Sugarbeet Advancement Program Evaluation
2007

Partnership of:
Sugar Beet Growers
Michigan Sugar Company
Michigan State University
Agribusiness

Mary ZumBrunnen, Graduate Student
Murari Suvedi, Professor
Center for Evaluative Studies
Department of Community, Agriculture,
Recreation and Resource Studies
Michigan State University
Acknowledgements

The authors wish to acknowledge Michigan State University Extension and the Michigan Agricultural Experiment Station and Michigan Sugarbeet Advancement Program for funding this evaluation. They contributed to funding this evaluation.

We acknowledge the support we received from Steven S. Poindexter, MSUE Sugarbeet Educator for his help in the development and finalization of the survey instrument, coordinating the survey administration and providing useful and relevant feedback to the survey results. Special thanks to Michigan Sugarbeet Advancement Committee for their assistance in reviewing the survey instrument.

We greatly appreciate the cooperation and support from all members of Michigan Sugar Cooperative who took time to complete and return this survey.

Mary ZumBrunnen
Murari Suvedi
Sugarbeet Advancement Program Evaluation

2007

Mary ZumBrunnen, Graduate Student
Murari Suvedi, Professor

Center for Evaluative Studies
Department of Community, Agriculture, Recreation and Resource Studies
Michigan State University

Executive Summary

The Michigan Sugarbeet Advancement (SBA) program was initiated in 1997 to help sugar beet farmers adapt to economic and environmental changes through research and dissemination. In 2006 an evaluative study was conducted to understand SBA’s impacts on Michigan’s sugar beet industry. It attempted to understand (a) the credibility of SBA in beet research and educational information; (b) SBA’s dissemination of research-based information to growers; and (c) changes in sugar beet production practices by the growers due to this information. The study also attempted to learn about sugar beet grower concerns and specific suggestions from growers for educational program offerings.

After a careful review of SBA activities during the past ten years and discussion with SBA Extension Educator and affiliated growers, a survey instrument utilizing traditional mailing methods, was developed and delivered to Michigan sugar beet farmers. The population included 1,342 sugar beet growers across Michigan. The survey was administered during January - March 2007. The survey had a response rate of 23.4 percent. Following are some of the key findings of this evaluation of the SBA program.

- Respondents came from various Michigan counties with the majority farming in Huron, Saginaw, Tuscola and Sanilac.
- The average sugar beet farmer cultivates about 1,300 acres of which about 250 acres of this is devoted to sugar beet production.
- Farmers averaged about 50 years old and worked on family owned farms full-time.
- About three-quarters of survey respondents plan to pass their farm on to family members when they retire.
- Over three-quarters of respondents have access to a computer, the Internet and e-mail. About half the respondents indicated using the computer, Internet and e-mail on a two to three times per week basis or daily.
- The majority of growers indicated that SBA is their preferred source of information. Respondents indicated that SBA should take the lead in educational programming and rated SBA overall as the most heavily relied on source for research-based information.
- Over two-thirds of participants participated in, attended or used SBA’s farm meeting/workshops, the Bean and Beet Symposium, Sugar Beet Seed Week, “On Farm Research Demonstration” SBA publication, information from quarterly newsletters, Cercospora Leafspot bulletin and production tip cards (tips for maximizing sucrose production).
Conversely, two-thirds or more of respondents indicated that they had not attended harvester clinics, used the SBA website or had a local Extension Educator visit their farm.

The information provided by the SBA programs was deemed to have helped farmers make positive changes in their practices by about two-thirds of participants. Also, two-thirds of respondents indicated that SBA information had helped increase their income due to changes in production practice.

Overall yields have increased from 18 tons per acre in 1997 to about 24 tons in 2006.

Major grower concerns can be grouped into four categories of: 1) profit, 2) disease control, 3) industry stability and 4) MI Sugar Company stability.

Selected suggestions for Sugarbeet Advancement improvement include:
- “A number to call to alter up coming field problems.”
- “Continue to identify ‘best hybrid.’”
- “Cooperate with Co-op research/production staff.”
- “Keep us more up to date on sales of sugar and price.”
- “More research on nematodes.”
- “Improve relationship with MI Sugar.”
- “Look into soil types, rotations, cover crops, row spacing, in general other ways.”
- “Overall just keep up the job being done now.”

Introduction

Michigan Sugar Beet Production History

The sugar beet industry in Michigan was termed an industry at risk when profitability declined for both producers and processing companies beginning in the 1970’s. Following this sugar beet yield decreased from 20 to 19 tons per acre during the 1980s to 16 tons per acre between 1991-1998. No single factor, but rather a multitude of production problems was associated with this decline. Twenty percent of beet acreage planted annually was replanted due to poor emergence, and 20 percent of beet plants were estimated to be lost between emergence and harvest (Suvedi, 2001).

In 1997, sugar producers from Michigan’s Thumb area approached Michigan State University (MSU), Michigan State University Extension (MSUE) and the Michigan Agricultural Experiment Station (MAES) in hopes of strengthening their dying industry. The result was the creation of the Great Lakes Sugarbeet Advancement (SBA), a cooperative partnership between Michigan State University, Michigan Sugar Company, area growers and agribusinesses with the goal of generating research and utilizing education to enhance productivity and profitability of the Great Lakes sugar beet industry.

The mission of the SBA program is to utilize research and education in revitalizing the Michigan sugar beet industry through a cooperative effort involving Michigan State University, sugar companies and producers. Its major efforts include conducting on-farm applied research and increasing educational opportunities for sugar beet producers.

The Sba program has been funded through an assessment of fees from sugar beet producers and sugar related companies. The program also receives grant dollars from the state funded Generating Research and Extension to meet Economic and Environmental Needs initiative coordinated by MAES.

Sugarbeet Advancement introduces “new technologies into current dry edible bean and sugar beet production systems that are profitable to the growers of these crops. New developments in varieties include increased yield and quality, disease resistance and growth habit that are requested by farmers and industry representatives working in cooperation with research scientists” (MAES, 2006).

Sugarbeet Advancement has worked closely with the Michigan Sugar Company to offer many educational programs and conduct applied projects by facilitating efforts with company personnel to coordinate multi-partner efforts. Sugarbeet Advancement is working to deliver research information from all relevant
solutions to growers both within and out of Michigan. To continue generating research and utilizing education to enhance productivity and profitability of the Great Lakes sugar beet industry, SBA objectives include cooperative efforts involving MSUE, MSC, MAES, producers and agribusiness to identify research needs, conduct educational programming and identify promotional and financial support.

**Study Objectives**

The 2006 evaluative study has an overall goal of determining the impact and influence that the SBA program has had on changes in sugar beet production practices. Specifically, the objectives of the 2006 evaluation of the Michigan SBA program are to:

1) Determine the demographic, socio-economic characteristics of sugar beet growers.

2) Determine grower participation in SBA educational programs and activities.

3) Ascertain grower perceptions of the quality of SBA educational programs and activities.

4) Identify the sources of information utilized by sugar beet growers: 1) the most heavily relied on source of current beet research information, 2) the most preferred source of information, and 3) who farmers feel should take the lead in providing educational programming for the sugar beet industry.


6) Solicit growers’ perspectives on their sugar beet yield and profitability.

7) Explore the major concerns of Michigan sugar beet growers.

This study is significant at the state and national level to sugar beet producers, economy and culture. As grower feedback is analyzed, more informational and efficient services may be provided to improve education and profit while maintaining environmental sustainability. Documenting current farming trends, such as production practices, will help researchers better project future trends and needs to meet them. Furthermore, it is critical to the success of the Michigan sugar beet industry, state economy and culture to understand sugar beet producers’ future plans for their farm land such as family inheritance or development. Lastly, grower concerns and ideas for SBA improvement and perception of continued services are important to continue this programs success into the future.

**Methodology**

The population for this study included sugar beet farmers across Michigan. The SBA mailing list served as the sampling frame, totaling 1,342. This study followed a descriptive case study research design, utilizing a mail survey for data collection and analysis. A mail survey was chosen because of its low cost and uniform access to dispersed populations without interviewer bias (Dillman, 2006).

The survey instrument was developed after a careful review of the SBA program. Results from the 2001 study were utilized to facilitate development of survey questions. The draft instrument was examined by the Center for Evaluative Studies, MSUE SBA Extension Educator and several SBA affiliated growers, who provided feedback upon which the instrument was revised. A six page survey instrument was developed to assess SBA impacts using both closed and open-ended questions.

Respondents were asked to indicate their farming practices, information sources, profitability, SBA program participation, computer-use and suggestions/comments/concerns. Topics covered many farming practices concerning primed seed, planting dates, plant population, Cercospora Leafspot control, weed control, Rhizoctonia Crown Rot and more. Questions such as: “Do you use primed seed?”, “On average, has your planting date changed during the last ten years?”, and “What was your 2006 average seed spacing” were asked.

After each farm practice question, a follow-up question was asked to help researchers understand the most influential sources of information for current practices. Also, general preferred sources of research and educational information questions were asked such as “Overall, who do you rely most heavily on for current research information?” and “Who do you feel should take the lead in providing educational programming for the sugar beet industry?”.

This study also attempted to determine efficient avenues for research and education dissemination by asking whether respondents had access to a computer, the Internet, and email accounts. To understand if these means are efficient ways of communicating, questions were also asked regarding
daily and weekly use. Using a one to six scale (1 = “Never” and 6 = “Daily”) participants were asked if they regularly used a computer, the Internet and accessed their email accounts.

Participants were also asked to rate the quality of SBA events and media using a one to five scale with one representing “Poor” and five representing “Excellent”. A Likert-type scale was implemented to gather information about SBA program participation and change in practices. The scale relied on a one to five numbering system with one being “Strongly Agree” and five being “Strongly Disagree”. Open-ended questions solicited suggestions for SBA improvement, grower concerns and comments.

Concerning profitability, respondents were first asked to indicate their average beet yields in 1997 and 2006. Second, participants indicated whether their sugar beet profits had increased or decreased during the last ten years. If profits had decreased, a follow-up question requested respondents to detail reasons for this.

The survey concluded with an open-ended question asking if respondents had any other information to share such as ideas, concerns and suggestions. Throughout the survey similar questions were asked such as “Please suggest how the SBA program could improve its role in helping Michigan beet growers” and “What are your major concerns for Michigan sugar beet growers?”

The data collection instrument was formatted using Adobe Pagemaker 7.0 and designed to be folded and taped shut with pre-paid postage and tracking number included on the front. The SBA Extension Educator, representatives from the SBA producer mailing list and Center for Evaluative Studies staff reviewed the survey to ensure usability. The survey instrument took no more than twenty minutes to complete.

Data Collection
The survey population consisted of all sugar beet farmers from the SBA producer mailing list. The SBA Extension Educator spoke of the survey and its importance prior to the first mailing at multiple formal settings, such as workshops, and informal settings, such as field encounters with sugar beet farmers to increase awareness and the rate of response. Surveys were mailed during the first week of January, 2007. The mail-out package consisted of the questionnaire, a cover letter and instructions for folding responses to expose postage ensuring free return. The cover letter emphasized the importance of the survey, guaranteed confidentiality and requested a prompt response.

A follow-up reminder letter requesting participants to fill out the survey and discussing its value was sent after two weeks. A follow-up packet consisting of a cover letter and survey was mailed on February 7th to farmers who had yet to respond. By March 15, 2007 almost one-quarter of the surveys were returned. This totaled 305 usable responses. Thirty-seven surveys were returned unusable for reasons including incorrect address, deceased contacts and recipients’ change of employment. This resulted in a response rate of 23.4 percent.

Analysis of Data
Data was analyzed using the Statistical Package for the Social Sciences (SPSS 12.0) computer software program. Descriptive statistics such as frequencies, percentages, medians, means and standard deviations were used to analyze the data. Qualitative responses were analyzed through data entry, coding and theme notation in Microsoft Word 2003.
Results and Discussion

Socio-economic Characteristics of Respondents

The number of farms in America has been on the decline since the 1970’s (USDA, 2006). With this in mind, this study attempted to understand current Michigan farming demographics, such as the number of full-time farmers, their age and what they plan to do with their farm in the future (e.g., sell it, pass down to family members or rent it out).

Of the 305 respondents, most (83.6%, n=255) were full-time farmers as shown in Figure 1. Part-time farmers consisted of about one-tenth (11.1%, n=34) of respondents. Those that considered themselves something “Other” than farmers (5.2%, n=16) responded with, “retired” (n=10) yet still active on the farm or as “technical support” (n=6) such as consultants and field representatives for example.

Figure 1: Type of Farmer (N=305).

Survey results demonstrate that more than half (59.4%, n=174) of Michigan sugar beet producers operate family owned farms (Figure 2). Almost one-third operate individually owned farms (30.0%, n=88) and less than one-tenth of beet farm are corporately owned (7.8%, n=23). “Other” farm type responses (2.7%, n=8) included “partnership”, “technical support to beet growers” and “land privately owned, farming under corporation”.

Figure 2: Type of farm operated (N=293).

Growers’ needs, efficient communication avenues and future farm trends vary by age. To understand Michigan sugar beet farming population needs and avenues for disseminating educational information, respondents were asked how old they were. Most respondents (80.3%, n=232) ranged between 31 and 60 years old and averaged about 50 years old. This was followed by almost one-fifth (17.0%, n=49) at or beyond standard retirement age. The minority of respondents (2.8%, n=8) were 30 years old or younger.

Figure 3: Level of education (N=301).
The farm size of sugar beet growers ranged between 39 and 6,900 total acres and average about 1,325 acres (Stdv.= 1188.3). Of this, farmers plan to grow about 250 acres (M=253.4, Stdv.= 256.5) of sugar beets in 2007 as shown in Table 1. This sugar beet acreage ranged from nine to 1,500 acres. Average beet acreage has increased from 1996 by about 25 acres. When asked how long have been growing beets, farmers responded with a range from one to sixty years with an average of about 27 years (M=26.7, Stdv.=12.8). It was found that farmers plan to grow sugar beets on about 253.4 acres (Stdv.= 256.5) ranging between nine and 1,500 in 2007. This has increased from 1997 when harvested acres totaled about 224.9 (Stdv.= 221.1).

Respondents represented 15 sugar beet producing counties in Michigan. The most commonly sited sugar beet farming counties were Huron, Saginaw, Tuscola and Sanilac or some combination of these and/or Arenac, Bay, Clinton, Gratiot, Isabella, Lapeer, Midland, Montcalm, Ogemaw, St. Clair and Shiawassee. Combinations included some such as “Midland, Gladwin and Bay” or “Sanilac and St. Clair”.

Farm ownership is a key factor to family economic well being in the farming community. Respondents were asked to indicate the nature of ownership of the farm they operate and whether they inherited the land on which they grow sugar beets. Slightly more than three-quarters (78.4%, n=229) of farmers said their farms had been passed down from family member to family member as shown in Figure 4. In the future, also about three out of four of (75.2%, n=203) plan on passing their farms to the next generation (Figure 5). Of those who do not plan to pass on the farm to their family members (24.8%, n=52) most of them plan to rent (70.3%, n=52) or sell (16.2%, n=12) (Figure 6).

<table>
<thead>
<tr>
<th>Statements</th>
<th>Median</th>
<th>Mean (Stdv.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was your age as of last year? (N=289)</td>
<td>50</td>
<td>50.4 (10.5)</td>
</tr>
<tr>
<td>What is your total farm size including all crops? (N=292)</td>
<td>980</td>
<td>1324.6 (1188.3)</td>
</tr>
<tr>
<td>On how many total beet acres do you plan to grow in 2007? (N=285)</td>
<td>160</td>
<td>253.4 (256.5)</td>
</tr>
<tr>
<td>How many total harvested acres did you have under sugar beet production in 1996? (N=260)</td>
<td>150</td>
<td>224.9 (221.1)</td>
</tr>
<tr>
<td>How many years have you been involved in growing beets? (N=294)</td>
<td>29</td>
<td>26.7 (12.8)</td>
</tr>
</tbody>
</table>

![Figure 4: Farm passed down from family member to family member (N=292).](image)

![Figure 5: Intent to pass down farm to family in the future (N=270).](image)
Computer and Internet Use

Questions regarding computer access and use were asked in an attempt to better understand avenues for educational research and information dissemination. First, respondents were asked if they had access to a computer, the Internet and an e-mail account. This was followed up by asking how frequently each was used on a monthly, weekly or daily basis. It was found that nine out of ten participants have access to a computer (90.1%, n=274), almost nine out of ten have access to the Internet (88.1%, n=266) and almost three-quarters (70.2%, n=207) have access to an e-mail account as shown in Table 2.

Following this, questions regarding frequency of Internet use were asked to determine the most efficient avenues for SBA communication. Together, over half of the respondents indicated either using the computer daily (38.4%, n=112) or two to three times per week (17.5%, n=51) as shown in Table 3. Similar results were recorded for Internet use with about half of the respondents indicating either daily (35.8%, n=105) or two to three times per week access (16.4%, n=48). Email accounts were used less frequently by just over a quarter of participants on a daily (27%, n=78) or two to three times per week (13.1%, n=38) basis. Therefore, though many have access to the computer, Internet and e-mail accounts, electronic means of communication may not be as effective as traditional mail based on frequency of use findings.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have access to a computer? (N=304)</td>
<td>Yes 274</td>
<td>90.1</td>
</tr>
<tr>
<td></td>
<td>No 30</td>
<td>9.9</td>
</tr>
<tr>
<td>Do you have access to the Internet? (N=302)</td>
<td>Yes 266</td>
<td>88.1</td>
</tr>
<tr>
<td></td>
<td>No 36</td>
<td>11.9</td>
</tr>
<tr>
<td>Do you have an e-mail account? (N=295)</td>
<td>Yes 207</td>
<td>70.2</td>
</tr>
<tr>
<td></td>
<td>No 88</td>
<td>29.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions</th>
<th>Never (%)</th>
<th>1 x per month (%)</th>
<th>2 x per Month (%)</th>
<th>1 x per Week (%)</th>
<th>2-3 x per Week (%)</th>
<th>Daily (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you regularly use a computer? (N=292)</td>
<td>15.8</td>
<td>8.9</td>
<td>8.2</td>
<td>11.3</td>
<td>17.5</td>
<td>38.4</td>
</tr>
<tr>
<td>Do you regularly use the Internet? (N=293)</td>
<td>17.4</td>
<td>10.2</td>
<td>7.8</td>
<td>12.3</td>
<td>16.4</td>
<td>35.8</td>
</tr>
<tr>
<td>Do you regularly access your e-mail account? (N=289)</td>
<td>29.8</td>
<td>9.7</td>
<td>10.4</td>
<td>10.0</td>
<td>13.1</td>
<td>27.0</td>
</tr>
</tbody>
</table>
Preferred Sources of Information
One of the objectives of this evaluative study was to ascertain information sources utilized by the sugar beet growers. It attempted to understand through three questions who farmers rely on most for production practice information. First, respondents were asked who they prefer to get their information from. Second, farmers were asked who they felt should take the lead in providing educational programming for the sugar beet industry. Third, it was asked who they relied on most heavily for current research information.

Sugar Beet Advancement was most frequently mentioned as the preferred source of information (45.2%, n=117) for Michigan sugar beet farmers also shown in Figure 7. This is followed by Agriculturist/MI Sugar (31.7%, n=82) and Elevator agronomist (11.6%, n=30). When asked who should take the lead in providing educational programming for the MI sugar beet industry two-thirds of respondents (67.6%, n=161) felt that SBA should be responsible (Figure 8). This was followed by Agriculturist/MI Sugar (29.8%, n=71) and “Other” (1.3%, n=3) answers included combinations of SBA and the MI Sugar Company and “someone that doesn’t have financial interests in selling chemicals”.

When asked who respondents relied on most heavily for research based sugar beet information overall, once again SBA received almost three-quarters of responses (70.7%, n=174) as shown in Figure 9. Similarly, this was again followed by Agriculturist/MI Sugar (17.1%, n=42). “Elevator agronomist” (4.1%, n=10) and “Private consultant” (3.3%, n=8) were also acknowledged.

SBA Program Participation
The SBA program was established in 1996 to provide research and education to Michigan beet growers. Beginning in 1997, SBA organized various kinds of educational programs for farmers. This study attempted to determine what types of SBA programs respondents have participated in and what SBA information they have received. SBA activities included farm meetings/workshops, field days/research tours, Bean and Beet Symposium, Seed Week and harvester clinics. Media and SBA information used includes “On Farm Research and Demonstration” publication, quarterly newsletters, Cercospora Leafspot bulletin, tip cards, contact with MSUE Educator, SBA website and mass media.

Respondents were asked to indicate if they participated in these educational programs or benefitted from these activities. Findings are displayed in Table 4.

Figure 7: Source of preferred information (N=259).

Figure 8: Preferred lead educational programming source for the sugar beet industry (N=238).

Figure 9: Most heavily relied on source of information for current research information (N=246).
Table 4. Farmer participation in SBA programs/activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>N</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended sugar beet related farm meetings/workshops</td>
<td>296</td>
<td>253</td>
<td>85.5</td>
</tr>
<tr>
<td>Participated in sugar beet field days/research tours</td>
<td>296</td>
<td>178</td>
<td>60.1</td>
</tr>
<tr>
<td>Participated/attended the Bean and Beet Symposium</td>
<td>297</td>
<td>194</td>
<td>65.3</td>
</tr>
<tr>
<td>Participated in Sugar Beet Seed Week</td>
<td>292</td>
<td>197</td>
<td>67.5</td>
</tr>
<tr>
<td>Used “On Farm Research Demonstration” SBA publication</td>
<td>295</td>
<td>219</td>
<td>74.2</td>
</tr>
<tr>
<td>Used information from quarterly newsletters</td>
<td>297</td>
<td>271</td>
<td>91.2</td>
</tr>
<tr>
<td>Used Cercospora Leafspot bulletin information</td>
<td>294</td>
<td>259</td>
<td>88.1</td>
</tr>
<tr>
<td>Used production tip cards (tips for maximizing sucrose production)</td>
<td>291</td>
<td>208</td>
<td>71.5</td>
</tr>
<tr>
<td>Gained information through mass media (newspaper, radio or TV)</td>
<td>288</td>
<td>129</td>
<td>4.8</td>
</tr>
<tr>
<td>Had contact with an MSU Extension Specialist</td>
<td>291</td>
<td>127</td>
<td>43.6</td>
</tr>
<tr>
<td>Had a local Extension Educator(s) visit my farm</td>
<td>285</td>
<td>57</td>
<td>20.0</td>
</tr>
<tr>
<td>Attended harvester clinics</td>
<td>284</td>
<td>104</td>
<td>36.6</td>
</tr>
<tr>
<td>Used the SBA website</td>
<td>289</td>
<td>101</td>
<td>34.9</td>
</tr>
</tbody>
</table>

Respondents indicated participating in most SBA activities and receiving direct publications as shown in Table 4. The majority of respondents indicated receiving information and/or participating in activities such as farm meeting and workshops (85.5%, n=253); field days/research tours (60.1%, n=178); Bean and beet symposium (65.3%, 194); Seed Week (67.5%, n=197); On Farm Research and Demonstration (74.2%, n=219); Information and newsletters (91.2%, n=271); Cercospora Leafspot bulletin (88.1%, n=259) and; tip cards (71.5%, 208). It should be noted, however, that information gained through mass media (44.8%, n=129); contact with MSU Specialist (43.6%, n=127), local Extension Educator farm visit (20.0%, n=57), harvester clinics (36.6%, n=104) and; SBA website (34.9%, n=101) were less frequently used sources of information for sugar beet production.

SBA Program Ratings

After gaining a clearer picture of what sources of information sugar beet growers prefer, including SBA programs, this study asked participants to rate these programs. Using a scale of one to five with one indicating “Poor” and five indicating “Excellent”, participants were asked to rate SBA programs such as educational programs, field and research tours, communications and services. Results are shown in Table 5.

Table 5: Educational research program quality ratings by farmers.

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Poor (%)</th>
<th>Fair (%)</th>
<th>Good (%)</th>
<th>Very Good (%)</th>
<th>Excellent (%)</th>
<th>Mean (Stdv.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational programs such as workshops/meetings</td>
<td>256</td>
<td>1.6</td>
<td>2.7</td>
<td>19.5</td>
<td>50.0</td>
<td>26.2</td>
<td>3.96 (.84)</td>
</tr>
<tr>
<td>Educational field/research tours</td>
<td>221</td>
<td>1.4</td>
<td>5.0</td>
<td>28.5</td>
<td>44.8</td>
<td>20.4</td>
<td>3.78 (.87)</td>
</tr>
<tr>
<td>Communications such as newsletters, tip cards and bulletins</td>
<td>284</td>
<td>2.1</td>
<td>3.9</td>
<td>23.6</td>
<td>42.6</td>
<td>27.8</td>
<td>3.9 (.92)</td>
</tr>
<tr>
<td>Services such as Extension contacts and farm visits</td>
<td>217</td>
<td>10.1</td>
<td>24.0</td>
<td>29.0</td>
<td>22.1</td>
<td>14.7</td>
<td>3.07 (1.21)</td>
</tr>
</tbody>
</table>
Combined, over three-fourths of participants rated educational programs as “Good”, “Very Good” or “Excellent”. Educational programs were rated the most highly with half of the respondents (50.0%, n=128) rating them as “Very Good” and over a quarter rating them as “Excellent” (26.2%, n=67). Educational field/research tours were rated “Good” by almost one-third of participants (28.5%, n=63) and “Very Good” by almost half of the respondents (44.8%, n=99). Communication tip cards were also highly rated by about two fifths (42.6%, n=121) indicating they are “Very Good” and almost one-third (27.8%, n=79) indicating they are “Excellent”. Services such as Extension contacts and farm visits were rated as “Good” by almost one-third of the respondents (29.0%, n=63) and “Very Good” by almost a quarter of respondents (22.1%, n=48). These findings are presented in Table 5.

**Perceptions of Sugarbeet Advancement**

This evaluative study attempted to ascertain Michigan sugar beet growers perceptions of the SBA program. This information will help researchers understand SBA strengths and weaknesses to better deliberate future improvements. It was agreed by almost half of the participants that they gained new, research-based information that helped them make positive farming practice changes while increasing yield and income. Findings are shown in Table 6.

When asked if the SBA program provided research-based information, together about two-thirds “Agreed” (42.5%, n=108) or “Strongly Agreed” (32.7%, n=83) that they do. This was followed by asking if the SBA program also provided information not readily available anywhere. Again, about two-thirds responded either “Agree” (49.6%, n=126) or “Strongly Agree” (18.5%, n=47) with this statement. It was also agreed (43.0%, n=111) or strongly agreed (24.8%, n=64) that information or practices provided by SBA were new by about two out of three participants (Table 6).

These SBA new information/practices were determined to have made positive changes in farming practices. About two out of three participants either “Agreed” (44.7%, n=114) or “Strongly Agreed” (22.0%, n=56) that SBA information and practices had helped them make positive changes. From this over half of respondents either “Agreed” (37.7%, n=97) or “Strongly Agreed” (19.8%, n=51) that their yields have increased due to SBA information. Though increases in yield do not necessary equate increases in profit, it was found that about half of the respondents either “Agreed” (32.2%, n=82) or “Strongly Agreed” (18.0%, n=46) that their farm income had increased due these changes in their beet growing practices (Table 6).

**SBA Program Impacts**

Respondents were asked to provide feedback regarding their sugar beet planting practices from variety selection to the use of planter seed tubes. After asking for general information regarding practices, each topic was followed up with a question

<table>
<thead>
<tr>
<th>Table 6: Perceptions of the Sugarbeet Advancement program.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Program provided research-based information</td>
</tr>
<tr>
<td>Program provided information not readily available elsewhere</td>
</tr>
<tr>
<td>I gained new information/practices about beets</td>
</tr>
<tr>
<td>It helped me make positive changes in my farming practices</td>
</tr>
<tr>
<td>My average yield has increased because of this information</td>
</tr>
<tr>
<td>My farm income has increased due to changes I made in beet growing practices</td>
</tr>
</tbody>
</table>
regarding what source of information was most influential to the practice change. Specific impacts are discussed below by sugar beet production practice.

Variety Selection
Each year SBA conducts large on-farm trials for variety selection. The Michigan Sugar Company also conducts small plot trials for variety approval. Variety trials contain experimental lines to evaluate their adoption, productivity and quality in the area. Sugar beets are evaluated for Cercospora Leaf spot, Rhizoctonia Crown Rot, emergence capability, and juice content. This study attempted to understand the most influential source of information regarding sugar beet variety selection in Michigan. Respondents were asked, “when selecting beet varieties, who provides the most influential source of information?” Responses are reflected below in Figure 10.

Figure 10: Most influential source of information when selecting beet varieties (N=263).

About two-thirds of the respondents (64.6%, n=170) indicated SBA as their preferred source of information when selecting beet varieties. This was followed by Agriculturalist/MI Sugar (16.3%, n=43) and Seed Company (11.8%, n=31). “Other” (3.8%, n=10) responses included “My own experience”, “Salesman” and combinations of SBA, crop consultant, seed company and MI Sugar company.

Primed seed
Sugarbeet Advancement has been conducting research on the speed of emergence and yield enhancement for primed seed in Michigan. Primed seed promotes early top growth of sugar beet, uniformity, rate of germination and resistance to moisture conditions during germination (Mukasa, 2002 and Orzeszko and Podlaski, 2003). Prior to 1997, no primed seed was planted. In this study beet growers were asked to indicate if they use primed seed, when they began using primed seed and who was the most influential source of information regarding primed seed. Findings in Figure 11 show that over four out of five respondents (84.8%, n=251) are using primed seed as shown

Figure 11: Use of primed seed (N=296).

Those indicating the use of primed seed were further asked to indicate the year they began using such seed. As shown in Figure 12, use of primed seed has become more prevalent since 2003 (15.1%, n=32) and 2004 (21.2%, n=45). As shown in Figure 13, the most influential source of information regarding primed seed is SBA (44.1%, n=112). This is followed by the seed company (24%, n=61) and Agriculturalist/MI Sugar (22.8%, n=58). A few also indicated “Other” (3.8%, n=10) as the most influential source of information. These responses included “equipment manufactures”, “family members” and “personal experience”.

Figure 12: Year farmers began using primed seed (N=212).
Planting date

Planting date significantly affects sucrose and purity percentages of sugar beets as well as root and sugar yields (El-Razek, 2005). By planting early and harvesting late, growers may take advantage of the entire growing season allowing for above average sugar yields (Lauer, 1997). Sugarbeet Advancement education has demonstrated the benefits of earlier planting on yield and quality. In this study it was asked if grower’s planting date had changed in the last ten years. If they had changed their planting date, it was also asked who the most influential source of information or education was regarding this change.

Almost three out of four participants (72.0%, n=213) indicate their average planting dates have changed in the last ten years. For those who are planting earlier (n=123) a range of two to 30 days earlier was recorded with an average of about 11 days (M=10.6, Stdv.= 4.4). Those planting later (n=2) indicated a range between five and ten days later with an average of about eight days (M=7.5, Stdv.=3.5).

It was found that SBA is the most influential source for changes in planting date (34.4%, n=76) as shown in Figure 14. This is followed by “Other” sources of influence that include “Mother Nature”, “My own decision” and “As soon as the ground is ready”. Agriculturalist/MI Sugar (14%, n=31) was the third most influential source of information for changes in planting date.

Plant population

Optimal row width and plant population affect weed control and sugar beet yield quality (Armstrong et al., 2006). Sugarbeet Advancement has been working with farmers in effort to improve stand establishment and population particularly through high population trials in sugar beet yield and quality. To determine SBA impacts, farmers were asked what their seed spacing was in 1997 and 2006.

In 1997 seed spacing ranged between two and eight inches with an average of 5.06 inches (M=5.06, Stdv.=91). Plant population has increased since. In 2006, respondents indicated seed spacing had decreased to about four inches (M=4.30, Stdv.=.4) and ranged between three and one-quarter to six inches.

As shown in Figure 15, the most influential source of information regarding changes in plant population is SBA (45.9%, n=95). This was followed by Agriculturalist/MI Sugar (24.2%, n=50). “Other” response (11.6%, n=24) included “My own experience”, “Change in row width” and “Seed not as good”.

Figure 13: Most influential information source for use of primed seed (N=254).

Figure 14: Most influential information source for changes in planting date (N=221).

Figure 15: Plant population information sources (N=207).
Cercospora Leafspot Control
Sugar beets may act as host plants to Cercospora Leafspot, a devastating fungus, resulting in withered leaves and/or black spots. In most cases, infected plants eventually die (Harveson, 2003). However, Growers may improve Leafspot control through the use of properly timed fungicides. A Leafspot prediction model, BeetCast, was developed by the Michigan Sugar Company and SBA to aid growers with fungicide timing (MAES, 2006). Sugarbeet Advancement along with Michigan Sugar both were strongly promoting growers on the use of BeetCast. In this study respondents were asked if they used BeetCast to improve Leafspot control.

More than half of the respondents (62.4%, n=176) indicated “Yes” they do use BeetCast as shown in Figure 16. Of those, the majority (90.3%, n=158) answered that this helped control Leafspot (Figure 17). Almost nine out of ten farmers also indicated that BeetCast helped them time their fungicide applications (87.4%, n=167) (Figure 18). Findings indicate that leaf spot control and timing of fungicide applications has improved significantly.

Figure 16: Use BeetCast to time fungicide applications (N=282).

![Figure 16](image1.png)

Figure 17: Leafspot control improved by BeetCast (N=175).

![Figure 17](image2.png)

Those respondents who didn’t use BeetCast were asked whose recommendations they followed. These findings are shown in Figure 19. Responses indicated slightly less than one-third (31.9%, n=36) using an Elevator agronomist and almost another one-third (28.3%, n=32) relying on an Agriculturalist/MI Sugar. “Other” (18.6%, n=21) included “fungicide labels”, “family” and “personal experience”. In follow-up, respondents were asked in an open-ended question who they relied on for the majority of their information regarding Leafspot spray. Responses reflected those of timing recommendations including BeetCast, agriculturalists, MI Sugar and personal/family experience.

Figure 19: Other information sources for fungicide application timing (N=113).

![Figure 19](image3.png)
Weed Control

Until sugar beet stands are established, they are very susceptible to competition from weeds (Morishita, 2003). Weed control is essential to profitable sugar beet growing (May, 2000). Weed control has changed from traditional split rates to microrate applications in the last ten years (MAES, 2006). MSU’s Crop and Soil Sciences Department and the MSC have conducted research enabling this while SBA has educated growers on these practices. This survey attempted to better understand the extent to which farmers have switched to microrates.

First, respondents were asked if they used traditional split rates ten years ago. Findings in Figure 20 indicate that about two out of three respondents (69.7%, n=186) used traditional split rates in 1997. Figure 21 demonstrates split rate use in 2006 (43.3%, n=124). However, survey analysis indicates that in 2006 about two-thirds (68.8%, n=194) of respondents switched to microrate applications (Figure 22). Those who used microrate applications in 2006 reported spraying a range from four and 100 percent of their acreage with microrates, averaging about 95 percent (Stdv.= 16.1).

Farmers were also asked if their weed control information has changed in the last ten years, who was the most influential source of information or education for this change? Respondents indicated SBA has the most influential source of weed control information (31.1%, n=68) followed by Agriculturalist/MI Sugar (27.6%, n=60) and Elevator Agronomist (14.3%, n=31). “Other” includes “Beet magazine articles”, “Combination of all” and “Our weed history”. These findings are displayed below in Figure 23.

Rhizoctonia Crown Rot Control

Rhizoctonia Crown Rot is a deadly sugar beet fungus. A sudden and permanent wilt to the leaves and a dark, dry rosette indicate plant exposure (Harveson, 2003). Sugarbeet Advancement has dedicated many resources to researching Rhizoctonia Crown Rot fungicide control. In this evaluative study, respondents were asked if Rhizoctonia Crown Rot lowered their profit ten years ago and today, and today are they better able to control/manage it. These

Figure 20: Use of split rates to control weeds in 1997 (N=267).

Figure 21: Use of split rates to control weeds in 2006 (N=286).

Figure 22: Use microrate applications in 2006 (N=282).

Figure 23: Most influential source of information or education for changes in weed control information during the last ten years (N=217).
questions were followed up by asking if respondents applied fungicide for Rhizoctonia. Finally, if they had applied a new method of Rhizoctonia Crown Rot control within the last ten years, it was asked who was the most influential source of information or education for this change.

Rhizoctonia Crown Rot is reported to have lowered profits ten years ago by survey respondents (76.9%, n=210) as shown in Figure 24. Survey analysis shows over three-quarters of respondents (88.4%, n=237) report being better able to control/manage Rhizoctonia Crown Rot today (Figure 25). This is in part due to applied fungicides as reported by almost three-quarters (70.9%, n=190) of respondents (Figure 26) who indicated that they have applied fungicide for Rhizoctonia on an average of about 68 percent of their acreage (M=67.87%, Stdv.=31.7). Fungicide application ranged from five to 100 percent of sugar beet acreage.

As shown in Figure 27, if respondents have applied a new method of Rhizoctonia Crown Rot control in the last ten years the most influential source of information for this change has been SBA (49.0%, n=98). This was followed by Agriculturalist/MI Sugar (19.5%, n=39) and Elevator Agronomist (10%, n=20). “Other” responses include “Chemical company representative”, “New fungicide labels” and “Family”.

Nitrogen Rates

“Nitrogen is the most yield limiting nutrient, but nitrogen management is critical to obtain optimum sugar beet yields and quality” (Mortvedt et.al, 1996). Traditionally, producers have applied too much nitrogen resulting in lower sugar content in beets (MAES, 2006) as shown in Figure 28. The SBA program has devoted a great deal of resources, research and education to reducing the amount of nitrogen applied in Michigan fields.
Michigan sugar beet growers were asked how much nitrogen they applied to their beets ten years ago and in 2006. If was found that ten years ago, average application rates were about 134 pounds per acre (M=133.6, Stdv.32.3). In 2006, an average of 113 pounds of nitrogen per acre (M=112.9, Stdv.31.8) was the reported application. This shown an average reduction of 21 pounds per acre during a period of ten years.

In follow up, it was asked if there had been a change in the amount of nitrogen applied, who was the most influential source of information or education for this change. Reasons cited for change are mainly due to information or education from SBA (55.7%, n=107) as shown in Figure 29. This is followed by Agriculturalist/MI Sugar (20.3%, n=39) and Elevator Agronomist (7.8%, n=15). “Other” reasons for this change include “Change in previous crop”, “Cost” and “Experience”.

**Table 7: Conservation tillage.**

<table>
<thead>
<tr>
<th>Use of conventional tillage system (mold board plow)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N=259)</td>
<td>190</td>
<td>73.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use of higher residue conservation system (chisel plow)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N=252)</td>
<td>217</td>
<td>86.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did you use the same type of plow system ten years ago?</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N=279)</td>
<td>164</td>
<td>58.8</td>
</tr>
</tbody>
</table>

Over four out of five (86%) of the respondents indicated using higher residue conservation plowing (chisel plow) and respondents plowed on average of about 73 percent (M=73.65%, Stdv.28.41) of their fields this way. On the other hand, conventional tillage system (i.e., mold board plow) is used by 73 percent of the respondents and this system is used to plow 66% of their acreage (M=66.1%, Stdv.30.9). These findings suggest that beet growers use both types of tillage systems but higher percentage of them utilize the residue conservation system. Over half of the respondents (58.8%, n=164) indicated that they are currently using the same type of plow system as they did ten years ago.

Finally, respondents were asked if there has been a change in the type of tillage system they apply, who was the most influential source of information or education for this change. As shown in Figure 30, if there was a change in the type of tillage system applied “Other” sources of information (32.1%, n=50)
Reduced Cultivation

In addition to conservation tillage practices that leave residue on the surface of field crops appear to have the greatest potential for minimizing erosion problems and less cultivation (Fornstrom and Miller, 1998). Sugarbeet Advancement research attempts to demonstrate the need for less cultivation to increase such residue and is working to help farmers reduce traditional three to five cultivations to zero to two (MAES, 2006).

To measure SBA impacts, this study asked growers if they cultivate and on average, have they reduced the number of cultivations in the last ten years. It was found that the majority of participants cultivate (92.2%, n= 271) as shown in Figure 31. The number of cultivations in 2006 ranged between one and four and averaged about two. Respondents indicated the number of cultivations to have decreased over the last ten years (79.2%, n=225) (Figure 32). Reductions ranged from one-half to five times and averaged about two times.

Following this, it was asked if farmers had made a change in their cultivation system, who was the most influential source of information or education for this change. As shown in Figure 33, changes in cultivation systems are mainly due to SBA influences (51.2%, n=103). This is followed by “Other” responses (19.4%, n=39) including “Fuel prices”, “Personal experience” and “Time” as well as Agriculturalist/MI Sugar (11.9%, n=24).

Oil Seed Radish as a Nematode Trap Crop

Nematodes are a major parasite for sugar beets (Gray et.al, 2007). Entire fields may be infested or localized areas may result in circular or oval areas where stands are poor (Gray et.al, 2007). “Continued use of nematicides threatens the sustained production of sugar beets because of their high cost and environmental risks” (Krall et.al, 1996). Therefore, SBA has promoted the use of oil seed radish as a nematode trap crop and attempted to demonstrate yield advantages of nematode tolerant varieties.
In this study it was asked if 1) farmers had sugar beet cyst nematodes in their fields; 2) do they use oil seed radish as a nematode trap crop; 3) have they observed yield advantages of nematode tolerant varieties and; 4) did they use oil seed radish as a nematode trap crop ten years ago? Almost half of respondents (49.3%, n=144) did not know if they have sugar beet cyst nematodes (Figure 34). It was found that about 15 percent of respondents (15.1%, n=44) have sugar beet cyst nematodes. It follows that about one-third (35.6%, n=104) reported that they do not have cyst nematodes.

Figure 34: Farmers indicating sugar beet cyst nematode in fields (N=292).

Today, the majority (92.6%, n=250) of farmers stated that they do not use oil seed radish as a nematode trap crop (Figure 35). Almost all respondents (99.2%, n=250) did not use oil seed radish as a nematode trap crop ten years ago (Figure 36). Respondents (73.3%, n=165) also indicated that they have not observed yield advantages of nematode tolerant varieties (Figure 37).

Figure 35: Use of oil seed radish as a nematode trap crop (N=270).

Figure 36: Use of oil seed radish as a nematode trap crop ten years ago (N=252).

Lastly, regarding oil seed radish as a nematode trap crop, respondents were asked if there had been a change in the use of oil seed radish on their farm, who was the most influential source of information or education for this change. For those who made changes in the use of oil seed radish, SBA is the most influential source of change (47.3%, n=26) as shown in Figure 38. This was followed by Agriculturalist/MI Sugar (14.5%, n= 8) and Neighbor (12.7%, n=7). “Other” responses include “MSU”, “Me” and “Agriculturalist from Idaho”.

Figure 37: Observed yield advantages of nematode tolerant varieties (N=225).

Figure 38: Most influential source of information or education for changes in the use of oil seed radish (N=55).
Planter Seed Tubes

With use, planter seed tubes can show signs of wear, resulting in a roughening of the inner tube area. This rough surface may cause seeds to take different paths through the tube resulting in inaccurate seed spacing within the beet row (Smith, 2004). Sugar beet Advancement research and education has studied the removal of seed tube inserts and correlating positive impacts on plant/seed spacing. This evaluative study attempted to understand how many farmers still use seed tube inserts and what type.

First, farmers were asked what type of seed tube they use for planting. Second, they were asked whether they remove seed tube inserts. In follow up, respondents were asked if they removed seed tube inserts ten years ago. Survey analysis shows that curved seed tubes for sugar beet planting are preferred by slightly more than half of the respondents (53.6%, n=141) as opposed to straight seed tubes (46.6%, n=123) as shown in Figure 39. Also, slightly more than half (56.3%, n=142) do not remove seed tube inserts (Figure 40). Ten years ago, this number was higher with over three-quarters of respondents (78.9%, n=191) reporting that they did not remove seed tube inserts (Figure 41).

Figure 39: Use of straight or curved seed tubes (N=264).

Figure 40: Removal of seed tube inserts (N=252).

Following these questions, researchers asked who the most influential source of information or education for changes in planter seed tube practice has been. It was indicated that SBA (44.5%, n=57) was the most influential source as shown in Figure 42. This is followed by “Other” responses (18.0%, n=23) identifying “Different planters”, “Personal experience” and “Equipment dealers” and “Neighbor” (15.6%, n=20).

Figure 41: Removal of seed tube inserts ten years ago (N=242).

Figure 42: Most influential source of information or education for change in the use of seed tubes (N=128).

Sugar Beet Yields

Many factors play a role in determining sugar beet yield. “Crops are integrators of stresses present during the growth season (Gat et.al, 2000). If stresses occur, yield may suffer. This evaluative study attempted to understand changes in beet yield over the last ten years. It was asked, what was your average beet yield ten years ago and in 2006. This was followed by a question asking farmers to estimate their average beet yield in the last three years.
In 1997, Michigan sugar beet farmers report having an average beet yield of about 19 tons/acre (Stdv. = 2.4) as shown in Table 8. This ranged from 14 and 28 tons. Since then, in 2006 average yields have increased to about 24 tons (M=23.8, Stdv.=4.0), ranging between nine and 35 as indicated by the respondents. When asked to estimate average beet yield in the last three years answers ranged from 15 to 32 tons with an average of 22 tons (M =21.9 tons, Stdv.=2.7) (Table 8).

Table 8: Sugar beet production yield.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Stdv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was your average beet yield in 1997? (N=268)</td>
<td>18.8</td>
<td>2.4</td>
</tr>
<tr>
<td>What was your average beet yield in 2006? (N=287)</td>
<td>23.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Please estimate your average beet yield in the last three years. (N=267)</td>
<td>21.9</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Though yield has increased, only about one in three respondents indicated an increase in profit (28.7%, n=80) and two out of ten (22.9%, n=64) indicated there was no change as shown in Figure 43. Almost half of respondents (48.4%, n=135) report that their sugar beet profits have decreased. These decreases were explained through open ended responses citing increase in input prices, including fertilizer and pesticides, and decreases in the price of beets.

Figure 43: Sugar beet profit change in the last ten years (N=279).

Grower concerns

When asked what sugar beet growers felt were their major concerns, they listed four main categories: profit, disease control, industry stability and MSC stability. For example, “Getting paid”, “Getting price up” and “Income not keeping up with increased cost” were echoed in different forms throughout the survey. Similar opinions were also detailed as explanation for increases in yield while profitability declined due to increase in input prices and decreases in the price of sugar.

New diseases, Rhizoctonia Crown Rot and disease management were key themes as well. These were voiced as “Beet plant health, nematode, leafspot” and “Control weeds, diseases”. More research and education were requested in these areas.

Concerns about industry stability were also voiced statements such as “Keep foreign sugar from lowering prices”, “Government regulations” and “Keep the beet industry alive!” Particularly, growers were concerned about “getting paid”. This was recorded in multiple ways from “Getting return on money spent” and “Getting a good return per acre for our beets”.

There were also MI Sugar Company concerns closely related to industry stability fears. These included “Keeping Co-op successful”, “Viability of MI Sugar”. Co-op management concern was also voiced in ways such as “Proper management of Co-op to keep price per ton up”.

While soliciting for grower concerns, some suggestions for improvement were recorded in farmer comments. These ranged from general to specific comments. For example, “Have a good stand” and “Keeping a check and balance system of information growers” to “We need to work more at matching our production to our processing capabilities”. Positive feedback recorded includes “Keep up the good job”, “Good survey” and “I believe SBA has had a very positive impact on my operation”.

20
Summary

The average sugar beet farmer is about 50 years old and cultivates about 1,300 acres on a family owned farm as a full time job. Typically, about 250 acres of this is devoted to sugar beet production in the common growing counties of Huron, Saginaw, Tuscola and Sanilac. About three-quarters of survey respondents plan to pass their farm on to family members when they retire.

Over three-quarters of respondents have access to a computer, the Internet and e-mail. About half the respondents indicated using the computer, Internet and e-mail on a two to three times per week basis or daily. It was also found that SBA was their preferred informational source. Respondents indicated that SBA should take the lead in educational programming and rated SBA overall as the most heavily relied on source for research information.

Over two-thirds of participants participated in, attended or used SBA’s farm meeting/workshops, the Bean and Beet Symposium, Sugar Beet Seed Week, “On Farm Research Demonstration” SBA publication, information from quarterly newsletters, Cercospora Leafspot bulletin and production tip cards (tips for maximizing sucrose production). However, two-thirds or more of respondents also responded that they had not attended harvester clinics, used the SBA website or had a local Extension Educator visit their farm. Programs were rated by over two-thirds of participants as either “Good”, “Very Good” or “Excellent”. The information provided by the SBA programs was deemed to have helped farmers make positive changes in their practices by about two-thirds of participants. Also, two-thirds of respondents determined that SBA information had helped increase their income due to changes in production practice.

From information on variety selection to planter seed tubes, SBA was rated as either the first or second most influential source of information. Over four-fifths of respondents use primed seed and plant about ten days earlier than they did ten years ago. Sugar beet seed spacing has decreased by almost an inch as well. Almost two-thirds of respondents use BeetCast to help them time their fungicide applications. Of these, nine out of ten reported that BeetCast helps them control leafspot.

Over two-thirds of participants use microrate applications today. These Michigan farmers are better able to manage Rhizoctonia Crown Rot today than they were ten years ago. It was found that nitrogen application rates have also decreased by about 20 pounds per acre in the last ten years. Two types of tillage systems are used on many farms. Some farmers use both mold board and chisel plow on sections of their acreage.

The majority of farmers also cultivate and report a reduction in the number of times by about two. Almost half of the respondents reported not knowing if they have sugar beet cyst nematodes in their fields and about ninety percent of farmers don’t use oil seed radish as a nematode trap crop. Currently, both straight seed tubes and curved seed tubes are used almost equally by respondents while about half of respondents remove inserts.

Though yields have increased to about 24 tons, unfortunately, profit has decreased. This is due to increased input prices and decreases in the price of beets. Major grower concerns can be grouped into four categories of: 1) profit, 2) disease control, 3) industry stability and 4) MI Sugar Company stability.

Suggestions for improvement

Suggestions for improvement concerned profit, MSC management and SBA performance. Specific comments included: “2007 will be a draft with beets - labor and money intensive. Corn is a smarter choice”, and “Company overspending - what is the company going to do if farmers decide to get out of beets”. It was suggested that SBA determine “the best beet variety for early harvest compared to late harvest” and “check seed varieties more accurately”.

There were positive comments recorded as well when soliciting for suggestions for improvement such as, “I believe SBA has a very positive impact on my operation”. When asked how SBA could improve its programming, responses can generally be summarized in 1) field testing, such as testing Round-up Ready beets or improved trials; 2) continuing research such as “Continue to help growers stay ahead” and “Keep up research”; 3) areas for improvement such as “Keep us more up to date on the sales of sugar” and “more research information” and; 4) praise such as “Keep up the good work” and “In my opinion SBA does a tremendous job by covering all areas in beet production”.

Summary and Conclusion
General Feedback

General feedback was requested at the end of the survey. These ranged very broadly from specific requests and positive feedback to general industry wide comments. Comments were both positive and negative.

A few comments were about information avenues, for example “I like my information to come by e-mail instead of snail mail because it is much quicker and current”. Other comments included suggestions for improvement such as, “They should do a feasibility study to close the factory and cut our loses”.

Positive feedback included “Overall, I’ve been pleased with what you’ve done. Keep doing it.” and, “Keep up the good work”. Industry wide feedback included “We need to promote sugar beet stock ownership”, “Small farmers can’t buy new equipment” and “It’s important to the industry that MI Sugar agronomists and SBA give growers the same recommendations. It is equally important for SBA to maintain its independence from MI Sugar”.

Conclusion and Recommendations

Overall the survey analysis suggests the SBA program is doing well at meeting growers’ research and educational needs. Since its establishment in 1997, SBA has had positive measurable impact and influences on changes in beet production practices. Sugarbeet Advancement is viewed as a very credible and either the most influential source of information or one of the top sources of information for growers.

Sugarbeet Advancement’s most effective ways of communicating with growers include research tours, workshops, Bean and Beet Symposium, Seed Week, quarterly newsletters and bulletins. Sugarbeet Advancement may put more emphasis on disease oriented research and increase farm visits. In particular, most farmers were unaware if their acreage did or did not have sugar beet cyst nematodes. Nematode trap crops were also reported to have the least improvement and/or change out of production practices measured.

Overall, SBA was found to be the most credible source of information in eleven out of twelve production practices measured. Also, two out of three participants agree or strongly agree that the SBA program provided new information not readily available elsewhere that has helped farmers make changes in their farming practices. This in turn has increased their yield and positively effected their profits.

In the future, farmers request that SBA research concentrate on disease management, weed control and profitability. It is requested that SBA work with the Sugar Cooperative so as to not duplicate research. In providing future research and education to sugar beet farmers, it was found that e-mail correspondence will most likely reach less than half of respondents regularly. Therefore, production tip cards and educational workshops may be more appropriate means of communication.
References


