

FALL 2006

# THE NEWSBEET

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

CELEBRATING 100 YEARS OF GROWING,  
PROCESSING AND MARKETING HISTORY





*By Mark Flegenheimer,  
President and CEO*


This year marks a truly historic year for Michigan Sugar Company as we celebrate our 100th anniversary as a company. Few corporations in

America can say that they have been in business for 100 years. Many aspects of our business have changed during the last century and a number of articles in this issue of the Newsbeet discuss the progress that has been made in various facets of our business.

One thing that has not changed, however, is the determination and commitment of both our growers and our employees. Few would have imagined that a crop once harvested by pitchfork and horses could someday be harvested eight rows at a time by GPS-guided 200 horsepower tractors. A century ago, no one would have believed that today we could slice 20,000 tons of beets in 24 hours; as their average factory would have required over a month to process the same tonnage. Throughout the years, both growers and owners of Michigan Sugar Company have had faith, vision and dreams that sugarbeets could be grown and processed more efficiently. Our forefathers' vision was right. Beet yields which once averaged 10 tons to the acre with 14 percent sugar content now average over 20 tons to the acre at over 18 percent sugar. Beet factories which once had an average extraction of 65 percent now average over 80 percent. Those dreams of a better, more economical way to make sugar are now a reality and part of our history.

In the coming years, we must continue to work together and believe in the future if we are going to succeed. New technologies such as biotech/Roundup Ready beets or steam dryers for pulp are just a couple of examples of improvements and enhancements we are currently working on implementing in order to make us competitive and prosperous for the next 100 years. Other advancements will continue to become available which we will need to embrace as we move ahead in the next century.

In 1906, Michigan Sugar Company was formed by the merger of six independent companies and in 2004 Michigan Sugar Company and Monitor Sugar Company merged to create one company in the State of Michigan. More importantly, the ownership of the company and the industry is now completely in the hands of our growers. As a grower-owned cooperative, we must work together and have a common vision in order to survive and prosper for the next 100 years.

I believe the quote by Eleanor Roosevelt which states, "The future belongs to those who believe in the beauty of their dreams" sums up the feelings and beliefs of our forefathers. They had a dream that sugarbeets could profitably be grown in the fertile soils of mid-Michigan and processed in factories throughout the Thumb while selling the sugar, pulp and molasses to customers in the Great Lakes region. Their dreams became a reality. I think our future is just as bright as it was 100 years ago if we continue to believe in the beauty of our dreams. 

## TABLE OF CONTENTS

<b>Root of the Business</b> .....	<b>2</b>
<b>2006 Crop Update</b> .....	<b>3</b>
<b>Celebrating 100 Years of Sugar History</b>	
<b>Washington Scene</b> .....	<b>5</b>
<b>Michigan's Beet Sugar History</b> .....	<b>8</b>
<b>Highlights from 100 Years</b>	
<b>of Sugarbeet Production</b> .....	<b>14</b>
<b>Michigan Sugarbeet Research:</b>	
<b>Past to Present</b> .....	<b>20</b>
<b>Personalities and People</b> .....	<b>22</b>
<b>The Sweetest Girl in the World</b> .....	<b>24</b>

<b>Grower-Owner Processing</b>	
<b>Makes Full Circle</b> .....	<b>26</b>
<b>2006 Scholarships</b> .....	<b>28</b>
<b>Improving the Balance Sheet</b>	
<b>Through Retentions</b> .....	<b>32</b>
<b>Summer Research: 2006 Sugarbeet</b>	
<b>Advancement Research Trials</b> .....	<b>34</b>
<b>Research Update – Summer 2006</b> .....	<b>36</b>
<b>4H/FFA Summer Fun</b> .....	<b>40</b>
<b>Growers in the News</b> .....	<b>41 &amp; 42</b>



# 2006 CROP UPDATE



*By Paul Pfenninger,  
Vice President of Agriculture*

The growing season started on Monday, March 27, and to date, the season has progressed in a very nice way. Early planting is always a plus for the entire year and we have been very fortunate to be blessed with weather for early planting for the last five years. This year, we planted approximately 3,000 acres in March, with the majority of our crop planted in mid-April. We were 90 percent planted by April 24 and completely planted by May 1.

We have 163,087 acres for harvest with only 5.1 percent, or 8,300 acres, replanted this spring. In general, crop emergence was not as good as the last couple of years, but we have a good stand of beets in most fields. A high sugarbeet population generally leads to a higher yield – anything less than 150 beets in 100 feet of row is considered light. Unlike last year, applying herbicides timely to control weeds was not as challenging. Overall, we have done a good job controlling weeds, but there are still fields scattered across the countryside which need some tender loving care relative to late season weed concerns. Weeds are always a problem in the field and an even bigger

concern when they arrive in a truck at one of our receiving stations. There is no way to store a load of beets if it is delivered with weeds. Please make every effort to rid your beets of unwanted weeds.

The potential of this crop was realized when row closure occurred by the first day of summer, June 21. Since that time, we have received adequate and very beneficial rains. There are isolated areas where heavy thunderstorms have damaged some low lying areas of beet fields, but for the most part, this crop had adequate moisture and hot, sunny days through early August. Needless to say, we are very optimistic about this crop.

Our three-year average is 21.13 tons per acre and 18.36 percent sugar. We are very hopeful that we will reach, and even surpass, both averages for the 2006 crop. We certainly have the potential! We have harvested 3.4 million tons each of the last two years as a combined cooperative in Michigan. If we have an “average” crop once again, we should expect to harvest another 3.4 to 3.5 million tons of beets. Every ton per acre is equal to another 163,000 tons or about eight days of slice. With the early planting season, early row closure and ample rain through August, we have even higher expectations for sugar and quality. Quality will depend upon excellent control of Cercospora leafspot, which did not happen in 2005. Hopefully, we have learned our lesson from 2005 and did a much better job of controlling this disease in 2006.

Harvest began on schedule on September 14th. It is always easier to slice beets in September than to end a campaign in mid-March. We do have a new early delivery schedule which should entice growers to harvest early. We paid \$8 per ton for beets delivered by September 15, and we have a sliding scale for beets delivered after that date which is significantly better than the previous three years. The schedule, along with the explanation of the early delivery sugar premium can be found in your 2006 Michigan Sugar Company Grower Agreement.

We are excited about this crop and harvest is off to a good start. Please make every effort to remove late season weeds and deliver clean, well topped beets.

Have a fantastic and safe harvest. 

## **THE NEWSBEET**

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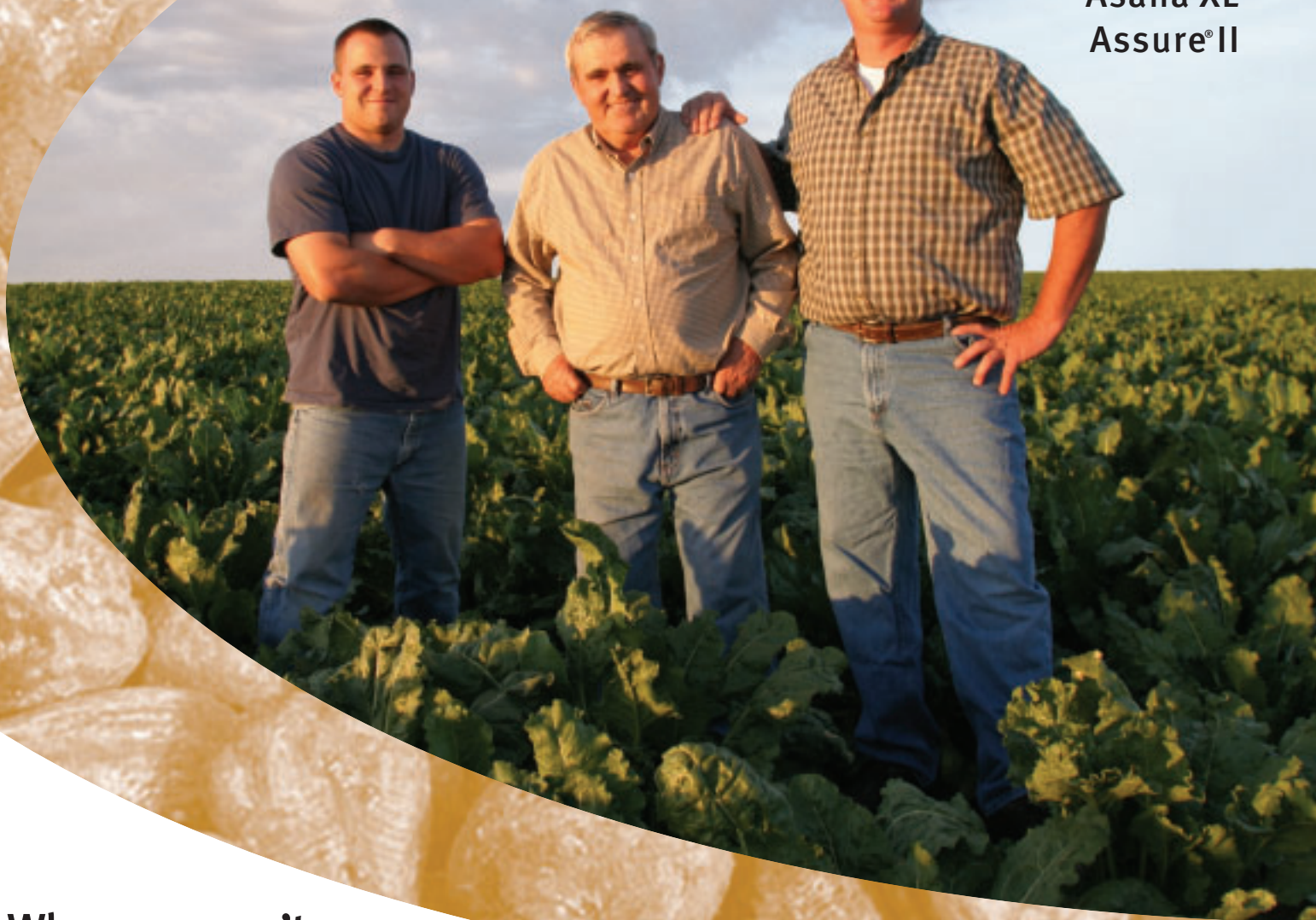
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## WASHINGTON SCENE: HISTORY OF THE U.S. SUGAR POLICY



*By Ray  
VanDriessche,  
Director,  
Community and  
Government  
Relations*

The government has a long history of involvement in the sugar trade. Throughout the Colonial period and into the early 19th century, financing government operations was the principal objective of sugar legislation. The nature of intervention in sugar marketing changed significantly, however, near the end of the 19th century, as the rationale for high sugar tariffs shifted from a means of raising revenue to protection of a domestic industry. The Louisiana Purchase in 1803, which gave the United States its first opportunity to produce sugarcane, and the establishment of the beet sugar industry in the 19th century were major forces that brought about this change in government policy.

The first U.S. tariff on raw sugar was imposed in 1789 to help raise revenue for the federal government. Since their original imposition, the United States has maintained import duties on all imported sugar, except for raw sugar imported from 1890 to 1894; however, the influx of surplus production from Europe resulted in competition at prices often much below the cost of production for many producers of sugarcane and sugarbeets. Due to the depressed price conditions, Congress passed the McKinley Bill in 1890 which became the first national legislation to recognize the new beet sugar industry and encourage it. Under the bill, U.S. refiners and processors were paid a bounty of two cents for each pound of sugar produced and provisions were implemented for free import of beet seed and sugar machinery. In 1894, the federal bounty was removed and a new tariff was levied on sugar. The primary purpose of the

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# CELEBRATING 100 YEARS

## WASHINGTON SCENE: HISTORY OF THE U.S. SUGAR POLICY (CONT'D)

tariff was not to generate revenue but to protect the domestic industry. The second sugar tariff program remained in force until 1934.

World sugar production expanded rapidly in the early 20th century and brought about an extended period of low world sugar prices in the 1920s and 1930s. U.S. sugar producers were in acute economic distress at the time President Roosevelt initiated the New Deal because the tariffs they had sought for protecting and improving their economic position prior to 1933 were no longer effective. Representatives of the domestic sugar industry selected a committee to draft a sugar agreement designed to improve the balance between sugar supplies and consumption. The resulting agreement was approved by the President on May 9, 1934, and provided an entirely new method,

the basic features of which are still being used for regulating the domestic sugar industry and controlling the imports of sugar.

Consequently, for the next 40 years, the sugar policy sought to preserve, within the United States, the ability to produce a substantial portion of the nation's sugar requirements. Protection was provided because it was considered unlikely that much sugar would be grown in the United States if domestic producers had to compete on the open market with sugar produced by cheap labor or under subsidy in other countries.

With this in mind, there were a number of sugar acts that were implemented which were very similar with minor changes in each to adjust to a changing environment, including the Sugar Acts of 1934, 1937 and 1948.

### SUGAR ACT OF 1934

The Sugar Act of 1934 required the Secretary of Agriculture to determine the consumption requirements for sugar in the United States each year and to divide these requirements among domestic areas and foreign countries by assigning each a quota. The act also made provision for benefit payments to growers. A major purpose of the payments to sugar producers, as was true of similar payments to producers of other crops, was to provide growers with an incentive to limit their acreage in line with quotas, as determined by USDA.

### RECENT SUGAR LEGISLATION

With the tight world sugar supplies in 1974 and world sugar prices averaging 57.2 cents a pound in November 1974, opponents argued







# RS OF SUGAR HISTORY

that the sugar program was no longer needed since prices were sharply higher. The Sugar Act was, therefore, permitted to expire on December 31, 1974. The 1975 and 1976 sugar crops were not covered by a support program; consequently, during 1975 and 1976, sugar surpluses developed and prices fell to an average of 7.5 cents per pound. This prompted Congress to include new sugar legislation in the Food and Agriculture Act of 1977 which provided that 1977 and 1978 sugarcane and sugarbeet crops were to be supported through loans or purchases.

## **SUGAR LEGISLATION (1985 TO PRESENT)**

Since the inception of the loan program, the sugar policy has been primarily based around a policy of import quotas and a

domestic loan program for beet and cane sugar. Congress inserted a no-cost provision into the 1985 Act, requiring administrators of the sugar program to more strongly avoid forfeitures, due to the result of large forfeitures on CCC loans in 1985. The other major change was a result of cane refiners and quota-holding countries requesting a legislated, guaranteed minimum level of sugar import access. To control the U.S. domestic price, another supply control mechanism was needed and thus the 1990 Farm Act included the first domestic supply controls since 1974, which we now know as the marketing allocation system. This system basically limited a sugar processor to selling a designated number of hundredweights of sugar based on a formula of total U.S. consumption, minus imports from foreign quota

holders and NAFTA, leaving the balance of the market to domestic producers. The marketing allotment system was not reenacted in the 1996 Farm Bill but was then reestablished in the 2002 Farm Bill.

## **2007 FARM BILL**

Discussions and hearings around the country are taking place on the upcoming 2007 Farm Bill. With talks of more free trade agreements, and with WTO negotiations unresolved, it makes it difficult to craft language for the new Farm Bill. We will remain in close contact with our legislators as this process unfolds. 🌱





## MICHIGAN'S BEET SUGAR HISTORY



*By Thomas Mahar, former Executive Vice President of Monitor Sugar Company*

*Thomas Mahar is the former Executive Vice President of Monitor Sugar Company. He retired in 1999. Following retirement, he authored the company's history in a volume entitled Sweet Energy and has dedicated the past five years to penning Sweet Legacy, a history of the Michigan sugar industry, a work that is nearly complete.*

In the Bay City suburb of Essexville on October 17, 1898, a smiling Governor Hazen B. Pingree was on hand to officially begin the state's first beet sugar campaign. Pingree had thrown his support behind Public Act 48, legislation that promised bounty money for beet sugar manufactured in Michigan. Its passage had sparked a rush to build beet sugar factories all across the state and would, according to its supporters, go a long way toward replacing jobs lost by the fast approaching demise of the lumber industry. Now, he listened with satisfaction to the factory whistle as it summoned beets from the storage pits to enter the factory where laborers, entrepreneurs, farmers, and politicians had set aside natural differences to combine

their skills for the common good.

The first sugarbeet campaign in the state's history was, by every account, a remarkable success. Farmers harvested an average of 10.3 tons of beets from each of 3,103 acres for a total of 32,047 tons of sugarbeets. The sugar content of the beets averaged 12.93 percent with a purity of eighty-two percent, from which the factory extracted 5,685,552 pounds of sugar, delivering an extraction rate of 65 percent.

The farmers signaled their approval when Michigan Sugar Company paid an average of \$4.51 per ton of beets, an amount that immediately classified sugarbeets as a premier cash crop. The investors were delighted. Public Act 48 assured a profit to the sugar manufacturers by promising to pay a bounty roughly equivalent to one-third of the estimated three-cent per pound manufacturing cost. The manufacturer's obligation entailed a guaranteed payment of \$4 per ton of beets containing at least twelve percent sugar and a sum proportionate to \$4 for all beets containing a greater or lesser percentage of sugar.

At the projected price of four dollars, no crop in human history had held the potential for creating such a high return from so few acres. A farmer with above average ability who placed 15 acres in sugarbeets could earn \$900 and if

his family provided the bulk of the labor, the net profit would more than take care of a family's needs for a year, which, including food, was less than \$800. After adding revenue from crops in rotation such as wheat, corn, and beans, and revenues from milk, eggs, and poultry, the farm family's standard of living advanced from a subsistence level to one that compared favorably to those who held mid-management positions in industry. Not only did the advent of sugarbeets radically improve the standard of living for those who grew beets, but also established its reputation as a mortgage payer.

Official recognition by the United States Department of Agriculture in 1898 of the importance of the sugarbeet industry — combined with success occurring right at home with the initial outstanding results of the Essexville factory — sparked rapid development. One year earlier the nation could boast of only ten beet sugar factories, four of which were in California, one in Utah, two in Nebraska and three in New York. The construction of seven sugarbeet factories in 1898 brought into focus for the first time the stirrings of a rush, one that blossomed into a full-fledged boom by 1900 when the nationwide count stood at 30 beet sugar factories in 11 states.

Nowhere was the blaze hotter than in Michigan where nine fac-





# RS OF SUGAR HISTORY

tories followed Essexville's successful experiment. A burst of cyclonic enthusiasm caused a mad scramble when investors, constructors, bankers, and farmers combined energies and skills to bring to life eight factories in a single year! They were in Holland, Kalamazoo, Rochester, Benton Harbor, Alma, West Bay City, Caro, and a second factory in Essexville. In Marine City, investors, inspired by success at

Essexville, paid Kilby Manufacturing \$557,000 to build Michigan's tenth sugarbeet factory. Despite the paucity of factory constructors and the engineers to operate them, fourteen additional factories rose on the outskirts of Michigan towns during the next six years, the last of which appeared in Blissfield in 1905. Fifteen years later, Monitor Sugar Company built the state's twenty-fourth and final beet factory

in Mount Pleasant.

In 1898, when ardor flamed at its hottest, enthusiasts shouted the prediction that Michigan would soon resemble a single field of sugarbeets extending from its southern border to the northernmost tip of the Lower Peninsula. Legislators grew alarmed in fear that Public Act 48, designed to spark the development of a new industry, might have instead unleashed a







## MICHIGAN'S BEET SUGAR HISTORY (CONT'D)

monster that would swallow the state's budget. They stood by in relieved silence when Roscoe Dix, the state's Auditor General, declared the act unconstitutional. The decision, later endorsed by the Michigan Supreme Court, cooled passions for sugarbeets only slightly because the case was strong and, after all, there was still hope that the United States Supreme Court would reverse the state supreme court's decision. That effort failed when the U.S. Supreme Court rejected an appeal on grounds of jurisdiction. The court's decision was not much more than a speed bump in Michigan where mounting excitement for beets brought fresh capital to cities that otherwise faced extinction in the fading light of the lumber industry.

If credit is given to an effort made 60 years earlier, the Essexville factory was Michigan's second beet factory. By the 1830s, the new European practice of extracting sugar identical to cane sugar from beets had captured the minds of separate but like-minded small groups of investors in Pennsylvania, Massachusetts, and Michigan. The latter group took the name "White Pigeon" after the town in which the company was organized. The Michigan and Massachusetts experiments led eventually to the construction of factories sized to produce salable white sugar in commercial quantities. Those first factories, cobbled together relics

of French origin, averaged five tons of sliced sugarbeets per day, an amount processed in less than 60 seconds in today's factories. Unable to achieve the goal of producing marketable sugar, both failed in 1841.

By 1906, the state's beet sugar industry had evolved into three basic groups that would remain largely unchanged during the next 100 years. The first constituted those factories that experienced a lifespan of fewer than ten years, one of which was Michigan's first factory at Essexville. The others included four of the eight factories that came into existence in 1899.

Factories in Rochester, Kalamazoo and Benton Harbor, plus one in Charlevoix, had been built by industrialists who firmly believed in the axiom that when it came to farmers, "build it and they will come." The theory failed to blossom into sugarbeets when farmers saw little reason to surrender profitable fruits and vegetables for a product that depended upon a factory to convert farm goods into salable products. The factories failed for want of beets.

Lumber baron Worthy Churchill led a group of investors to the idea of building a 600-ton per day sugar factory directly across the street from Michigan Sugar Company's Essexville factory, correctly believing that factory's 350-ton slice capacity made it an easy target for an aggressive competitor. He was right.

By 1903, he had persuaded Tom Cranage, Michigan Sugar Company's president, to merge with his new company. They named the new corporation, Bay City-Michigan Sugar Company, effectively ending the existence of the original Michigan Sugar Company and then began the process of closing the smaller factory.

In addition to the group of factories destined for brief existence, there were seven others that would remain largely independent and survive for an average of 41 years. Chief among them was the Holland factory that, by all standards, should have gone the way of other undersized 350-ton factories, but because of frugal management by Charles McLean, a former school superintendent who possessed the obstinacy of a bear trap, the factory survived 37 years. The Holland factory was the only factory in the United States to shut down operations on Sunday, which it did during its first 11 years at great cost in efficiency, but in keeping with the religious convictions of a majority of the community.

Bay City in 1899 was still a fast-paced lumberman's paradise enjoying the last hurrah of timber harvesting, while keeping an eye out for a handy replacement. Among the ruins of a decaying industry rose the city's third beet factory, revealing another example of persistence, one matching that displayed at Holland in terms of





# RS OF SUGAR HISTORY

lifespan and the will of a single individual to achieve success.

Mendel J. Bialy, a scrappy lumber mill manager, a bookkeeper by training, assembled a group of investors, who like himself had no experience in beet sugar manufacturing. Together they organized the West Bay City Sugar Company in 1898. The investors awarded a contract to Bartlett and Howard, a Maryland iron works company looking for an entry into a hot new industry — sugar manufacturing.

Such was Bialy's confidence that he determined himself qualified to operate the factory without the aid of technicians schooled in the intricacies of a beet sugar factory. The result was predictably disastrous. The factory achieved a mere 126 pounds of sugar per ton of beet sliced, a 48 percent extraction rate in an era when factories often achieved 65–69 percent. Even the Holland factory, where operations ceased twelve hours each Sunday, recorded a higher extraction rate of 53 percent.

Those who had instigated rumors of imminent abandonment did so without first considering Mendel Bialy's indomitable spirit. He kept the factory in operation for 38 campaigns on a shoestring budget and the charity of nearby factory managers who came to his aid with spare parts, expertise and patience.

Five additional factories made up the balance of the independents, each with a story like those at

Holland and West Bay City where persistence, derring-do, hard work and dedicated artisans gave life to factories that in turn generated economic well-being for townspeople and farmers in equal portions. Four of those factories came into existence in Mount Clemens, Menominee, St. Louis, and Bay City. The new Bay City factory was the fourth built in that city's environs giving it more beet sugar factories than any city in America. At first operating under the name German-American Sugar Company, it evolved into the Monitor Sugar Company. The fifth was established in Blissfield where a magnificent showplace factory took center stage only to collapse into mediocrity a few years later when its chief sponsor and benefactor, Henry O. Havemeyer, died suddenly of a heart attack.

As 1905 drew to an end, the Michigan beet sugar manufacturing industry began to wobble not unlike a child's spinning top at the end of a vigorous twirl. Factories that had opened just a few years earlier to the sound of blowing bugles, marching bands and patriotic speeches from political luminaries reposed behind locked gates in mute reproach to the forces that had rendered them so. Seven factories had closed, Essexville and five others situated in Kalamazoo, Rochester, Benton Harbor, Marine City, Saginaw, and East Tawas most often because farmers turned indifferent to the appeals

of factory representatives to grow beets. Sixteen beet factories with a combined daily slice capacity of nearly eleven thousand tons remained in business, however.

Despite disasters elsewhere a new company formed, one that would eventually become the sole survivor among the state's sugar companies. It came about on August 20, 1906 when the Bay City–Michigan Sugar Company struck a deal with Charles Beecher Warren, its principal shareholder and Bay City native, to form a new company, one that borrowed its name, Michigan Sugar Company, from Michigan's pioneer entrant into the beet industry.

The new Michigan Sugar Company's balance sheet reflected the assets of six sugar factories located in Michigan. The companies were, in addition to the Bay City–Michigan Sugar Company, the Saginaw Valley Sugar Company in Carrollton, the Peninsular Sugar Company in Caro, the Alma Sugar Company in Alma, the Sanilac Sugar Refining Company in Croswell, and the Sebewaing Sugar Company in Sebewaing. Warren would serve as the company's president until 1925 when he resigned in anticipation of accepting an appointment by President Coolidge as United States Attorney General. An unusually fractious United States Senate, however, pointing to Warren's relationship to the sugar industry, rejected the nomination in a narrow



## MICHIGAN'S BEET SUGAR HISTORY (CONT'D)

vote. Coolidge's Vice President, Charles Dawes, who could have swung the vote in Warren's favor, was taking a short nap at the Willard Hotel when the vote was called. He arrived in the Senate chamber too late to change the result. It was the first time since 1868 that the US Senate had rejected a presidential cabinet nomination, ending both Warren's distinguished public service career and his association with the sugar industry. Previously, he had served as Ambassador to Japan (1922-1923) and Ambassador to Mexico in 1925.

Eighteen years after its founding, Michigan Sugar, in 1924, added two additional factories to the corporate roster when beet sugar factories in Owosso and Lansing joined the company. Twenty-four years later, in 1948, Michigan Sugar acquired the Mount Pleasant factory in a move calculated to acquire acreage allotments mandated under 1948 federal legislation. The factory had been built by Monitor Sugar Company in 1920 and taken over by Isabella Sugar Company in 1933. Members of the Coryell family who, under the leadership of Charles Coryell, held the controlling interest in Monitor Sugar Company until 1982, also for a time held controlling interest in Isabella Sugar Company. By 1948, the factory had become a derelict, useful only for odd parts and marketing allocations assigned by the U.S. Department of Agriculture, an unfitting end to

a company that had successfully pioneered molasses desugarization via ion exchange 50 years before the process gained acceptance in the domestic sugar industry.

With the closing in 1954 of three factories, one at Menominee, another at Blissfield where factory operations had ceased three years earlier, and in St. Louis, only two of the original 24 companies remained. One was Michigan Sugar Company that was by then operating four of the nine factories it had acquired, Caro, Carrollton, Croswell, and Sebewaing. The other was Monitor Sugar Company's single factory in Bay City. The decision to close the Menominee factory occurred shortly after Albert Flegenheimer's introduction to the Michigan beet sugar industry. After gaining long years of experience in the European and Canadian beet sugar industries, he and others acquired a sugar company in Iowa. A decade later Flegenheimer was the majority shareholder in the Superior Sugar Refining Company in Menominee, Michigan. By then, acreage allocations set by the U.S. Department of Agriculture were too low to justify operating Menominee, spelling doom for the factory. Flegenheimer continued to gain American experience, however, at a factory in Green Bay, Wisconsin.

Seven years later, in 1961, an opportunity presented itself to become a majority shareholder in Michigan Sugar Company. He did not

let the opportunity pass. Two years later, he stepped into the role of Chairman of the Board of Directors.

Following the closing of factories in 1954, the two surviving companies operated in competition within spitting distance of each other for the next half century with Michigan Sugar Company headquartered in Saginaw and Monitor Sugar in nearby Bay City. That changed in 2004, when Michigan Sugar Company, by then a grower's cooperative, joined forces with the Monitor Sugar Beet Growers Association to purchase the Bay City company. Illovo Sugar Company of Durban, South Africa, Monitor's parent since 1982, had developed new strategies that made it necessary to sell its U.S. interests. Many growers viewed that decision as an opportunity to join a national trend of growers taking over beet factories.

The Monitor Sugar growers initially hoped to acquire the company much in the manner Michigan Sugar growers plucked that company from the roster of Imperial Sugar Company holdings two years earlier. Careful analysis, however, suggested a different, bolder route — partnership between the two farm cooperatives, a merging of two companies and two grower groups that had for most of the 20th century viewed each other as fierce competitors for the hearts of growers and the pocketbooks of customers. That





cultural shift, combined with a short time frame imposed by the seller, called for extra allotments of elbow grease and midnight oil both of which were supplied in generous quantities by the two grower boards of directors.

After overcoming obstacles native to complex structural change, the two associations successfully completed the acquisition of Monitor Sugar Company and the merger of the two associations into one 1,300-member cooperative on October 1, 2004.

Today, the combined factories, each of them examples of modern extraction technology, possess a beet slicing capacity of 22,000 tons per day (not including Carrollton where production was suspended in 2005) and an ability to produce a billion pounds of sugar each year. The sugar arrives at the marketplace in granulated, powdered, brown or liquid form packed in bags ranging from two pounds to 2,000 pounds or in carloads. In addition, the company markets more than 150,000 tons of molasses and pulp by-products, which combined with sugar products, gives the state of Michigan a significant presence in the nation's food industry. 🌱

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# HIGHLIGHTS FROM 100 YEARS OF MICHIGAN SUGARBEET PRODUCTION

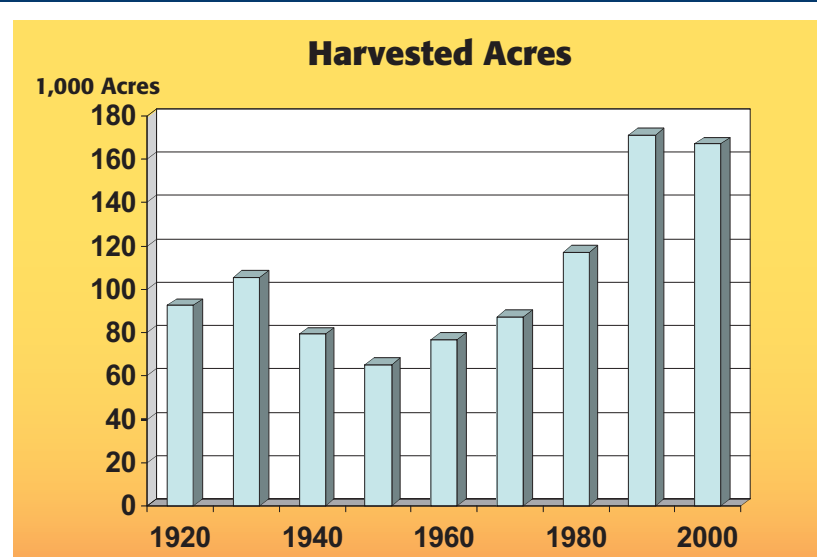


*By Corey Guza,  
PhD, Agronomist*

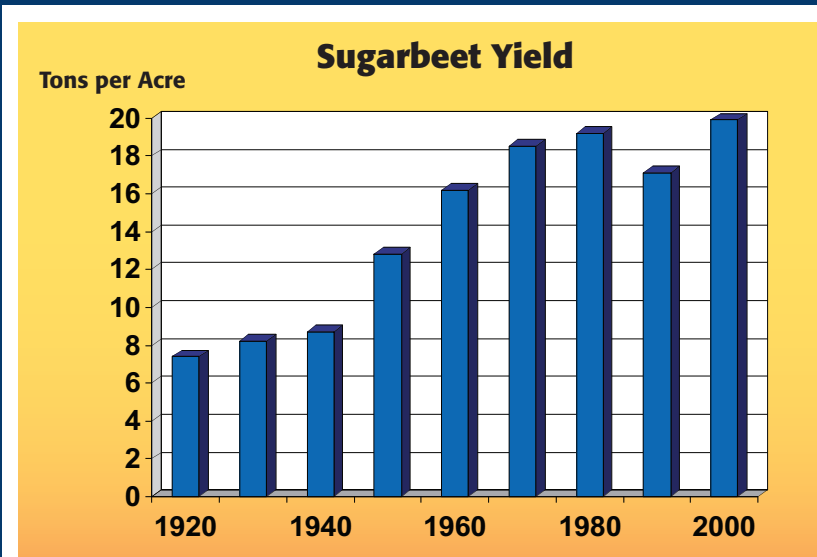
Harvested acres have been on a steady increase in Michigan since 1950, reflecting the growth of the industry (Figure 1). Advances in variety improvement, weed control and farm equipment have helped growers and the factories become more efficient producers of sugar. Sugarbeet yield has increased dramatically since the 1920s (Figure 2). Production leveled off in the 1970s through the 1990s, (Figure 2) but in recent years production has continued to increase (Figure 3). Through new technology and research advances, the trend of increased productivity can continue.

Changes in sugarbeet production can be measured by major events or cycles that have occurred. Some of these events have been due to research advances. Others have been responses to disease or pest epidemics. *Cercospora* leafspot is an example of a disease that has cycled over time. Major outbreaks of *Cercospora* leafspot have occurred about every 20 years. These outbreaks have forced plant breeders to focus on sugarbeet varieties that have a high level of resistance to leafspot. USH-20 originally had some *Cercospora*

**FIGURE 1**



**FIGURE 2**

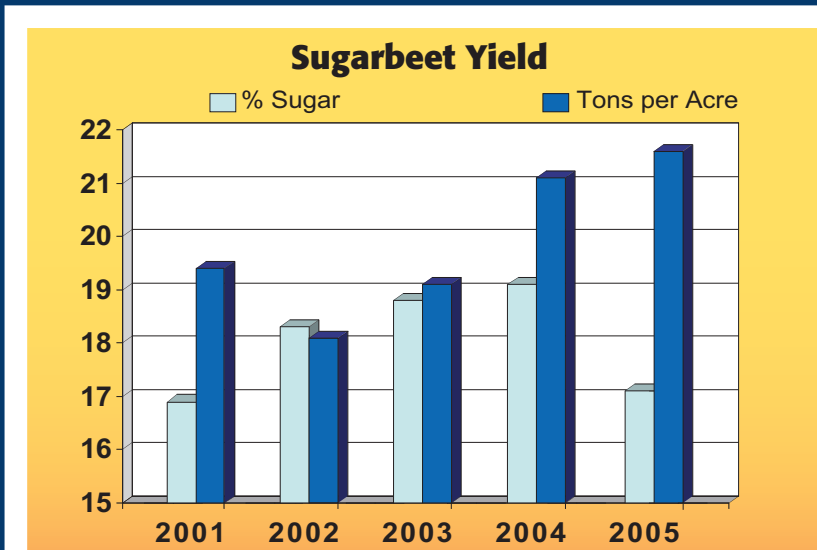






**FIGURE 3**

resistance; however, by 1980, *Cercospora* leafspot was again beginning to become a serious problem and a new generation of varieties were developed; E-4 and E-7 were among those varieties. Root aphid became a serious issue in 1995 and again forced change in the sugarbeet industry. Root aphid led to the demise of the popular variety ACH-185 and the emergence of E-17 as one of the most widely used varieties for nearly ten years.





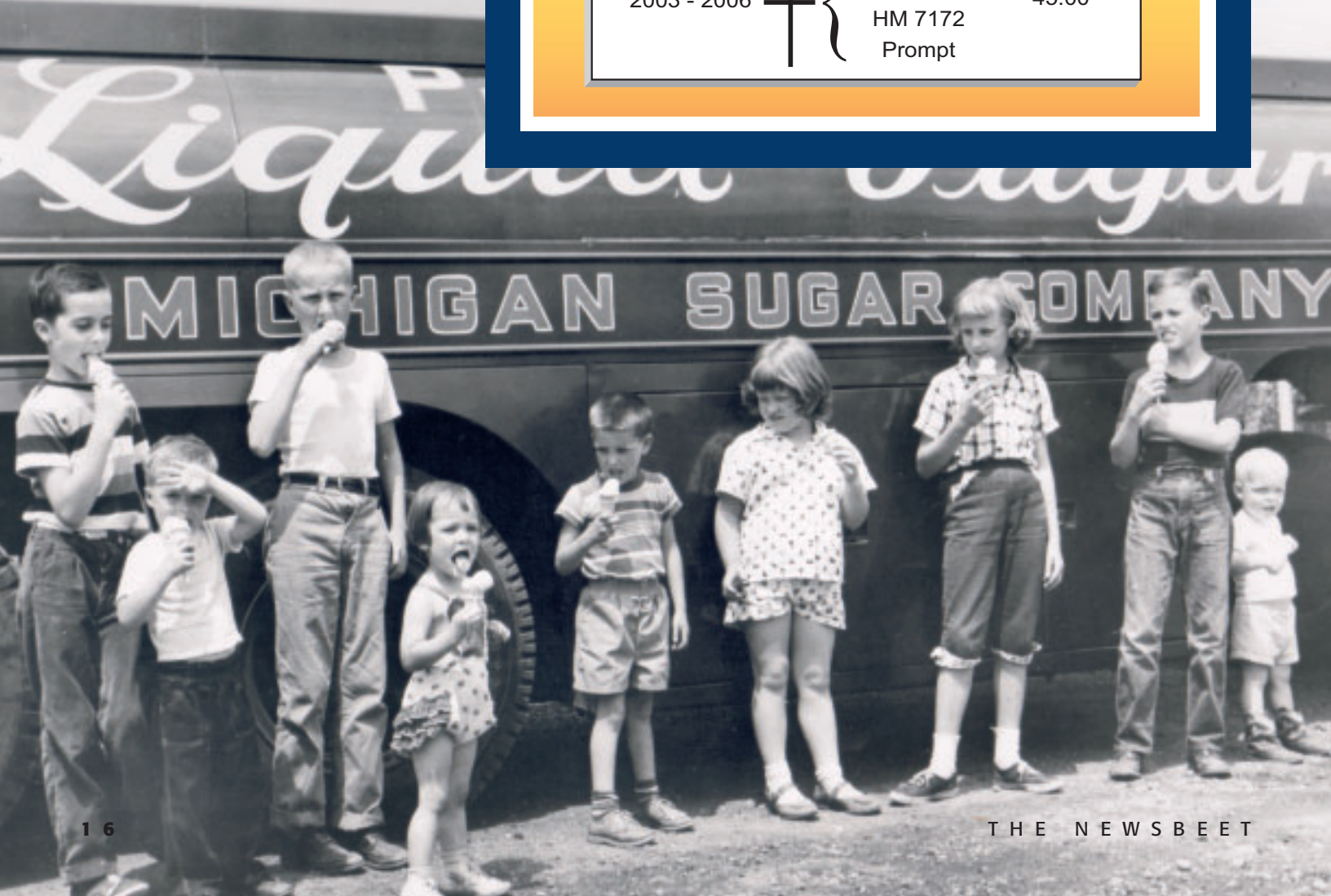
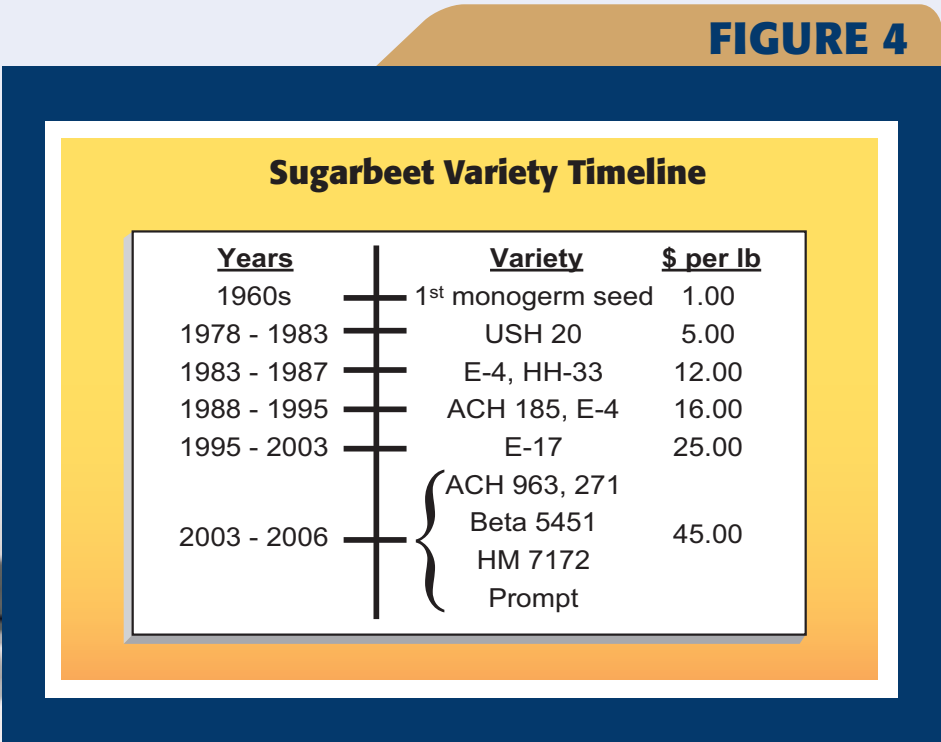


HIGHLIGHTS FROM 100 YEARS OF  
MICHIGAN SUGARBEET PRODUCTION (CONT'D.)

VARIETIES

The first monogerm seed sold was in the 1960s. Generally, only one or two varieties were grown in a ten-year period until recently (Figure 4). The short lifespan of new varieties can be attributed to improvements in sugar production and higher levels of disease resistance. Cercospora leafspot, root aphid, and Rhizoctonia crown rot continue to be important factors when selecting a variety for

FIGURE 4







Michigan. Rhizomania and possibly Roundup Ready sugarbeets could lead to the next shift in varieties grown in our region.

### SEED IMPROVEMENT

Seed quality is important when raising any crop, particularly sugarbeets. Major advances in seed sizing and selection occurred when the Farmers and Manufacturers Beet Sugar Association started the Seed Plant in Michigan in the 1960s. Seed coating and coloring helped to reduce seedling disease and made the seed easier to find in the soil. In 2004, seed priming helped to dramatically improve emergence for growers. In 2005, all of the seed sold in Michigan was primed.

### CULTURAL PRACTICES

Crop rotation, tillage studies and nutrient management research have been conducted since the early 1900s. Research is still needed to meet the needs of modern sugar production. Some of the research conducted in the past has led to standard production practices today. Studies conducted in the 1950s by J.F. Davis and M.G. Frakes demonstrated the advantages of tile drainage (Table 1) and reduced tillage (Table 2) on sugarbeet yield. Other highlights from researching cultural practices that are standard production practices today are listed in Table 3 (next page).

**TABLE 1**

**Yields of beets as affected by tile drainage, 1958**

District	Tile Drained	Tons/A	Difference
Alma	Yes	14.8	1.3
	No	13.5	
Caro	Yes	17.2	4.8
	No	12.4	
Croswell	Yes	13.4	1.7
	No	11.7	
Saginaw	Yes	18.5	3.7
	No	14.8	
Sebewaing	Yes	16.2	0.2
	No	16.0	
Total	Yes	16.7	3.2
	No	13.5	

**TABLE 2**

**Beet yields as affected by the number of times a field was worked prior to planting, 1958.**

Times Worked	Tons/A
One	16.8
Two	16.7
Three	15.2
Four	14.8
Five	14.2
Six	14.3
None	14.0



## HIGHLIGHTS FROM 100 YEARS OF MICHIGAN SUGARBEET PRODUCTION (CONT'D.)

### WEED CONTROL

As weed control technology advanced, growers were quick to change. Weed control has and continues to be a challenge for growers. Table 4 highlights the changes in weed control practices over time.

### DISEASE

Seedling disease from *Aphanomyces* spp., *Rhizoctonia solani* and *Pythium* spp. have reduced sugarbeet stands in Michigan. Through plant breeding, seedling tolerance to disease has been improved. Tachigaren, as a seed treatment, has been shown to reduce the incidence of seedling disease. It is difficult, however, to predict which fields will have disease issues, reducing the value of the product. *Rhizoctonia* crown rot has also been managed through variety selection in the past. Until recently, chemical control of *Rhizoctonia* was not available. Variety resistance and fungicides have been used to manage *Cercospora* leafspot. In the 1980s, Benelate, Mertect or Duter fungicides were available for leafspot management. Currently, there are nine active ingredients available for leafspot control in Michigan (Table 5).

### ROOT STORAGE

Since the 1940s, beet storage has been a major research topic in Michigan. The need for longer campaigns and increased factory

**TABLE 3**

#### Highlights from research on cultural practices and soil fertility

Years	Topic
1940s - 1950s	Nutrient needs of sugarbeets studied, N, P, K and micro-nutrients.
1960s - 1970s	Row spacing, reduced nitrogen rates, soil structure, soil testing.
1980s - 2000s	Benefits of lime for sugarbeet production. Improved nutrient management recommendations, new methods to test for nitrogen.

**TABLE 4**

#### Weed control milestones

Years	Topic
1960s - 1970s	First herbicides for weed control. Most herbicides were used pre-emergence.
1970s - 1985	Betamix developed for post-emergence weed control.
1985 - 1990s	Split-rates of post-emergence herbicides. Post-emergence grass herbicides. Stinger and UpBeet.
1997 - Present	Herbicide micro-rates. Dual Magnum and Outlook registered.





# RS OF SUGAR HISTORY

efficiency through higher quality beets has inspired change. In the 1960s, some of the first ventilation and pile covering research was conducted. In the 1970s through the 1980s, pile management was initiated. Pile management included receiving clean beets at cool temperatures, leveling piles, and building smooth, straight piles. Reducing pile height and using the fungicide Mertect to control root rot organisms was emphasized in the 1980s. In the 1990s, covering beet piles with lime and straw appeared to improve pile storage. Due to challenging winter weather and advances in computer technology, ventilation again has proven to be a valuable tool for increasing sugar production. 🌱

**TABLE 5**

## **Fungicides available for Cercospora leafspot control - 2006**

Active Ingredient	Fungicide
thiophanate-methyl	Topsin M
tetraconazole	Eminent
azoxystrobin	Quadris, Amistar
trifloxystrobin	GEM
pyraclostrobin	Headline
triphenyltinhydroxide	SuperTin, AgriTin
mancozeb	Dithane, Manzate, Penncozeb
maneb	Manex
copper hydroxide	Champ II, Kocide







## MICHIGAN SUGARBEET RESEARCH: PAST TO

Sugarbeet production has advanced significantly in Michigan over the last 100 years. Much of the advancement can be attributed to research organizations like Michigan State University and the East Lansing U.S. Department of Agriculture (USDA). Sugarbeets continue to be a challenging crop to grow and process. Many people have worked hard to make sugar production from beets more enjoyable and profitable.

### **MICHIGAN STATE UNIVERSITY**

A number of research topics related to sugarbeet production have been investigated at Michigan State University (MSU), ranging from soil fertility to pest management. Researchers at MSU have been involved in sugarbeet production since the late 1800s. Frank Kedzie was President of the Michigan Agricultural College from 1915 to 1921 and played an active role in developing the sugarbeet

industry in Michigan. Most of the sugarbeet research prior to 1970 was conducted on the MSU campus or on the Ferden Farm near Chesaning, Michigan. After 1970, most of the sugarbeet research was conducted on the "new" Bean and Beet Farm near Saginaw, Michigan.

Early fertility research was focused on nutrient rates and requirements. Micro-nutrients were studied extensively. As the cost of nitrogen began to increase and the sugar content of beets remained low, more effort was focused on reducing nitrogen rates. From the 1940s through the 1970s, Ray Cook and Bus Robertson were among the first MSU soil scientists to study sugarbeets. From 1970 through the 1990s, Don Christensen and Berne Knezek conducted research ranging from nutrient management to row spacing. Don Christensen also published research on the positive impact of sugarbeet lime on sugarbeet production.

From the 1960s to the 1980s, Earl Erickson focused on the impact soil structure has on a sugarbeet crop. Crop rotation studies were also conducted at that time.

Presently, researchers such as Ron Gehl, are using new technologies, like GreenSeeker or SPAD Meters, to predict the amount of nitrogen that should be applied to a sugarbeet crop to maximize quality. Nutrient management continues to be an important component for improving sugarbeet production.

Weed control using herbicides is a relatively new science. William Meggitt was the first MSU researcher to study weed control using herbicides for sugarbeet production. The first herbicides used in sugarbeets were developed in the 1950s. They were applied preemergence and included TCA and Dowpon. The next generation of herbicides were mainly applied postemergence. These included Betamix, Betenal, and Endothal.







## PRESENT

Nortron and Pyramin were two herbicides developed that could be used preemergence or postemergence. In the mid-1980s, Karen Renner began to experiment with split-rates of herbicides such as Betamix. Prior to 1986, most herbicides were applied at the full-rate, one time, in a band. Stinger and the post-emergence grass herbicides were developed during the mid to late 1980s. In the early 1990s, UpBeet was developed for velvetleaf control. In the late 1990s, the herbicide micro-rates were adapted to Michigan and research on Roundup Ready and Liberty Link sugarbeets was initiated. Current research with Christy Sprague is focused on using weather, particularly growing degree days, to reduce sugarbeet injury from herbicides and improve weed control. Consistency is important when conducting research. One constant in sugarbeet weed control research has been research technician Gary Powell. Gary has been working with sugarbeets and weed control at MSU since 1979.

Insect pests and nematodes have been noted to cause problems for growers since the 1940s. The first nematodes were detected by H.W. Bockstaller in 1949. John Knierum and Charles Laughlin studied fumigation for nematode control from the 1950s to the 1970s at the Appold plots. George Bird started to research sugarbeet cyst

nematode in the early 1970s and has focused on crop rotation, cover crops and more recently, using a tolerant variety to manage sugarbeet cyst nematode. Fred Warner works closely with Dr. Bird to diagnose sugarbeet cyst nematode problem fields. For insect pests, Bob Ruppel conducted some of the first research on root aphid and cutworm. Doug Landis and Chris DiFonzo continued insect research with sugarbeets by studying the affect tarnished plant bug (lygus bug) has on sugarbeet yield.

### USDA, EAST LANSING

USDA research in East Lansing has been strongly focused on genetic improvement of sugarbeet. J.G. Lill, an agronomist in the 1930s and 1940s, conducted some of the first research on monogerm seed in Michigan. C.W. Doxtator studied seed sizing and segmenting during the same period. In the mid-1940s through the 1950s, F.V. Owen focused on adapting eastern germplasm to male sterility to improve plant breeding efficiency. This early research led to development of the variety US-H20, a popular sugarbeet variety until the mid-1980s. George Hogeboom, Woody Snyder and Chuck Schnieder began studying sugarbeets after World War II and through the mid-1980s. They developed genetic resistance to Rhizoctonia, Aphanomyces, and Cercospora along with studying nutrient

management. In 1985, Clare Tyre began research on "smooth root" varieties. He also developed high sucrose varieties. From 1979 through the 1990s, Joe Saunders worked as a geneticist in East Lansing. He developed cell culture techniques which led to the development of IMI-resistant sugarbeets. IMI-resistant sugarbeets could tolerate applications of the herbicide Pursuit which can seriously damage sugarbeets. Currently, the USDA in East Lansing and Mitch McGrath are focused on using molecular genetics for breeding and selection. This includes characterizing the sugarbeet genome and improving disease resistance.

Sugarbeet research is labor intensive and costly. Researchers write grants and pool resources to accomplish their goals. Sugar companies and growers have worked together to fund advances in sugar production in the past. Currently, Michigan Sugar Company continues to support researchers by offering funding, analyzing sugar samples and helping to conduct research trials. The help and funding from Michigan Sugar Company can be used to leverage additional support for sugarbeet research. Innovative research has been important to the history of sugar production in Michigan and is critical for success in the future. 🌱



# CELEBRATING 100 YEARS

## PERSONALITIES AND PEOPLE ASSOCIATED WITH SUGARBEET RESEARCH IN

Sugar company researchers have been active in advancing the efficiency of sugar production since the companies were formed in the early 1900s. They worked closely with growers, universities and the USDA to develop new ideas. These new ideas could be researched and perfected so growers could implement the new concepts on their farms as quickly as possible. Many of the early ideas and concepts are still used today.

In the 1930s, the sugar companies and growers formed the

Farmers and Manufacturers Beet Sugar Association ("F&M"). The F&M was very similar to Sugarbeet Advancement. The F&M was made up of growers and company personnel from Michigan, Ohio, and Ontario, along with people who worked directly for the F&M. John Niederer, Jerry Brown, and Richard Zielke all worked as researchers for the F&M. Their primary focus was variety testing; however, they conducted herbicide and fungicide trials as well. Elmer and Tom Rader worked on seed production and

quality for the F&M starting in the 1960s. They started the early Seed Plant which was used to process seed for improved sugarbeet emergence. The F&M ceased operation in 1982 after sugarbeet production in Ontario and Ohio declined. Dr. Zielke joined Michigan Sugar Company in 1983 and continued to conduct variety, fungicide and herbicide research until he retired in the late 1990s.

When reviewing literature associated with sugarbeet research in Michigan, one of the most frequently







## MICHIGAN

found names is Maurice Frakes. He conducted research on sugarbeets from the 1940s through 1978. His research interests ranged from developing the protocol for laboratory testing the sugar content in beets to field work on variety testing and general agronomy. His laboratory procedures are still used today to test the sugar content in beets.

A current and historical figure in sugarbeet research is Ralph Fogg. Ralph has conducted research on sugarbeets for Monitor Sugar Company since the 1960s. Some

of his interests included soil fertility research and pile storage. Paul Pfenninger, Michigan Sugar Company's Vice President of Agriculture, also was an agronomist for Monitor Sugar Company in the 1980s.

In 1973, Dave Sunderland moved north from Ohio and brought Phil Brimhall with him. Phil conducted some of the early pile storage research for Michigan Sugar Company along with general agronomy research through the 1990s.

Since sugarbeets are considered

a minor crop for crop protection companies and universities, fewer resources are available to growers for finding information on improving sugar production. Michigan Sugar Company personnel help by conducting research and organizing information so growers can receive the information they need quickly. While advances in sugar production have been significant over the last 100 years, more advances are sure to come. 🌱





## ... AND THE WINNER IS... MARY ANN HORNBACHER, "THE SWEETEST GIRL IN THE WORLD"



That was the announcement on July 2, 1965, for the crowning of the first Michigan Sugar Queen. Sixteen young ladies competed in the event that was initiated at

the first Sebewaing Sugar Festival in 1965. For over 40 years, Michigan Sugar Company has been a big part of the crowning of the Sugar Queen, dubbed "the sweetest girl in the world."



For being crowned the Sugar Queen, Michigan Sugar would award the winner with a trip. Some trips that the queen

and parents took were to the World's Fair in New York, Expo '67 held in Montreal, Canada, and the Hemis-Fair in San Antonio, TX. As time went by, the company thought it would be a valuable asset to add more appearances for the queen and court to attend. Concentrating on parades for other festivals held around the state, the prize package changed to a \$500 savings bond for the

*History has  
shown that  
Michigan Sugar  
Queens have  
successfully moved  
forward into  
the world.*

queen and a \$100 savings bond was given to the court members (at that time, there were five). Today, the Michigan Sugar Queen receives a \$2,000 scholarship and the two court attendants receive \$1,000 each.

It has been a very good arrangement for both the queen and court with Michigan Sugar Company. The court has an opportunity to

travel to several different cities around the state; including towns in the Thumb, Fremont (National Baby Food Festival), Holland (Tulip Festival), Traverse City (National Cherry Festival), and Mackinac Island (Lilac Festival), and Michigan Sugar receives free advertising! The schedule for the Michigan Sugar Queen and Court has them appearing in over 25 parades this year on the Pioneer Sugar float. For upcoming parades, please visit our website at [www.michigansugar.com](http://www.michigansugar.com).

Along with a tiara and roses; the Sugar Queen has been receiving a special crown made of what



else, SUGAR! Hans (John) Balk, a local "master baker," made the first sugar crown to present to the new queen, and continued to make the crown each year. Mr. Balk, a craftsman of great skill and experience, and someone who loved his trade and his customers enough to give only his very best, made the crown out of pure cooked sugar. The crown requires four to five hours to construct and at least three hours of drying time. The crowns were exceptionally delicate and





completely edible. Mr. Balk, after 35+ years, retired from making the sugar crown in the early 2000s. This year, Mrs. Judy (Dressler) Bollstetter, the 1966 Sugar Queen,



decided to try her hand at making a sugar crown. At the 2006 crowning of the Sugar Queen,

Erica Hoffman was presented with a sugar crown.

The Michigan Sugar Queen scholarship program has attracted many candidates, averaging 16 young ladies every year. In late March, the Company sends out notices to high schools and colleges around the state, as well as posting information regarding the program on its website. Young ladies between 18 and 23 living in counties where

sugarbeets are grown are eligible.

History has shown that Michigan Sugar Queens have successfully moved forward into the world. Young ladies become teachers and doctors, as well as mothers and homemakers. Michigan Sugar Company is very proud of its past Michigan Sugar Queens and they have enjoyed their time representing the company and industry as well. 🌱





## GROWER—OWNER PROCESSING MAKES FULL CIRCLE



*By Ray  
VanDriessche,  
Director,  
Community and  
Government  
Relations*

The sugarbeet industry has come full circle with the first grower-owned sugarbeet cooperative in the United States known as the German American Farmers Beet Sugar Company, organized in Bay City, Michigan, in 1899. A group of 400 growers banded together to form a cooperative and it was the first time in the history of the U. S. that sugarbeet farmers were both sugarbeet grower and sugarbeet processor. The cooperative was sold to the Sugar Trust in 1906, ending an era of grower-owned processing for many years to come. From 1906 to 2002, the ownership has come full circle and the sugarbeet industry is now 100 percent grower-owned cooperatives. Here is a very brief timeline of the transition.

### **MINN-DAK FARMERS COOPERATIVE — ORGANIZED — AUGUST, 1972**

A meeting was held in the Wahpeton/Breckenridge area of North Dakota/Minnesota in January 1952, to test the waters to see how

many farmers were interested in growing sugarbeets. In December of 1953, a group of farmers organized the Southern Red River Valley Beet Development Association (later changed to Southern Red River Valley Sugarbeet Corporation, or SRRVSC). For the next 20 years, the SRRVSC and its members worked, invested, lobbied in Washington, DC, recruited growers, and secured acres. In August 1972, their hard work paid off and SRRVSC's 329 growers named the new cooperative Minn-Dak Farmers Cooperative.

### **SOUTHERN MINNESOTA BEET SUGAR COOPERATIVE — ORGANIZED — MARCH, 1973**

In October 1972, the Southern Minnesota Beet Growers Association, consisting of 300 growers, formed a cooperative and selected a suitable site for a factory. In the ensuing months, construction contracts were let, financial arrangements were sought, grower agreements were prepared and signed, and by March 28, 1973, the newly-formed cooperative was ready for a gala ground-breaking event for a \$60 million sugar processing facility.

### **AMERICAN CRYSTAL SUGAR COMPANY — ORGANIZED — JUNE, 1973**

In 1972, the Red River Valley

Growers Association organized a temporary corporation and formed a new cooperative, one that would not violate the anti-trust laws. On February 15, 1973, the 1,300 shareholders of Crystal Growers Corporation voted to merge with American Crystal. Six days later, the merger documents were signed. With this action, Crystal Growers Corporation ceased to exist. The shareholders in this former corporation became stockholders in American Crystal. On June 14, 1973, the growers, as stockholders, met to complete the final steps in this complicated undertaking and they approved the formation of the new American Crystal Sugar Company as a grower's cooperative. The next day the representatives of the new Crystal board signed notes with the St. Paul Bank for Cooperatives, which allowed them to complete the purchase, and left the growers in complete control of American Crystal and all its properties.

### **AMALGAMATED SUGAR COMPANY LLC — ORGANIZED — DECEMBER, 1996**

Effective December 31, 1996, the Snake River Sugar Company — a grower-owned cooperative of sugarbeet growers in Idaho, Oregon and Washington — and the Amalgamated Sugar Company,





completed the transfer of control of the operations of Amalgamated to 1,134 grower-members of Snake River. This transaction brought to a close the long and involved process that began July 6, 1994.

#### **MICHIGAN SUGAR COMPANY – ORGANIZED – FEBRUARY, 2002**

In February of 2000, Imperial Sugar approached the Great Lakes Sugar Beet Growers board of directors in Hebronville, Texas, about the opportunity to purchase their Michigan Sugar Company subsidiary. After numerous meetings, over two years, with the 950 growers of the Great Lakes Sugar Beet Growers Association, the purchase was finalized on February 12, 2002.

#### **MICHIGAN SUGAR COMPANY MERGED – OCTOBER, 2004**

In April of 2004, the Monitor Sugarbeet Growers Association received word that Monitor Sugar was for sale and that a closing deadline of sale for potential buyers would be October 1, 2004. Things would need to move quickly and Michigan Sugar Company approached the Monitor Sugarbeet Growers Association about a possible merger shortly after the announcement. It soon became evident that a merger with Michigan Sugar Company would be the best

for all involved in Michigan's sugarbeet industry. On October 1, 2004, the purchase of Monitor took place and the merger was finalized. The 1,300 grower-owners of Michigan Sugar Company were now the owners of the five processing factories and the producers of approximately 170,000 acres of sugarbeets.

#### **WYOMING SUGAR COMPANY – ORGANIZED – JUNE 2002**

After leasing the facility for a year from Imperial Sugar, the growers of the Wyoming Sugar Growers Association Cooperative, along with investors, purchased the Worland Factory in June of 2002, and organized Wyoming Sugar Company, LLC.

#### **WESTERN SUGAR COOPERATIVE – ORGANIZED – DECEMBER, 2002**

In December 2002, over 1,000 sugarbeet growers in Colorado, Nebraska, Wyoming and Montana united to form the Western Sugar Cooperative, believing that the future of the sugarbeet industry in the area would be well-served by grower ownership of the company. On April 30, 2002, the Cooperative finalized the purchase of Western Sugar from Tate & Lyle. 🌱





## 2006 SCHOLARSHIPS



### *Albert Flegenheimer (1890–1972)*

*Albert Flegenheimer was born in Germany, and shared his birthday, July 4, with that of the country he would adopt 51 years after his birth. It was in 1941 that he entered the United States after establishing credentials as a sugar executive first in Germany where he held management positions with the South German sugar company, Sueddeutsche Zucker, A.G., followed by a period of service with Europe's largest sugar combine, the Montesi Group of Padua, Italy. He departed war-troubled Europe in 1939 for the North American continent where he settled in Winnipeg, Canada. While in Canada, he became a principal in the organization and construction of the Manitoba Sugar Company. Two years later, he and an investment group acquired the Waverly Sugar Company located in Waverly, Iowa, where*

*he served as President. In 1954, Albert became the major stockholder of an organization that controlled the Superior Sugar Refining Company in Menominee, Michigan, and the Menominee Sugar Company in Green Bay, Wisconsin. Seven years later, at the age of 71, he became the majority shareholder in Michigan Sugar Company, having acquired the shares from the Pitcairn Company who were stockholders of Michigan Sugar Company for more than 30 years. Two years later, in 1963, Albert was elected Chairman of the Board of Directors of Michigan Sugar Company. Albert Flegenheimer died in December 1972 after gaining recognition in Who's Who in America for a lifetime dedicated to beet sugar. In 1974, Michigan Sugar Company established this scholarship to honor its chairman after his passing.*

*The Albert Flegenheimer Scholarship is awarded each year to an outstanding young individual who has shown leadership in academic and extracurricular activities. The recipient must have participated in the 4H/FFA Sugarbeet Project.*



### **THE 2006 ALBERT FLEGENHEIMER MEMORIAL SCHOLARSHIP HAS BEEN AWARDED TO AMY GERSTACKER OF MIDLAND.**

Amy, whose parents are Kirk and Peggy Gerstacker, graduated from Midland High School with a 4.35 grade point average. Amy was in the top ten percent of her graduating class and a member of the National Honor Society. She plans to attend Michigan State University this fall, with a major in Bio-Engineering.

Amy has been very involved in both school activities and community activities during her school years. She is a committee chair for the National Honor Society and played softball in high school. She is also part of the American Cancer Society Relay for Life team and volunteers to help with Sunday school at her church. She has participated in the Midland County 4-H program for 12 years, winning numerous awards along the way for sewing, crafts, art, shooting sports and showing steers. We would like to congratulate Amy for her outstanding accomplishments and wish her luck in her future endeavors. 🌱





# HISTORY OF SUGAR BEET



## ***Phil B. Brimhall (1938–1999)***

*Phil was involved with sugarbeets throughout his entire life. As a child, he helped on the family farm in Wyoming. Later, at the University of Wyoming he earned his Bachelor of Science degree, doubling in General Agriculture and Vocational Agriculture, and a Master of Science degree in Weed Control. Phil started his career in the sugar industry in 1964, in Longmont Colorado, for Great Western Sugar Company. In 1965, he was transferred to Fremont, Ohio.*

*During his stay in Ohio, he married his beautiful wife, Delores. Together, they raised four boys; Mark, Gary, Glenn and Guy, and one daughter, Lisa.*

*One of Phil's major contributions to the sugar industry was his development of the original technique for applying coloring (Day Glo paint pigment) to monogerm seedcoat. As quoted by*

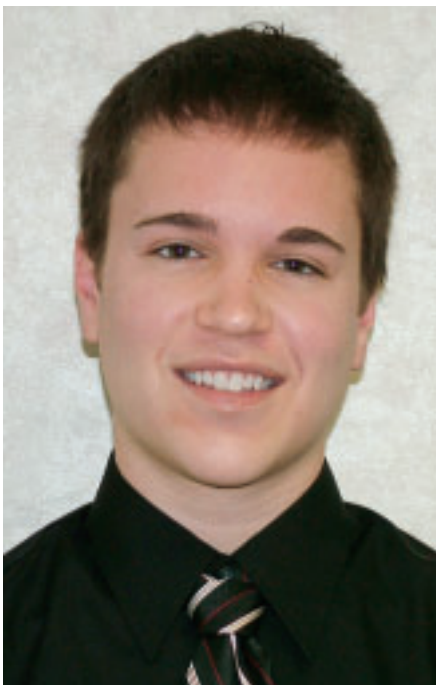
*Dr. Richard Zielke, "Growers appreciated being able to find the seed in the ground."*

*Phil worked for Michigan Sugar Company from 1973 until his retirement in December of 1998.*

*Mark Flegenheimer stated it best in the October 20, 1999, issue of The Sugar Scoop shortly after Phil's passing, "Phil left us with more than just 25-plus years of dedicated service. He left us with many wonderful examples on how to approach work and live our lives. Phil's pride, passion and enthusiasm for his work was second to none, but it's the memories of his friendly, honest approach to life that we will remember most. Phil was truly a genuine person, filled with integrity and trustworthiness."*

*Dolores, knowing Phil's love for the sugarbeet industry, established a fund to provide a college scholarship through Michigan Sugar Company in memory of her loving husband.*

*The Phil Brimhall Memorial Scholarship is awarded each year to a deserving young person who has participated in the 4-H/FFA Sugarbeet Project.*



## **THIS YEAR, THE PHIL BRIMHALL MEMORIAL SCHOLARSHIP WAS AWARDED TO CHAD GOEBEL OF SEBEWAING.**

Chad graduated from U.S.A. High School. He has been involved in many extracurricular activities such as Yearbook, Drama Club, Tri-County Honors Band, the National Honor Society, and many others. He has been involved in the 4-H and FFA Sugarbeet Project for nine years and has earned both the Prestige Award and the Premier Award several times. Chad has also been very active in his high school FFA Chapter. This summer, he participated in the 78th Michigan FFA State Convention where he was awarded a state proficiency in Specialty Crop Production – Entrepreneurship. He kept accurate records of one acre of sugarbeets over the past four years.

Chad graduated from U.S.A High School with a 4.0 grade point average. He plans to pursue a career in agricultural business or agricultural management at Saginaw Valley State University this fall.

Chad's parents are sugarbeet growers; Wayne and Sheree Goebel. Michigan Sugar Company is proud to honor Chad with the Phil Brimhall Memorial Scholarship and wishes him the best in his future. 🌱



## 2006 SCHOLARSHIPS (CONTINUED)



### ***Guy Beals (1964-2003)***

*In November of 2003, the sugarbeet industry lost a valuable young grower due to a lifelong illness. Guy Beals, formerly of Brown City, was not only a successful sugarbeet producer but he also custom harvested over 700 acres of sugarbeets in the Croswell area, sold beet seed for Syngenta, worked at several agricultural suppliers, served as the Maple Valley Clerk (Sanilac County), and was an outstanding role model.*

*With the passing of Guy, a scholarship fund was established in his honor (the Guy Beals Memorial 4-H Scholarship). The East District of Michigan Sugar Company was able to make \$500 available each year to a deserving 4-H Sugarbeet*

*Program participant in the East District. The fund was established from donations of company shareholders and private individuals.*

*The following deserving Sugarbeet Project participants have earned this Scholarship for use in furthering their education:*

2004	Andrew Kirsch (Harbor Beach)
2005	Ashley Roggenbuck (Harbor Beach)
2006	Jared Puvalowski (Ruth)

*The Guy Beals Memorial Scholarship is awarded each year to the 4-H sugarbeet project participant from the East District who earned the most points in the program.*



### **JARED PUVALOWSKI EARNS THE GUY BEALS MEMORIAL SCHOLARSHIP IN 2006**

This year's recipient of the Guy Beals Memorial Scholarship was Jared Puvalowski from Ruth. Jared's parents are Claude and Denise Puvalowski and he is the youngest of six children. The Puvalowskis farm land in the Ruth and Verona areas with Claude's father and brother in the partnership.

Jared scored the highest quantity of points of the entire East District 4-H Sugarbeet Project in 2006, which earned him this distinctive \$500 academic scholarship. He has been involved in the sugarbeet project for the past ten years. For his hard work in the sugarbeet project, he has earned a Prestige Grower Award for the past four years in a row, has twice given the 4-H Sugarbeet Project report at the East District Annual Meeting, and was the Master of Ceremonies at the 2005 East District Sugarbeet Project Awards Banquet.

Jared graduated from Ubly High School in June 2006 with honors, ranking second in his class. Jared was very active throughout his high school years, participating in several sports, was Student Council President, and President of his school's National Honor Society chapter.

Jared plans to attend Michigan State University in the Fall of 2006, working toward a degree in engineering. 🌱





# PRESSED BEET PULP

**Michigan Sugar Company is now accepting orders for pressed sugarbeet pulp for the 2006 processing campaign.**

Our pressed pulp program gives you two options for purchase; either pick up at any of our four factory locations or have pulp delivered to your farm. There are also several discount or rebate options to help you reduce your feed costs. Pressed pulp is made to order, with a guaranteed moisture level that will not exceed 75%.

Pressed pulp can be fed fresh or ensiled in a bunker or Ag-Bag. Properly ensiled pulp contains more than 20% dry substance, is light gray in color and maintains its texture well.

Sugarbeet pulp has been recognized as a valuable livestock feed. It has high energy value, is a good source of protein and contains minerals essential for animal health. Pressed pulp is highly digestible and can reduce digestive disturbances. It is a key ingredient in livestock rations, especially for dairy and beef cattle.

## How to purchase PRESSED PULP:

Contact us at 989-686-1549, ext. 243 or ext. 253 to place orders and determine pick-up or delivery. Orders for specific tonnage must be placed two days prior to delivery to ensure availability.

Loading is normally scheduled during daylight hours during the processing season (late September to mid-February). Specific loading hours for each factory can be determined when orders are placed.

Payments will be due 15 days following an invoice. All trucks are weighed at the factory to determine quantities sold.



## 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 sucrose.*

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and it can be yours!**

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- It neutralizes acidic soils, increasing soil pH
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- Improves legume growth
- Improves stand, root growth, and sugar content of sugarbeets

Give your crops the extra edge to increase yield potential.

For more information, CALL your nearest Michigan Sugar Company processing facility during business hours. \* Monday–Friday, 7:30 a.m. to 3:00 p.m.

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This offer is available from your friends at Michigan Sugar Company, producers of Pioneer and Big Chief Sugar. Locally grown. Locally owned.

\* Truckers/users of lime must comply with DEQ/MI Department of Agriculture regulations. A brief outline of the applicable regulations are as follows:

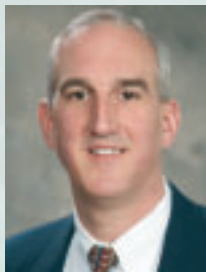
- Truckers: the same regulations for hauling quarry lime apply. You may need to take steps to prevent blowing of dust from the truck.
- Users: the nutrient loading should be accounted for in your fertilizing program. The sugarbeet lime contains: Nitrogen 5.5 pounds per ton, Phosphorus 1.0 pound per ton, Potassium 0.36 pounds per ton, Calcium 570 pounds per ton (80% as CaCO<sub>3</sub> or limestone, Organic content 8%, Moisture content 10%–15%, and Micro nutrients typical background levels

Application should be conducted to not impact any water. A more detailed discussion can be found in the Generally Accepted Agricultural and Management Practices for Nutrient Utilization as approved by the Michigan Commission of Agriculture at the following internet address: [http://www.michigan.gov/mda/0,1607,7-125-1567\\_1599\\_1605-70361-00.html](http://www.michigan.gov/mda/0,1607,7-125-1567_1599_1605-70361-00.html)





# IMPROVING THE BALANCE SHEET THROUGH RETENTIONS



*Brian Haraga,  
Chief Financial  
Officer*

This year, we recognize Michigan Sugar Company's 100th year. In the past, the ownership has been privately held or a subsidiary of a publicly traded corporation. It has only been in the last few years that the growers owned the business as a cooperative. All ownership models present unique challenges in building financial strength. In a co-op, a number of financial options are available to increase equity which may include, but are not limited to, direct investment, debt reduction and per-unit retains. Strategic decisions should be directed to provide the best fit between distributing proceeds to

the grower-owners and retaining for your Cooperative. Using the per-unit retain approach for your Co-op this year, and in the future, will continue to improve Michigan Sugar Company's long-term position in the marketplace, strengthen the balance sheet and ultimately provide the grower-owners income and growth. The tools utilized by Michigan Sugar Company to strengthen the balance sheet combine consistent debt reduction, working capital management, fixed asset investment and unit retention.

What is per-unit retain choice and how does it affect shareholder value? First, it is important to note that shareholder value is a function of both current returns (distributions in the form of the dollar per ton beet payment) and growth (capital gains in the form of preferred share appreciation). Businesses

that distribute 100 percent of earnings focus only on returns. This usually indicates a business that has little need to reinvest funds in excess of depreciation and has modest or little incremental working capital requirements. Retaining 100 percent of the earnings would exclusively focus on capital gains, or the growth in the value of that stock. A third choice is a combination of returns and growth; that is, determining the "best fit" for your Co-op and its grower-owners.

The benefits of utilizing unit retentions for Michigan Sugar Company are many. The retentions help meet strategies associated with continuing long-term growth and balance sheet strength. We will see this through improved creditor analysis. An example of how this works can be seen in purchasing energy. The cost of





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energy has increased dramatically over the past few years. During the same time, those increases have out-paced the supplier credit limits. In order to maximize working capital and improve cash flows, we are in constant negotiation to improve credit terms with those suppliers. A major indicator for the supplier in their decision-making process involves reviewing our balance sheet; most specifically debt-to-equity ratios. By improving this relationship through increased equity, there will be greater opportunity for those suppliers to favorably view enhanced credit applications. This allows us to hold onto cash (borrow less) for a longer period of time, and therefore reduce interest expense. Another use of the per-unit retain is providing funding for specific capital (fixed asset) projects such as the installation of the preliner in Croswell. That asset will upgrade the purification system and improve recovery of sugar. Retentions provide capital for technologically advanced equipment and improve repair and maintenance to support unrealized operational efficiencies. Retains also provide additional benefit with our bank group. Meeting debt covenant requirements ensures that they will continue to provide term and revolver financing, and to a greater extent, that financing can be obtained at reduced costs.

What is the downside to your Co-op by not retaining capital? First, businesses with high debt-to-equity ratios are considered risky by nature. The ability to attract bank financing for future capital projects, such as a second

steam drier for another location, will be much more difficult and may ultimately be unattainable. Second, the sugarbeet processing business is cash intensive and must continue to borrow from bank operating credit lines at higher interest costs. The higher perceived risk results in higher rates. Third, future opportunities to increase your Co-op membership and attract direct investment would be limited.

A per-unit capital retention can provide several benefits for the grower-owners as well. Grower-owners will realize increased value in stock through growth, continue to have a viable market for sugarbeets, and realize an increased return on investment. Although there are many factors and variables that contribute to the beet payment, plant efficiency and beet storage are commonly recognized drivers. The additional capital can support investment in technologically improved assets in the factories while implementation of ventilation systems at piling stations improves beet storage simultaneously decreasing production and plant costs. Similarly, an example on the farm would be reinvesting crop returns to purchase a 16-row planter to replace an eight row planter. This reduces planting time and increases opportunities for growth through additional acres.

Another benefit is the option to delay the pass-through of the tax obligation from the Cooperative to grower-owners. The effect of a non-qualified retention results in no tax obligation in the year of allocation for the grower-owners.

When retentions are used to build your Co-op's equity position, the shareholders will receive either a qualified or non-qualified retention. The determination is actually made by a board resolution at the time the retention is declared. A qualified retention means Michigan Sugar Company will deduct the amount of the allocation from its taxable income in the year the retains were realized. Shareholders receive notice and a corresponding federal tax form 1099 and need to treat their allocated retention as taxable earnings for that year. For a non-qualified retention, Michigan Sugar Company will not be able to deduct the allocated amount from taxable earnings and the shareholder is not responsible for taxable income that year. The tax will follow the cash payment to shareholders in the form of redemption in a future period.

Michigan Sugar Company is 100 years old this year, but as a co-op it is just beginning. This new business model desires to build and improve the financial position of your Co-op for its members. In summary, there are several factors to consider when making a decision regarding a per-unit retain. Strategic decisions should be directed to provide the best fit between distributing proceeds to our grower-owners and retaining for the Co-op. Using the per-unit retain approach for Michigan Sugar Company this year, and in the future, will continue to improve our long-term position in the marketplace, strengthen the balance sheet and ultimately provide our grower-owners income and growth. 🌱



# 2006 SUGARBEET ADVANCEMENT RESEARCH TRIALS



*By Steven Poindexter,  
Michigan State University  
Extension Sugar Beet Educator*

The mission of Sugarbeet Advancement (SBA) is to generate research and utilize

education to enhance productivity and profitability of the Great Lakes sugarbeet industry. SBA research is unique in that trials are usually field scale and are reflective of actual grower conditions. These "actual" conditions remind us, as researchers, what growers encounter when dealing with Mother Nature. This year, 30 research trials were established.

Five of these trials are being planned for abandonment because excess moisture has left them too variable for good research results. The 25 trials that are left for harvest look very good. A brief summary of the trials and preliminary observations are as follows:



*Sugarbeet response to  
2 by 2 28% UAN vs.  
no nitrogen (check).*



## **VARIETY TESTING**

Variety testing continues to be a priority research objective of SBA. Our research allows growers to evaluate varieties under grower management and conditions. There are times that certain varieties react negatively to certain environmental conditions or pests that were not observed under more “protected” trials. Choosing the best variety for the given field conditions is the foundation to successful sugarbeet production. Stand establishment this year ranged from a low of 59% to a high of 74% with an average of 66%. Preliminary observations look as though 7172RZ and ACH-355 have good Rhizoctonia tolerance and ACH-355 is setting a new standard for leafspot resistance.

## **NITROGEN**

Nitrogen management research is being conducted in two research trials. Our goal is to determine optimum N-rate to produce the best recoverable sugar per acre. This year’s work is looking at N-rate on B-5534N, the new nematode tolerant variety and determining proper N-rate on low population beets. Producers don’t always have perfect stands. These low population beets traditionally produce poor quality. Managing nitrogen in these situations can help maintain quality and improve profits.

## **RHIZOCTONIA CROWN ROT**

Rhizoctonia crown rot research is also being continued. We know from previous research that high rates of Quadris will reduce Rhizoctonia crown rot. Research

this year is looking at the efficacy of reduced rates of Quadris on Rhizoctonia. Both in-furrow and foliar applications are being evaluated.

## **STARTER FERTILIZER**

Starter fertilizer research including both in-furrow and 2 by 2 placement is being conducted. Previous research has shown that increasing nitrogen in the starter fertilizer promotes faster early season leaf growth. This year we are seeing the response with both 28% UAN and 10-34-0 applied 2 by 2. Little response was seen with the in-furrow treatments alone.

## **NEMATODE RESISTANCE**

The nematode tolerant variety B-5534N is being further evaluated in four trials that SBA is conducting. This data will be combined with Michigan Sugar Company research. The impact sugarbeet cyst nematode has on reducing crop yield is large. This pest is one of the leading factors that can limit crop yield in the Saginaw Valley. The results from previous years have shown that utilizing a nematode resistant variety can increase yield up to ten tons per acre. Nematode resistance in conjunction with oil seed radish used as a trap crop, can have a major impact on yield. One additional trial has been initiated that utilizes radish in slurry manure for establishment. Beets will be planted next year.

## **PRIMED SEED**


Primed seed has improved sugarbeet emergence which has led to increased yields under our Michigan

conditions. Seed companies are developing their own priming systems which need to be evaluated along with potential improvements over our current PAT seed. A new primed product called X-BEET is being evaluated in several trials. Preliminary observations indicate this product may result in faster emergence than our standard primed seed.

## **CERCOSPORA LEAFSPOT**

Timing of fungicide applications for Cercospora leafspot control continues to be an important area of research for SBA. Yield and quality of beets is greatly affected by poor leafspot control. Research in other areas indicates that there may be plant health effects (greening) if a certain chemistry is applied within 45 days of harvest, even if leafspot is not present. This is extremely important to the industry if yield enhancement can occur by simply changing the order of fungicides.

## **ADDITIONAL RESEARCH**

Additional research that is being conducted includes tillage, cover crop, harvest loss and economics of replanting. Results of the trials will be published in the SBA On Farm Research Book and reported during the winter meetings. Sugarbeet Advancement has tried to respond to critical production issues facing the industry. Your input is always welcome as we develop our research and educational agenda. 

# RESEARCH UPDATE — SUMMER 2006



*By Jim Stewart,  
Director of  
Research, and  
Lee Hubbell,  
Research  
Agronomist*



## ROUNDUP READY SUGARBEETS

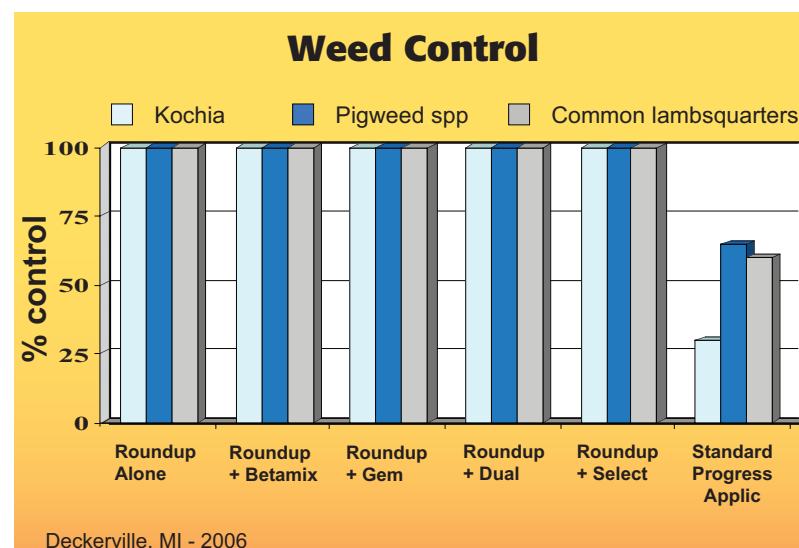
There has been a renewed interest in Roundup Ready sugarbeets across the country in 2006. A large scale trial is being conducted in Idaho where Roundup Ready sugarbeets are being produced and will be processed through the Twin Falls, Idaho, factory. The most significant portion of this trial may be the test marketing of the sugar for consumer acceptance from these Roundup Ready sugarbeets. More large scale trials are being planned for 2007 and commercialization by 2008 is a real possibility.

Michigan Sugar is conducting six biotech variety trials this year to evaluate the agronomic traits of the new Roundup Ready varieties. We will be looking at sugarbeet emergence, yield, percent sugar, percent

clear juice purity, Cercospora leafspot resistance, as well as tolerance to other diseases and insects. Two varieties from ACH, three varieties from BetaSeed and four varieties from Hilleshog are being evaluated. The trials are located at Bayport, Sandusky, Breckenridge, Akron, Albee and at the Bean and Beet Farm, near Saginaw.

All but one of the nine Roundup Ready varieties are first year entries and eight of the varieties are resistant to Rhizomania. Five have tolerance to Rhizoctonia and seven claim root aphid resistance. Emergence and growth in the trials has been good and we expect to obtain valuable data from all sites. Information from these trials will not

### TABLE 1



*Weed control in Roundup Ready sugarbeets.*





be available until later in the year.

The tech fee for 2007 and 2008 was recently announced to be \$106 per unit, which will put the cost to growers somewhere in the range of \$50 per acre.

The main advantages of the Roundup Ready system will be 1) significantly improved weed control, 2) fewer herbicide appli-

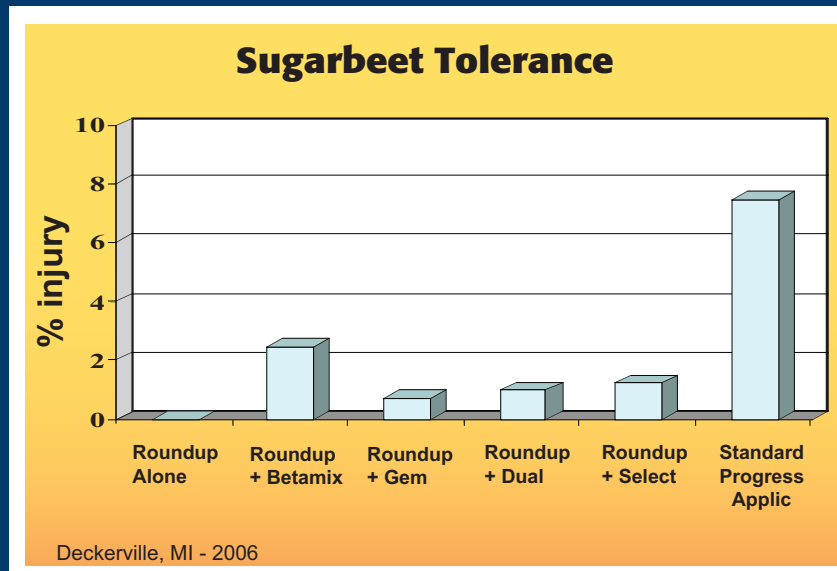
cations, 3) flexible application timings, 4) reduced crop injury and 5) improved crop yields.

In addition to the Biotech Variety Trials, we are also conducting Roundup Ready weed control studies to determine how to implement the Roundup Ready system in sugarbeets. Two trials were conducted looking at tank

mixing Roundup with common products such as fungicides, grass herbicides or residual soil herbicides. In these trials, Roundup provided very effective control of pigweed species, common lambsquarters, kochia and wild mustard. We did not see any reduced weed control (Table 1) or increased sugarbeet injury (Table 2) with any of the tank mixtures. All of the Roundup treatments provided better weed control than the conventional Progress treatments (Table 1).

Another study was designed to determine the timing of the Roundup applications. The primary weeds present at this site were common lambsquarters, pigweed species and velvetleaf. A single Roundup application at the two to four leaf stage did not provide adequate weed control because of late emerging weeds. A single Roundup application applied at the eight to twelve leaf stage provided relatively good weed control, however, the crop was stunted by weed competition from the delayed application. Two Roundup applications applied at the two to four leaf stage and at the eight to twelve leaf stage provided nearly complete weed control. Slightly

**TABLE 2**



*Roundup Ready sugarbeet tolerance to herbicides.*



**TABLE 3**

better weed control was achieved with three Roundup applications applied to cotyledon stage beets, two to four leaf beets and six to eight leaf beets (Table 3).

Even though we are looking forward to Roundup Ready, we will continue with traditional weed control research until the Roundup Ready system is in place.

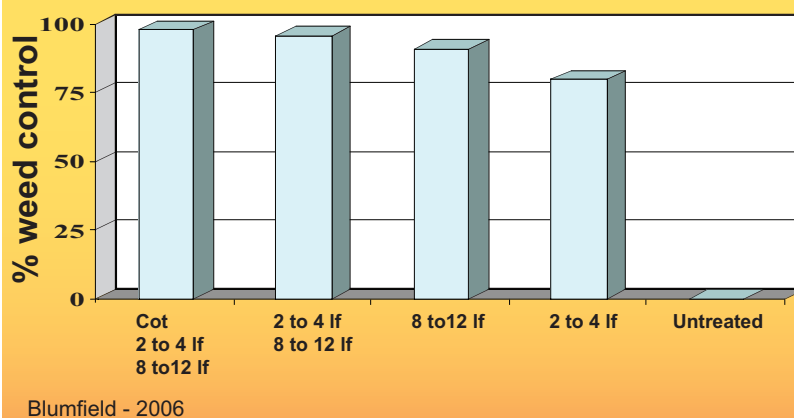
## CONVENTIONAL WEED CONTROL TRIALS

Several herbicide trials were conducted this year examining different methylated seed oils (MSOs), tank mixing Dual Magnum and Outlook in the micro-rates, increasing the Betamix rates in the micro-rates and reduced rates of Dual Magnum applied preemergence followed by micro-rates.

The addition of a MSO is necessary to make the micro-rate system work. We are constantly testing various brands of MSO to make sure that we are only recommending high quality products to our growers. Trials in 2006 did not indicate differences between the common MSOs used in our area. Adding Transactive, a nonionic surfactant with ammonia, increased crop injury significantly as did Z-64, an MSO used in the Red River Valley. Z-64 contains a nitrogen source which boosts weed control, but also causes crop injury. Dyne-Amic, which is a blend of nonionic, silicone surfactants and MSO, provided slightly less weed control and crop injury (Table 4).

Adding Dual Magnum or Outlook in the first micro-rate caused significant sugarbeet injury in trials again this year (similar to

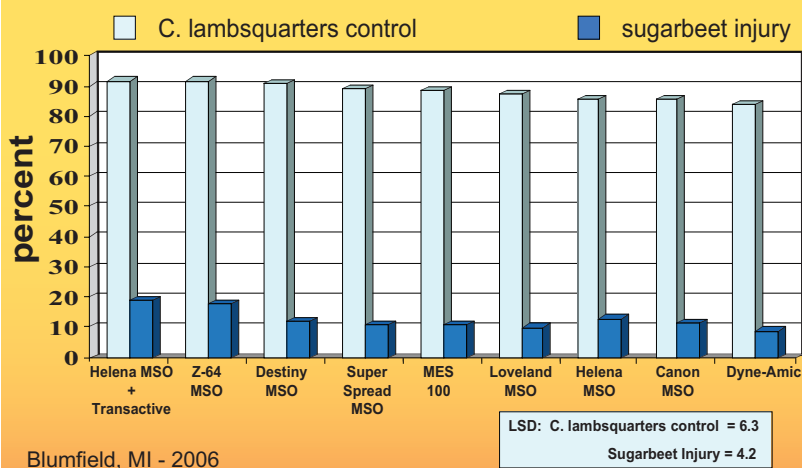
### Weed Control in Roundup Ready Sugarbeets



*Weed Control from Roundup applied to Roundup Ready sugarbeets at various stages of sugarbeet growth.*

**TABLE 4**

### Comparison of MSOs in Micro-Rate Applications



*Comparison between methylated seed oil products for weed control and sugarbeet injury.*



previous research). Some injury occurred at the second micro-rate timing but little sugarbeet injury was observed when the herbicides were applied with the third micro-rate timing. Splitting the Dual Magnum or Outlook rate into multiple small doses was safer than applying a single full dose.

A half-rate of Dual Magnum applied preemergence followed by micro-rates provided better weed control than micro-rates alone and did not cause crop injury. Norton applied preemergence followed by micro-rates resulted in weed control similar to the Dual Magnum treatments. Weeds controlled were wild mustard and common lambsquarters. The full-rate of

Dual Magnum caused moderate sugarbeet injury.

Raising the Betamix rate to 12 or 16 ounces per acre in the second, third or fourth micro-rate improved weed control without causing excessive crop injury. When raising the Betamix rate to 22 ounces per acre, weed control was not improved over the 12 to 16 ounce per acre rates, but crop injury increased noticeably. Similar results were observed in previous research.

## VARIETY TESTING

In addition to the nine varieties with Roundup resistance, 31 are being tested in the Official Variety Trial (OVT) and two varieties with cyst nematode resistance are

being tested in a separate trial due to low Cercospora resistance. At this time, all six nematode variety trials and five of eight OVTs planted should be good to use for variety approval. The lost OVT locations were caused by dry soil and uneven emergence. Rhizomania was confirmed at one OVT location. We are very interested to determine how the varieties will respond to the disease. Three of the four Cercospora nurseries we planted should produce good results. For the first time, we are trying to conduct a Rhizoctonia nursery here in Michigan to evaluate variety resistance. 🌱



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# 4-H/FFA SUMMER FUN

*By Kent Graf, Keith Kalso, John Leach and Dennis Montei, Michigan Sugar Company Agricultural Managers*

The 4-H/FFA summer trip stayed close to home again this year, and it was fun and interesting.

Approximately 140 members,

parents and leaders involved in the 4-H/FFA Sugarbeet Project attended and enjoyed the day at Kokomo's Family Fun Center in Saginaw, Michigan. Everyone arrived at 10:00 AM and the fun began. There was a laser tag area, putt-putt golf, go-karts, water bumper boats and an arcade.

Everyone made the most of the three hours allotted to the group. The laser tag and go-karts seemed to interest the participants the most. At noon, pizza and pop was served and an hour later, it was already time to go. It was an enjoyable day and the members all had a good time. 🌱



## WEST DISTRICT ANNUAL SUMMER 4-H OUTING

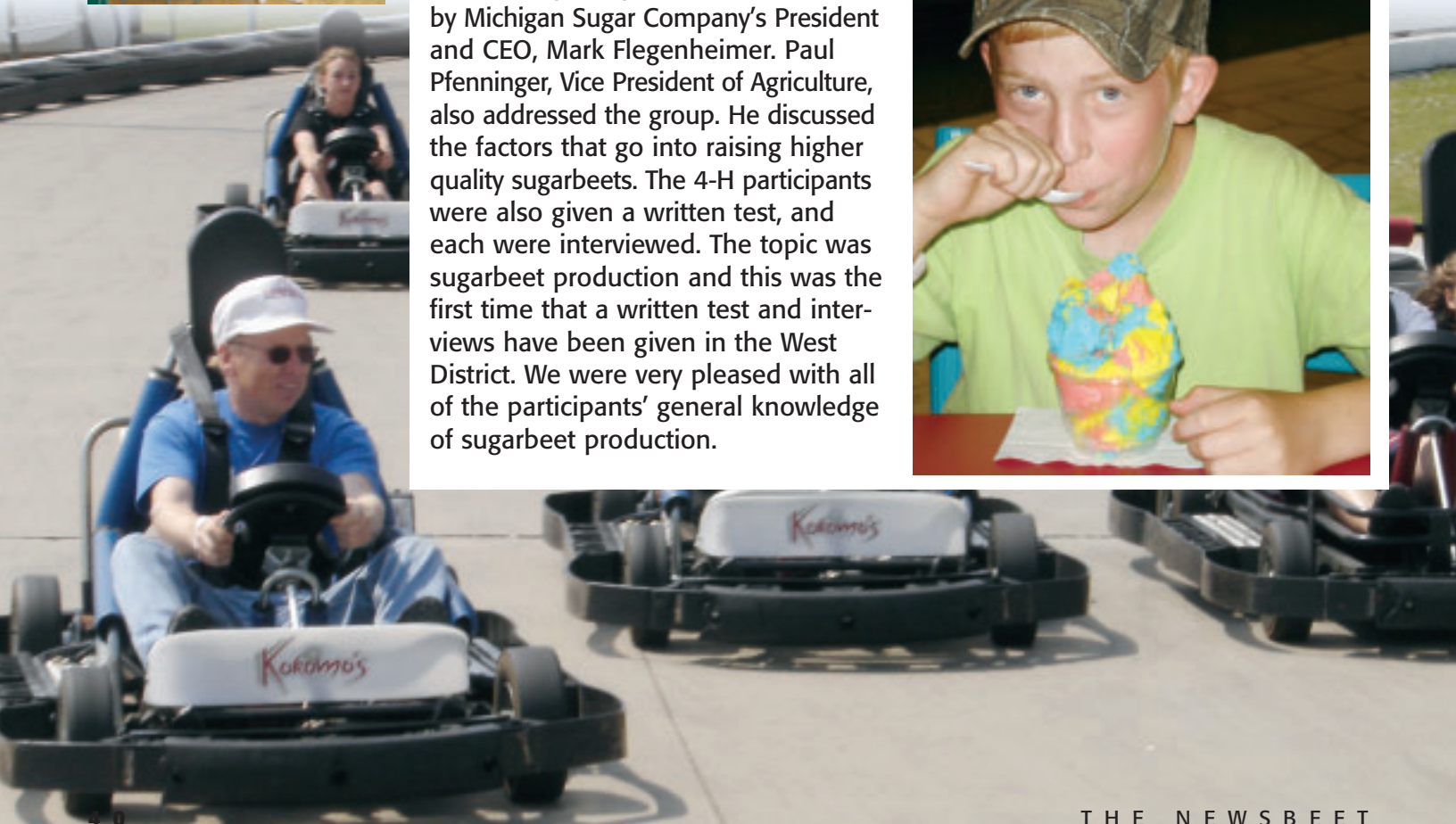
*By John Leach*

The West District held its annual summer 4-H outing at the Bay City factory on July 13, 2006.

This event was in cooperation with Michigan State University, Bay and Saginaw County Extension Services, and Reggie VanSickle from Sugarbeet Advancement.

The 4-H participants were welcomed by Michigan Sugar Company's President and CEO, Mark Flegenheimer. Paul Pfenninger, Vice President of Agriculture, also addressed the group. He discussed the factors that go into raising higher quality sugarbeets. The 4-H participants were also given a written test, and each were interviewed. The topic was sugarbeet production and this was the first time that a written test and interviews have been given in the West District. We were very pleased with all of the participants' general knowledge of sugarbeet production.

Parents and 4-H participants were given a factory tour. The participants also had a short weed identification session and were taught how to prepare their beet project for the fair. We finished with pizza for lunch and an ice cream sundae for dessert. It was a great learning experience and an enjoyable time for all. 🌱







*By Michael Leen,  
Agriculturist,  
East District*

The McNaughton's have a long history working with sugarbeets just south of Croswell. They have been growing and custom harvesting since the 1950s. Three brothers, Gary, George and Ross McNaughton along with Gary's son, Chad, are currently involved in raising sugarbeets.

Gary began farming in 1966 after graduating from high school. He farmed 250 acres and began installing drainage tile in his fields in 1977. Gary believes that tile drainage is important for raising quality sugarbeets. Gary started with 30 acres of sugarbeets and currently owns 100 shares. He worked closely with George and Ross until 1997. Chad began farming in 1995 with 67 acres. Chad started raising sugarbeets in 1998. Between Gary, Chad, George and Ross, they own over 650 shares in Michigan Sugar Company.

Working together and helping their neighbors has been a continuing theme with the McNaughton's concerning sugarbeet production. Gary's father, James, custom harvested sugarbeets in the 1950s before he passed away. Gary was then nine years old. Gary and his brothers custom harvested 140 acres in 1966. At times, they had trouble harvesting their own beets, since they harvested their neighbors' beets first. In 1978, they were harvesting 400 acres of beets and in 1999 they harvested 600 acres with a four-row harvester. In 1978,



*Gary and Chad McNaughton.*

they planted 1,100 acres with a six-row planter. Michigan Sugar Company, with Louie Muir, coordinated a program in 1998 called "Farm Services" to encourage more sugarbeet production in the Croswell area. This program organized growers who would custom plant, spray and harvest sugarbeets. The McNaughton's participated in this program and Chad was one of the first to custom apply herbicide micro-rates in Michigan.

Transportation and fuel costs are issues that the McNaughtons face when hauling beets over 20 miles to Croswell. Gary and Chad feel that early harvest and delivery is important to the success of Michigan Sugar Company. Chad enjoys the value of some of the new technology Michigan Sugar Company has to offer. "The Michigan

Sugar Company website has definitely improved communication with and between growers", says Chad. He also feels that BeetCast is a good tool for managing Cercospora leafspot.

Gary and Chad both enjoy collecting toy tractors. Gary and his wife, Sandra, Chad and wife, Alison and new baby, Lily, are members of the North Street Baptist Church. Gary and Sandra have two daughters, Sonya and Lori, and three other grandchildren, Issac, Isaiah and Bethany. Chad received an accounting degree from Michigan State University in 2001 where he was a member of Alpha Gamma Rho, an agricultural fraternity. Chad also has been active by serving on the State Young Farmer Committee with Farm Bureau. 



*By Lewis Parks,  
Agriculturist,  
Central District*

In Northeast Huron county, you can find a lot of sugarbeets and one of Michigan Sugar Company's long-time growers, Erwin Schave. Erwin is 82 years old and has been growing sugarbeets since he signed his first contract at age 21. Erwin also helped his father, Adolph, raise sugarbeets in the '20s and '30s. Adolph grew two acres of beets and would haul them to Port Hope or Harbor Beach where they would shovel the beets off by hand into railcars heading for Croswell.

When Erwin began raising sugarbeets in 1946, a typical yield was between eight and nine tons per acre. In 1948, he raised 12-ton-per-acre beets and that was the best yield in the area. His first harvester was a one-row Scottviner belt drive. This harvester would lift and top beets with one machine. As with many new tools, it needed some adjustment, since it would throw off the belts every 15 minutes. After the Scottviner, Erwin moved up to a two-row John Deere harvester and then a four-row John Deere. The advantages of the two-row John Deere were that it would load directly into trucks and had more capacity.

Erwin started growing two to five acres of sugarbeets in the 1940s and grew as many as 85 acres of sugarbeets in the 1970s through the 1980s. In 1972, the first piler was placed in Verona,



*Erwin Schave on his "antique" CO-OP tractor.*

which led to rapid expansion of sugarbeet acres in the area. Most growers had two-row harvesters at that time. Currently, Erwin grows 28 acres of black beans, 50 acres of wheat, 29 acres of corn and 64 acres of soybeans, in addition to 32 acres of sugarbeets. He also raises 25 head of cattle. Since 1996, Erwin operates the topper in the fall and works with Les Weiss when harvesting sugarbeets. Erwin's harvesting group will harvest over 600 acres of sugarbeets this fall.

Erwin farmed with his wife, Helen, and his sons, Jerry and Chucky.

Some of Erwin's most difficult challenges in growing beets were weed control and wet weather. Erwin remembers 1946 and 1966 as wet years for harvest. In 1946, beet harvest did not start until Thanksgiving. In the 1960s, TCA was available for weed control and was a big help in reducing labor costs. Erwin remembers one year

when Michigan Sugar Company recommended salt brine for weed control.

Erwin feels that sugarbeets have always been a good cash crop; that may be one reason why Erwin may be the longest, continuous sugarbeet grower for Michigan Sugar Company. He is also proud of the amount of sugarbeet acreage in his area. Within the section of land which Erwin lives, only 40 acres do not have sugarbeets growing this year. "With modern equipment, it is easy to grow beets," says Erwin.

Aside from his farming career, Erwin operated a saw mill until 1974. For entertainment, he enjoys playing cards. He also enjoys traveling and for many years went to Mio for the Fourth of July. In 1963, he helped organize the first tractor pull in Port Hope. His 4,500 pound 77 Oliver tractor won many trophies at that event. 🌱





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