false advertising and the distribution of misinformation.

The Sugar Association is currently working on the negative perception that obesity is caused by too much sugar in today's diet, misleading food labels and stopping efforts to regulate what we eat.

BSDF

The Beet Sugar Development Foundation's (BSDF) membership consists of beet sugar processing companies and sugarbeet seed-related companies. They state in their mission statement that they are "dedicated to the advancement of sugarbeet production and beet sugar processing through science-based research and leading educational programs." BSDF works closely with the USDA and land grant universities in the continual development of improved seed varieties and scientific advancements in beet sugar production. The BSDF is located in Denver, Colorado.

SUMMARY

When we look at the at the U.S. sweetener industry as a whole, the question is asked, do we really need all these organizations and associations? The answer is a resounding yes. For whatever reason, the sweetener industry, particularly sugar, is the most misunderstood and brutally challenged industry in the U.S. At this time, the ASA and its members are dealing with those who continue to challenge the Farm Bill, the Mexican sugar import dispute, the Bush Administration's Free Trade Agreements, including the negotiation of our tariff-rate quota system, and World Trade Organization (WTO) negotiations. All of these problems will pass and our domestic sugar industry will survive. Why? The industry's organizations are made up of growers and processors—real people with real families and real businesses. They are people who believe in what they do. When we need representation in Washington, D.C., we don't hire anyone from another company; we go ourselves. When we get there, we are organized and know what we are talking about. Tom Zimmer, Richard Maurer, Jim Ruhlman, and I have been going to Washington, D.C., at least once each year for the past several years to build relationships with the congressional agricultural staff. Each beet sugar state does the same. We want our friends of the sugar industry to know us and know about our industry.

You should now have a better understanding of the sweetener industry's representative organizations. After working in the sugar industry, I have seen the real value of being well organized. If we are to survive—and I really believe that we will—we need to continue working together and telling our great truth…**Sugar is pure and natural with only 15 calories per teaspoon.**

PRESSED BEET PULP
AN ANIMAL FEEDING OPTION

Michigan Sugar Company annually produces about 120,000 tons of beet pulp pellets which have a moisture content of 10%–12%. The pulp is sold for animal feed in countries throughout the world where there is a deficit feed production, such as Japan and Europe. During the past couple of years, demand for "pressed pulp" (75% maximum moisture) has increased significantly. Dairy and beef cattle feeders near our production facilities have found success adding pressed pulp to their feed rations. Also, nutritionist consultants have seen increased milk production in lactating cows that are fed beet pulp.

Even though demand for pressed pulp has increased, Michigan Sugar Company has the capacity to produce more if demand were to further increase. Production of pressed pulp causes less wear and tear on our factories and decreases our dependence on the volatile price of fuel.

If you feed cattle, we encourage you to try some pressed pulp in your feed rations this year.

Guaranteed Analysis (Wet Basis)

Crude Protein	Minimum	1.33%
Crude Fat	Minimum	0.04%
Crude Fiber	Maximum	3.83%
Moisture	Maximum	75.00%
N-Free Extract	Minimum	8.67%
Ash		1.50%

Composed of sugarbeet residue after extraction of sugar.

HOW TO PURCHASE PRESSED PULP:

- Contact Mary Smith (989-799-7300, ext. 3521) to place orders and determine the pickup location. Orders for specific tonnage must be placed two days prior to delivery to ensure availability.
- Loading will normally be scheduled during daylight hours, Monday through Friday. Specific loading hours for each factory can be determined when ordering.
- Payment will be due 15 days following an invoice and Michigan Sugar Company will not continue delivery if payments are late. All trucks will be weighed at the factory to determine volume sold.

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For years sugar beet herbicides have escalated in price, until AgValue, Inc. entered the ethofumesate market with ETHO SC. Through growers support of ETHO SC, AgValue has invested to offer Michigan sugarbeet growers additional post patent sugar beet herbicides.

- May of 2003 AgValue introduced CLOPYR AG
- For 2004 AgValue will introduce desmedipham and phenmedipham.

All of the AgValue formulations meet or exceed the branded product in quality and have been tested by Michigan Sugar and universities. When our future products are registered please ask for **AgValue** branded products. Independently owned, sourced and priced to bring you value

Thank you for your support.

ETHO SC Benefits

1) Safe to the sugarbeet seedling

2) Widest weed spectrum

3) Longest residual

4) Postemerge or Preemerge

CLOPYR AG Benefits

1) Enhances tank mix partners

2) Safe to the sugarbeet seedling

Please visit us on the web @ www.agvalue.net or contact Henry Steinberger by email - henrys@agvalue.net

Toll Free 1-866-511-3171 or 701-269-9037

EARLY DELIVERY ENHANCED—
AN IMPORTANT SUCCESS STRATEGY

By Robert Braem, Vice President of Agriculture

Early delivery is an important period of harvest which has a significant effect on the success of our cooperative. By initiating a fast, early start we ensure there is sugar available for customers and we can effectively manage the ending date of campaign to reduce storage risks and increase profits.

The Board of Directors approved changes in the Grower Agreement for the 2003 crop to increase early delivery premiums and ensure that growers are fairly compensated for potential reductions in yield and sugar. The tonnage incentive has been improved by adding $0.50 per ton to each early delivery period. This incentive begins with beets delivered on or before September 23 at $5.80 per ton and ends with $1.30 per ton for beets delivered from October 10 through October 13.

A grower's early delivery sugar content will be adjusted up to 97.25% of their receiving station's average for all beets delivered after the early delivery period. This change was made last December by the Board to protect growers who deliver to a station where large volumes are delivered early.

The cost of early delivery premiums deducted from the beet check (50%) will now be charged only against tons delivered after the early delivery period. Early tons will receive premiums and no charges.

Overall factory efficiency is greatly improved when campaign starts early and finishes in mid-February. Sugarbeets in the pile are alive and utilizing their sugar reserves to stay alive every day in storage. The agricultural department manages beet piling and re-haul to the factory to minimize this loss, but it is only a matter of time before significant amounts of sugar are lost. Cossette sugar, a measure of sugar content entering the factory, drops significantly when comparing averages from October to February (Figure 1). In the worst case, beets stored too long cannot be processed efficiently because of increased impurity levels associated with storage rot. Slice rate in the factory drops off as campaign is extended into February (Figure 2), driving up per ton processing costs and lengthening the slicing period even more.

The amount of sugar recovered in the factory (pack) drops off later in the campaign due to lower cossette sugar from storage losses. Figure 3 shows a significant difference in pack from October when beet storage length is short compared to February when beet storage extends more than 120 days.

A campaign ending near mid-February is a compromise between adequate throughput to cover costs and having a highly efficient factory operation. Our data indicates, if a

FIGURE 1

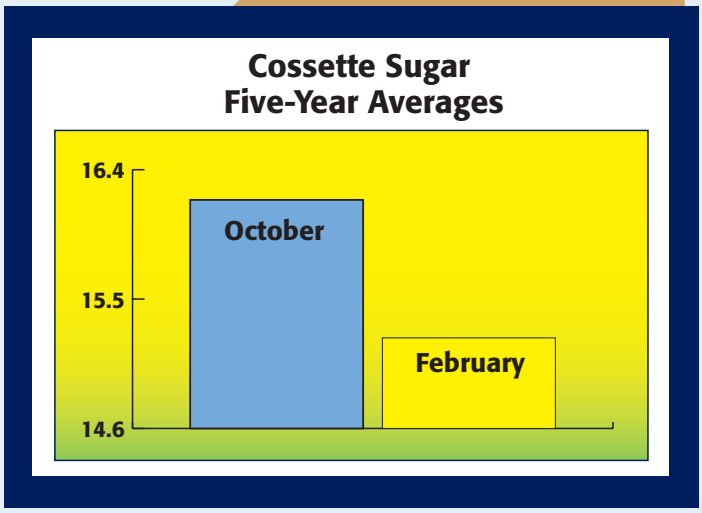
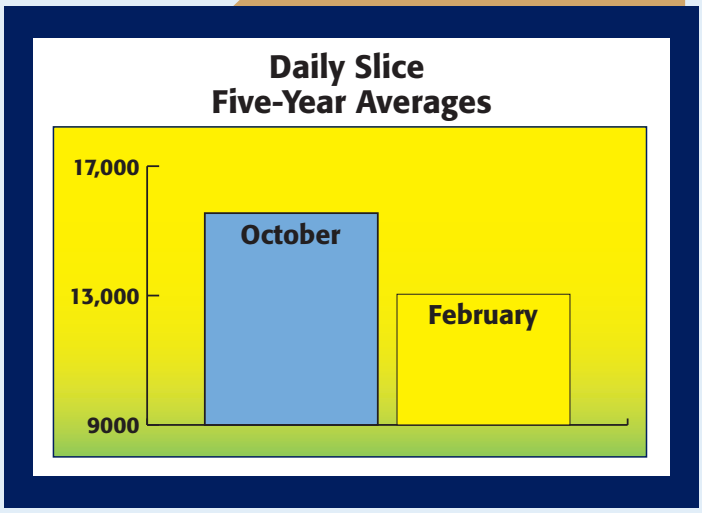


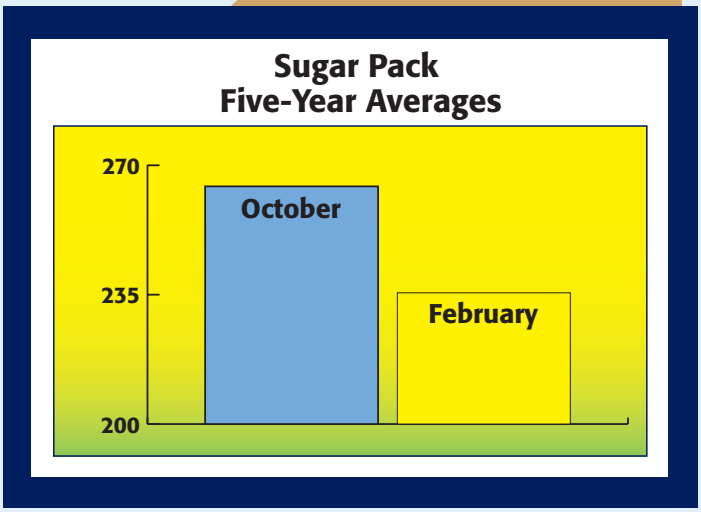
FIGURE 2



large crop is grown, starting earlier improves factory efficiency, reduces storage risk and increases profits for all members. The only way to accomplish an early start is for growers in all factory areas to harvest a small percentage of their acreage throughout the early delivery period. Changes made to the early delivery premium will compensate growers for potential losses in yield and/or sugar content when harvesting early.

The agricultural staff looks forward to unloading your trucks during early delivery and getting our factories off to an early, fast start.

FIGURE 3



GETTING YOUR TRUCKS DUMPED FASTER
TRUCK/TRAILER TAILGATES, CHUTES, FLAPS AND HYDRAULIC SYSTEMS

By Dennis Montei, Agricultural Manager, Sebewaing District

Attention to small details on your trucks and semi-trailers will provide significant benefits when unloading your sugarbeets. Beet spillage at the piling grounds cost big dollars due to lost time. In Sebewaing, we handle up to 2,500 trucks per day, and if each truck causes lost dumping time of just two minutes, we will lose 5,000 minutes of dumping each day. At an average of four tons per minute, per piler dumping capacity, we would lose 20,000 tons (dumped) per day, and that is only in Sebewaing. Please, take the time to review the following list of important items prior to beet harvest to ensure a fast, efficient and safe unloading experience.

TAILGATES–Make sure tailgates open easily, without sticking, when loaded. On trucks with low frame heights (such as a tandem, tri or quad axle) and tall tailgates, relocating the hinge point of the tailgate is often the preferred method. This will also keep the tailgate from catching the piler's cross-conveyer chain when the box is raised to its full dumping height. *(See photo #1)*

Helpful information to keep in mind:

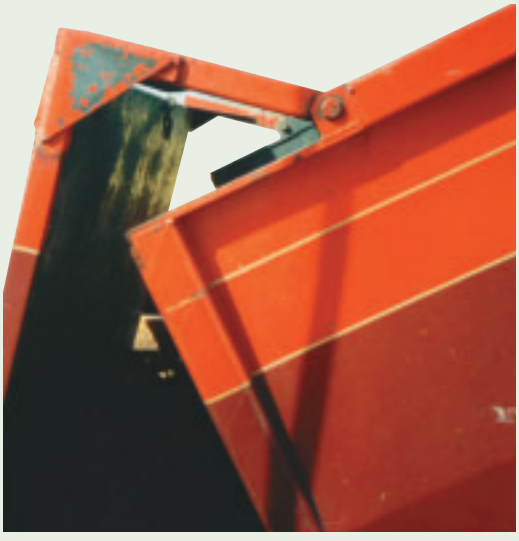
- Piler cross-conveyer truck opening height (steel): 32"
- Piler cross-conveyer truck opening height (rubber flap): Varies from 30–42"
- Cross-conveyer drag chain height: 14"

FLAPS–Installing a wide, rubber flap across the entire rear of the truck or trailer is another very helpful item to consider. This keeps the beets from falling out between the rear axle duals when dumping. *(See photo #2)*

TAILGATE CHUTES–Chutes extend the bed of your truck into the piler's cross-conveyer and will help keep the beets from falling out of the conveyor. Actually, these chutes should also have sides on them to stop beet spillage from occurring between the top of the cross-conveyer and the hinge point of the tailgate. *(See photo #3)*

BED LINERS–Bed liners help the beets slide out at a much lower dumping angle. This also reduces the chance of a truck or trailer tipping over. Boxing in the truck box "dog house" will help keep the dirt from building up around the "dog house" and holding in the last few beets.

HYDRAULIC SYSTEM–Thumb Truck wrote an article a few years ago on installing a hydraulic system bypass.This modification allows the truck box to lower much more



Above (Photo #1): By moving the hinge point (as above) your tailgate will swing up and away from the cross-conveyor belt.
Above right (Photo #2): Rubber flaps seal off the axle area to prevent beet spillage.

rapidly and gets your truck under the dirt belt faster to receive your tare dirt. This can save time between trucks. Thumb Truck says that box lowering time can be cut by as much as 50%. If your hydraulic cylinder has an extra port, you can plumb into both ports to improve truck box lowering time. Another restriction point can be eliminated by either removing the hydraulic hose quick coupler or replacing it with a much larger one. Also check your hydraulic tank breather to make sure it is large enough to handle the job. This filter should be a 10 micron filter. Other suggestions include checking to make sure your hydraulic cylinder is staging correctly and changing your hydraulic oil to a lighter weight oil (5W instead of 10W).

Appropriate changes to your trucks will increase your harvest truck turnaround time, and that means time and money for you and your company. Thank you for taking the time and effort to implement some of these ideas.

Right (Photo #3): Side plates will help prevent beets from spilling out over the top of the cross-conveyor.

BEETCAST: A WEATHER-TIMED FUNGICIDE PROGRAM CONTROLLING CERCOSPORA LEAFSPOT IN SUGARBEETS IN MICHIGAN

Cercospora leafspot

Typical weather data recording equipment used by BeetCast.

The inset is the patented leaf wetness sensor developed by Dr. Pitbaldo and his team.

Dr. Ron Pitblado, Ridgetown College University of Guelph, Ontario Weather Network (OWN)

Growers ask, "When should I start, how often should I spray and when should I stop?"

These are questions that are being answered using the latest in weather technology coupled with a new understanding of disease development.

Considerable effort has been made recently into the development of a practical, near real-time and affordable program (computer disease prediction model) to assist sugarbeet growers making decisions for the control of Cercospora leafspot. The program is called BeetCast.

Basic research has shown that by simply using hourly temperatures during periods when leaves are wet, the disease profile of Cercospora can be monitored. More importantly, the progress of this disease can be reduced by following timely fungicide spray applications based on this same information.

Cercospora leafspot influences plant growth and yield in two steps. First, the pathogen develops on the primary foliage, causing a progressive increase in necrotic leafspots and the drying of leaf blades. Second, plants react to the leaf loss by producing new leaves —regrowth taking earlier stored resources from the beet root.

The photosynthetic rate of the affected canopies significantly decreases with a consequent loss in beet dry matter. Both root yield and sugar content are reduced, the former twice as much as the latter, and the processing quality decreases as well because of an increase in the content of potassium (K) and sodium (Na).

Growers are and have been aware of the consequence of lower yields; however, they are much more aware, now that they are owners of a cooperative, of the significance of even the smallest loss in sugar content. It has been stated that for every 0.1% loss in sugar content there is a loss of approximately $1,000,000 of revenue to Michigan Sugar Company, which affects every grower of the cooperative.

All of this can be minimized by timely spraying of fungicides to control Cercospora leafspot.

The University of Guelph team has developed and perfected one of the most significant contributions to weather-timed spray programs with the discovery of a cylindrical leaf wetness sensor. Nowhere else in the world have they come up with such an effective sensor that mimics the wetting and drying characteristics of a sugarbeet leaf.

An effective delivery mechanism is in place with the team that has been formed (the Ontario Weather Network). Temperature and leaf wetness sensors can be placed within sugarbeet fields and through the technology of telemetry, hourly data is "pinged" or transmitted to a central computer miles from the

sugarbeet field. The computer program then translates each day using a rating system of 0, 1, 2, 3 or 4, to reflect the progress of this disease on that day. The higher the number, the more favorable the weather conditions for the disease. The spray program then is based entirely on these daily Disease Severity Values (DSV).

Growers can tailor-make their own program by deciding when to spray using these DSV numbers. Currently, we are working collaboratively with the Michigan Sugarbeet Advancement partners to find the best recommendations for your region of the growing area.

Numerous small plot research trials have provided a set of guidelines; however, a farm research and demonstration trial was needed and is being conducted in cooperation with Jim Stewart and his staff at Michigan Sugar Company, Sugarbeet Advancement and a local commercial sugarbeet grower. The results of the 2002 trial follow in Figure 1.

Note: The most economical fungicide spray program begins at 55 DSV with repeat spraying every 55 DSV. Excellent results were also obtained when the spray intervals were shortened from 55 to 35 DSV; however, it required an additional application. If the initial spray was delayed until 70 DSV had accumulated or until the first symptoms of the disease were noted, yields were reduced as was the sugar content.

Summary: Cercospora leafspot can effectively be controlled using the technology available to us through the use of the weather-based spray program, BeetCast. Compared with the standard, "wait until you see the disease," BeetCast can forecast a spray timing just BEFORE this occurs, allowing for the most effective use of fungicides.

Check out the OWN website www.ownweb.ca and follow the Michigan BeetCast program at www.michiganbeets.com.

FIGURE 1

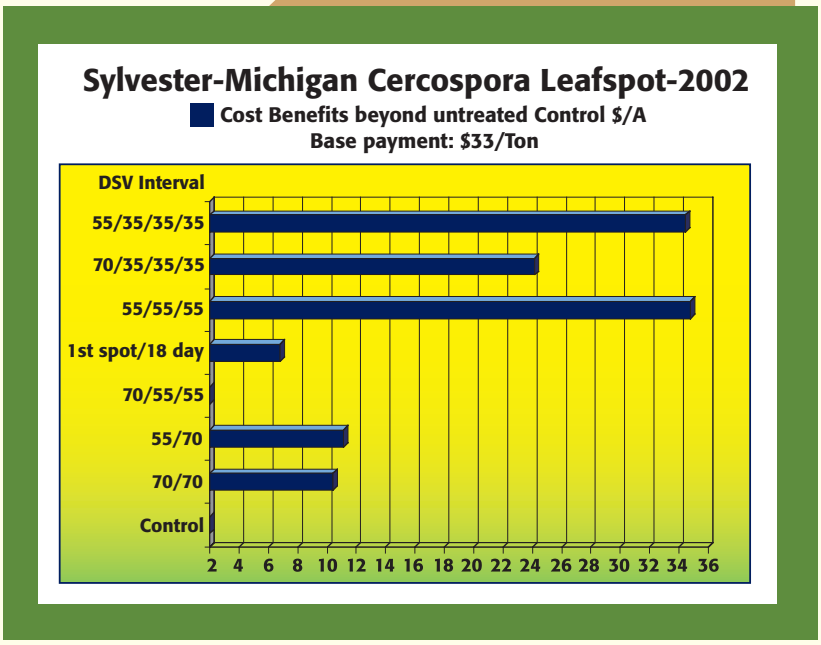


Figure 1. Cost benefits beyond the untreated control US$/A. Using a base payment of $33/T, sugar quality adjustment, less the cost of fungicides and application. Fungicides used were Eminent, Gem, Topsin and Super Tin. The longer the bar the more cost effective the spray program.

REVIEW OF FACTORY INTER-CAMPAIGN PROGRAMS

by Herb Wilson, Vice President of Operations

If you are not directly involved in factory operations, you may be curious about where the time and money is spent each summer to prepare our factories for the upcoming campaign.

A general description of the objectives for the inter-campaign programs at our factories includes:

- Repairing and replacing worn machinery and systems.
- Cleaning pipelines and heating surfaces.
- Improving the effectiveness of existing systems and equipment.
- Performing preventative maintenance on critical equipment.
- Maintaining buildings and structures.
- Maintaining and repairing systems used year-round, such as packaging and sugar handling equipment.
- Adapting or installing equipment that will improve safety for our employees.
- Updating systems to maintain compliance with food safety, security, sanitation and environmental standards.
- Installing new systems and equipment as approved by the Board of Directors.
- Training employees in workplace procedures and policies.

REPAIRS—Since we have the responsibility of processing a perishable raw material, our factories must be made to operate reliably 24 hours a day, seven days a week from the first day beets are sliced until the final sugar is produced at the end of the season. This fact requires a different approach than an operation where time is available for scheduled repairs during the processing. We must do everything possible to prevent slowdowns and breakdowns during the campaign. A delay in processing, which could result in extending the campaign too late into the spring, introduces great risk regarding the quality of the stored beets and reduces the overall recovery of sugar from the crop. The underlying objective is to ensure reliability and performance of the essential elements of the process systems.

Since it is not feasible or affordable to completely overhaul all the processing equipment each year, we rely on the expertise and experience of our managers and crews to determine which equipment needs to be overhauled and repaired and to what degree this is to be done. The program is different every summer depending upon these assessments. Some equipment experiences a very high wear rate and must be repaired or renewed every year. Other machinery is chosen based on logs kept during the campaign and known life expectancy of certain elements.

Much effort goes into cleaning the essential heating surfaces in our process. Although most of this equipment is chemically cleaned at times during operations, a thorough cleaning is performed over the inter-campaign period.

Every season, new issues are identified with our operations and ideas for improving the operating rates and efficiencies of our system come from our employees. If these changes are relatively inexpensive, they are approved and incorporated into our summer budgets. It is a system of continuous improvement and each time a bottleneck is eliminated we purposely try to identify the next one for consideration.

Although our processing equipment is up to date, in many cases, our buildings are of original vintage and require considerable maintenance for them to remain safe and sound. We are on a multi-year program regarding the repair of many un-reinforced masonry buildings and roofing structures.

In addition to daily on-stream repairs, much of our sugar handling, storage and packaging equipment requires annual major maintenance with these systems being out of service. Since we deliver our products year-round, this necessitates some critical scheduling on the part of our logistics and sales representatives. This typically takes place sometime just prior to the campaign when stocks are low. A temporary overstock of packaged products is usually created and/or deliveries are made out of alternate locations so that it is as transparent as possible to our customers.

CAPITAL IMPROVEMENT PROJECTS: Each year, the Board of Directors evaluates a recommended

list of improvement projects presented by management. These projects are those of relatively major expense that will extend the life of buildings, replace obsolete equipment, increase efficiency, protect our finished products, maintain compliance with regulations, reduce operating costs or modernize our operations. The scale of most of these projects requires the services of our engineering department. New systems are designed, drawings are created, equipment is specified and chosen, and compliance with various standards are ensured.

This year's program covers most of the areas mentioned. Of particular note is the sealing and painting of the Carrollton sugar storage silos and the installation of equipment to increase fuel efficiency or flexibility at Sebewaing, Caro and Croswell.

EMPLOYEE TRAINING: A considerable effort is made each year prior to campaign in order to refresh and train employees regarding safety, workplace policies and procedures. New employees are trained and oriented so they are familiar with the requirements and procedures of sugar factory work. The Human Resources, Safety, Agricultural and Operating Departments work together to ensure that the proper information is presented.

Even though we are not slicing sugarbeets during the spring and summer months, our employees are very busy doing critical repairs and capital projects. Also, during our inter-campaign period, employees are able to take much earned vacations which they can't do when the factories are running 24/7. Steam may not be coming out of the factories during these months, but there is plenty of activity inside getting them ready to process the next crop efficiently.

Clockwise from bottom left: Erection of forms for new rock & coke handling system at Croswell; Don Kelcher (E/I Apprentice) shown working on new burner installation for Sebewaing's package boiler; Re-tubing of boiler at Carrollton. Most of the old tubes have been removed and drums are being prepared for installation of new tubes; Contractor (Structural Restoration, Inc.) painting sugar silos at Carrollton; Completed silos, sealed and painted with two-color logo applied; Refurbished rotary vacuum filter ready to be lifted into building at Caro.

MEET THE FACTORY MANAGERS FOR MICHIGAN SUGAR COMPANY

The people who manage our factories need to know the sugar refining process inside and out. Michigan Sugar Company's factory managers have over 100 years of combined experience. They have been educated, trained and have experienced the sugar industry from almost everywhere sugarbeets are grown and processed in the United States. These are the people who make sure your factories operate as smoothly and as efficiently as possible. These are your factory managers.

Dan Mashue (32 years) is factory manager at the Caro factory, which is the oldest operating sugarbeet factory in North America! He began his career as chief chemist with a BA in chemistry from Anderson College in Anderson, Indiana. He advanced to shift superintendent, engineer and factory superintendent. He earned his MBA from University of Michigan while working for Michigan Sugar Company. Dan has been a member of the Caro Community Schools Board for eight years and is currently its president. He is also a board trustee for the Caro Church of the Nazarene. Dan and his wife, Kathy, reside in Caro. They have three sons; Tim (28), Matt (28) and Aaron (25).

Ken Scheffler (30 years) is factory manager at the Carrollton factory. Ken has worked in the sugar industry for 35 years. He started in Chaska, Minnesota as an electrician then moved to Mason City, Iowa as master mechanic. He then worked briefly in Colorado before joining Michigan Sugar Company at Carrollton as chief engineer. Ken then accepted the Factory Manager position at Fremont, Ohio when Michigan Sugar acquired the Ohio facilities. After the Fremont factory was closed, Ken was named factory manager at the Caro factory and subsequently Carrollton. He is a member of the American Society of Sugar Beet Technologists, past president of the Zilwaukee Lions Club and a member of the Bay City Trinity Lutheran Church. Ken and his wife, Marilyn, live in Essexville. They have three children; Cory (41), Kelly (38) and Mindy (31). They also have seven grandchildren.

Greg Soule (27 years) is factory manager at the Croswell factory. Greg started his career as the chief chemist, in Croswell, and worked his way up through shift superintendent to factory manager. Before joining Michigan Sugar Company, Greg served in the U.S. Army and worked for various farmers in the area. Greg has an MA degree in business management and BS in biology from Central Michigan University. He also holds a Wastewater Treatment Plant Operators License from the State of Michigan. He is very involved with the community of Croswell as a city councilman, Charter Commission member and the Tax Increment Financing Authority. Greg also enjoys serving on the Cros-Lex School Improvement and School Construction Committees and is a member of the Croswell United Methodist Church Administrative Board. Greg and his wife, Judy, live in Croswell and have two children; Gregory (21) and Carolyn (18).

Gary Hamlin (30 years) is factory manager at the Sebewaing Factory. His career in sugar began in Brawley, California, as an assistant electrician, advancing to electrician, shift superintendent, assistant maintenance manager and finally production manager. In 1999, Gary was offered and accepted the position of factory manager at the Sebewaing factory. During his career, he also assisted at sugar factories located in Moses Lake, Washington and Herford, Texas. Gary and his wife, Arnita, live just outside of Sebewaing and have two children; Erin (25) and Gary, Jr. (20).

2003 Crop Update *continued from page 3*

BeetCast and deciding how to make it available to growers throughout the beet growing area.

Our 2003 sugarbeet crop got off to a great start and has progressed well through the growing season. Growers have taken extra care to maximize its potential by controlling weeds and diseases. In many ways, it is up to Mother Nature to finish the job. The 2002 crop produced record sugar production and looked hard to beat. All indications are this year's crop could surpass last year's record.

Late May in Don Stecker's field south of Sebewaing.

Early morning in a Sugarbeet Advancement Rhizoctonia test plot with Dr. Willie Kirk's weather data equipment in the foreground.

SUMMER RESEARCH ACTIVITIES UPDATE 2003

WHAT RESEARCH IS BEING CONDUCTED AND WHO IS DOING IT?

Michigan Sugar Company

Michigan State University

Sugarbeet Advancement

SUMMER RESEARCH ACTIVITIES UPDATE 2003

INTRODUCTION

by Corey Guza, Chief Agronomist, Michigan Sugar Company

To improve sugar production, new ideas need to be explored that will have positive short- and long-term impacts on the sugar industry. Every year, Michigan Sugar Company, Sugarbeet Advancement, universities, and industry professionals conduct research trials that focus on improving sugarbeet production. These trials address sugarbeet growers' needs in the Great Lakes region and provide information to the entire sugarbeet industry. This cooperative research maximizes the amount and quality of information produced from these research trials. This cooperation is also critical for effectively conducting research and maintaining the diversity of ideas for future improvements in sugar production. The following provides an update of current research projects that are being conducted by Michigan Sugar Company, Sugarbeet Advancement, and Michigan State University researchers for the 2003 growing season.

Left: Sugarbeet research plots at the Bean and Beet Research Farm Southeast of Saginaw.

Right: Tom Rader, Seed Plant Manager, applying fungicides to Michigan Sugar research plots at the Gilford Beet Receiving Station site.

MICHIGAN SUGAR COMPANY RESEARCH ACTIVITIES

by Jim Stewart, Manager of Research, Michigan Sugar Company

The favorable weather this year has helped establish very high quality research trials that will aid in providing answers to some of our production problems. The official variety trials look particularly good this year. We are testing 42 varieties on five farms in 2003, including 17 varieties that are tolerant to Rhizomania. The main purpose of these "official variety trials" is to identify and introduce higher yielding, higher quality and more disease-tolerant sugarbeet varieties for Michigan Sugar Company growers. The trials are located on Steve Hoard's farm in Breckenridge, Dave Russell's near Akron, Don Stecker's at Unionville, Brent Maust's in Bay Port and on Joel Weber's farm at Ruth. At each of these sites, we have also established plant-to-stand demonstration trials which compare the approved sugarbeet varieties side by side. All of the varieties are also tested for Cercospora leafspot tolerance. There are two coded trials, one in Gilford and another in Sebewaing, which contain 44 varieties and six replications. We are also testing RoundUp Ready and Rhizomania resistant varieties.

In addition to variety trials, we are evaluating new pesticides to stay abreast with the latest in pest control. Several of these trials are designed to evaluate Cercospora leafspot and Rhizoctonia root and crown rot control treatments and strategies. We are testing an alternate formulation of Quadris because it appears that the Quadris formulation is going to be changed.

Evaluating the BeetCast model is another large project this year. The purpose of the BeetCast program is to predict the best time to apply fungicides for managing Cercospora leafspot. An accurate prediction model will improve disease control and save growers money. This is a cooperative program between the sugar companies, Sugarbeet Advancement and Ridgetown College in Ontario. Five weather stations have been established in a trial area from Frankenmuth to Gilford. Several large and small plot trials have been established in conjunction with the weather stations. Michigan Sugar Company's research location is on Richard Sylvester's farm. Several growers in the BeetCast area are using the model to help them decide when to spray. The program can be accessed on the Internet at www.michiganbeets.com by any of our growers. See the *BeetCast* article in this issue by Dr. Ron Pitblado for more detail.

We also have trials looking at pelleted seed that was treated to increase the speed of emergence. These products would be similar to PAT treated seed. Another trial is designed to test different seed treatments which may protect sugarbeet seedlings from damping off organisms while yet another trial is looking at new pyrethroid insecticides applied in-furrow.

Lastly, we are conducting cooperative research with Steve Poindexter (SBA) and Carrie Laboski (MSU) to determine proper nitrogen rates, timings and placements. Carrie has small plot trials and Steve has numerous strip trials throughout the growing area. All in all, this is a very busy year for the research department.

SUMMER RESEARCH ACTIVITIES UPDATE (CONT'D.)

SUGARBEET ADVANCEMENT ON FARM RESEARCH TRIALS

Steve Poindexter, Sugarbeet Extension Agent, Michigan State University

Sugarbeet Advancement established over 20 research trials throughout the growing area of Michigan. Priorities for research were established by the full Sugarbeet Advancement Committee. The committee is representative of the beet industry and is made up of 24 voting members. Trials include varieties, Rhizoctonia, BeetCast, nitrogen and starter fertilizers.

Six variety trials include twelve varieties each. Four of the varieties are new for 2003, two of which are Rhizomania varieties.

Two BeetCast leafspot spray trials are being conducted in Bay and Saginaw Counties. These trials are being conducted in cooperation with the Manager of Research, Jim Stewart, from Michigan Sugar Company and Lee Hubbell from Monitor Sugar Company. Fungicide applications will be applied according to the Weather Station Disease Prediction Model. Four Quadris/Rhizoctonia disease controls were established. Two of the sites are in cooperation with Dr. Willie Kirk, Michigan State University Pathologist and Doug Ruppal, Syngenta Seeds/Hilleshog. These trials include spray-timing rates and disease infection studies.

Four nitrogen management trials are being conducted in cooperation with Dr. Carrie Laboski, Michigan State University Soil Fertility Specialist. Rates of nitrogen range from zero to 200 pounds per acre. Emphasis will be on maximizing recoverable sugar per acre.

Several starter fertilizer trials have also been implemented. These trials include in-furrow applications at planting. Trials are being monitored for starter effects and any yield enhancement.

Most of the Sugarbeet Advancement trials are established replicated/randomized strip trials utilizing grower equipment for planting and harvest. Twenty-two grower/cooperators are participating in field trials this year.

Morning sun shinning through one of Dr. Willie Kirk's weather data gathering stations in a Sugarbeet Advancement test plot.

MICHIGAN STATE UNIVERSITY SUGARBEET RESEARCH ACTIVITIES

by Karen Renner, Professor, Dept. of Crop and Soil Sciences

We have six research projects in sugarbeets this summer. We will be harvesting most of these studies this fall and will have a final report once the sugar samples are analyzed. Thank you to all the growers that cooperated with us in our weed research.

WEED CONTROL IN SUGARBEETS—It was cool and wet this spring. The PRE herbicides provided excellent weed control until mid-June in our research trials. PRE herbicides persist in the soil and control weeds for about six to eight weeks; therefore, if growers want weed control in June, July, and August in any "gaps" in their fields, applying a residual herbicide POST in late May may be important.

POST applications, for the most part, were very effective this year. Standard splits and micro-rates worked well in our plots and in most growers' fields. The two weeds that were difficult to control again this year were common lambsquarters and redroot pigweed.

DUAL MAGNUM—This was the first year of Dual Magnum registration for use in sugarbeets in the U.S. Pre-plant incorporated (PPI) and pre-emergence (PRE) applications are on the label but are not recommended by Michigan State University due to the risk of stand loss. This year, we had cool, wet conditions following sugarbeet planting. Stand loss from Dual Magnum PRE was over 40% at our East Lansing site and 20% at our two grower sites. Growers and fieldmen observed a similar loss in stand at some sites where growers left a check strip or areas of fields without Dual Magnum PRE. We had exceptional sugarbeet emergence across the state this year because soil crusting was minimal. Therefore a stand loss of 20% was 'acceptable' this year. MSU will continue to recommend not applying Dual Magnum PPI or PRE to avoid the risk of stand loss when rains occur in the days between beet planting and emergence.

NEW BETAMIX AND PROGRESS FORMULATIONS—Michigan State University, Michigan Sugar Company and Monitor Sugar Company are testing new Betamix and Progress formulations again this year. These formulations are different than

Red Michigan State University flags marking test plot treatments in Lloyd Hecht's sugarbeet field East of Saginaw.

what we tested in previous years. Isopherone is one of the ingredients in the current Betamix and Progress formulations. Isopherone-free formulations may be required by U.S. EPA and Canada in the not too distant future; therefore, manufacturers are developing isopherone-free Betamix and Progress formulations.

ADJUVANTS AND MICRO-RATES—We compared sugarbeet response and weed control following micro-rates of Betamix and Progress that were applied with either MSO at 1.5%, Kinetic at 0.125% or Reddy-it at 0.25 and 0.5%. MSO provided the best weed control, particularly of common lambsquarters. The other adjuvants were slightly less injurious to the sugarbeets (sugarbeets were about 10% smaller in the Betamix micro-rate + MSO treatments) but the weed control was only fair. MSU will continue to recommend MSO with micro-rates for optimal weed control.

QUADRIS AND AMISTAR—Amistar is a new formulation of Quadris that is a dry formulated product. We compared sugarbeet response to Quadris and Amistar, when applied alone and when combined with standard splits and micro-rates. We also determined: 1) the time needed between herbicide applications and Quadris/Amistar applications, and 2) whether we could add Dual Magnum to the Quadris/Amistar + micro-rate application. Syngenta will decide this winter whether they will market Amistar in future years for Rhizoctonia control in sugarbeets.

NITROGEN, WEEDS, AND SUGARBEETS—This is a part of Dr. Carrie Laboski's project that is studying optimum nitrogen rates and timings in sugarbeets. We preplant broadcast and incorporated three rates of nitrogen in mid-April, late April and early May. We then planted (yes, planted) five different weed species to supplement the existing weed seeds in the field. We monitored biweekly weed emergence and growth. We want to determine if nitrogen applications change the emergence patterns or growth rate of various weed species. We also did this experiment in two farmer's fields (without seeding any more weeds!!) to see if nitrogen influenced weed emergence in 2003.

SOIL FERTILITY RESEARCH

by Carrie A.M. Laboski, Ph.D., CPSSc Assistant Professor and Extension Specialist, Dept. of Crop and Soil Sciences

I have two ongoing soil fertility research projects. The first project is to determine the optimum nitrogen (N) application rate for beets following corn compared to a soybean/dry bean rotation. Generally, we know that beets following corn require a little more N; however, we do not have enough information on which to base a recommended amount, other than to say about 30 lb. N/a. As part of this study, I have a graduate student, Amy Guza, assessing the impact of N application timing on optimum N rate for beets following corn. For example, is more N required if all the N is applied pre-plant compared to side dressing? We are also evaluating pre-plant and pre-side dress nitrate soil tests for effectiveness in fine-tuning N application rates. Additionally, the Illinois nitrogen soil test, a newly developed test, is being evaluated to determine its ability to improve N recommendations. All of the data obtained from these plots will be analyzed based on sugarbeet yield and quality, along with potential environmental impacts. The overall goal of this project is to provide economically and environmentally sound N recommendations. This research was conducted at three grower locations last year (John Spero, Matt Marzluft and Lowell Bebow) in addition to two plots at the Bean and Beet Research Farm in Saginaw. This year, I have three plot locations with two growers (Loren Humm and Lee Butts) and

two plots at the Bean and Beet Research Farm.

The second project is to determine the need for starter fertilizer on soils with high soil test phosphorus (P) levels. This has become an important topic for growers as soil test levels on sugarbeet ground have risen to where the need for P is minimal to none. Additionally, many growers are curious about in-furrow starters as they have heard about positive results in other crops or with beets in other growing regions. The goals of this study are to determine if P fertilizer is needed on high P soils and if in-furrow starters offer a yield advantage. The starter treatments that are being compared to the control (no starter) include: N only, P only, or N+P in a traditional 2x2 starter fertilizer band; 2, 3, or 4 gal/a 10-34-0 in-furrow; and 4.5 gal/a 6-24-6 in-furrow. This study was started this year with two locations; the Bean and Beet Research Farm and Loren Humm's farm. I will need at least one more year of data combined with data from Steve Poindexter's Sugarbeet Advancement plots in order to make solid recommendations regarding the practice of starter fertilizers.

Funding for the N research was obtained from a USDA Special Grant for sugarbeets and Sugarbeet Advancement. The starter fertilizer research is being funded by Sugarbeet Advancement.

CONCLUDING COMMENTS

Corey Guza, Chief Agronomist, Michigan Sugar Company

The ongoing research discussed in this update is coordinated and conducted by Michigan Sugar Company, Sugarbeet Advancement and Michigan State University, along with researchers from private industry, other sugar companies, other universities, USDA and MDA. It is not intended to be a comprehensive list of all sugarbeet research being conducted in Michigan this year. For example, Dr. T. M. Harrigan of MSU is conducting on-farm soil tillage research at a number of sites this year and many other university professors, grad students and assistants have research projects related to sugarbeets. A number of private companies conduct research focused on the safety and efficacy of products used for pest management in sugarbeets. Seed companies test new sugarbeet varieties and explore new methods of processing seed. Many universities and government agencies throughout the United States and the world are exploring new ideas to enhance sugar production. With a wide range of sources of data on sugarbeet production available, constant management and interpretation of information is critical when applying knowledge gained from research to the sugar production system.

Intertwined through all of this research effort are your company Agriculturists. They are often the ones who find willing cooperators, coordinate between cooperators and research people, help lay out plots, collect samples and occasionally even get to assist with harvesting some of the plots. This article is provided to give our readers and our grower-owners a perspective as to how much research is being conducted, how many people are involved and how much work goes into finding answers to production problems, developing new sugarbeet varieties and controlling pests in our grower-owner's sugarbeet crop.

Participants of this year's Beet Sugar Development Foundation's Beet School listen as USDA researcher Dr. Mitch McGrath talks about research into sugarbeet genetics.

LIME:
ANOTHER VALUABLE BY-PRODUCT FROM THE PRODUCTION OF SUGAR

by Keith Kalso, Agricultural Manager, Croswell District

Besides producing refined white sugar, beet pulp and beet molasses at our beet factories, lime is generated which can be a valuable component to your soils' health and improve your crop yields. Lime is used to neutralize soil pH and condition acid soils so they respond to proper fertilization. Long-term research on soil health in Michigan and other Midwestern states indicate that each dollar spent on agricultural lime, when applied according to soil tests, returns between $5 and $10.

SOIL ACIDITY—When lime is applied to acidic soils, it acts to increase soil pH thereby reducing soil acidity. This acidity is caused by a high concentration of hydrogen ions being held on the clay and organic matter particles in the soil. pH is the measure of the degree of acidity. A pH value below 7.0 is acid, with 7.0 being neutral, and a value above 7.0 being alkaline (non-acid). The hydrogen ion content of a soil must be reduced to lower acidity. When lime is applied to soils, a reaction in the soil takes place causing calcium to be released into the soil solution. The calcium replaces (or removes) hydrogen ions from the soil particles and therefore causes a reduction in soil acidity. A simple soil pH measurement is used to determine soil acidity.

WHY IS LIME A BY-PRODUCT OF SUGAR PRODUCTION? Lime utilization in the sugar factory takes the form of a purification agent required to process beets into white sugar. This purification agent is produced in the plant's lime kiln by introducing limestone with foundry coke, as a fuel, for the burning of the limestone. This process forms calcium oxide and carbon dioxide gas. The calcium oxide product is used to absorb the non-sugars from the beet juice. A mixture of lime and water is metered into the clarification process where it reacts with the naturally occurring non-sugars in the sugarbeet juice to form solids. The carbon dioxide gas (produced from the burning process in the lime kiln) is introduced to the process in a carbonation step that precipitates out the solids (non-sugars). The precipitate, called slurry, is vacuum filtered for the removal of any additional sugar. The remaining product, called lime cake, is sent via a liming system to the lime pond for drying, storage, and ultimate use as a soil additive.

BENEFITS OF LIME—Some benefits of liming acidic soils (all of which have the general benefit of improving crop yields) are as follows:

- Liming increases the availability of nitrogen, phosphorus, potassium, magnesium, calcium, sulfur, boron, and molybdenum. Most nutrients are available to the greatest extent at a pH of 6.0 to 7.0.
- Application of lime is needed to neutralize soil acidity caused by many fertilizers.
- Liming increases soil microbiological activity, which accelerates decomposition of crop residue and releases nutrients to the soil. This also improves the physical condition and soil structure of the soil.
- Sugarbeet lime application supplies calcium and nitrate nitrogen, essential components for plant growth.
- Liming reduces aluminum and manganese concentrations in the soil to levels that are not harmful to crops.
- Liming promotes longevity of legume stands, due to the high calcium requirements of these plants. It also increases these plants' capacity to fix nitrogen.
- Sugarbeet lime application improves stand, root growth, and sugar content of sugarbeets.

HOW AND WHEN TO LIME— The equipment used for spreading lime should spread the material evenly. Lime will be mixed and incorporated into the soil more evenly by using a disk or field cultivator before plowing. If possible, the lime should be applied and worked into the soil the year before the crop with high lime demands is planted. The application time utilized by most growers is late

summer or early fall (after wheat harvest) because there is normally less soil compaction caused by handling and spreading equipment on dry late-summer soils.

AVAILABILITY OF LIME AT THE MICHIGAN SUGAR COMPANY FACTORIES—The combined lime production of Michigan Sugar Company is in excess of approximately 100,000 tons per year. Continued improvements to company lime ponds, equipment, conditioning, excavation techniques, and planning have resulted in a lime product that is available on a daily basis and can be spread immediately to your land.

Loading of lime is available each day that the plant is open through the intercampaign period, depending on weather. Lime is loaded by company employees on a no-charge basis. **Hours of loading are 7:30 a.m. to 3:00 p.m.**

A User Agreement must be filled out before removing any lime. This is an agreement created by the Michigan Department of Environmental Quality (DEQ) and can easily be completed the day of the haul.

To custom transport the lime (commercially) to farms other than your own, a Trucking Agreement/ Liming License must be obtained from the Michigan DEQ.

Who to contact for lime loading and local questions

Factory Department	☎
Caro Security	(989) 673-7560
Caro Agriculture	(989) 673-3126
Carrollton Factory	(989) 752-1032
Croswell Security	(810) 679-3740
Croswell Agriculture	(810) 679-2240
Sebewaing Factory (Cindy)	(989) 883-3201
Sebewaing Agriculture	(989) 883-3200

TABLE 1

Nutrient properties of sugarbeet lime

	Units	Value
Phosphorus (Olsen)	lbs./ton	1.00
Potassium	lbs./ton	0.36
Calcium	lbs./ton	570
Magnesium	lbs./ton	1.982
Nitrate Nitrogen	lbs./ton	5.5
$MgCO_3$	%	3.1

Physical properties of lime

	Units	Value
Neutralizing Value	%	83–89
Moisture	%	10–15
pH value		8.8
Organic Matter	%	8.0
CEC	e/100 g	23.2
$CaCO_3$ Equivalent	lbs./cu yard	1362

The $CaCO_3$ (calcium carbonate) equivalent compares sugarbeet lime to pure calcium carbonate. One cubic yard of sugarbeet lime will neutralize the same amount of acidity as 1,362 pounds of calcium carbonate.

Below: Lime being applied to a local area farm field.

grower IN THE NEWS

KOTH FARMS—A SWEET OPERATION

by Jeff Elston, Agriculturist, Sebewaing District

From left to right: Don, Kelli, Geraldine and Merle. Together they are Koth Farms.

Clarence Koth bought a 200-acre farm six miles east of Kinde and moved his family there in 1942. He started a dairy operation, and raised cash crops with the help of his son, Merle, who started farming in 1950. After Clarence retired in 1980, Merle's son, Don, began working on the family farm after graduating from high school in 1988. They have farmed together ever since. Merle's wife, Geraldine, and Don's wife, Kelli, handle the farm accounting and record keeping, when they are not assisting their husbands by driving trucks and tractors.

From its humble beginning of 200 acres, to its present day size of 2,350 acres, the farm operation has added one full-time employee, Duane Pleiness, to help with the daily workload. The Koths started growing sugarbeets in 1995 and eliminated their dairy operation in 1996. The farm operation currently raises sugarbeets, corn, wheat, dry beans, and soybeans in a four- to five-year rotation. They now finish 7,500 hogs per year on the farm and assist East Huron Enterprise with their hog farrowing operation.

The Koths plant most of their beets on wheat stubble after hog manure has been applied the fall before. The rest of their sugarbeet crop follows corn. Everything is chisel-plowed in the fall to help reduce wind erosion during the winter and spring. The sugarbeets are planted with a John Deere vacuum planter in 30-inch rows, utilizing pellets from all four seed companies, planted at a 4.25-inch seed spacing. For weed control, the Koths spray RoundUp before the sugarbeets emerge and micro-rate them after emergence. This practice allows them to cultivate only once, if needed, to control weeds. With the assistance of the Michigan Sugar Company Agricultural staff, sugarbeet yields have increased for the Koths during the last several years.

The Koths have purchased a six-row Wilrich harvester and use a six-row Alloway to defoliate the sugarbeets. The beet defoliator is Geraldine's during harvest, as she does the majority of the topping. They haul their sugarbeet crop to the Meade receiving station in the Sebewaing District or the Verona receiving station in the Croswell District, depending on field location. This is the only time of year the family hires part-time help for the farm.

In addition to farming, the Koths are involved in their community. Merle is an elder at St. Peter's in Kinde and is on the Board of Review for Huron Township. He is a former vice president of the Farmers Cooperative in Kinde and was a delegate for the Michigan Milk Producers Association. Merle and Geraldine also have three daughters who still reside in Huron County.

Don is a member of the Sebewaing District Board and is the Board's representative for the 4-H and FFA participants involved in the sugarbeet project. He is the secretary for the Kinde Farmers Cooperative and is a past financial and recording secretary for St. Peter's, a position he has relinquished to his wife Kelli. Don said he enjoys working with the 4-H and FFA sugarbeet project participants and hopes to continue in this capacity. "We need to continue the 4-H/FFA program to keep our children interested and educated in raising sugarbeets. If we don't, who will be around to own our factories in another 20 years?"

grower IN THE NEWS

WHERE THE FAIR WINDS BLOW AND THE SUGAR BEETS GROW

By Wayne Martin, Agriculturist, Croswell District, Ontario

At the southern tip of Lake Huron is the city of Sarnia (Ontario, Canada). On the eastern edge of the city is the base of operations for Fairwind Farms and home to Mark and Anne-Marie Lumley. A mixed farm operation, Fairwind Farms got its name from the "fair winds" that influence the area. This farm is complete with a dog, cats, pigs (including Rosie, the potbelly pig), goats, sheep, donkeys, horses, rabbits, swans, geese and ducks. Reminds me of a tune I once heard, less the cow and some chickens.

Mark and Anne-Marie Lumley have three children; Olivia (7), Jaden (5) and Ryan (born June 2003). Mark plays the woodwinds for the band at his church, River City Vineyard, and for the community theatre. He also plays saxophone in a blues band.

In 1992, Mark graduated from the University of Western Ontario and Fairwind Farms was established as an ownership transition vehicle. Mark earned Bachelor Degrees in Music and in Education. After graduating from university, Mark taught high school for seven years, until the year 2000, when he left teaching to assume the responsibility of managing Fairwind Farms. This event marked the midpoint of the transition of ownership of the farm business from Reginald and Judy Lumley to Mark and Anne-Marie Lumley.

From left to right: Anne-Marie holding Ryan, Mark, Olivia, Judy, Reg and Jaden Lumley.

Fairwind Farms operates 3,000 acres of land in Lambton County. It employs eight full-time and three to five seasonal employees. The farm's crop line-up and field rotation consist of corn, soybeans, wheat and sugarbeets. The operation houses 375 sows for farrow to feeder pig, with some finishing. Mark has been successful incorporating his crops into niche markets and services with all of the sectors of his operation. Corn and wheat are for feed and bedding, respectively. Fairwind Farms is in the Select Grower Program with Pioneer for which it produces Round-Up Ready soybean seed. The operation produces sugarbeets and hogs for companies in which it enjoys ownership.

The operation is also in the business of custom planting, spraying and harvesting for other local farmers. There are two trucks on the road, year round, hauling grain, beets and beet pulp. Fairwind Farms is often one of its own best customers due to its vertical integration and by affiliation to sectors within its own enterprise.

Fairwind Farms is also a member of the Progressive Pork Producers (PPP), a new generation co-op founded in 1996. PPP bought a packing plant in Kitchener, Ontario, in 2002. Its shares are tied to hook space much in the same way as Michigan Sugar Company's shares are tied to acres, with the right and obligation to produce product. PPP focuses primarily on quality cut meats for niche markets, particularly in Japan.

Fairwind Farms is also a shareholder in Lambton Beet Harvesting Inc., founded in 1998. Lambton Beet is a group of sugarbeet growers that pioneered the realisation of field-cleaned beets for direct shipment to the processor. This company has evolved from modified beet carts, to modified potato stackers, to its present-day technology, the German-made Euro Maus that cleans and loads field-piled beets. Lambton Beet will handle 55 to 60 thousand tons of sugarbeets for processing at Michigan Sugar Company's Croswell facility.

Mark's philosophy for the farm business is large volume, low mark-up, keep it simple. Vertically integrate and diversify within the realm of your expertise.

4-H PARTICIPANTS ENJOY A DAY OF BASEBALL

Members of the 2003 Michigan Sugar Company 4-H and FFA Sugarbeet Program attended an afternoon baseball game in Lansing on July 23. The event was held at the beautiful Oldsmobile Park in downtown Lansing. The Lansing Lugnuts (a farm team of the Chicago Cubs) played the Fort Wayne Wizards in an exciting game that went down to the bottom of the ninth inning. The Lugnuts scored two runs in the ninth inning to earn a 3-2 victory.

There were 163 project participants, leaders and family members in attendance. A fabulous cookout was held at the Tailgate Terrace behind the right field fence before the game started.

The event was great fun and enjoyed by all.

Above right: A group of students, family members and adults from the Caro and Carrollton areas stop for a picture before heading into the stadium.

Below right: The students, family members and adults from the Croswell area saw this as a good spot to have their picture taken also.

MICHIGAN SUGAR TEAMS UP WITH WNEM TV5

Michigan Sugar Co. is sponsoring several segments of the WNEM TV5 Weather Garden this year.

At far left, Chief Meteorologist Darrin Bradley interviews Charlie Bauer of Laracha farms in their field north of Frankenmuth. Charlie is explaining different sugarbeet seed treatments to Darrin's audience.

At left, Darrin interviews John Spero in his field south of Saginaw as John talks about some of the diseases that may harm a growing sugarbeet crop.

MICHIGAN SUGAR SCHOLARSHIP AWARDS

ALBERT FLEGENHEIMER MEMORIAL SCHOLARSHIP

Michigan Sugar Company recently awarded the Albert Flegenheimer Memorial Scholarship to Andrew Volmering, son of Daniel and Ladonna Volmering, of Ruth, Michigan. The $2,500 scholarship is presented annually in recognition of academic excellence and community involvement. Andrew Volmering graduated from Harbor Beach High School where he achieved a 3.98 grade point average. Andy was Vice President and Representative of the Student Council, a member of FFA Parli-Pro Team, the FFA Ag Mechanics Team, National Honor Society, 4-H member and Teen Leader and has been a 4-H Sugarbeet Project Prestige Winner for four years. He will be attending Michigan Technological University to work towards a Bachelor's degree in Mechanical Engineering with a Minor in Business Management. His goal is to be able to design equipment for the military or the agricultural industry.

The Albert Flegenheimer Memorial Scholarship has been committed to providing financial assistance to high school seniors in the Michigan sugarbeet growing area since 1979. The scholarship is given in memory of Albert Flegenheimer, chairman of Michigan Sugar Company from 1963–1970.

PHIL BRIMHALL MEMORIAL SCHOLARSHIP

The Phil Brimhall Memorial Scholarship has been awarded to Sara Stecker, daughter of Donald and Nancy Stecker of Sebewaing, Michigan. This is the third year this $1,000 scholarship has been given to a high school senior. Sara Stecker has achieved a 3.8 grade point average while being an active member of the FFA. She has been a 4-H sugarbeet project Prestige winner for four years. Sara will be attending two years at Delta College and then transfer to Michigan State University in the field of Horticulture/ Floriculture.

The Phil Brimhall Memorial Scholarship was initiated by Delores Brimhall through Michigan Sugar Company in memory of her late husband. Phil was the Chief Agronomist for Michigan Sugar Company for 33 years.

CONTACT YOUR LOCAL MICHIGAN SUGAR COMPANY AGRICULTURAL OFFICE FOR SCHOLARSHIP APPLICATION INFORMATION.

Left to right: Stacey Helewski, Jackie Ann Puvalowski, and Emily Ellison.

THE 2003 MICHIGAN SUGAR QUEEN BEGINS HER REIGN

The 2003 Michigan Sugar Queen is 19-year-old Jackie Ann Puvalowski of Ruth, MI. Crowned at the Michigan Sugar Festival in Sebewaing on June 20, Puvalowski has a busy year ahead of her. She will represent the sugarbeet industry as she visits with public officials, food industry leaders and the general public. Her schedule includes many official appearances during the year, often riding on the Pioneer Sugar float in over 20 parades throughout Michigan.

Jackie, the daughter of Claude and Denise Puvalowski of Ruth, Michigan, is currently pursuing a degree in medical technology at Michigan State University.

Michigan Sugar Company solely sponsors the Michigan Sugar Queen competition. As the sponsors, the company and grower-owners provide the queen with a $2,000 scholarship for use at the university of her choice. The first runner-up, Stacey Helewski of Bad Axe, is awarded a $1,000 scholarship and a $750 scholarship is given to the second runner-up, Emily Ellison of Reese.

CO-OP FINANCIALS
AN UNDERSTANDING

Denis Boissonneault, Chief Financial Officer

As our company continues to grow, it is helpful that we all have a basic understanding of the financial reporting of our organization. This article will discuss some basic principles dealing with our financial reporting…

The Audit
Balance Sheet
Statement of Operations

THE AUDIT—Michigan Sugar Company's bylaws require that we have an annual audit. An audit is a comprehensive review of financial statements conducted by an independent auditor. During this review, the auditor verifies whether standard accounting procedures have been consistently followed. Upon completion of the audit, the auditor issues a statement indicating their belief that the financial statements are fairly stated and accurate.

An independent audit, conducted by an outside auditor and containing an unqualified report, is a key tool a board of directors utilizes to help them effectively oversee their cooperative. The Rehmann Group in Saginaw currently conducts our audit.

Each organization can and should outline the specific financial statements that best fit its control and decision making needs. While audit reports for different types of cooperatives contain different types of statements, all audits are required to have a Balance Sheet and Statement of Operations, as well as any other pertinent information regarding the financial condition of the company.

BALANCE SHEET—The Balance Sheet serves many functions. It summarizes what the company owns and what it owes, outlines the financial position of the company at a specific point in time and identifies what portion of the company's assets are owned by the patrons and what is owned by creditors.

"Each organization can and should outline the specific financial statements that best fit its control and decision making needs."

Everything an organization owns must be financed through owner equity or debt. For this reason, assets must equal liabilities, plus owner equity. A balance sheet, in order to be accurate, must literally "balance."

The Balance Sheet is made up of assets, liabilities and equities.

Assets are the things the organization owns. Assets are usually organized in three categories: Current Assets, Non-Current Assets and Fixed Assets.

Current Assets are items that can generally be sold, collected or in some other way converted to cash within one year's time. Cash, accounts receivable, pre-paid expenses and advance payments are examples of current assets typically found on a cooperative balance sheet.

Non-Current Assets are items that cannot be converted into cash within one year's time. A common example of non-current assets is investments in subsidiaries or other cooperatives.

Fixed Assets include buildings, facilities, land, vehicles and equipment. They are shown on the balance sheet at their book value. Book value is calculated by taking the original purchase cost of an asset and subtracting accumulated depreciation.

The Liabilities section of the balance sheet outlines amounts owed to outside parties. It is typically divided into two parts.

Current Liabilities represent amounts owed and payable within 12 months. Examples of current liabilities include accounts payable, accrued expenses, the cash portion of patronage refunds and the current portion of long-term debt.

Non-Current Liabilities (also know as Long-Term Liabilities) are amounts owed and payable in more than one year. The most common example of a long-term liability is long-term debt.

The Patrons' Equities section of the balance sheet lists the amounts of ownership members have in the cooperative. This section is sometimes referred to as Owners' Equity.

Equity in a cooperative is made up of stock, common and preferred, and capital reserves.

Stocks include both stock purchased to become members of a cooperative (common) and stock purchased giving the owner the right and obligation to deliver one acre of beets per share (preferred).

Capital reserves, commonly referred to as patronage or retainage, are amounts set aside from past profits to enhance the cooperative's working capital. Without capital reserves, any operating losses would be taken out of members' stock values.

STATEMENT OF OPERATIONS— The Statement of Operations performs many functions. It matches the sales recorded for the cooperative with the costs necessary to produce and operate the business over a given period of time. It summarizes the net earnings or losses of the company and is often considered a "report card" for the organization's operating performance.

The basic business equation in the statement of operations is:

Sales – Cost of Sales – Expenses = Net Earnings

Sales in our cooperative are recorded as a result of the shipments of refined sugar and by-products. There are several external factors that can influence sales. The economy, competition, government programs and certainly the weather/crop conditions are all factors in which the cooperative's management has limited control.

Many of the factors that influence sales can also affect Cost of Sales. Internal factors can also influence the cost of sales. Examples of these costs may be energy, labor, benefits and insurance. Management continuously monitors these expenses to be sure they are minimized and used efficiently.

The third element of the basic business equation is Expenses. Expenses may be influenced by a number of factors. Such influences include, wages, professional fees, regulatory expenses, costs of distribution, marketing and advertising, to name a few. Others would include the cost of repairs, depreciation on existing assets, insurance and interest on short-term and long-term debt.

The final piece of the basic business equation is Net Earnings. Net Earnings is basically the amount that is left after all sales, with the appropriate cost of sales, and all expenses are recorded. The company, to increase its equity and strengthen the financial condition of the company, may decide to retain all or a portion of this amount from time to time. It also may be fully or partially distributed to the patrons of the cooperative, at the end of the year or at some time in the future.

In a future edition, we will discuss patronage, unit retainage and revolving equity. The use of these concepts are very powerful tools available to cooperatives. These tools assist with increasing the financial stability of the co-op.

The business structure of a cooperative is very unique. Discussing some of these unique organizational principles will help our shareholders better understand the financial stability of our company, both now and in the future.

community WINDOW

A "SWEET" PLACE TO LIVE

by Dick Leach, Director of Community and Government Relations

We don't usually deliver and set up displays at a community event where company personnel will not be present; however, we did for Katie Jackson of Cass City. She wanted a sugar display in the Municipal Building for the Cass City Open House at the end of May. Katie is a delightful person, in love with her community and dedicated to making it a great place to live. Every community that I know of has people dedicated to make their community a special place to live. As I drove back to Saginaw that beautiful morning I couldn't help thinking about the privilege of being part of this area of God's earth. I have had the good fortune of traveling all over this world, but I have not found a better place to live and work than the sugarbeet growing areas of Michigan, Ohio, and Ontario. From the sugarbeet fields in Ohio to the tip of the Thumb and from Dover Centre, Ontario, to Greenville, Michigan, the people are the best.

It seems like every community has a homecoming or festival event and most counties have a fair. What a great way to visit with neighbors and feel part of the local community. These events give Michigan Sugar Company the opportunity to show off their float, the sugar queen and her court. The queen's float carries a large Pioneer Sugar bag with our logo that is seen by thousands of people.

This year's Sebewaing Sugar Festival was a special event. In addition to the crowning of the new Sugar Queen and her court, and it being the 39th Annual Sugar Festival, Sebewaing Township celebrated its 150th anniversary. On Sunday morning of the festival, they have a community worship service. The speaker this year was Wally Bronner from Frankenmuth, owner of the largest Christmas store in America. Wally asked me for some information about sugarbeets in the Thumb. After the festival, he sent me a copy of the outline he used for his presentation and thanked me for the information about sugarbeets. He said he used about 1/1000th of the information that I sent him. Well, maybe I overdid it a little, but I like to tell people about sugarbeets.

Isn't it great that our world is made up of so many people who are in love with their community and are willing to make it a better place to live? If you want to get to know really great people, don't go to the newspaper or the television, just look around you—maybe look in the mirror.

Have a great fall!

Michigan Sugar Company's float at the Tulip Festival Parade earlier this summer in Holland, Michigan.

Just when you thought you knew everything there was to know about growing sugarbeets, now you have to know the other side of the business, too.

It used to be that when harvest was over you could breathe a long sigh of relief. The sound of that last truck making its way back from the final haul was pure music. Not anymore. Not if you're part of the new majority — an owner in a sugar cooperative.

While the end of harvest does signal well-deserved accolades, there's more to tackle. Sugar marketing. Employee relations. Inter-campaign maintenance. Loan payments. Grower retains.

Reclaiming control.

Taking charge of your future is one very tough, very smart, incredibly brave decision. But everyone banding together for the greater good of all isn't that new of an idea. Neighbors working hand-in-hand to thrive in the new land was the backbone of the American dream. That dream continues today — with you at the root of its success.

How do you make it in your new role?

The choice of growing sugarbeets has evolved into the responsibility of getting the sugar to its final destination. And it all begins with the right seed. You need varieties that are bred just for your field. The climate. The diseases. The insects. Hilleshög breeds varieties to withstand even the toughest conditions. So while you're learning everything else there is to know about sugarbeets, you can count on Hilleshög for everything there is to know about sugarbeet seed.

Growing your success. That's Hilleshög.

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PIONEER NEWSBEET

Fall 2003
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