EVALUATION OF
MICHIGAN SUGARBEET ADVANCEMENT PROGRAM
March 2001

An evaluative study conducted in cooperation with
Michigan State University Extension
The Michigan Agricultural Experiment Station
The Michigan Sugarbeet Advancement Program

Center for Evaluative Studies
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Education and Communication Systems
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EVALUATION OF
MICHIGAN SUGARBEET ADVANCEMENT PROGRAM

Executive Summary

In an effort to identify and solve some of the critical production problems that currently face the sugar beet industry in Michigan, the Great Lakes Sugarbeet Advancement Program was started in 1997. Its major efforts are in conducting on-farm applied research and increasing the educational opportunities for sugar beet producers.

With the objectives of gathering information on how sugar beet producers perceive the Sugarbeet Advancement Program and measuring the impacts that these efforts have had on the sugar beet production practices, a mail survey was conducted.

A self-administered mail questionnaire was sent to a random sample of 510 sugar beet producers drawn from an industry list of 1,600 beet growers. A standard mail survey design was implemented, which included a postcard reminder and a second survey packet to non-respondents. Response rate was 36 percent.

The major findings of this study include:

- Most respondents indicated receiving quarterly newsletters and/or bulletins (92 percent) and the “On-farm Research and Demonstration: Sugarbeet Advancement” publication (89 percent), while 80 percent attended sugar beet-related farm meetings/workshops.

- The quality of the educational programs has been high. Most respondents (81 percent) agreed that the program provides research-based information, 74 percent agreed the program provides information not readily available elsewhere, and 72 percent indicated they gained new information on and skills in beet production.

- Among 10 farm management practices selected to measure the program’s technological impact, the practices related to the control of leaf spot have been changed/modified or adopted by more than two-thirds of respondents and more than half, changed to the variety recommended by the program.
• About one-fifth (17 percent) of the respondents indicated their sugar beet yields had increased as a result of the Michigan Sugarbeet Advancement Program; half of respondents could not estimate the increase.

• Two-thirds of the respondents (66 respondents) considered the Sugarbeet Advancement Program the most credible and/or reliable source for sugar beet production information; about one-fourth (26 percent) considered the processing company, the most credible source.

• Nearly half (46 percent) of sugar beet growers said the quality of Extension services had improved as a result of the Michigan Sugarbeet Advancement Program.

• Respondents indicated that the program could be improved in three major areas: reduction of cost of production, information update and field trials.

• The major concerns on which the program should focus its research/demonstration efforts are: disease control (leaf spot, Rhizoctonia and root aphid), testing seed (good standability, seed emergence and vigor) and fertilization, specifically nitrogen level and time to apply, micronutrient and foliar feeding.
Introduction

The sugar beet industry in Michigan was termed an industry at risk when profitability declined for both producers and processing companies. Sugarbeet yield decreased from 19 to 20 tons per acre in the late 1980s to 16 tons per acre in 1991-1998. No single factor but rather a multitude of production problems was associated with the decline. Twenty percent of the beet acreage planted annually was replanted because of poor emergence, and 20 percent of the sugar beet planting could die between emergence and harvest.

To identify and solve critical industry production problems, the Great Lakes Sugarbeet Advancement Program was started in 1997. The committee is a partnership of sugar beet growers, the Michigan Sugar Company, the Monitor Sugar Company, Michigan State University and related agribusinesses. The mission of the Sugarbeet Advancement Committee is to utilize research and education in revitalizing the Michigan sugar beet industry through a cooperative effort involving Michigan State University, the sugar companies and producers. Its major efforts are in conducting on-farm applied research and increasing the educational opportunities for sugar beet producers.

The Sugarbeet Advancement Program has been funded through an assessment of fees to sugar beet producers and companies. The program also received grant dollars from the state-funded Generating Research and Extension to meet Economic and Environmental Needs (GREEEN) initiative coordinated by the Michigan Agricultural Experiment Station.

Methodology

This evaluation utilized a mail survey for data collection. The staff of the Department of ANR Education and Communication Systems developed a mail survey instrument in collaboration with the representatives of the Sugarbeet Advancement Program. The questionnaire consisted of several sections (Appendix A). The first section was designed to assess the participation of sugar beet producers in the various educational activities supported by the program. The second part was intended to measure the adoption of new practices and/or changes in sugar beet production practices as a result of the Sugarbeet Advancement program. Questions were asked to assess changes in production practices and associated economic impact of the Sugarbeet Advancement
Program and the farmers’ perceptions about the most credible and/or reliable sources of sugar beet production information. The last section consisted of some demographic characteristics and open-ended questions. Here the farmers could suggest ways to improve the program and indicate their major concerns on which the Sugarbeet Advancement Program should concentrate its efforts.

The Sugarbeet Advancement Program survey was mailed to a random sample of 510 sugar beet producers drawn from an industry list of 1,600 beet growers. The survey procedure consisted of three mailings. In the initial mailing (November 21, 2000), all sample subjects received a questionnaire with a cover letter. A postcard reminder was mailed to the sample about two weeks after the initial mailing, December 6, 2000. A second copy of the questionnaire with a stamped return envelope was sent to all non-respondents on January 9, 2001. The survey had an overall response rate of 36 percent. Only three blank surveys were received. The low response rate could be attributed to the holiday season.

Results

Demographics

It is necessary to know some of the characteristics of the sugar beet producers because some of these characteristics -- for instance, kind of farmer, years involved in growing beets and size of farm -- can be related to their participation in the Michigan Sugarbeet Advancement Program.

The majority of respondents (85 percent) considered themselves full-time farmers. Likewise, most of them have been involved in growing beets for a long time. More than half of respondents (56 percent) have grown beets for more than 20 years. The mean number of years involved in growing beets was 23 years; the mode was 25 years.
On the other hand, farm operations varied greatly in size. The mean acreage contracted was 223, with a minimum of 13 and a maximum of 1,200. More than half of the farms (64 percent) were smaller than 200 acres.
Awareness of Sugarbeet Advancement Program

To find out the extent of awareness about the program, the first question was whether respondents had ever heard of the Michigan Sugarbeet Advancement Program. Almost all the respondents (98 percent) answered this question affirmatively.

Participation in activities

Those who reported awareness of the Michigan Sugarbeet Advancement Program were asked about their participation in Sugarbeet Advancement Program activities. Most respondents (92 percent) indicated receiving quarterly newsletters and/or bulletins; approximately nine out of 10 (89 percent) indicated receiving the “On-farm Research and Demonstration: Sugarbeet Advancement” publication; and four out of five (80 percent) attended sugar beet-related farm meetings/workshops (Table 1).

Table 1. Participation in Sugarbeet Advancement Program activities (N= 177).

<table>
<thead>
<tr>
<th>Program activities</th>
<th>% who said “yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended sugarbeet-related farm meetings/workshops</td>
<td>80</td>
</tr>
<tr>
<td>Participated in sugar beet field days/demonstrations</td>
<td>61</td>
</tr>
<tr>
<td>Participated in Bean and Beet Symposium and research tours</td>
<td>56</td>
</tr>
<tr>
<td>Received “On-Farm Research and Demonstration: Sugarbeet Advancement” publication</td>
<td>89</td>
</tr>
<tr>
<td>Received quarterly newsletters and/or bulletins</td>
<td>92</td>
</tr>
<tr>
<td>Gained information through mass media (newspaper, radio or television)</td>
<td>63</td>
</tr>
<tr>
<td>Had contact with MSU Extension specialist</td>
<td>24</td>
</tr>
<tr>
<td>Had a local Extension agent(s) visit my farm</td>
<td>26</td>
</tr>
<tr>
<td>Phoned beet and beans production hotline</td>
<td>15</td>
</tr>
</tbody>
</table>

Quality of educational programs

The quality of five educational programs offered by the Sugarbeet Advancement Program was measured through a scale of agree, undecided and disagree.

Most respondents (81 percent) agreed that the program provides research-based information. About three quarters (74 percent) agreed the program provides information not
readily available elsewhere, and 72 percent indicated they gained new information on and skills in beet production. About one-third of the respondents indicated that their income increased because of the changes they made in beet growing practices, one-fifth (20 percent) disagreed and nearly half (43 percent) indicated they were undecided.

Likewise, half of respondents (52 percent) agreed the program has helped them to make positive changes in their farming practices (Table 2).

Table 2. Respondents’ opinions about the quality of educational programs offered (N= 172).

<table>
<thead>
<tr>
<th>Statements about the program</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program provided research-based information</td>
<td>81</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Program provided information not readily available elsewhere</td>
<td>74</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>I gained new information and skills on beet production</td>
<td>72</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>It helped me make positive changes in my farming practices</td>
<td>52</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>My farm income has increased due to changes I made in beet growing practices</td>
<td>29</td>
<td>43</td>
<td>20</td>
</tr>
</tbody>
</table>

Changes in sugar beet production practices

The Michigan Sugarbeet Advancement Program has introduced new/improved farm management practices for local beet producers. Ten farm management practices were selected to measure the program’s technological impact. The results show that more than two-thirds of respondents (69 percent) have changed/modified or adopted practices related to the control of leaf spot, more than half (56 percent) have changed to the variety recommended by the program, and 52 percent indicated changing their herbicide practices (Table 3).

Fewer than one-third of the respondents indicated adopting or changing planting date (27 percent) or fertilization practices (19 percent) or modifying planters (16 percent).
Table 3. Practices changed/modified and/or adopted (N= 174).

<table>
<thead>
<tr>
<th>Sugar beet practices</th>
<th>% who said “yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf spot control</td>
<td>69</td>
</tr>
<tr>
<td>Variety recommendation</td>
<td>56</td>
</tr>
<tr>
<td>Herbicide use</td>
<td>52</td>
</tr>
<tr>
<td>Pelleted seed</td>
<td>45</td>
</tr>
<tr>
<td>Plant population</td>
<td>40</td>
</tr>
<tr>
<td>Tillage practices</td>
<td>34</td>
</tr>
<tr>
<td>Date of planting</td>
<td>27</td>
</tr>
<tr>
<td>Planter modification</td>
<td>16</td>
</tr>
<tr>
<td>Fertilization practices</td>
<td>19</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

The nature and extent of changes in each of the major sugar beet production practices are as follows:

**Leaf spot control**: Prior to 1998, very few producers controlled Cercospora leaf spot or understood the economic impact this disease was causing. Sugarbeet Advancement research and education on leaf spot began in 1999 and continued in 2000. Eight research trials indicated an average $83 per acre net return from improved yields (1 to 4 tons per acre) with good leaf spot control.

**Variety recommendations**: Prior to 1997, growers had only two sources of information on variety selection: the sugar company and the seed company. Their information was considered biased, and research was conducted in small trials under ideal conditions. In 1997, Sugarbeet Advancement started to conduct large field trials with varieties planted and cared for under grower conditions. This research has shown major differences in variety emergence, yield and disease resistance. On average, three years of research showed that growing the best variety resulted in an $80 improvement in net return per acre over the worst variety. On average, we would expect a $40 per acre difference between average yielding varieties and the best
varieties. Sugarbeet Advancement variety trial results have grown to be the most popular 
source of variety yield information that producers use.

**Herbicide use:** Prior to 1997, sugar beet herbicide education was generally part of all weed 
control seminars involving multiple crops. Beginning in 1998, special sugar beet herbicide 
seminars were conducted and provided in-depth information. Research was conducted in 1998 
on a new micro-rate weed control program for beets. By 2000, 34 percent of the growers and 
41 percent of the total beet acreage had implemented a micro-rate program based on our 
educational efforts. Micro-rates, overall, have improved weed control and lessened the need 
for hand weeding.

**Pelleted seed:** In 1997, virtually no pelleted beet seed was being planted in Michigan. 
Research was first conducted in 1997 and continues today. Educational efforts began in 1998 
on the improved spacing, emergence and yield from utilization of pellets. By 2000, 45 percent 
of sugar beet acreage was grown using pelleted seed. Research shows that pelleted seed, on 
average, can improve yields by just over one-ton per acre.

**Plant population:** Sugar beet yields are closely associated with plant populations per acre. 
The sugar beet industry needed to increase populations to more optimum levels. Research and 
educational efforts began in 1998. By 2000, 40 percent of growers had increased plant 
populations because of Sugarbeet Advancement efforts. Higher (optimum) population of beets 
not only increases tons per acre but also improves the quality of beets and the sugar content per 
acre.

**Tillage practices:** Sugar beet producers have traditionally worked soil too deep and/or too 
much, which can affect emergence of beet seedlings. Research and educational efforts began 
in 1998 emphasizing shallow and/or minimum tillage. Improved emergence will result in less 
replanting and higher plant populations per acre. By 2000, 34 percent of producers had 
changed or modified tillage practices.

**Date of planting:** Earlier planning in the spring improves yield by extending the growing 
season. Producers traditionally start planting about April 15 even though there may be 
opportunities to plant earlier. Research and educational efforts began on the benefits of early
planting in 1999. Approximately 27 percent of producers will have changed planting dates and started planting, if conditions were right, beginning April 1 in 2001.

**Planter modification:** Sugar beet plant spacing in Michigan is not as good as it should be. Improved spacing makes topping of beets easier and results in higher quality beets and less within-row plant competition. In 2000, research and educational efforts showed that using straight seed tubes with no inserts in their planters improved targeted seed spacing by 15 percent to 20 percent and decreased the number of doubles (two plants in one spot). In one year, 16 percent of producers modified their planters.

**Fertilizer practices:** Overuse of nitrogen fertilizer can reduce the sugar content and quality of sugar beets. Research and education on-going since 1997 shows the economics and yields from optimum nitrogen rates. Sugarbeet Advancement efforts have helped reduce over application of nitrogen fertilizer. Approximately 19 percent of producers have modified nitrogen applications.

**Sugar beet production level**

The Michigan Sugarbeet Advancement Program was started in 1997. An attempt was made to estimate the economic impact of the program by asking questions about yield increases due to the program efforts.

When asked “How much would you estimate your 2000 beet yield has increased due to the Advancement efforts?” about one-fifth (17 percent) of the respondents indicated their sugar beet yields had increased, 25 percent said no increase occurred, and half of respondents (50 percent) could not estimate the increase. Eight percent of the respondents did not answer this question. Among those who indicated an increase, the average yield increase was 2 tons/acre, with a minimum of 0.5 ton/acre and a maximum of 6 tons/acre.
A follow-up question that attempted to measure the economic impact was: “How much do you estimate the saving in beet production cost due to Advancement efforts in 2000?” The results were very similar—only 10 percent of the respondents indicated savings in beet production costs. Savings ranged from $100 to $5,000 with a mean of $2,330.80 (Table 4).

**Table 4. Estimated economic impact of Michigan Sugarbeet Advancement Program.**

<table>
<thead>
<tr>
<th></th>
<th>Increase in yield (ton/acre) (N=29)</th>
<th>Cost savings in 2000($) (N=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.02</td>
<td>2,330.80</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.5</td>
<td>100</td>
</tr>
<tr>
<td>Maximum</td>
<td>6.0</td>
<td>5,000</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>1.26</td>
<td>1,801.50</td>
</tr>
</tbody>
</table>

Some statistical tests were run to determine the level of association between selected variables (Table 5). A positive relationship was found between increase in yield and number of practices adopted by the respondents. Although the relationship was moderate, the correlation coefficient was significant.
It was interesting to note that there was no association between increase in yield and farm size. This finding indicates that sugar beet yields had increased irrespective of farm size.

Table 5. Correlation coefficients.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saving in cost of production and size of farm</td>
<td>r= 0.112</td>
</tr>
<tr>
<td>Increase in yield and size of farm</td>
<td>r= 0.051</td>
</tr>
<tr>
<td>Increase in yield and number of practices adopted</td>
<td>r= 0.503**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level.

Actual and potential economic benefit

One way to quantify the actual economic benefit of the Sugarbeet Advancement Program to growers is to add the benefit gained by the increase in production and the savings in cost. Yield data from 29 sugar beet growers were used to estimate the benefit from increased yield. Similarly, data from 19 growers were used to estimate the cost savings for the year 2000. The total increase in production gained by the sugar beet growers as a result of the Michigan Sugarbeet Advancement Program was 14,364 tons, which, multiplied by a price of $30/ton, totals $430,920. Adding to this value the total savings achieved, $44,285 results in an actual economic benefit of $475,205.

Respondents in this study account for 20 percent of total sugar beet acreage in Michigan (total Michigan sugar beet acreage is estimated at 190,000 acres). If sugar beet growers were to adopt these practices statewide, the potential economic benefit of the program could be estimated at approximately $2,376,025.

Perceptions about sugar beet information

To determine the educational value of the Sugarbeet Advancement Program to sugar beet producers, the survey asked what respondents considered the most credible and/or reliable source for sugar beet production information. Two-thirds of the respondents (66 percent) considered the Sugarbeet Advancement Program the most credible and/or reliable source for sugar beet production information, while about one-fourth (26 percent) considered the processing company the best source of sugar beet information.
Table 6. Credible and reliable sources of information on sugar beet production (N= 178).

<table>
<thead>
<tr>
<th>Source</th>
<th>% who said “yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarbeet Advancement Program</td>
<td>66</td>
</tr>
<tr>
<td>Processing company</td>
<td>26</td>
</tr>
<tr>
<td>Elevator agronomist</td>
<td>19</td>
</tr>
<tr>
<td>Seed company</td>
<td>12</td>
</tr>
<tr>
<td>Neighbor</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
<tr>
<td>Private consultant</td>
<td>6</td>
</tr>
</tbody>
</table>

**Quality of Extension services**

An attempt was made to understand growers’ perceptions of any change in the quality of Extension services as a result of the Michigan Sugarbeet Advancement Program. On a 5-point scale (1=definitely deteriorated, 3= no change and 5= definitely improved), respondents were asked to rate the quality. Findings in Figure 4 show that nearly half (46 percent) of sugar beet growers felt an improvement had occurred in the quality of Extension services as a result of the Michigan Sugarbeet Advancement Program, while about one-third (30 percent) perceived no change.
Suggestions about how to improve the program

One of the objectives of this evaluation was to gather information about how to improve the program. The sugar beet growers were asked how the Sugarbeet Advancement Program could improve its role in helping Michigan beet growers.

Answers to this open-ended question showed three major issues needing attention. The first is related to costs—respondents felt that the program should be more involved in reducing the cost of production. The second issue is related to information update—respondents want weekly updates during the growing season, early information at planting time, and advice in advance of possible diseases or specific problems. Likewise, several respondents expressed concerns about field trials. The respondents suggested continuing the field trials in areas of emergence, varieties, rotation and tillage, and getting information out to the producers.

The major concerns on which the program should concentrate

Finally, respondents were asked in an open-ended question what they considered the major production concern that they would like the Sugarbeet Advancement Program to concentrate its research/demonstration efforts on.
Table 7 summarizes the main concerns of the 113 respondents who answered this question. Definitively, diseases occupy the first place because these are the main cause of reduced plant vigor and yield reduction. For this reason, most respondents indicated that the program should concentrate its efforts in insect and disease control (leaf spot, Rhizoctonia and root aphid), disease-resistant varieties, seedling establishment and the effect of weather on leaf spot infection.

Likewise, sugar beet growers are interested in testing seed of varieties that have good standability, high sugar and high tonnage. Seed emergence and vigor is another important issue related to varieties.

Finally, research on nitrogen levels and time to apply, micronutrients and foliar feeding are important issues related to fertilization.

Table 7. Major concerns on which the program should concentrate.

<table>
<thead>
<tr>
<th>Concern</th>
<th>Frequency of mention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases</td>
<td></td>
</tr>
<tr>
<td>- Leaf spot</td>
<td>48</td>
</tr>
<tr>
<td>- Rhizoctonia</td>
<td>7</td>
</tr>
<tr>
<td>Varieties</td>
<td></td>
</tr>
<tr>
<td>- Seed selection</td>
<td>14</td>
</tr>
<tr>
<td>- Emergence</td>
<td>9</td>
</tr>
<tr>
<td>Fertilization</td>
<td>10</td>
</tr>
<tr>
<td>Tillage</td>
<td>8</td>
</tr>
<tr>
<td>Weed control</td>
<td>6</td>
</tr>
<tr>
<td>Rotation</td>
<td>5</td>
</tr>
</tbody>
</table>

Following are some selected comments made by the respondents:

“Slow emergence and seedling disease.”

“Do research in micronutrients.”

“Seed variety to eliminate extra spraying for disease.”

“Start telling growers the negative effects soybean has on growing sugar beet.”
“What is the best depth to harvest beets?”

“Planting dates and effects on field and sugar.”

“More Rhizoctonia testing on seed varieties.”

“Different ways of crust busting and the effects on small beets.”

“How much nitrogen is too much.”
Appendix

The survey instrument
In an effort to identify and solve critical industry production problems, the Great Lakes Sugarbeet Advancement Program was started in 1997. We have made major efforts in conducting on-farm applied research and increasing the educational opportunities for sugar beet producers. We are currently trying to gather information on how sugar beet producers perceive the Sugarbeet Advancement Program and to measure impacts that our efforts have had on their sugar beet production practices.

These programs has been funded through assessment of sugar beet producers, companies, and also by receiving state funded grant dollars from the GREEEN Initiative (Generating Research and Extension to meet Economic and Environmental Needs).

The information received from this survey will be used to assist MSU Extension/Sugarbeet Advancement in the future on how to better serve the sugar beet producers. Please be as candid as possible when responding to the questionnaire. Be sure to answer each question as accurately as you can. All answers will be kept completely confidential. Your participation in this survey is voluntary. Please use the enclosed self-addressed envelope to return your questionnaire.

Feel free to include other comments, if you wish.

Please mail the completed questionnaire in the enclosed return envelope to:

Steve Poindexter
MSU Extension
705 Adams Street
Saginaw, MI 48602
Evaluation of Michigan Sugarbeet Advancement Program

We are interested in what you think about the impact of Sugarbeet Advancement Program to you and other beet growers in Michigan. Here is your chance to provide feedback. We need it to plan and improve future programs and events. Please take five minutes to share your views with us.

1. Have you heard of Michigan Sugarbeet Advancement Program?
   _____ YES              _____NO (Skip to Q. 8)

2. If you answered to “YES” to Question #1, have you been a participant in the following Sugarbeet Advancement activities or received information from Sugarbeet Advancement Program in any of these ways during the past three years? (Check each item that apply).

   a) Attended sugarbeet related farm meetings/workshops.        _______      _______
   b) Participated in sugarbeet field days/demonstrations.        _______      _______
   c) Participated in Bean and Beet Symposium and research tours.  _______      _______
   d) Received “On Farm Research and Demonstration: Sugarbeet Advancement” publication. _______      _______
   e) Received quarterly newsletters and/or bulletin.            _______      _______
   f) Gained information through mass media (newspaper, radio or television). _______      _______
   g) Had contact with MSU Extension specialist.                 _______      _______
   h) Had a local Extension agent(s) visit my farm.              _______      _______
   i) Phoned Beet and Beans production hot line.                 _______      _______

3. Please reflect on various Sugarbeet Advancement Extension programs listed above in which you have participated. How would you rate the quality of these educational programs offered?

   a) Program provided research-based information.    Agree     Undecided    Disagree
   b) Program provided information not readily available elsewhere. Agree     Undecided    Disagree
   c) I gained new information and skills on beet production. Agree     Undecided    Disagree
   d) It helped me make positive changes in my farming practices    Agree     Undecided    Disagree
   e) My farm income has increased due to changes I made in beet growing practices Agree     Undecided    Disagree
4. What production practices have you changed/modified/ and or adopted because of Sugarbeet Advancement information. Check all that apply:

___ (a) Variety recommendation
___ (b) Herbicide use
___ (c) Leaf spot control
___ (d) Tillage practices
___ (e) Pelleted seed
___ (f) Planter modification
___ (g) Date of planting
___ (h) Plant population
___ (i) Fertilization practices
___ (f) Others (please list) ______________________________________

5. Michigan Sugarbeet Advancement on-farm research and educational efforts began in 1997
   (a) How much would you estimate your 2000 beet yields have increased due to the Advancement efforts?

   ______ tons/acre          _____ No increase in yield          _____ Can’t Estimate

   (b) How much would you estimate the savings in beet production cost due to the Advancement efforts?

   $__________ (estimated cost savings in 2000).

6. Which one source would you consider the most credible and/or reliable for sugarbeet production information?

___ Seed Company
___ Processing Company
___ Sugarbeet Advancement
___ Elevator Agronomist
___ Private Consultant
___ Neighbor
___ Other (please specify) ________________________________
7. Have you noticed any change in the quality of Extension programs as a result of Michigan Sugarbeet Advancement Program?

<table>
<thead>
<tr>
<th>Definitely deteriorated</th>
<th>Deteriorated</th>
<th>No change</th>
<th>Improved</th>
<th>Definitely improved</th>
</tr>
</thead>
</table>

8. Please suggest how the Sugarbeet Advancement Program could improve its role in helping Michigan beet growers. List specific suggestions:

a. ____________________________________________________ __________________________

b. ______________________________________________________________________________

c. ______________________________________________________________________________

d. ______________________________________________________________________________

e. ______________________________________________________________________________

9. What do you consider the major production concerns that you would like Sugarbeet Advancement Program to concentrate research/demonstration efforts on?

a. ____________________________________________________ __________________________

b. ______________________________________________________________________________

c. ______________________________________________________________________________

10. How many total acres did you have in production this year?

   _____ Contracted Acres   _____ Harvested Acres

11. How many years have you been involved in growing beet?      _______ Years

12. Do you consider yourself:

   ___ Full-time farmer   ___ Part-time farmer

Is there anything else you would like to share with us? Ideas? Concerns? Suggestions?

________________________________________________________________________________
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Thank for your help!