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# **Cooperation with Commodity Groups and Hands-On Demonstrations Improve the Effectiveness of Commodity-Focused Educational Programs**

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**Abstract:** Wheat and soybean producers pay a small amount per bushel produced as a check-off. Funds are used for research, outreach, and crop promotion. Commodity organizations and Extension joined forces to develop multi-state educational outreach on spring wheat and soybean production. Participatory planning involved producers in developing these educational events. The financial resources and availability of contact information from the commodity groups combined with the knowledge base and teaching skills from Extension resulted in well attended, valuable educational events. "Speed" hands-on demonstrations were well received. Extension working together with commodity groups can be a model for other Extension programming efforts.

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## Introduction

Many Extension programs in the United States are facing budget constraints. Cooperation with agricultural commodity groups provides both financial resources and contact information of farmers normally not reached via traditional Extension channels.

The programs described in this article uniquely combined producer participatory planning (Boleman & Cummings, 2005), use of mailing lists normally not used by Extension (Londo, Kushla, & Smallidge, 2008), and a series of "speed" hands-on demonstrations (adapted from Lev, 2003). We describe how the Minnesota and North Dakota Wheat and Soybean check-off dollars were used to sponsor comprehensive research-based educational events. The objectives of the survey we conducted were to evaluate: (1) if we reached our target audience (producers), (2) how participants learned about the educational event, (3) the perceived value of information presented, and (4) the acceptance of the hands-on sessions compared with traditional lecture-style teaching.

## The Situation

### Why Training Is Needed

While soybean acres have increased over the last decade, in both northwestern Minnesota and North Dakota, spring wheat (*Triticum aestivum* L.) acreage and production have been declining in these same areas. This is due to low prices compared with other crops, high input costs, and losses from diseases such as scab (*Fusarium* head blight caused by *Fusarium graminearum*). Producers have been frustrated by the apparent lack of genetic progress in wheat when compared with other crops such as corn (*Zea mays* L.) and soybean [*Glycine max* (L.) Merrill].

### Resources Available to Researchers and Educators

#### ***Check-Off***

Many of the agricultural commodities have a check-off system in which producers pay a small amount per bushel produced into a special fund. For wheat sold in North Dakota, it is 1.5 cents per bushel; in Minnesota, it is 1 cent per bushel. For soybeans in Minnesota and North Dakota, it is 0.5% of the market price at the time of sale. The money generated is used for research and promotion of the commodity crop. Producers representing geographical growing areas are elected to an administrative council to distribute the funds.

#### ***University***

Researchers can apply to these administrative councils for funding to do research on the commodity crop. After a grant review process, funds are awarded to the highest-priority projects. The Extension Service uses the research results to provide producers with the latest scientific production information.

## Educational Events to Meet the Needs

### Participatory Planning of the Event

Each year the Minnesota Wheat Research and Promotion Council delegates to the Small Grains Research and

Communications Committee the task of requesting proposals regarding wheat research in the northern spring wheat growing region in the U.S. It is not only the task of the committee to support research, but also to communicate the research findings to agricultural producers. In the fall of 2003, committee members indicated that not all growers were using the latest university production recommendations. Growers suggested that there be an intensive one-day wheat production workshop utilizing university researchers and Extension staff.

Extension staff from the University of Minnesota Extension Service developed a proposal to provide four regional workshops with a focus on current research information. Extension is charged with responding to stakeholder priorities and was helped by the valuable input provided by the stakeholders (Adelaine & Foster, 1990; Kelsey & Mariger, 2003; Cummings & Boleman, 2006). Infante-Casella and Kline (2003) stated that the most successful Extension programs are identified and planned using stakeholder input.

A working group, consisting of wheat producers, industry representatives, Extension educators, and university researchers, developed the program based on the identified needs of the stakeholders, as suggested by Boleman and Cummings (2005). Producers recommended that presenters provide information in a chronological sequence from land selection, fertilizer considerations, planting, and crop management to harvest. Presenters were assigned time slots corresponding with the seasonal sequence of their topic.

Producers wanted short, to-the-point presentations. The plant pathologist, for example, would speak briefly about early season diseases and be back on the program later when the discussion reached disease control at the grain heading stage. The Extension staff helped set up the schedule and coached researchers about the producers' plan for the educational event.

The Wheat Research and Promotion Council allocated funding for advertising, room rent, refreshments, handouts, speaker mileage, and lodging costs. There was no charge for producers to attend the meeting. The Minnesota Association of Wheat Grower's communications team put an advertising campaign together. Producers who contributed to the check-off were on the commodity mailing list. All on the list received a flyer in the mail about the event, as well as a reminder in the form of a post card. The association publishes a magazine six times a year, and one of the issues had an article with information about the educational event. In addition, a regional agriculture radio network was used to generate awareness of the meetings and to remind producers one week prior to the event.

## **Lecture-Style Teaching vs. Hands-On Learning**

In the participatory planning process, producers in 2005 indicated that they would like some hands-on sessions during the educational event. Keenan, Giles, Burgener, Christian, and Elliott (2007) also found that producers enjoy being involved in active learning experiences.

In 2005-07, demonstrations were scheduled. The participants were divided into two groups to keep the group size small. These speed hands-on sessions were held before lunch for one group and after lunch for the other. The group participating in the hands-on session was subdivided into four to six sub-groups depending on how many stations were created during each year's workshop. Producers attended a station with a demonstration for about 10 to 15 minutes before moving to the next station.

Topics included plant growth stages, identification of weed species, spray drift, plants under water stress, and differences in germination of various seed sizes. Live plants were used in the demonstrations. The number of participants expected was about 100 per day, with about 50 attending the stations while the other half would have lunch. The presenters interacted with each sub-group and repeated the mini-sessions eight to ten times over the 2-hour period.

## Implementation of the Educational Events

### Getting It Right, 2004

The Getting It Right event was conducted in the spring of 2004 at four locations in Minnesota (Table 1). Most of the spring wheat grown in Minnesota is produced in northwestern Minnesota, including the eastern half of the Red River Valley. The western half of the Red River Valley is located in North Dakota. Growers in the Red River region use information from both the University of Minnesota and North Dakota State University. At the end of each program producers were asked to fill out a questionnaire about the event (Table 2).

**Table 1.**

Overview of Annual Education Events for Wheat and Soybean Growers in MN and ND During 2004-2007

Year	Name of Event	Location	Date	Participants	Total Surveys Returned	Univ. <sup>1</sup>	Commodity Organizations <sup>2</sup>
2004	Getting it Right: Research Based Wheat Management Workshop	Moorhead, MN	2/3	110	217	U of M	MAWG
		Greenbush, MN	2/4	55			
		Crookston, MN	2/5	103			
		Fergus Falls, MN	2/6	95			
2005	The Best of the Best in Wheat Research	Jamestown, ND	2/2	67	293	U of M / NDSU	MAWG/NDGGA
		Moorhead, MN	2/3	116			
		Grand Forks, ND	2/7	196			
		Minot, ND	2/8	86			
2006	The Best of the Best in Wheat Research and Marketing	Valley City, ND	1/30	82	116	NDSU	NDGGA/NDWC
		Dickinson, ND	1/31	151			
		Grand Forks, ND	2/27	80			
		Mohal, ND	2/28	100			
2007			2/1	240	150		

The Best of the Best in Wheat and Soybean Research and Marketing	Grand Forks, ND			U of M / NDSU	MAWG/NDGGA/NDWC/MSGA/NDSGA
	Moorhead, MN	2/2	155		
<sup>1</sup> U of M = University of Minnesota, NDSU = North Dakota State University. HM <sup>2</sup> MAWG = Minnesota Association of Wheat Growers, NDGGA = North Dakota Grain Growers Association, NDWC = North Dakota Wheat Commission, MSGA = Minnesota Soybean Association, NDSGA = North Dakota Soybean Grower Association.					

**Table 2.**

Core Questions in the Survey to Evaluate Educational Events 2004 to 2007 in North Dakota and Minnesota

1	Which of these best describes you?
2	How many miles did you drive to this meeting?
3	How did you hear about this workshop?
4	Please rate the presentations of the speakers and demonstrations.
5	To what extent was today's meeting worth your time?
6	How are the handouts?
7	Of the information presented today, how much is useable to you?
8	If you were to place a dollar value on the information you received (when you apply the knowledge on your farm) what would it be?
9	What did you learn today that you plan to take home and use?
10	What changes would you like to suggest, to improve the workshop?

### Best of the Best, 2005

The program was expanded in 2005 to include North Dakota agricultural researchers in workshops pertaining to wheat production. The name was changed to "The Best of the Best in Wheat Research." In 2005, the partners involved in the project doubled with input from both universities and wheat commodity groups from each state. Two border cities between Minnesota and North Dakota in the Red River Valley, Moorhead, Minnesota, and Grand Forks, North Dakota, were selected as meeting locations, as well as Jamestown and Minot further west in North Dakota (Table 1).

### Best of the Best, 2006

The Best of the Best 2006 had as its objective to reach wheat producers who had not previously participated in the event. Three new North Dakota locations were selected and Grand Forks, North Dakota, in the Red River Valley, where Minnesota wheat growers also could obtain the research information (Table 1).

## Best of the Best, 2007

A number of producers requested that production information for the two main crops grown in the region, wheat and soybean, could be presented during one event. Producers indicated that they would like to see a systems approach to education where information about soybean production would be interrelated with wheat production topics. For instance, producers were interested in the interaction between wheat and soybean as it relates to crop sequence, residue, fertility, and disease management. The producers approached the Minnesota and North Dakota Soybean Grower Associations with this idea. Many wheat growers are also members of the Soybean Growers Associations, and the leadership of these associations agreed with the need for integrated education for both wheat and soybean production. As a result the organizations worked together on the 2007 program (Table 1).

## Evaluation of the Educational Events

### Survey Method

Starting with the first meeting series, Getting It Right, anonymous surveys were conducted to evaluate the events. The surveys were distributed at the beginning of each meeting, and attendees were asked to complete it during the event. Table 2 provides an abbreviation of the main questions that were asked over the four-year period. The answer options are included in Tables 3 to 6. The evaluation instrument changed slightly over the years as some questions were dropped and others added.

Not all attendees completed the surveys (Table 1), and not all questions were answered by all producers. In each of the following tables, we indicate the number of answers provided for the specific question. Results are expressed as percent of the answers provided. We only discuss the answers to some of the key questions.

### Target Group and Some Background Information

The majority of attendees (on average 84.5%) were active producers, which was our target group (Table 3). Direct mailing (magazine, flyer, and postcard) was the dominant means of communication about the workshops in all years (Table 4). Kelsey and Mariger (2004) indicate that some producers have limited contact with Extension and that one way to reach these producers is via direct mailing. As the commodity groups have an extensive mailing list, even producers who normally are not on any Extension mailing list received information about this educational event. The more traditional methods to announce a meeting used by Extension included radio, newspaper, information provided by the Extension agent, e-mail, and Web calendar and were mentioned on average by 30% of the attendees. Around 9% heard about the event from friends or neighbors. Kelsey and Mariger (2003) indicate that producers visit with friends, family, and other producers about agricultural production issues, so it is not surprising that educational opportunities are discussed during these visits.

**Table 3.**  
Background of Audience

	2004	2005	2006	2007	Average
	(%)				
Active farm operator	86.5	87	84	82	84.5

Retired farm operator	1	0.5	1	2	1
Work in agri-business	11	9	3.5	5	7
Crop consultant		2	7	4.5	4.5
Public employee	0.5	0.5	1	2.5	1
Farm laborer	1	1	3.5	4	2
Number of answers	217	286	115	155	

**Table 4.**  
How Participants Learned About the Educational Event

	2004	2005	2006	2007	Average
	(%)				
Direct mailing	61	71.5	47	58	59
Radio	8	3.5	2.5	9	6
Newspaper	6.5	5	10.5	7	7
E-mail	5	5	8	6	6
Friend or Neighbor	7	9.5	9.5	9	9
Extension Agent	4	4.5	16	4	7
Calendar of events	5.5	1	2.5	5	3
Other	3		4	2	3
Number of answers	291	317	150	194	

### Value of the Workshops

Both university and commodity organizations are interested in measuring the impacts and perceived value of the educational events because all organizations need to justify the use of public money, time, and energy (Diem, 2003). On average, 53% of the respondents felt that the workshop was worth their time to a "great extent," and 43% responded "to a moderate extent." Only 4% answered that attendance was only to a "slight extent" worth their time. None of the participants answered that the time at the meeting was "not worthwhile."

Agricultural educational events are designed to provide producers with information that can make a positive difference in their operation. We asked producers their perceived value of the information they received when it would be applied on their farm (Table 5). Attendees were given the option of ranges of values, for instance \$26 to \$50 or \$501 to \$1,000.

In order to calculate the perceived value of the events, the middle value of the range was used except for the "less than \$25" option, in which case we used \$12.50. In the "more than \$1,000" option, we assigned the value \$1,250. A weighted average was calculated (Table 5). Based on the attendance of 217 and 293, the total perceived value of the program was \$123,473 and \$209,495 for 2004 and 2005, respectively. In Table 5,

we used \$1,250 as value where attendees answered "more than \$1,000," which is most likely underestimating the true value intended by producers.

**Table 5.**

Response to the Question: If You Were to Place a Dollar Value on the Information You Received (When You Apply the Knowledge on Your Farm) What Would It Be?

Answer Option on Survey	Value Used to Calculate Perceived Value	2004	2005	Average <sup>1</sup>
		(%)		
Less than \$25	\$12.50	3.5	10	7
\$26-\$50	\$37.50	21	14.5	18
\$51-\$100	\$75	13.5	15	14
\$101-\$500	\$300	17	0	8
\$501-\$1,000	\$750	10.5	10	10
>\$1,000	\$1,250	34.5	50.5	43
Number of answers		163	169	
Average dollar value		569	715	642
<sup>1</sup> Question was only asked in 2004 and 2005.				

### Traditional Teaching vs. Hands-On Demonstration

Producers on the organizing committee influenced the planning process to include speed hands-on demonstrations. Grudens-Schuck (2000) supports the involvement of stakeholders in the planning process. The hands-on sessions received 31.4 and 46.2 % excellent ratings in 2005 and 2006, respectively (Table 6). These percentages for the demonstration part of the program were higher than the excellent percentages for the lecture part, with 25.9 and 36.1% in 2005 and 2006, respectively. These results seem to indicate that producers valued the hands-on demonstrations higher than the traditional lecture.

**Table 6.**

Response to the Question: Rate the Presentations of the Speakers and the Demonstrations.

	2004 <sup>1</sup>	2005	2006	2007	Average
<b>Speakers</b>	(%)				
Excellent	47.6	25.9	36.1	33.1	35.5
Good	46	53.3	50.1	53.1	50.5
Fair	6.2	18.6	13.1	12.7	13
Poor	0.2	2.2	0.7	1.1	1



Number of answers	143	252	98	112	
<b>Demonstration</b>	(%)				
Excellent		31.4	46.2	27	35
Good		52.3	47.9	55.5	52
Fair		14.9	5.7	15	12
Poor		1.4	0.2	2.5	1
Number of answers	223	90	100		
<sup>1</sup> Demonstrations were not included in 2004.					

However, in 2007, the percentage for "excellent" for the lectures (33.1%) was higher than for the demonstration (27%). The hands-on sessions were designed for 10 to 15 participants per station. The participation in 2007 was 240 in Grand Forks and 150 in Moorhead. The overwhelming number of participants was not anticipated based on previous attendance trends. The result was that the hands-on sub-groups had nearly double (20-24) the number of anticipated participants (10-15). The objective of the stations was to have direct contact between instructor and attendee. The effectiveness was less with the larger sub-group, which may explain why the "excellent" percentage for demonstrations in 2007 was lower than the lecture percentage.

## Conclusions

- The cooperation with commodity groups greatly increased the number of participants due to the direct targeting and advertising to active producers on organizational mailing lists.
- The cost of the program was carried by the commodity groups, and producers did not directly pay for the event but paid indirectly through the check-off dollars collected from their products.
- The cooperation among university Extension staff, researchers, and commodity groups strengthened. The program was generally well received and had a positive financial impact.
- Producer-driven planning resulted in a different way of approaching the program and delivery compared with planning a program by Extension staff only.
- The topics selected by producers were relevant. The producers influenced the program-planning process, and the educational event evolved to include soybeans.
- Having speed hands-on activities in addition to the lectures was a good way to diversify the educational method used in teaching the audience.

- The intensive 10-minute speed hands-on sessions kept producers and speakers focused and interested. This method can be used in a variety of Extension programs.
- Smaller groups during hands-on activities worked the best.
- Using participatory planning with stakeholders and working with commodity groups is a model that can be followed not only with agricultural groups but also with other Extension education programming.

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