4. Education and Sociologic Evaluation Component Summary

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Overview

During the second year of Phase II for the Areawide program we completed our second cost of production interview with 146 growers participating in the project. Significant time was spent on data entry from first and second year interviews, particularly in the development of cost data entries and calculation methods. At the end of November 2004, cost data calculations are nearly 80 percent complete. Once completed, each grower will have a completed summary for each crop in our surveys.

For meeting project goals, cost production values will be used to develop comparisons by farm type, region, size, sate, and other critical variables. Additional analysis of survey questions, cost of production summaries, and integration with focus group findings from year 1 and year 4 will enable us to contribute toward educational goals of the Areawide project.

We also added a number of questions to our second year interview regarding wheat production practices, use of wheat for grazing, leasing arrangements for wheat pasture and other pasture, livestock leasing, and growers' use of computers and the Internet. Preliminary results from these and other survey question are examined in this second annual report.

Plans for the next year are to continue along the same path with an increased emphasis on the development of outreach components. Cost of production analysis will continue with another year of data and the initial results completed. Some of the key items to be completed in the next year include:

- Complete the calculations of year one and year two data for cost of production and analyze these results;
- Develop a plan for the final year focus group sessions and prepare for the analysis of this data on a short turn around time;
- Collect year three cost of production data and begin analysis for inclusion in final reports;
- Develop an increased outreach program and utilize additional opportunities to present information from this project at extension meetings;
- Prepare for significant outreach push through the fall and winter of 2005-2006 in conjunction with the focus group meetings to distribute information gleaned from the project.

Review of Participant Selection and Year 1 Accomplishments

During the first of four years of Phase II implementation of the Areawide program we: 1) recruited wheat producers from around the study region to participate in focus group discussions and cost-of-production interviews; 2) established procedures for the protection of human subjects and obtained necessary institutional approval; 3) conducted a total of twenty focus group discussions with participating growers; and 4) conducted the first of four annual cost-of-production interviews with each participant.

We selected participants in consultation with members of the project team, cooperative extension agents, local farm cooperatives, and wheat organizations in each state. As described in the Year 1 report, we sought participating growers representing both traditional wheat-fallow cropping systems and diversified cropping systems involving winter wheat. Overall, we sought growers who were similar in production characteristics to the growers who farmed the 23 Areawide project demonstration fields.

In Year 1, a total of 138 producers attended one of the twenty focus group discussions and we successfully completed interviews with a total of 146 wheat growers (including some who were unable to attend one of the scheduled focus groups). In Year 2, we successfully completed second year interviews with all but one of the 146 growers from the first year. The regional distribution of growers is illustrated in Table 1, along with a summary of counties where these growers have farm operations.

Table 1. Number of demonstration sites and number of growers participating in cost of production surveys by project zone and state (counties farmed from 2003 production interview)

Project zones	States	Demonstration sites	Number of growers	Counties farmed [a]
1	Wyoming	2	14	Goshen, **Laramie**, Larimer (CO)
	Nebraska	2	14	Cheyenne, **Banner**, Kimball, Morrill, **Scotts Bluff**, Laramie (WY)
	N. Colorado	2	18	Adams, Arapahoe, Logan, Morgan, Washington, **Weld**
2	S. Colorado	4	19	**Baca**, Bent, Cheyenne, Lincoln, Kiowa, **Prowers**, Hamilton (KS)
	Texas	5	26	Armstrong, Briscoe, Castro, Carson, **Deaf Smith**, Hartley, Hemphill, **Hutchinson**, Lipscomb, **Moore**, **Ochiltree**, Potter, Randall, Roberts, Sherman, **Swisher**, Beaver (OK)
3	Oklahoma	6	42	**Alfalfa**, Barber (KS), Blane, Garfield, Grant, Greer, Harmon, Harper (OK), Harper (KS), **Jackson**, **Kay**, Kiowa, Major, **Noble**, Tillman, Woods
	Kansas	2	13	**Reno**, Kingman
Total		23	146	

[a] Areawide field demonstration sites are located in counties with boldface type. We recruited growers recruited from these and surrounding counties.

Consistent with the larger number of demonstration sites in Colorado and Oklahoma (6 in each state, with Colorado split between northern and southern areas), we have more participating growers in those states—a total of 42 in Oklahoma and 37 in Colorado. Producers in Nebraska and Wyoming combine for a total of 28 participants in that part of the study area. Numbers of counties farmed by participating growers are also influenced by the number of demonstration sites in each area, plus the geographical size of counties in each area (in particular, Texas and Oklahoma counties are smaller compared to other areas and more counties are represented in those states).

Progress toward economic cost-return summary reports

Cost of production results are taking shape with the completion of the cost data entry and calculations nearly 80 percent complete at the end of Year 2. With the completion of these calculations, the task of developing summary information for growers will begin (see example of summary in Figure 1). Each grower will have a completed summary for each crop and an overall summary for the dryland portion of the farm based on the data collected in our surveys.

The cost of production information will be used to determine the potential for increasing profitability by adoption of alternative cropping practices. In addition, the summary values calculated will be used to develop comparison data by farm type, region, size, state, and other critical variables. Analysis will be completed using data from specific cost and return data to evaluate the most profitable decisions and systems.

The data will also be used to make comparisons between the actual profitability of the farms and the decision making information gathered in the focus group sessions. The comparison of these two data sets will give us the unique opportunity to evaluate the profitability and decision making criteria as spoken, and determine where these growers may be making rational decisions or making decisions that are contrary to their goals.

The submission of a paper from this data is expected by early spring, for presentation in the summer of 2005. This will be the basis for an educational program over the next 18-24 month period. Additional data will be collected, so the educational program will be a dynamic process using the new data to improve the resulting program over the remainder of the project and beyond.

Areawide Pest Management for Wheat
Cost and Return Summary Report

Grower: 299
Crop: Wheat
Year: 2002

Actual Production Costs ($/Acre)		
Variable Costs		
Labor	1.30	
Fuel	2.61	
Repairs	1.69	
Seed	7.00	
Fertilizer	12.90	
Herbicide	0.00	
Custom	4.55	
Crop Insurance	4.50	
Overhead	1.73	
Operating Interest	1.84	
Total Variable Costs		**$37.66**
Ownership Costs		
Depreciation	0.27	
Interest	0.50	
THI	0.31	
Total Ownership Costs		**$1.08**
Total Production Costs		**$38.74**
Crop Acres	**4,000**	

Actual Revenue ($/Acre)		
Crop Revenue		
Wheat Yield	0	
Wheat Price	$3.00	
Total Crop Revenue		**$0.00**
Government Payments		
Direct Payment	8.40	
Counter Cyclical Payment	0.00	
Loan Deficiency Payment	0.00	
Total Govt. Payments		**$8.40**
Crop Insurance Revenue		
Wheat Indemnity (CRC)	41.25	
Total Crop Insur. Revenue		**$41.25**
Total Revenue		**$49.65**
Net Return to Land and Management ($/Acre)		**$10.91**
Total Return from Wheat		**$43,640**

Yielding Results by innovating & educating

Figure 1. Example cost-return summary for 2002 wheat production (we are currently developing similar reports for all dryland crops and all growers from 2002 and 2003 production interviews)

Acreage and livestock totals from 2003 crop production interview

Table 2 provides an illustration of growers' dryland crop acres, dryland pasture, and CRP acres for the 2003 crop year. Acres planted is important for cost of production assessments, along with additional questions regarding acres harvested and crop yields, not shown in the table. Tracking growers' planted acreage for dryland crops over the four year study period will assist us in evaluating crop rotations used with winter wheat. Forage production, pasture, livestock, irrigated acres, and CRP lands will be important to consider as we examine overall farm profitability and grower decision-making related to wheat and how it is used on these farms.

Collectively, growers had nearly 600,000 dryland acres for the 2003 production year, including nearly 199,000 of winter wheat, 87,000 acres of fallow, and nearly 89,000 acres of summer crops, hay, and forage. The remaining dryland acreage included 173,000 acres of dryland pasture and 52,000 uncultivated acres in the federal Conservation Reserve Program (CRP). In addition to these dryland acres, the growers had nearly 45,000 acres of irrigated crops and pasture, illustrated in Table 3.

Summer crops grown in rotation with winter wheat varied across the study region. Important summer crops among our growers in Wyoming, Nebraska, and Colorado were proso millet, sunflowers, corn, and millet for hay. Sunflowers and dryland corn were also important crops among some of the growers in Kansas, along with grain sorghum and soybeans. Soybeans were also an important dryland crop for some of the Oklahoma growers, while grain sorghum was clearly the predominant dryland summer crop among participating growers in Texas. Cotton was also an important dryland crop for some of the growers in Texas and Oklahoma.

Also evident in Table 2 is the importance of pasture, hay, and forage crops for many of our participating growers. Forage sorghum or Sudan grass for hay and forage is the most widely distributed summer crop over our entire study region. Millet is an important hay and forage crop among some of the growers in Wyoming, Nebraska, and Colorado. In Kansas, Oklahoma, and Texas, winter wheat is utilized for grazing and hay in addition to grain harvest or as an alternative to harvesting the crop for grain. Alfalfa is also an important hay crop for many of our growers, particularly in Kansas and Oklahoma.

As illustrated in Table 4, 82 of 144 growers we interviewed had cattle operations for 2003. **Collectively, growers totaled nearly 47,000 head of cattle for 2003**. Table 5 illustrates the importance of wheat used for cattle grazing and the importance of leasing arrangements related to cattle operations.

Table 2. Overview of dryland acres from 2003 crop production interview

	Acres planted by state:						All planted acres
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	
Winter wheat:							
Grain production only	14,146	8,813	69,312	8,960	25,695	12,432	139,358
Graze and grain	600	---	5,896	1,446	27,386	11,072	46,400
Graze only (graze out)	---	---	120	129	5,844	5,502	11,595
Cut for hay	---	---	--	30	1,329	100	1,459
Subtotal, all winter wheat acres	14,746	8,813	75,328	10,565	60,254	29,106	198,812
Fallow acres	15,412	8,372	53,557	128	191	9,190	86,850
Summer crops, hay, and forage: [a]							
Proso millet	1,468	7,231	9,543	---	---	---	18,242
Sunflowers	1,011	2,601	9,000	1,143	---	---	13,755
Corn	278	885	4,839	1,669	944	---	8,614
Millet, for hay and forage	217	339	1,730	101	34	---	2,421
Forage sorghum/Sudan grass for hay	200	40	1,815	383	1,414	451	4,303
Grain sorghum	---	---	6,095	4,520	2,539	7,692	20,847
Alfalfa	---	16	162	908	4,344	---	5,430
Soybeans	---	---	---	1,289	2,002	---	3,291
Cotton	---	---	---	---	1,957	3,775	5,732
Other cropland utilized for grazing (rye, sorghum, oats, millet)	---	---	398	124	725	156	1,403
Other grasses (for hay)	20	---	---	80	731	308	1,139
Rye (graze+grain/seed)	---	---	---	---	900	---	900
Other hay & forage crops (barley, oats, peas, triticale)	376	---	508	---	---	---	884
Oats	52	160	---	5	200	145	562
Mung beans	---	---	---	---	382	---	382
Spring wheat	---	---	---	235	---	---	235
Safflower	---	---	223	---	---	---	223
Barley	159	---	---	---	36	---	195
Peanuts	---	---	---	---	95	---	95
Triticale (grain, seed)	---	---	80	---	---	---	80
Sun hemp (no-till cover crop)	---	---	---	50	---	---	50
Chick Peas	40	---	---	---	---	---	40
Subtotal, summer crops, hay, and forage	3,821	11,272	34,393	10,507	16,303	12,527	88,823
All dryland pasture (native and improved)	15,908	24,129	46,511	5,493	44,424	36,152	172,617
Conservation Reserve Program (CRP)	5,377	5,902	31,123	875	3,251	5,397	51,925
Total dryland acres, all categories	55,264	58,488	240,912	27,568	124,423	92,372	599,027
Number of growers	14	14	37	12	42	25	144

[a] Summer crops, hay, and forage are partially ordered by acreage and by state to help illustrate regional distribution.

Table 3. Irrigated acres, 2003 crop production interview

	Irrigated crop acres by state						All planted acres
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	
Winter wheat:							
Grain production only	857	484	1,510	116	403	5,666	9,036
Graze and grain	--	258	645	347	--	2,841	4,091
Graze only (graze out)	--	--	--	--	280	498	778
Cut for hay	--	--	--	--	--	80	80
Subtotal, all irrigated winter wheat	857	742	2,155	463	683	9,085	13,985
Fallow	--	13	617	--	--	1,144	1,774
Summer crops, hay, and forage: [a]							
Corn	42	739	1,615	541	240	4,713	7,890
Cotton	--	--	--	--	811	4,255	5,066
Grain sorghum	--	--	568	--	260	2,986	3,814
Alfalfa	270	657	1,248	65	143	845	3,228
Sunflowers	102	284	608	--	--	1,249	2,243
Beans (dry, pintos)	795	123	165	--	--	--	1,083
Forage sorghum/Sudan grass (for hay & forage)	--	--	520	--	300	100	920
Other hay & forage crops (barley, oats, peas, triticale)	124	364	117	--	--	40	645
Soybeans	--	--	--	555	--	58	613
Millet (hay and forage)	70	364	132	--	--	--	566
Other cropland utilized for grazing (rye, sorghum, oats, millet)	--	--	125	149	--	271	545
Oats	98	149	--	64	--	--	311
Peanuts	--	--	--	--	290	--	290
Barley	--	60	100	--	--	--	160
Other grass (for hay)	124	15	--	--	--	--	139
Proso Millet	--	25	60	--	--	--	85
Sugarbeets	--	60	--	--	--	--	60
Pumpkins	--	--	50	--	--	--	50
Wheatgrass (for seed)	--	22	--	--	--	--	22
Beans (dry, yellow)	--	--	20	--	--	--	20
Peppers (Chili)	--	--	--	--	10	--	10
Triticale (grain, seed)	--	--	--	--	--	10	10
Subtotal, summer crops, hay, and forage	1,625	2,862	5,328	1,374	2,054	14,527	27,770
All irrigated pasture (native and improved)	120	240	--	130	800	--	1,290
Total irrigated acres	2,602	3,857	8,100	1,967	3,537	24,756	44,819

[a] Irrigated summer crops, hay, and forage ordered by total planted acres.

Table 4. Average cattle inventory for 2003 (totals for all growers by state)

	State						All growers
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	
Mother Cows	1,059	2,070	1,347	564	4,270	826	10,136
Replacement Heifers	86	480	230	128	428	86	1,438
Bulls	17	86	73	40	256	57	529
Raised Steers	188	1,031	1,365	268	1,907	182	4,941
Raised Heifers	166	1,006	1,316	281	1,880	326	4,975
Purchased Steers	10	1,070	799	81	3,512	4,919	10,391
Purchased Heifers	1,000	2,540	770	44	4,341	1,474	10,169
Other Cattle or Stockers	0	0	16	26	4,283	0	4,325
Total head	2,526	8,283	5,916	1,432	20,877	7,870	46,904
Number of growers with cattle	4	6	19	6	35	12	82
Growers without cattle	10	8	18	6	7	13	62
Total growers	14	14	37	12	42	25	144

Table 5. Use of wheat for cattle grazing, leasing of wheat or other pasture, and cattle leasing activity, 2003

	State						All growers
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	
Cattle grazed on wheat, 2003?							
No	13	13	34	5	12	15	92
Yes	1	1	3	6	30	11	52
Total	14	14	37	11	42	26	144
If yes, average days on wheat	--	--	96.67	63.75	102.52	135.00	102.23
Average cattle gain (lbs/day)	--	--	2.20	2.20	2.25	2.01	2.18
Any wheat or pasture leased out for grazing in 2003?							
No	9	7	22	6	26	12	82
Yes	5	7	15	6	16	14	63
Total	14	14	37	12	42	26	145
Lease any cattle to graze, 2003?							
No	14	13	36	11	35	24	133
Yes	--	1	1	1	7	2	12
Total	14	14	37	12	42	26	145

Wheat Varieties

Table 6 illustrates wheat varieties planted for the 2003 crop year. The wheat varieties planted by participating growers stayed relatively consistent for the 2002 and 2003 crop years, with a few notable changes (figures for 2002 crop are reported in our Year 1 report).

For the 2003 crop year, acres planted to the four Russian Wheat Aphid (RWA) resistant varieties were up by 15%. This will be a key factor to evaluate in the 2004 data after the discovery of a RWA biotype that is not affected by the RWA resistant wheat varieties. **The acres of TAM 110, which is greenbug tolerant, also increased more than 65% from 2002 to 2003 among participating growers**. Other varieties were similar with typical adjustments from variety to variety that would be expected given different weather conditions and the usual planting time decisions of growers.

One notable distinction is a dramatic increase in the number of acres planted to Trego, a hard white winter wheat, in 2003. The Trego planted increased from 1,599 acres in 2002 to 10,050 acres in 2003, a 528% increase from one year to the next. The federal white wheat program was not in place at planting time for the 2002 crop, but was known prior to planting the 2003 crop. This incentive increased the acres and the number of growers of white wheat throughout the region, and this survey reflects that increase.

Table 6. Most popular varieties of winter wheat for 2003 crop production year (number of acres planted and number of producers by state for varieties over 500 acres)

	Wyoming		Nebraska		Colorado		Kansas		Oklahoma		Texas		Project total	
Variety	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.
Jagger	10	1			2,361	3	6,678	11	30,552	35	3,835	6	43,436	56
Pioneer 2174							604	3	15,373	25	523	1	16,500	29
Akron	1,427	3	280	1	14,346	11							16,053	15
TAM 110*					2,046	2					13,930	13	15,976	15
Buckskin	12,110	12	2,161	5									14,271	17
Prairie Red*					13,367	12							13,367	12
Trego (white)					10,050	10							10,050	10
Pioneer 2137	255	1	562	1			1,219	3	2,976	6	4,876	7	9,888	18
Halt			100	1	8,567	8							8,667	9
Prowers 99*					5,731	6							5,731	6
Above					4,272	8							4,272	8
Alliance			2,772	7	1,446	3							4,218	10
TAM 107	57	1			1,005	1					2,317	2	3,379	4
Yumar*					2,776	6							2,776	6
Triumph 64											2,448	2	2,448	2
OK 101									2,159	8			2,159	8
TAM 105											2,152	4	2,152	4
Trio T13					2,110	1							2,110	1
Quantum					1,745	1							1,745	1
Hardman Grain 9									1,701	2			1,701	2
Coronado							1,245	3	233	1			1,478	4
Yuma					1,390	1							1,390	1
Dumas											1,342	6	1,342	6
Larned											1,306	1	1,306	1
Longhorn					160	1	79	1	800	1	200	1	1,239	4
TAM 200											1,182	1	1,182	1
Custer									1,178	3			1,178	3
Millenium	30	2	941	2									971	4
Triumph Early											966	1	966	1
Pioneer 2167											760	1	760	1
Scout					711	1							711	1
T81					691	2							691	2
Niobrara			686	1									686	1
Ogallala			341	1	100	1					186	1	627	3
Baca					584	1							584	1
Pioneer 2158									525	1			525	1
Jagalene	195	2					73	2	190	2	60	1	518	7
Vona			501	1									501	1

* Russian wheat aphid resistant varieties in boldface type; underlined variety (TAM 110) with greenbug resistance.

Wheat production practices and pest management

In the 2003 interview, we added a page of questions regarding growers' wheat production practices and pest management, including wheat seed cleaning, seed treatment, field recordkeeping, insect scouting, and observations of beneficial insects. Responses to these questions are illustrated in Tables 7 and 8.

As illustrated in Table 7, we observed that:

- **The majority of growers participating in our project practiced seed cleaning before planting winter wheat**. Most commonly, growers paid a custom seed cleaner to clean their seed (95 out of 145 growers). Custom rates for this service reported by growers ranged from 25 cents per bushel to $1.50, and averaged around 52 cents/bushel.
- **Seed treatment insecticides or fungicides for wheat were not widely utilized by the growers** (32 out of 145 growers did). Many did not consider this a necessary practice or found it to be cost prohibitive.
- **Soil testing at some regular interval was common among these growers**; 104 out of 145 used soil testing at regular intervals for at least some acres, though annual soil testing was not the norm.
- **Nearly all growers kept some type of field records** (such as planting dates, varieties planted, and field operations like tillage, fertilizer, insecticide applications). Most commonly, growers seemed to be keeping track of planting dates, which has become essential for crop insurance record keeping. However, we were not able to systematically assess the extent to which growers may or may not be utilizing record keeping as a crop management practice with this question. The most common type of record keeping was a journal, day planner, or calendar where field operations could be recorded. Often growers kept a journal in their tractor or pickup. Some grower's spouses kept a "backup" record on the kitchen calendar.
- **A total of 27 out of 145 growers kept at least some computerized field records**. Later in the interview we also asked about use of computers for farm financial record keeping. As illustrated in Table 9, 106 out of 145 indicated that they used a computer for some or all of their farm record keeping, where this included financial records. Here again, many spouses assisted in keeping computerized records for the farm.

Also illustrated in Table 7 is a summary of field tillage practices. We did not specifically ask about tillage practices, but determined these figures from our questions about field operations for each crop. The majority of participating growers practice limited tillage on some or all of their cultivated acres (104 out of all 146 participating growers). A total of 34 growers were practicing no-till on some or all of their crop acres. We have no-till growers distributed throughout the project study region, with larger numbers in Colorado and Oklahoma due to larger numbers of participants in those states.

Table 7. Wheat production practices

	State						All
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	
Wheat seed cleaning…							
Custom cleaned	5	8	24	9	36	13	95
Cleaned by seed dealer or purchased certified seed	4	1	3		2	6	16
Self cleaned	5	5	8	3	2	2	25
None			2		2	5	9
Total	14	14	37	12	42	26	145
Use any wheat seed insecticide or fungicide?							
No	13	13	32	9	32	14	113
Yes	1	1	5	3	10	12	32
Total	14	14	37	12	42	26	145
Use annual soil test(wheat fields)?							
None	8	10	7	1	2	13	41
At least some acres, periodically	6	4	30	11	40	13	104
Total	14	14	37	12	42	26	145
Keep records for individual fields (how kept)?							
Filed records (saved records, receipts only)	4	1	2		7	3	17
Some written record keeping (journal, calendar, notebook, field maps)	9	8	18	11	30	21	97
Some computerized field records	1	4	15	1	4	2	27
None specified		1	2		1		4
Total	14	14	37	12	42	26	145
Tillage Practices… [a]							
Conventional tillage, some use of moldboard plow	4	2	--	2	6	--	14
Conventional, disk/field cultivation only	8	9	27	8	34	18	104
Minimum tillage system (strip till, ridge till, etc.)	--	--	1	2	1	5	9
No-till system	4	3	10	4	10	3	34

[a] More than one tillage practice per farm possible, summarized from 2002 interviews.

Table 8 illustrates growers' responses to questions about field scouting and beneficial insects:

- **Very few growers, 6 out of 145, indicated that they practiced insect field scouting in wheat on a regular interval and 45 indicated that they did not scout wheat for insects**. However:
    - 42 indicated that they relied on consultation with a crop advisor when making decisions about insect infestations.
    - 40 indicated that they scout their own wheat for insects whenever they had reason to believe that insects may be a problem.
- **The majority of growers, 133 out of 145, indicated that they have observed beneficial insects in wheat.**
    - When asked to indicate which ones and the typical time of year, 126 out of 145 indicated that they have seen ladybeetles in wheat
    - The most typical time of year to observe beneficials was in the spring.
    - 23 growers mentioned ladybeetle larvae as a beneficial insect they have seen in wheat
    - 65 mentioned seeing (or knowing of) parasitic wasps as a beneficial insect for wheat
    - 54 mentioned lacewings as a known beneficial insect

Computers and the Internet

As noted above, 106 out of 145 growers indicated that they utilized a personal computer for farm records including financial records. We also asked growers about their use of the Internet for obtaining farm related information. As illustrated in Table 9:

- **122 out of 145 growers indicated that they used the Internet.**
- **Growers most commonly sought information on markets and farm machinery**. They also sought current information on weather and research on farm products such as seed varieties, chemicals, and fertilizers.
- **Forty five out of 144 growers had high speed internet service, but the majority relied on dial-up internet service, 82 out of 144**. Some noted that the slow speed of a dial-up connection limited their willingness or ability to use the Internet regularly for obtaining farm-related information. Seventeen of 144 growers did not have home Internet service.

Table 8. Field scouting and observation of beneficial insects in wheat

	State						
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	All
Field scouting, methods…							
Consultant, all or part acres [a]	--	1	14	3	13	11	42
Self only	7	2	8	2	18	3	40
Self, regular interval mentioned	1	--	--	--	4	1	6
Other, conditional	1	3		3	3	3	13
Not mentioned	5	8	15	4	4	8	45
Total	14	14	37	12	42	26	145
Ever observe beneficial insects in wheat?							
No	1	--	2	--	9	--	12
Yes	13	14	35	12	33	26	133
Total	14	14	37	12	42	26	145
Beneficial insects, most mentioned…							
Ladybeetles	13	14	35	12	29	23	126
Ladybeetle larvae	4	1	9	1	4	4	23
Parasitic wasps	7	--	21	4	19	14	65
Lacewings	3	4	21	4	7	15	54
When have you typically observed beneficial insects?							
Spring	3	8	8	10	23	10	62
Summer	4	1	4	--	1	1	11
Fall	--	--	1	--	2	2	5
Multiple seasons or conditional	--	2	4	1	4	5	16
Not mentioned/unspecified	7	3	20	1	12	8	51
Total	14	14	37	12	42	26	145

[a] Including Extension educator, Co-op agronomist, private crop consultant, or aerial applicator.

Table 9. Use of computers and the Internet for farm information, 2003 cost of production interview

	State						
	Wyoming	Nebraska	Colorado	Kansas	Oklahoma	Texas	All
Use a computer for farm records (including financial)?							
No	.....	3	5	1	18	7	39
Yes	.....	11	32	11	24	19	106
Total	.....	14	37	12	42	26	145
Seek farm related information from the Internet?							
No	.....	5	5	2	4	4	23
Yes	.....	9	32	10	38	22	122
Total	.....	14	37	12	42	26	145
Types of information sought (percentages who used the Internet)							
Commodity markets, cattle markets, financial information	.....63.	77.8	93.8	100.0	60.5	81.8	77.9
Equipment, machinery, parts	.....72.	44.4	68.8	40.0	57.9	59.1	59.8
Agricultural research, extension information, trials	.....90.	66.7	50.0	30.0	63.2	63.6	59.8
Weather	.....54.	77.8	84.4	90.0	34.2	27.3	55.7
Agricultural news, general news, correspondence	9	22.2	21.9	40.0	28.9	36.4	27.0
USDA information (FSA, farm programs)	.....	--	6.3	--	5.3	4.5	4.1
Type of Internet access…							
Dial-up service only	.....	7	19	5	22	18	82
High speed Internet	.....	3	15	2	17	6	45
None	.....	4	3	4	3	2	17
Total	.....	14	37	11	42	26	144