Wheat 2000 Workshop Evaluation
January 30 & 31 and February 6 & 7, 1996

Background

In response to a steady decline in wheat production in Michigan, wheat growers, Extension workers, researchers and wheat industry personnel created a research and educational partnership called Wheat 2000. The goals of Wheat 2000 are:

♦ To educate Michigan's farmers about the basic principles of wheat management.

♦ To further collective knowledge of the best practices for optimal returns on investments in wheat-based rotations.

To meet these objectives, Wheat 2000 hosted an all-day workshop in four locations around the state (see dates above). This all-day workshop consisted of the following sessions:

Table 1: Summary of Wheat 2000 Workshop Sessions, 1996

<table>
<thead>
<tr>
<th>Session</th>
<th>Description of Session</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Wheat Environment</td>
<td>Understanding environmental constraints related to wheat yields</td>
<td>Dr. Jeff Andresen, agricultural meteorologist</td>
</tr>
<tr>
<td>Interpreting Data: What to Believe and Whom</td>
<td>Making sense of variety trial data, on farm experiences, and other sources of information</td>
<td>Dr. Rick Ward, MSU wheat breeder</td>
</tr>
<tr>
<td>Planting Practices</td>
<td>Avoiding the pitfalls of poor planting practices</td>
<td>Steve Poindexter, MSU Extension, Saginaw County</td>
</tr>
<tr>
<td>Wheat Nutrient Management</td>
<td>Discussion of legume establishment and other agronomic benefits of wheat in rotation</td>
<td>Dr. Richard Harwood, MSU Crop and Soil Sciences</td>
</tr>
<tr>
<td>Two Hundred Bushel Wheat Yields</td>
<td>Wheat plant breeding and what the future holds for us</td>
<td>Dr. Gregg Marshall, Pioneer wheat breeder</td>
</tr>
<tr>
<td>Disease Update</td>
<td>Identifying critical problems, thresholds and management</td>
<td>Dr. Pat Hart, MSU Botany and Plant Pathology Department</td>
</tr>
<tr>
<td>Putting the Profit Package Together</td>
<td>Discussion on key principles of producing high yielding, profitable wheat</td>
<td>MSU Extension staff</td>
</tr>
</tbody>
</table>
The participants in this workshop were Wheat 2000 members, wheat industry personnel, wheat pest scouts, Extension agents and producers. At the conclusion of the workshop, participants were asked to complete a two-page evaluation so that MSU Extension could assess the overall program and improve future programs.

**Methodology**

At the end of each workshop participants were asked to complete a simple, anonymous two-page evaluation that was to be left at the back of the room. The evaluation instrument was designed to find out how useful the participants found the workshop and how they thought it could be improved. Before the workshops, the evaluation instrument was reviewed by the Wheat 2000 Steering Committee for content validity and the structure of the questions.

This evaluation has some limitations. The data were collected using a post-training evaluation form that focused on participants immediate perceptions about the workshop. After a long, full day of sessions, most participants are eager to return home and may have completed the evaluation hastily. Nevertheless, it is an effective, inexpensive method of gathering feedback and participant recommendations to improve future programs.

**Data Analysis**

The data were analyzed by using the Statistical Packages for Social Sciences (SPSS PC+) computer software. Descriptive statistics--such as percentages, means and standard deviations--were used to summarize data. Responses to the open-ended questions were entered into the Word Perfect program and then analyzed using qualitative techniques. The data from the evaluation can be effectively divided into five categories: content of workshop, objectives and procedures, perceived future impact, demographic information, and logistics (i.e., room and meals).

The same workshop was conducted in four locations and the data are presented accordingly, i.e., Cass City, Flint, Ionia and Milan. This allows the county Extension coordinators from each region to gain a better, clearer understanding of what was useful and not useful for their participants. An overall score for the 1996 workshop is also provided.

**a) Demographic Information**

In this portion of the evaluation, participants were asked the following questions: What is your age? How many total acres of wheat did you plant this year? How many acres of red wheat did you plant this year? And white wheat? How many acres of red wheat did you plant last year? And white wheat? How many years have you been growing wheat?

**Table 2: Demographic Information**
<table>
<thead>
<tr>
<th>Demographic Information</th>
<th>Cass City</th>
<th>Flint</th>
<th>Ionia</th>
<th>Milan</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>42.66</td>
<td>43.07</td>
<td>44.74</td>
<td>45.74</td>
<td>43.95</td>
</tr>
<tr>
<td>Average acres farmed</td>
<td>659.04</td>
<td>1486.74</td>
<td>777.74</td>
<td>825.89</td>
<td>895.15</td>
</tr>
<tr>
<td>Average red wheat acres this year</td>
<td>115.38</td>
<td>494.09</td>
<td>100.08</td>
<td>179.35</td>
<td>206.57</td>
</tr>
<tr>
<td>Average red wheat acres last year</td>
<td>72.20</td>
<td>294.81</td>
<td>96.73</td>
<td>156.07</td>
<td>144.96</td>
</tr>
<tr>
<td>Average white wheat acres this year</td>
<td>186.36</td>
<td>1275.20</td>
<td>214.50</td>
<td>0.00</td>
<td>347.36</td>
</tr>
<tr>
<td>Average white wheat acres last year</td>
<td>98.93</td>
<td>1313.07</td>
<td>82.95</td>
<td>25.00</td>
<td>317.32</td>
</tr>
<tr>
<td>Average years farming wheat</td>
<td>25.42</td>
<td>26.25</td>
<td>22.41</td>
<td>30.42</td>
<td>25.94</td>
</tr>
</tbody>
</table>

Findings in Table 2 show that participants have increased both red and white wheat acreage for 1996. Some participants indicated they were second- or third- generation wheat farmers. Overall, respondents indicated they had grown wheat for more than 25 years.

b) Content of Workshop

In this segment of the evaluation form, respondents were asked to rate for future workshops the eight topics that were presented in the current workshop. The rating for each topic was between 1, for “definitely do not include this topic in future workshops” to 5, for “definitely do include in future workshops”.

Findings in Table 3 show that the participants perceived the content of the workshop to be useful. The two sessions that may have to be reconsidered before including in upcoming workshops are Interpreting Data: “What to Believe and Whom” and “200-Bushel Wheat Yield” sessions. One respondent from Flint wrote: "200 bushel is probably not realistic for our area." Another respondent from Milan wrote: "200 bushels a little long." For the other session, “Interpreting Data: What to Believe and Whom”, two respondents from Flint wrote: "Of no value (this session). Do you think farmers are that dumb?" and "Show graph with variation (within) among and between groups."
Table 3: Whether topics should be presented in future workshop?

<table>
<thead>
<tr>
<th>Topics</th>
<th>Cass City</th>
<th>Flint</th>
<th>Ionia</th>
<th>Milan</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Wheat Environment</td>
<td>4.19</td>
<td>4.45</td>
<td>4.09</td>
<td>4.43</td>
<td>4.27</td>
</tr>
<tr>
<td>Interpreting Data: What to Believe and Whom</td>
<td>3.47</td>
<td>3.35</td>
<td>3.67</td>
<td>4.20</td>
<td>3.64</td>
</tr>
<tr>
<td>Planting Practices</td>
<td>4.50</td>
<td>4.61</td>
<td>4.50</td>
<td>4.45</td>
<td>4.51</td>
</tr>
<tr>
<td>Wheat Nutrient Management</td>
<td>4.35</td>
<td>4.32</td>
<td>4.52</td>
<td>4.50</td>
<td>4.41</td>
</tr>
<tr>
<td>Wheat in Rotation</td>
<td>4.13</td>
<td>4.28</td>
<td>4.21</td>
<td>4.53</td>
<td>4.26</td>
</tr>
<tr>
<td>200-Bushel Wheat Yield</td>
<td>3.41</td>
<td>3.77</td>
<td>3.88</td>
<td>3.80</td>
<td>3.66</td>
</tr>
<tr>
<td>Disease Update</td>
<td>4.47</td>
<td>4.27</td>
<td>4.50</td>
<td>4.57</td>
<td>4.46</td>
</tr>
<tr>
<td>Putting the Profit Package Together</td>
<td>4.26</td>
<td>4.56</td>
<td>4.37</td>
<td>4.50</td>
<td>4.39</td>
</tr>
</tbody>
</table>

Scale: 1=definitely no; 5=definitely yes

Other respondents recommended possible topics for upcoming workshops. One participant from Ionia wrote: "We need to remember that some soils will not produce 80 to 100 bushels of wheat and maybe there should be discussion regarding producers with light to moderate soil." Some other suggestions:

From Cass City: "How does wheat fit into my total practice? Measuring profitability of wheat vs. corn vs. beets?"

From Flint: "Need topics on soil quality/health (in addition to rotations). How do we lower costs by lowering inputs? High yields from high inputs only make agribusiness rich."

From Ionia: "More information and updates on weed control."
"Soil fertility results with N-P-K added with moisture to assess yield/lodging potential."
"Marketing."

**c) Objectives and Procedures of Workshop**

This portion of the evaluation rated the participants' overall perception of the Workshop: the objectives, the overall contents/topics presented, technical aspect of content, instructional aids, involvement of participants, teaching methods' workshop duration and overall quality of the workshop. Specific attention was paid to whether participants' personal objectives were met.
Table 4: Overall Wheat 2000 Workshop

<table>
<thead>
<tr>
<th>Category</th>
<th>Scale</th>
<th>Cass City</th>
<th>Flint</th>
<th>Ionia</th>
<th>Milan</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>unclear=1, clear=5</td>
<td>3.94</td>
<td>3.94</td>
<td>4.02</td>
<td>4.03</td>
<td>3.98</td>
</tr>
<tr>
<td>Topics presented</td>
<td>irrelevant=1, relevant=5</td>
<td>4.01</td>
<td>4.02</td>
<td>3.94</td>
<td>4.16</td>
<td>4.03</td>
</tr>
<tr>
<td>Topics presented</td>
<td>poorly organized=1, well organized=5</td>
<td>4.25</td>
<td>4.06</td>
<td>3.89</td>
<td>4.28</td>
<td>4.13</td>
</tr>
<tr>
<td>Technical aspect of contents</td>
<td>too tech.=1, just right=5</td>
<td>3.77</td>
<td>4.02</td>
<td>3.66</td>
<td>3.93</td>
<td>3.84</td>
</tr>
<tr>
<td>Instructional aids used</td>
<td>not useful=1, very useful=5</td>
<td>3.68</td>
<td>3.72</td>
<td>3.82</td>
<td>3.96</td>
<td>3.78</td>
</tr>
<tr>
<td>Involvement of participants</td>
<td>discouraged=1, encouraged=5</td>
<td>3.77</td>
<td>3.72</td>
<td>3.88</td>
<td>3.80</td>
<td>3.79</td>
</tr>
<tr>
<td>Teaching methods</td>
<td>not appropriate=1, very appropriate=5</td>
<td>3.85</td>
<td>4.00</td>
<td>3.88</td>
<td>3.96</td>
<td>3.91</td>
</tr>
<tr>
<td>Workshop duration</td>
<td>too long=1, just right=5</td>
<td>3.81</td>
<td>3.77</td>
<td>3.55</td>
<td>3.96</td>
<td>3.78</td>
</tr>
<tr>
<td>Overall workshop</td>
<td>poor=1, excellent=5</td>
<td>3.96</td>
<td>4.11</td>
<td>4.02</td>
<td>4.19</td>
<td>4.05</td>
</tr>
</tbody>
</table>

If we assume that a ranking of 3 is average, then the workshop ranked above average in all areas. Participants indicated that the objectives of the workshop were clear and the topics presented were relevant and well organized. The mean scores for instructional aids, participant involvement and teaching methods were below 4.0 on a 1 to 5 scale suggesting some room for improvement. One participant from Cass City responded: "Not as in depth as last Frankenmuth meeting, but good." Another from Flint wrote: "Very good, happy to attend." From Ionia, one respondent wrote: "I hope to attend another workshop in the future." And finally from Milan: "Very useful seminar, excellent information."

The three areas that may need some improvement are the instructional aids used, the involvement of participants and the duration of the workshop. The following are content and logistical recommendations organized by county:

**Content recommendations:**
Cass City: "Interpreting data was a waste of time since the average length at farming time experience was probably 20 years and in 20 years you better know that true data is taken over a long time and different locations or it just is not valid. Overall the whole program could have condensed."

Flint: "Pat Hart is against using fungicides as yield tool. If it is not true muzzle him."
"More detail on fertility, N use, statistics too technical--more layman terms."
"Keep it simple, Rick Ward."

Ionia: "Rick Ward needs to inform more on wheat and less on noise."
"First speaker could have made his point with less noise."
"Needs farmer panel--farmer achieving the higher yields. Felt the ‘noise' examples were poor. We would just not know enough appropriate form terms."
"Should have more time for questions, after each participant?"

Milan: "The ‘noise speech' needed spicing up or shortened. The speaker from Pioneer needs spicing up."

**Logistical recommendations:**

Flint: "Directions on my invitation were incorrect, it said exit 133 off 69."

Milan: "Have name tags for everyone."
"Cold room."

To conclude the evaluation, participants were asked: "Were your personal objectives for attending this workshop met?" and to rate this on a scale of 1, “not met” to 5, “extremely well met”. Findings are presented in Figure 1.

![Figure 1: Were personal objectives met?](Image)

d) Perceived Impact
This portion of the evaluation measured the impact of the workshop on the participants' knowledge of wheat growing. Participants were asked to rate this impact on a scale from 1 no change, to 5, improved knowledge. The last two questions were open-ended: “How do you plan to use the knowledge and/or skills gained during this session?” And “Please comment about anything that might help improve this workshop”. The results from these questions are reported in Table 5.

**Table 5: Impact of the Workshop**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Cass City</th>
<th>Flint</th>
<th>Ionia</th>
<th>Milan</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about growing wheat</td>
<td>3.85</td>
<td>4.08</td>
<td>3.85</td>
<td>3.93</td>
<td>3.92</td>
</tr>
<tr>
<td>Interest in growing wheat</td>
<td>3.38</td>
<td>3.97</td>
<td>3.63</td>
<td>3.66</td>
<td>3.63</td>
</tr>
<tr>
<td>Skill/ability to grow wheat</td>
<td>3.75</td>
<td>3.97</td>
<td>3.86</td>
<td>3.73</td>
<td>3.82</td>
</tr>
</tbody>
</table>

Findings in Table 5 show that the workshop had a strong impact on participants’ knowledge about growing wheat, followed by an enhanced skill/ability to grow wheat.

Several participants commented on the overall future impact of this workshop. Comments made by the participants include:

From Cass City: "Since part of my income livelihood comes from wheat, I have taken the time to learn most of this before now."
From Flint: "Always looking for new information."
"Need more information on what practices work well or best."
"Good program."
"Steve Poindexter did a very good job at his portion."
From Ionia: "Each Wheat 2000 program has been a great opportunity to learn."
"The information presented will be very useful to me."
From Milan: "Cover crops was better covered this year than last."

To further assess the impact of this workshop, the following question was asked: Responses were organized by county.

Several participants commented on how they plan to use the knowledge and/or skills gained during this session. Comments made by the participants include:
From Cass City:  "To try growing better wheat."
"Planting and timing."
"Seed treatment and variety."
"Help scout for disease, help plant population."
"Help growers in making intelligent decisions."

From Flint:  "To improve wheat yields on my farm."
"Seeding rate improvement."
"Support Wheat 2000 through my customers as I am a dealer."
"Communicate back to my growers about what I learned--going to be helpful."

From Ionia:  "Increase yield to make a profit."
"More aware of depth. OK fields."
"Higher seed rates, closer attention to disease resistance."
"Apply better management to my crops."
"Scouting, identifying diseases."
"Pass on information to clients enrolled and not enrolled in Wheat 2000."

From Milan:  "Getting higher yield."
"Timing in planting and in crop rotation."
"As I offer advice to growers, put plans together and scout."

The last part of the evaluation asked the participants to comment about anything that might help improve this workshop. The following comments are organized by county and categorized under subheadings of content, recommendations for future workshops and logistics.

Cass City:

**Content criticism:**

"There seems to be a lot of repetition of subjects."
"#1 speaker. Noise part of the meeting could have done without!"
"I do not feel Dr. Hart and Dr. Copeland gave a fair evaluation of ACT in front of a group like this. I have bought it, used it and received good economical results for several years."

**Recommendations for future workshops:**

"Talk more about no-till planting. I liked the market talk--it was short and really good
to the point."
"Bring along Jim Hilker for short market commentary."
"Good workshop--yield test, split N application, harvesting wheat information, field loss."
"Growers panel."
"I know it has to be general in knowledge content, but I'd like to see it more localized."
"Speakers should know what they are talking about, like a product, like ACA--I used it and with excellent results."
"Have flour millers discuss changing market quality issues, why millers and producers can complement each other more effectively."
"More information on production and growing practices. Is it possible to tie in some marketing ideas?"

Flint

Content criticism:
"Missed wheat plants hands-on growth stages from 158 meeting."
"Missed wheat plants at growth stages."
"Shorten speaker time to allow for questions."
"Why was Pioneer talking about 200 bushels of wheat--no other experts on this or what?"
"Needs more time."

Recommendations for future workshops:
"More data on fungicide use."
"Industry and university should be on same page for disease management and fungicide use."
"Bring in farmers who attained good yields with low inputs. 100 bushels have already been attained without fertilizer."

Ionia

Content criticism:
"Forget stats lecture."
"Dr. Ward's subject is excellent but he needs to simplify and use examples that make the subject more relevant to his audience."

Recommendations for future workshops:
"Show us how to set up test plots in various ways to get good information."
"Weed control updates."
"I would like to know how much fertilizer to apply at planting time."
"More information on actual yield trials in the state."

Logistical recommendations:
"Parking." three participants

**Milan**

**Recommendations for future workshops:**

"More information on plots of different practices."

**Logistical recommendations:**

"Name tags."
"When putting out news releases, use the MSU phone for information, not the host."

e) **Logistics (room and meals)**

In the evaluation the participants were asked to rank the room and meals on a scale of 1 as unsatisfactory to 5 excellent.

**Table 6: Ratings on Meals and Meeting Rooms**

<table>
<thead>
<tr>
<th>Category</th>
<th>Cass City</th>
<th>Flint</th>
<th>Ionia</th>
<th>Milan</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting rooms</td>
<td>3.94</td>
<td>4.11</td>
<td>4.19</td>
<td>4.09</td>
<td>4.06</td>
</tr>
<tr>
<td>Meals and breaks</td>
<td>4.30</td>
<td>4.22</td>
<td>4.25</td>
<td>4.41</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Scale: 1=unsatisfactory; 5=excellent

Findings in Table 6 show that participants were satisfied with arrangements relating to meals and coffee breaks. As some participants wrote: "Very good food and facilities." "Everything was just fine. Great lunch!" "Filling lunch." For the most part, the room facilities were fine except some respondents said the room was too cold. Some respondents wrote: "It was so cold!" and "Way too cold."