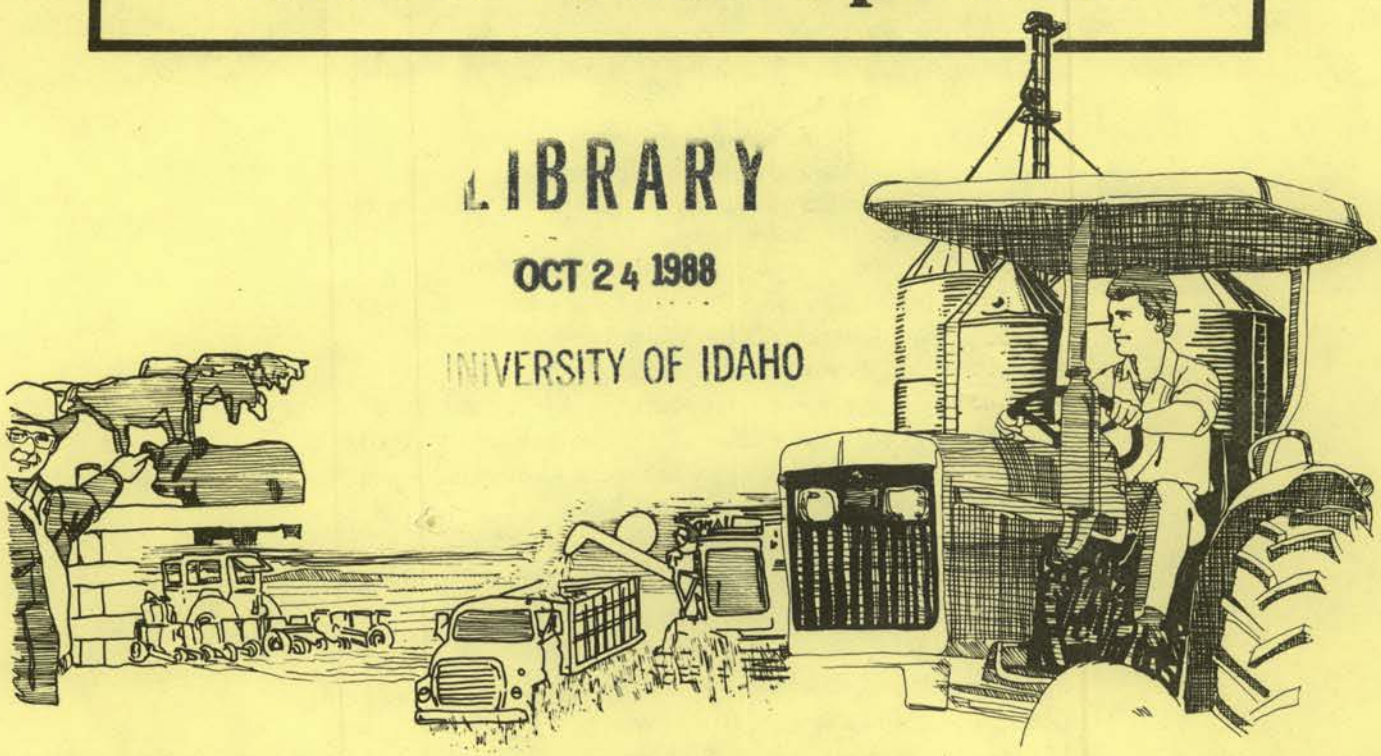
Bulletin No. 674

Agricultural Producers' Use of Recommended Practices in the Farm or Ranch Operation



Base Data for Planning Extension Agriculture Programs, 1988-91

Corinne M. Rowe and Joseph F. Guenthner

Cooperative Extension Service
University of Idaho
College of Agriculture

Contents

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Overview of Surveys

The Idaho Cooperative Extension Service, an integral part of the University of Idaho College of Agriculture, serves Idaho through faculty located in 42 county offices and departmental specialists housed in district offices and on the UI campus. Through the Cooperative Extension Service, the College of Agriculture seeks to generate and facilitate adoption of knowledge and to develop leadership in agriculture, natural resources, home economics, adult and youth development and related areas for people located throughout Idaho.

Extension is the educational arm of the U.S. Department of Agriculture and is funded by the federal government cooperatively with state land-grant institutions and county governments. The mission of the National Cooperative Extension System is to improve U.S. agriculture and strengthen American families and communities by providing informal research-based educational programs.

Extension finds it increasingly important to identify and document program impacts and opportunities for improvement. To respond to this increased need for accountability and evaluation, the state and federal Extension partners in 1982 jointly established a nationwide planning, reporting and evaluation system. This system involves the identification of high priority areas requiring major efforts over an extended time period, the establishment of long-range goals and objectives and the evaluation of program accomplishments and impacts. It begins with analysis of baseline data, i.e., information on the current status of a practice, behavior or condition among the people involved. Where such information is nonexistent or inadequate, an assessment of practices and/or needs is required.

Survey Scope and Method

During late fall 1986, the Idaho Cooperative Extension Service conducted statewide surveys of agricultural producers and Extension Home Economics program users. These surveys were conducted to provide information for program planning and evaluation by Extension county and specialist faculty and advisory groups.

The surveys provide descriptive profiles of clientele and establish current levels of use by clientele of Extension recommended practices. This provides base data that will facilitate the planning of Extension programs — a process that includes working with clientele groups to determine needs, establishing long-term goals and specific objectives, specifying ways to implement programs for maximum effectiveness and evaluating these for impact.

The study results may or may not be appropriate for a given locality. Supplemental information should be obtained from other sources or collected and analyzed at the local level for program target audiences.

This publication reports how agricultural producers use practices recommended by Extension. As readers interpret the results, they should keep in mind that what may be recommended in one county may not be recommended in another part of the state because of such things as differences in soil, climate, marketing opportunities or the management ability of the producer.

Results of the Home Economics program users' study have been published in Extension Bulletin 671, *Clientele Use of Recommended Practices: Base Data for Planning Extension Home Economics Programs.*

Agricultural Producers' Use of Recommended Practices in the Farm or Ranch Operation

Base Data for Planning Extension Agriculture Programs, 1988-91

Corinne M. Rowe and Joseph F. Guenthner

Central to the basic mission of the Cooperative Extension Service is the delivery of research-based knowledge and information to agricultural producers to help them solve farm and ranch problems. Agricultural producers are currently struggling in a difficult economic environment. Increasing Idaho agricultural profitability stands high on the list of program priorities for the University of Idaho College of Agriculture. Extension programs assist farmers and ranchers in a number of ways. Among them are recommendation of practices that increase profitability through the use of the latest technological knowledge, reduction of inputs, improved farm business management and marketing methods and the development of new or alternative products and new markets.

To establish a statewide baseline of the current use of various practices related to farm and ranch management, indicators of currently recommended practices were identified by specialists for each aspect of the farm and ranch operation. The Idaho Agriculture Statistical Services (IASS) office assisted by systematically selecting names from their current listing of Idaho farms and ranches.

Results from the survey are presented for the total state sample and, to facilitate program planning needs, by the four Extension districts of northern, southwestern, central and southeastern Idaho. Respondents were asked to mark the frequency of use of various management practices ranging on a continuum from "Never" or "Seldom" to "Usually" or "Always." "Does Not Apply" was also available as a response option. Only the highest response category is included in this report and then only for respondents to whom the question applied.

Figures given throughout the text represent findings for the state sample. Tables displaying data for the total sample and separately by district, or by herd size where more appropriate, are located in the appendix. The number of individuals responding to each question is included.

Characteristics of the Study Respondents

Of the 1,500 questionnaires mailed, 444 were returned (31 percent usable return rate after subtracting 43 non-deliverable returns and 16 returns from persons no longer farming). This is not considered unreasonably low using IASS mail survey procedures with no telephone follow-up. The characteristics of the sample fairly closely reflect those of Idaho producers found in the 1982 Census of Agriculture (Fig. 1). Because of the relatively low return rate, however, the findings must be viewed with caution.

The southwestern area, the region known generally as the Idaho Treasure Valley, was underrepresented by the sample. Only 16 percent of the sample was located there although the census indicates the area has 26 percent of Idaho farms and ranches. Overrepresented were northern Idaho producers and those in the Magic Valley of south-central Idaho. (Note: 12 respondents gave no county designation and are not included in this description.)

Other Idaho farms and ranches that were underrepresented in the sample were the largest farms, irrigated farms and the smallest-sized farms by sales classification (those with gross sales under $40,000). Mid-sized farms (those typically reached by Extension) with sales between $40,000 and $99,999 were overrepresented. This was somewhat true also for the large farms (sales of $100,000 to $499,999). The questionnaire clearly identified Cooperative Extension as sponsor of the survey, so users of Extension possibly were more inclined to complete and return the survey than non-users, thus skewing the sample somewhat.

Among major enterprises, cattle and cow operations and dairy enterprises were underrepresented compared with census percentages. And, although information was collected on sheep and swine operations, too few responses were received to justify separate analysis.

Figures for off-farm income as percent of total income are not given in census information, nor is the educational background of producers. Thus comparisons of these characteristics cannot be made. Age, however, is included in the agricultural census data. Comparisons show the study sample to be somewhat older than is generally true of Idaho producers.

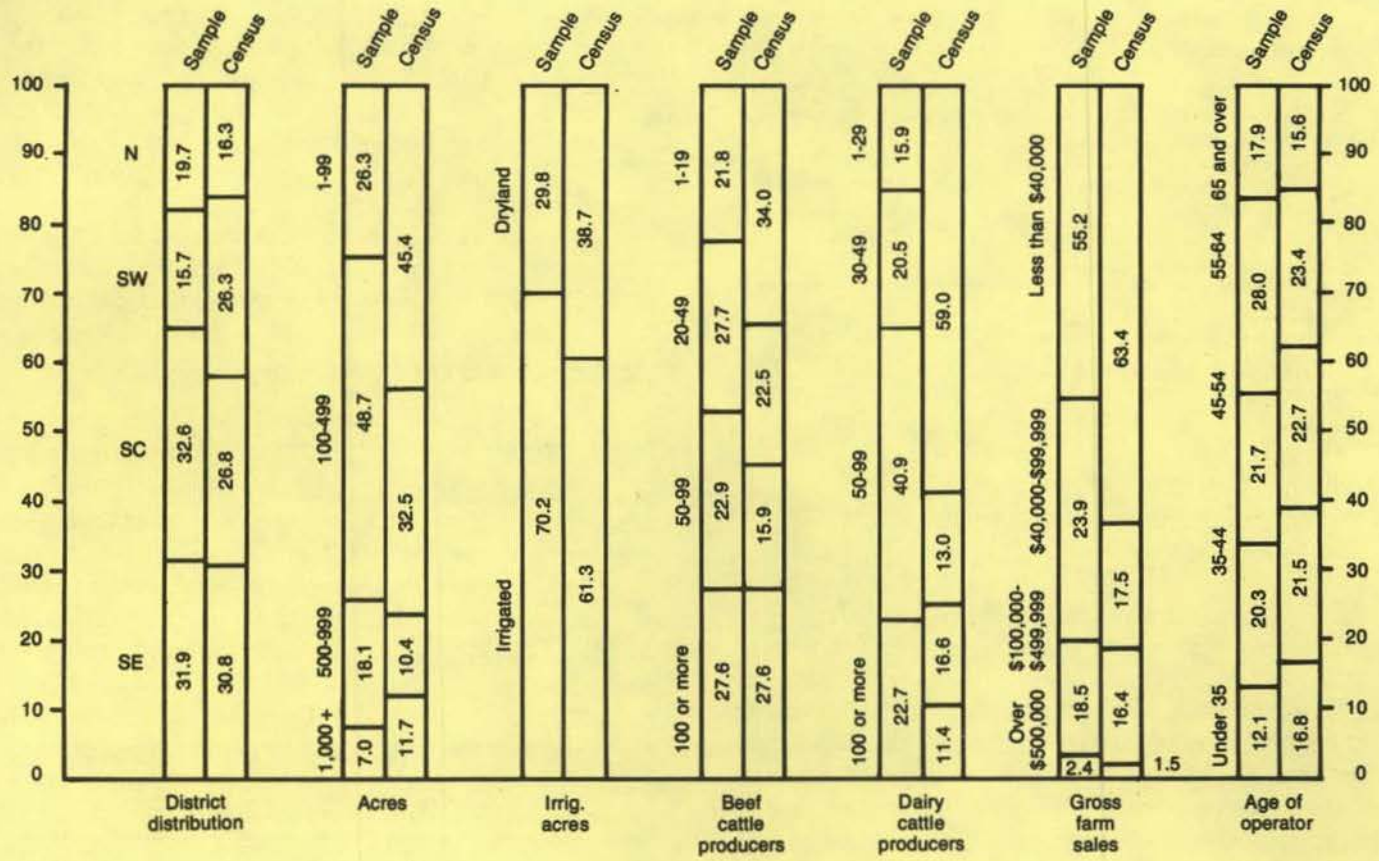


Fig. 1. Characteristics of study respondents comparison with 1982 Census of Agriculture, Idaho.

Survey Findings

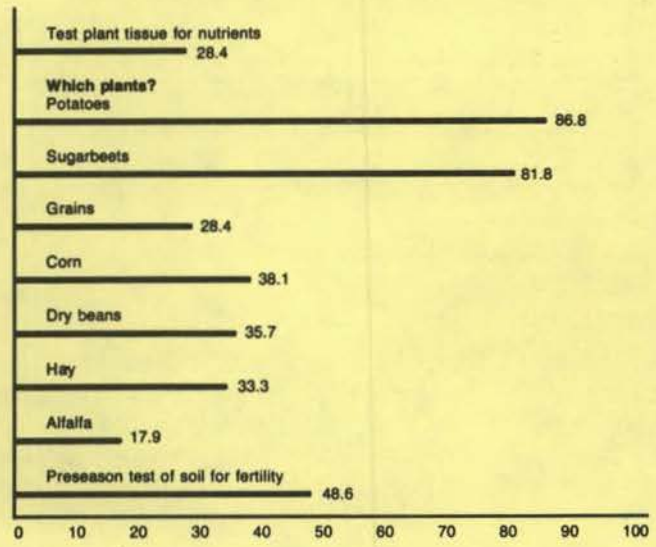
Practices Related to General Crop Production

Practices that relate to crop production in general are shown in Figs. 2 through 5. Tests of soil fertility and tests for determining plant tissue nutrients show fairly low use among producers. Of those who raised crops of any kind, less than half conducted preseason tests for soil fertility. Variation among districts was substantial. Districts where irrigated row crops are grown showed a higher percentage.

About 28 percent of the growers conducted plant tissue testing. Among these, potato and sugarbeet growers accounted for the greatest share with about 80 percent testing for nutrients. For other crops, the percentages of growers using this practice was much lower. Consistent use of both practices can reduce the cost of producing the commodity.

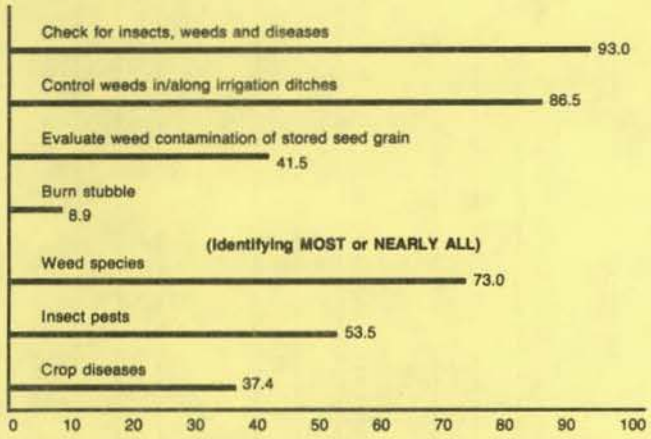
Management practices for controlling weeds, insect pests and crop diseases are regularly used by growers. Nearly all respondents indicated they check for insects, weeds, diseases at the start and/or often during the season, and

Fig. 2. Tests of soil fertility and plant tissue nutrients (conducted at start of and often during season).



most said they control weeds in and along irrigation ditches. About three out of four respondents indicated confidence in their ability to identify most or nearly all weed species. Over half said they could identify insect pests but just 37 percent were confident they can identify most or nearly all crop diseases (Fig. 3).

Fig. 3. Weeds, insect pests and crop diseases (at start and often during season).

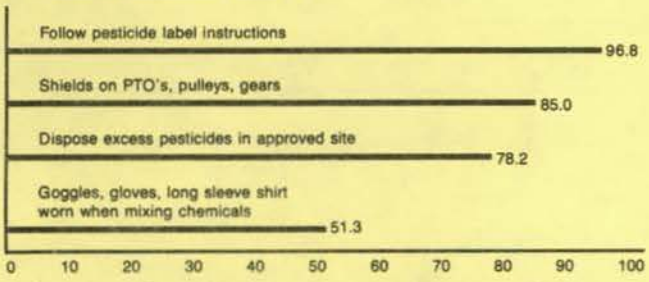


Of those who plant their own seed, less than half evaluate weed contamination of stored seed grain. Such contamination increases the amount of weeds needing eradication once the seed is planted.

Burning stubble is done in grass seed production but is a hindrance to soil conservation and fertility efforts when used following other crops. The percentage of respondents who burn stubble appears to include more than just grass seed producers who are located primarily in the northern Idaho district.

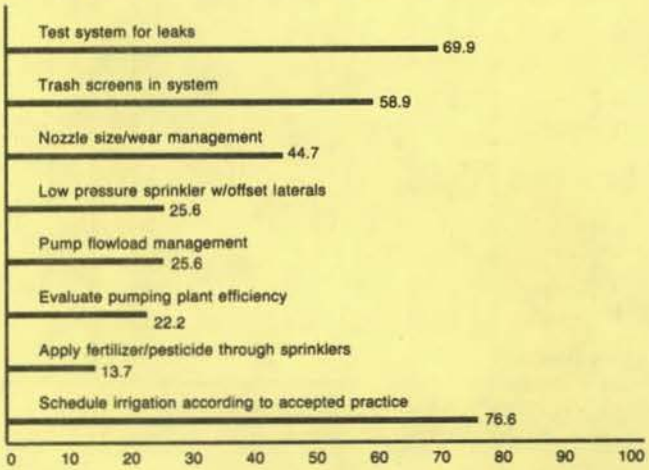
Fig. 4 shows the percent of study respondents usually following four safety practices. A high proportion overall indicated they follow pesticide label instructions and use shields on PTO's, pulleys and gears. Just over three-quarters indicated they usually dispose of excess pesticides in approved sites. Only about half, however, indicated they usually wear protective covering when mixing chemicals, a practice that can be vitally important to a person's health.

Fig. 4. Safety practices (*usually* followed).



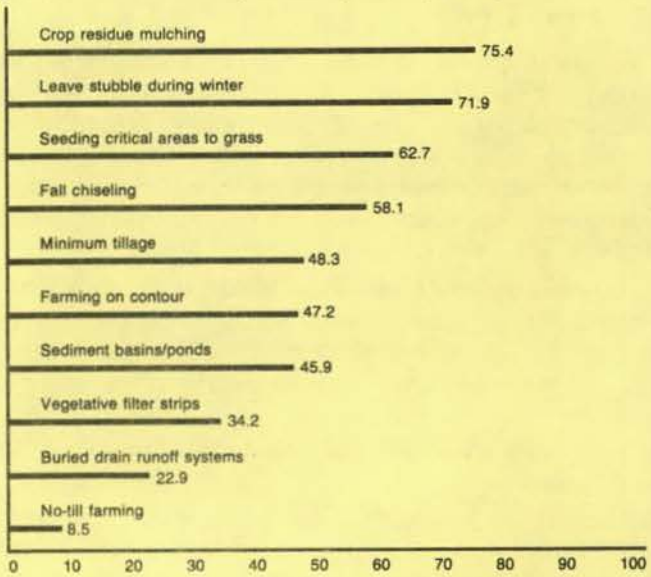
Irrigation of cropland is necessary in much of southern Idaho but is costly. Eight irrigation equipment and management practices that can impact irrigation cost effectiveness are listed in Fig. 5. Of these, two are usually followed by more than half of the respondents. Roughly 60 percent use trash screens in the irrigation system. Less than half said they use nozzle size/wear management practices, and about one in four indicated using low-pressure sprinklers with off-set laterals and pump flowload management practices. About 22 percent of respondents have evaluated the efficiency of their pumping plant and 14 percent apply fertilizers and/or pesticides through sprinklers. Slightly over 75 percent of the individual farmers who irrigate use one or more of the accepted methods for scheduling irrigation based on crop need. (Accepted methods include feeling the soil, using a crop water ET table, following a consultant's advice and using a tensiometer.)

Fig. 5. Irrigation practices (*usually* followed).



With millions of tons of the best topsoil annually lost through water and wind erosion, soil conservation is a continuing concern. Two fairly well established conservation practices — mulching crop residue and leaving standing stubble during the winter — are currently used by 75 and 72 percent of respondents (Fig. 6). (Response categories for conservation questions included "Tried, do not use," "Tried, do use," "Plan to try" and "No interest.")

Fig. 6. Soil conservation practices (*currently* used).



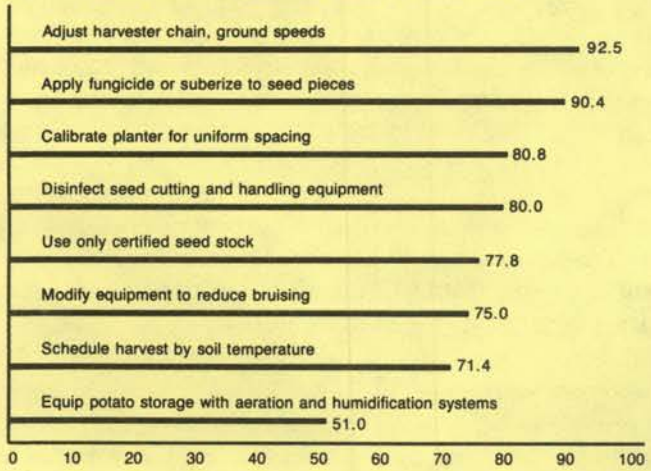
Over half of the survey respondents have seeded critical areas to grass and follow the practice of fall chiseling. Nearly half use minimum tillage and farming on the contour. Sediment basins or ponds and vegetative filter strips are used by 46 and 34 percent of respondents in the irrigated areas of the state, while 23 percent use buried drain runoff systems. The buried drain runoff systems were interpreted as tiling in northern Idaho and as a surface irrigation practice in the rest of the state. No-till farming, probably the most recently introduced soil conservation practice, is currently used by over 8 percent of respondents. In northern Idaho, this figure was 20 percent. (Note: A 1986 survey conducted by the National Association of Conservation Districts found less than 6 percent of northern Idaho cropland under no-till. Findings were not reported by numbers of farms, however, so the figures are not equivalent. Smaller-sized farms seem to be using no-till methods to a greater extent than large farms.)

Practices Related to Specific Commodities

Idaho agriculture produces about 100 separate commodities. For this study, three crops and four livestock commodities representing the largest percentage of producer efforts were singled out for analysis of specific practices. The crops were potatoes, small grains and alfalfa; the livestock were beef cattle, dairy cows, sheep and swine. The latter two animal commodities are not included in this report because so few producers of each responded to the survey.

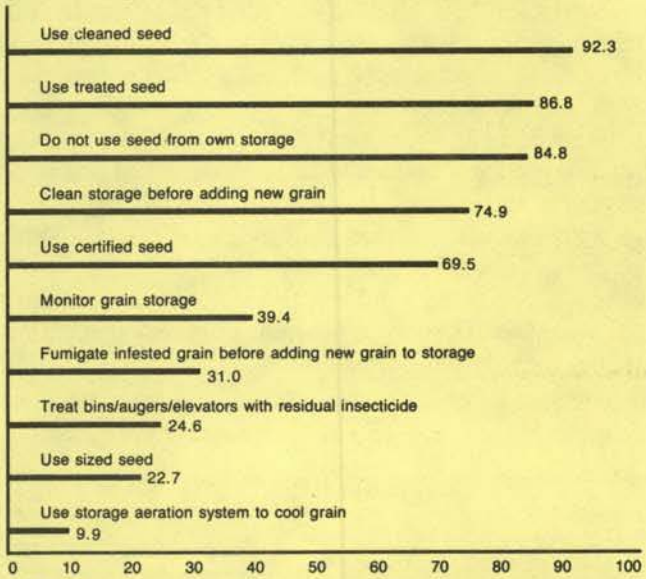
Potatoes — Only 54 potato growers responded to the survey, so findings must be viewed with caution. Most of those who responded indicated they usually follow the 8 potato production practices listed in the questionnaire (Fig. 7). Percentages ranged from a high of 93 percent who indicated they usually adjust the harvester chain and ground speeds to minimize bruising to slightly over half who indicated they have equipped the potato storage facility with aeration and humidification systems. (Note: The adjustment figure appears to be high and the aeration and humidification systems figure seems low, according to Extension specialists. Greater detail on Idaho potato production practices was recently collected by the University of Idaho for the Idaho Potato Commission. Results of this survey are forthcoming.)

Fig. 7. Potato growers (practices *usually* followed).



Small Grains — More than 70 percent of the study respondents indicated they raise some grain crops on their farms. The questionnaire listed 10 recommended practices, and results showed that only 5 are usually followed by more than half of the respondents. These practices are using cleaned seed, using treated seed, not using seed from own storage, cleaning storage before storing new grain and using certified seed (Fig. 8). Much smaller percentages of respondents indicated they usually monitor grain storage and fumigate infested grain before adding new grain to storage. About 25 percent treat bins, augers and/or elevators with residual insecticide, 23 percent use sized seed and only 10 percent use a storage aeration system to cool grain.

Fig. 8. Grain growers (practice *usually* followed).

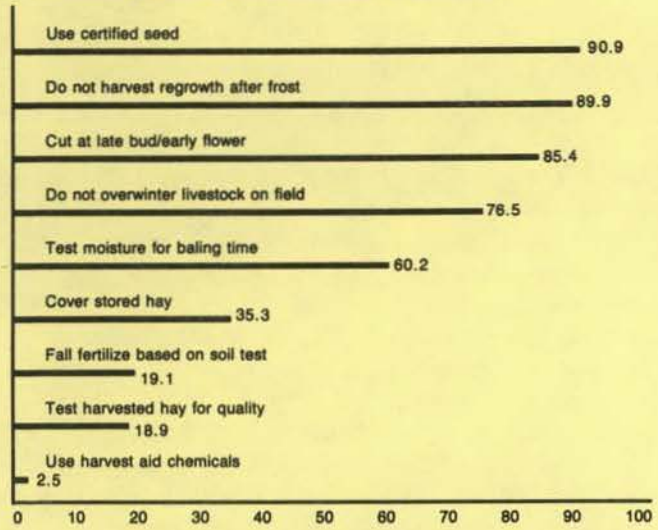


Alfalfa — About 60 percent of the study respondents indicated they grow alfalfa, and most indicated they usually use certified seed, never harvest regrowth after frost and do harvest at late bud/early flower stage (Fig. 9, on page 8). Response to this last indicator may be high, however, because of individual interpretations of "early bloom." Three out of four said they never overwinter livestock on the alfalfa field, and over half indicated they test moisture levels to determine when to bale, although they may do this only sporadically.

About 35 percent usually store hay under cover while just 19 percent fertilize in the fall based on soil tests and test harvested hay for quality. Less than 3 percent indicated they use harvest aid chemicals.

Beef Cattle — Length of calving season, calf crop death loss and average calf weaning weight are all indi-

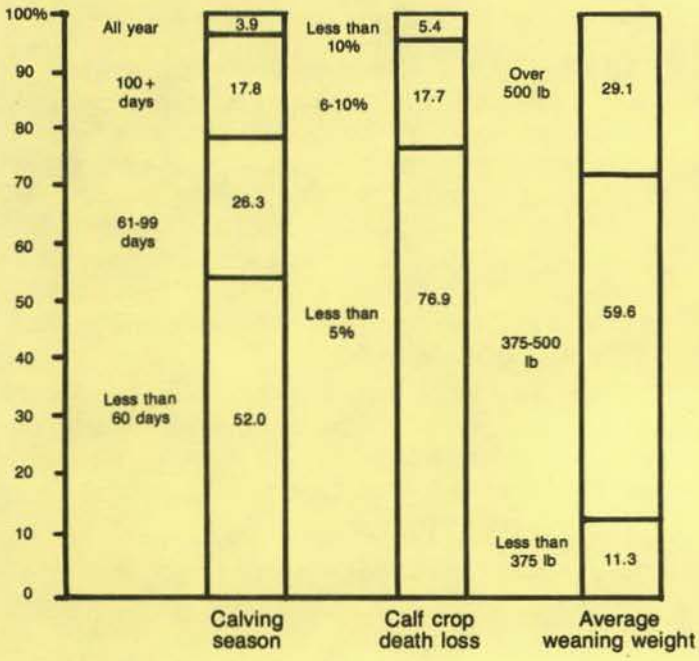
Fig. 9. Alfalfa growers (practice *usually* followed).



cators of effective herd management practices. A calving season of less than 60 days was achieved by just over half of the cattlemen who responded to the study questions. Over 3 out of 4 reported calf death loss less than 5 percent, and 60 percent said calf weaning weight averages between 375 and 500 pounds (Fig. 10A). (Note: in reviewing this section, one faculty member observed that figures appear to reflect responses of cattlemen who work closely with Extension rather than of all cattlemen. Further study confirmed that a higher percentage of cattlemen than others in the sample did use Extension resources during the past year. Therefore, the indicators may overestimate reality and should be used with caution.)

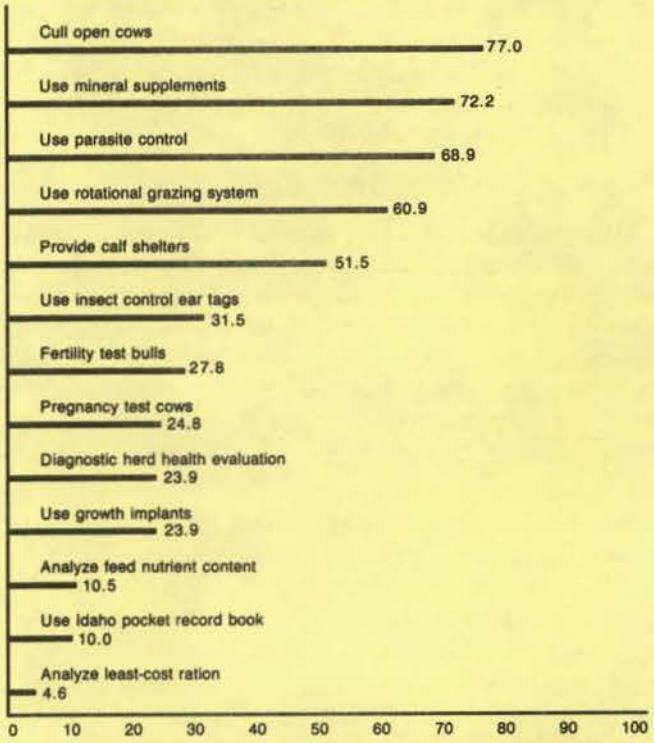
The respondents who raise beef cattle were asked how frequently they use 13 selected management practices.

Fig. 10A. Beef cattle operation.



More than half indicated they usually use 5 of these practices while less than a third usually follow the other 8 practices (Fig. 10B). Use of most of these practices is closely related to herd size. Calf shelters and feed nutrient content analysis are used more by owners of small herds, for example, while parasite control, rotational grazing systems, pregnancy testing, growth implants and the Idaho Total Beef Program pocket record books are more commonly used by owners of large herds (see Table 10 in Appendix).

Fig. 10B. Beef cattle operations (practice *usually* followed).



Dairy Production — Just 46 respondents indicated they operate dairy farms. Because of the small sample, the data should be interpreted and used with caution. Results are shown in Figs. 11A and B.

Performance indicators for dairy production include the average pounds of milk produced per cow per year, percent of calves dead at birth, death loss from day 1 to weaning and death loss from weaning to 1 year. Among study respondents, 42 percent indicated an average of between 16,000 and 20,800 pounds of milk per cow per year, 28.6 percent have less than 1 percent calf death loss at birth, 21 percent reported less than 1 percent death loss from day 1 to weaning and 43 percent indicated less than 1 percent death loss from weaning to 1 year. Responses again varied considerably according to herd size.

Dairymen were asked how frequently they use 10 management practices. Well over half indicated they usually provide individual calf houses, breed cows to AI sires, follow a herd health reproductive program and use balanced rations.

Fig. 11A. Dairy cow operations.

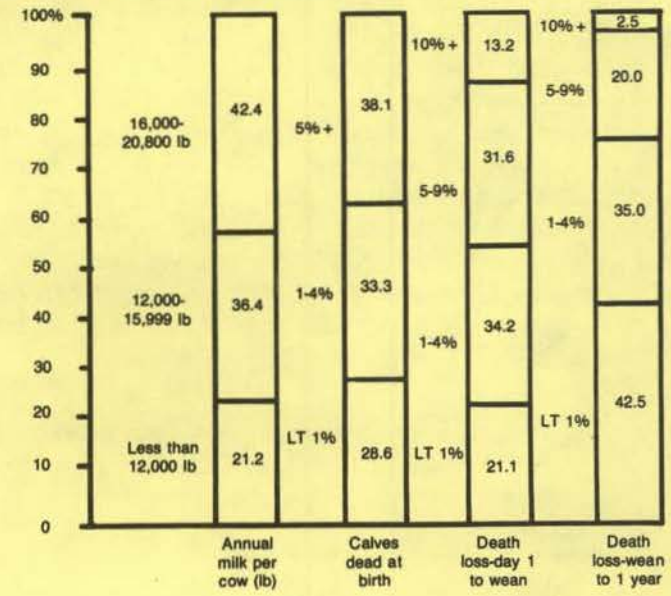
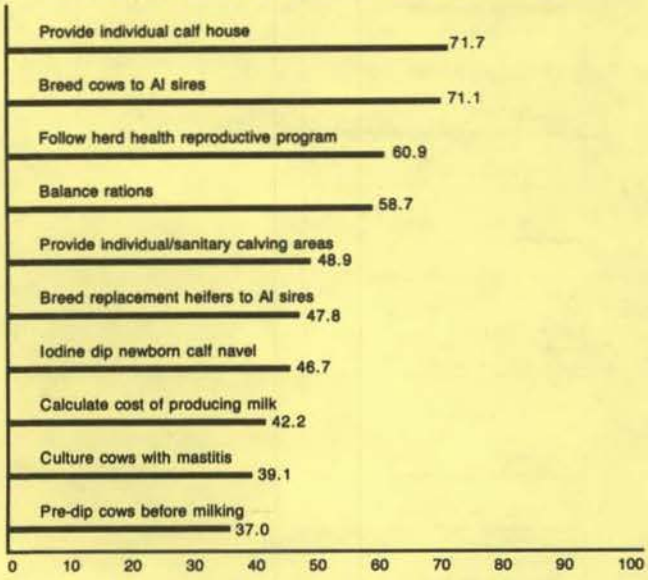


Fig. 11B. Dairy cow enterprise (practice *usually* followed).



Less than half of these dairymen indicated they provide individual sanitary calving area, iodine-dip navels of newborn calf, breed replacement heifers to AI sires, calculate cost of producing milk, culture cows with mastitis and pre-dip cows' udders before milking. Overall, these respondents had adopted an average of three management practices within the last 3 years, and 37 percent had adopted at least one of the practices within the last 3 years.

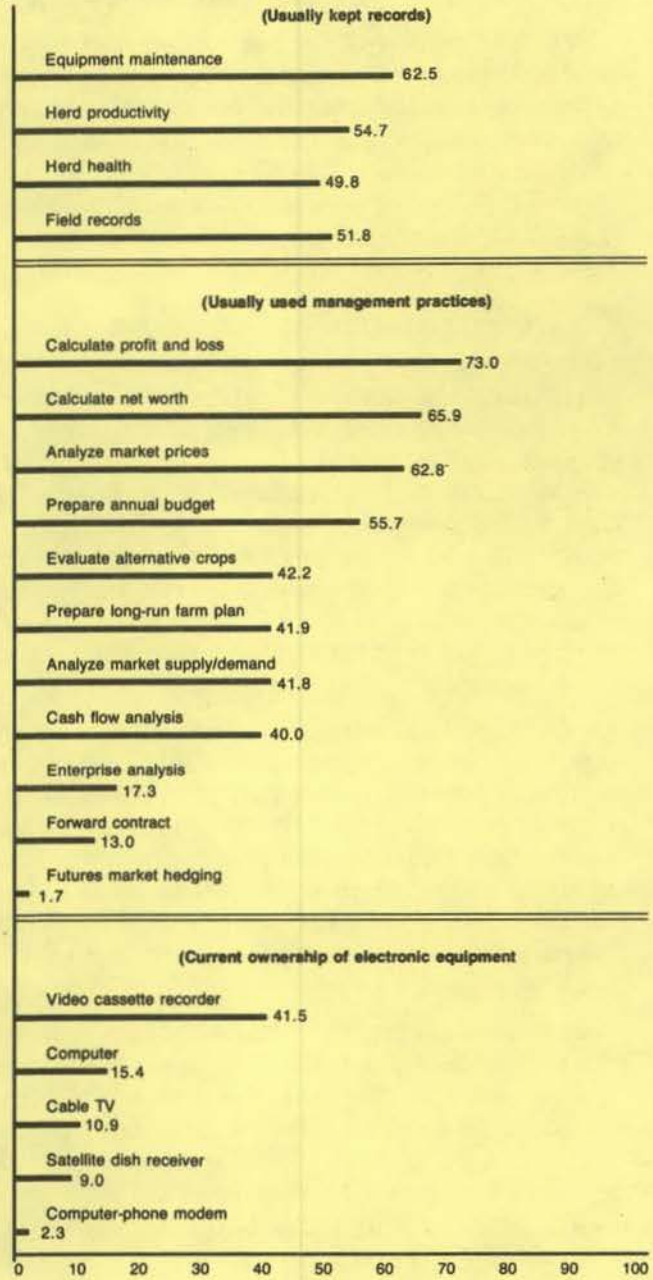
Farm Financial Management and Record Keeping

The successful farmers of the future will be better managers than many of today's farmers, in terms of both production and marketing and financial management. They will need to direct greater attention to controlling costs, accessing reliable marketing information and managing the risks of the production, financial and marketing environment. The ability to assimilate accurate, detailed information and to make profitable decisions based on this information will be required as well.

Three questions about production record-keeping practices were asked in this survey. About half of the respondents indicated they usually keep herd productivity records, herd health records and field records. A slightly higher percent usually keep equipment maintenance records (Fig. 12, top panel).

Other questions were directed to financial and market management practices. Over half of the respondents in-

Fig. 12. Farm financial management.



dicated they calculate profit and loss, calculate net worth, analyze market prices and prepare an annual farm budget. Less than half of the respondents indicated that they evaluate alternative crops, prepare a long-run farm plan, analyze market supply and demand and develop a cash flow analysis. Just 17 percent said they conduct enterprise analyses, while 13 percent use forward contracting as a management practice and less than 2 percent use the futures market for hedging (Fig. 12, center panel, on page 9).

Emerging technologies in telecommunications and microcomputer systems offer farmers instant access to the best information available for making production, marketing and financial decisions. To find out how many Idaho farms and ranches own five different pieces of electronic equipment, respondents were asked to indicate whether they currently own or plan to purchase these within the next 2 years (Fig. 12, bottom panel, on page 9).

Nearly 42 percent of the respondents said they own videocassette recorders and 15 percent have personal or microcomputers. Just 2 percent, however, currently have a computer phone connection or micro-modem that will allow them to connect with other computers via a telephone line. About 11 percent are connected to cable TV systems and 9 percent have satellite dish receivers.

Future Programming Directions

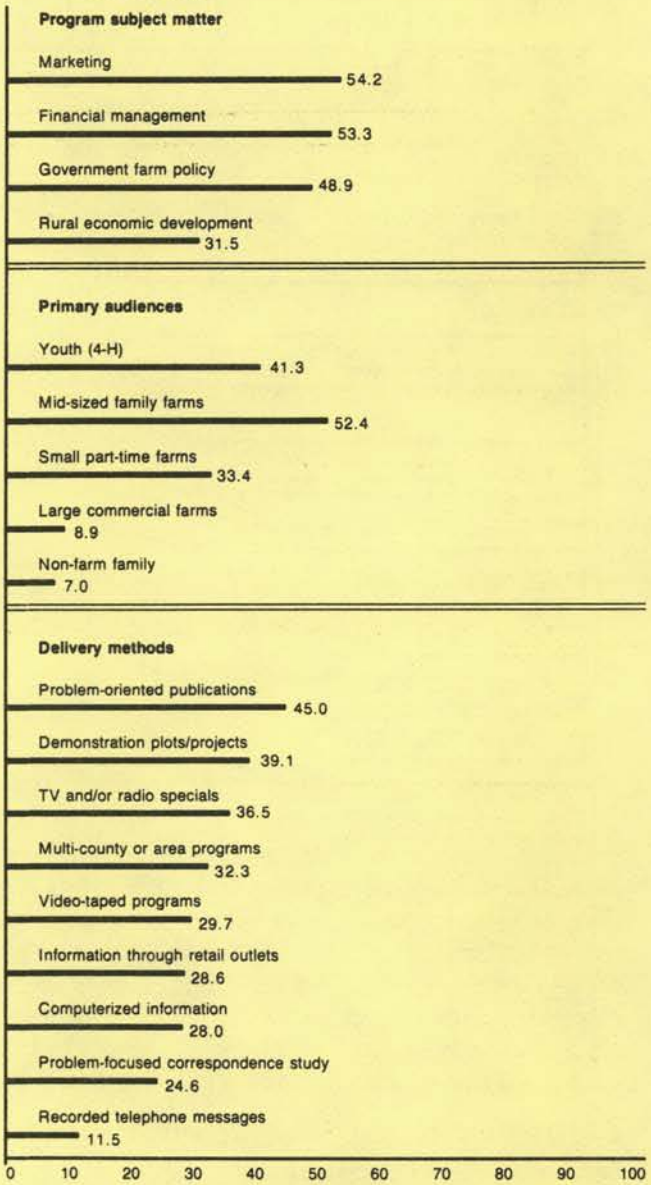
Farmers and ranchers were asked what changes they thought should be considered during the next 5 years to keep Extension information and programs timely and useful. Possible responses to a listing of potential changes included "Increase," "Decrease," "No Change" and "Not Sure." Fewer than 6 percent indicated items that should be decreased (primarily fees for items such as workshop attendance, bulletins, videotapes or computer disks). Most respondents indicated no change or not sure (data not shown). For simplicity, only the percentages indicating an increase are given in Fig. 13.

A set of questions was asked to determine producer interest in educational programs related to financial management and marketing, government farm policy and rural economic development. About half of the respondents indicated programs should be increased in marketing, financial management and government farm policy. Slightly less than one-third indicated rural economic development programs should receive increased attention (Fig. 13 top panel).

In terms of targeting audiences, 40 percent of the study respondents indicated consideration should be given to increasing programs for youth (4-H), over half want increased programming for mid-sized family farms and about one-third said emphasis on small-sized farms should be increased. Less than 10 percent indicated programs for large commercial farms and non-farm families should be increased (Fig. 13 center panel).

Asked to recommend program delivery methods that could be increased, 45 percent of the respondents listed problem-oriented publications, 39 percent suggested demonstration plots or projects and 37 percent indicated TV and/or radio specials. Nearly one-third of the respondents indicated an increase in multi-county or area programs would be appropriate, and 28 to 30 percent supported more videotaped programs, more information through retail outlets and more computerized information. Problem-focused correspondence study was mentioned for increase by 25 percent, and 12 percent indicated recorded telephone messages could be increased (Fig. 13 bottom panel).

Fig. 13. Changes in program delivery (responses indicating increase only).



Methods of Program Delivery

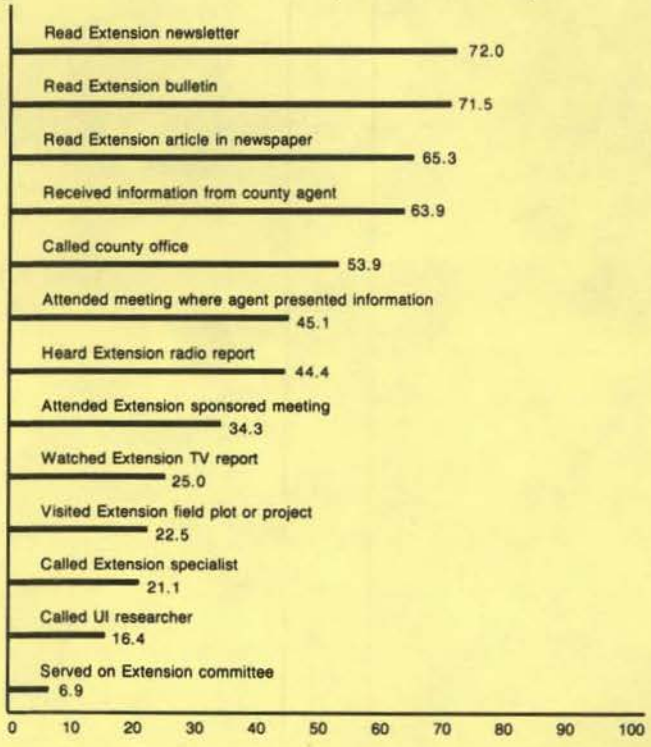
Current methods by which producers receive information from Extension vary from group meetings to personal

visits in office or field to newsletters, newspaper articles, printed bulletins and radio reports. Respondents were asked to indicate the ways in which they had had contact with Extension during the past 12 months. Responses are given by percent for contacts of one or more times (Fig. 14).

Topping the list of contacts was the Extension newsletter read by 72 percent of the respondents, followed by Extension bulletins and Extension articles in the local newspaper. Another 64 percent said they received information from the Extension agent but through an unspecified method. Even with the advent of electronic media (TV, radio, VHS systems, etc.), reading, particularly of short articles or reports of interest, continued to be the number one source of Extension information for the greatest number of study respondents.

Other frequently used ways of gaining Extension information included direct contact with the Extension office by phone, attending a meeting or conference where an agent presented information and listening to an Extension radio report. About a third of the respondents had attended an Extension-sponsored meeting, one-fourth had seen an Extension TV report and one-fourth had visited an Extension field plot or project. Fewer respondents indicated having called on a state Extension specialist or University of Idaho researcher. Fewer yet indicated having served on an Extension committee or council (Fig. 14A).

Fig. 14A. Contact with Extension (one or more times).



Total contacts made with Extension, arrived at by adding respondent estimates of individual contacts, showed considerable variation with 15 percent indicating no contact at all during the past 12 months. Of the 85 percent who had had contact, about half showed low number of contacts (between 1 and 19) and half more than 20 contacts during the past year (Fig. 14B).

Asked to assess the quality of Extension Service assistance and/or information received, 28 percent rated this assistance "very good," 45 percent indicated it was "good," 23 percent said "fair" and about 5 percent said the assistance was "poor" (Fig. 14C).

Fig. 14B. Level of contact with Extension.

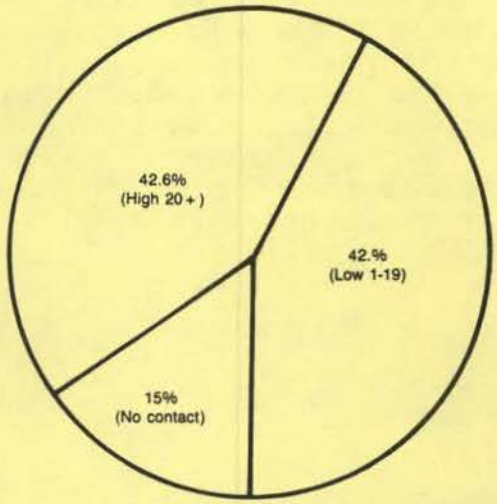
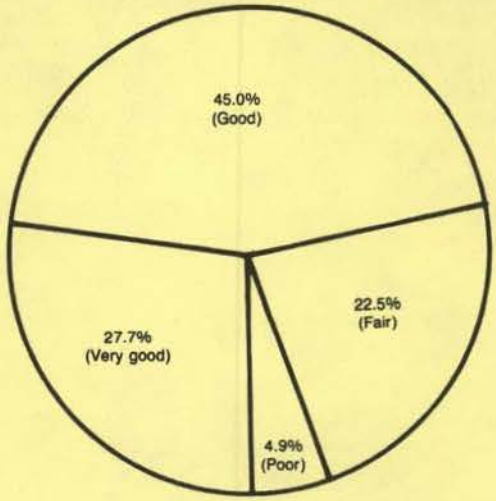


Fig. 14C. Quality of Extension assistance/information.



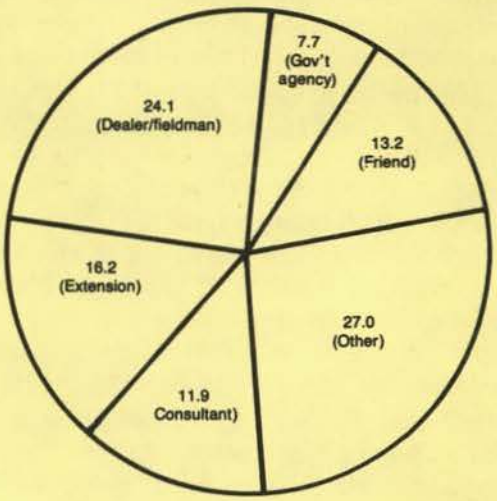
Producer Sources of Information

Finally, the study sought to determine where Idaho farmers and ranchers seek information related to production and management (see Appendix Table 15). The Extension Service was identified as first source typically for crop production information. Dealers or fieldmen were given as the primary source of information on crop variety selection, fertilizer recommendations and crop and livestock

pest control. For information on conservation practices, producers identified the Soil Conservation Service as primary source. For information related to livestock production, crop/livestock markets, farm financial management, computer use on the farm and reducing energy costs, producers identified principal information sources other than those named. In this "other" category, several respondents said they use various farm-related magazines as a first source. Lastly, friends were given as the first source of information related to selecting and using machinery.

Collectively, the most popular source indicated by respondents for all topics was the category "other," identified by 27 percent of the respondents (Fig. 15). This was followed closely by dealers or fieldmen (24 percent gave this category as their first source of information), and the Extension Service, indicated by 16 percent. Friends provided first source for 13 percent of the study respondents and consultants for 12 percent.

Fig. 15. Sources of production and management information (total number of first source indicators).



APPENDIX

Agricultural Producers' Use of Recommended Practices in the Farm or Ranch Operation

Table 1. Background characteristics of study respondents (figures in percent unless indicated).

		1982 Idaho census	Total study sample	Districts			
				Northern	South-western	South central	South-eastern
1982 ag census	n =	24,714		4,032	6,503	6,570	7,609
	% =	100.0		16.3	26.3	26.8	30.8
Study sample	n =		432	85	68	141	138
	% =		100.0	19.7	15.7	32.6	31.9
Total acres							
1- 99		45.4	26.3	18.8	43.9	20.3	27.9
100- 499		32.5	48.7	46.3	45.5	54.1	46.3
500- 999		10.4	18.1	18.3	9.1	20.3	19.9
1,000-1,999		11.7	7.0	16.3	1.5	5.3	5.9
Irrigated farms	n =	(17,349)	(264)	(12)	(50)	(108)	(94)
	% =	70.2	61.3	14.6	73.8	76.6	67.9
Cattle & cows	n =	(15,980)	(173)	(37)	(22)	(57)	(54)
Total Cattle		64.7	39.3	43.5	32.3	40.4	39.1
1-19		34.0	21.8	29.7	31.8	14.0	20.4
20-49		22.5	27.6	40.5	22.7	14.0	35.2
50-99		15.9	22.9	21.6	22.7	24.6	22.2
100 or more		27.6	27.6	8.1	22.7	47.4	22.2
Dairy cows	n =	(4,199)	(46)	(2)	(11)	(17)	(16)
Total dairy		17.0	10.6	2.3	14.7	12.8	11.6
1-29		59.0	15.9	-	20.0	11.8	12.5
30-49		13.0	20.5	-	30.0	11.8	13.3
50-99		16.6	40.9	-	40.0	29.4	43.8
100 or more		11.4	22.7	-	10.0	47.1	12.5
Gross farm sales							
under $40,000		63.4	55.2	67.9	47.0	45.7	61.5
$40,000-99,999		17.5	23.9	16.0	30.3	27.1	22.2
$100,000-499,999		16.4	18.5	14.8	18.2	24.3	14.8
over $500,000		2.7	2.4	1.2	4.5	2.9	1.5
Off-farm income percent of total income							
None		44.4	37.2	32.5	41.5	43.2	31.8
1-19 percent		-	12.7	14.3	12.3	15.2	9.3
20-49 percent		-	8.4	13.0	10.8	6.8	6.2
over 50 percent		-	33.3	33.8	26.2	28.0	41.9
All		-	8.4	6.5	9.2	6.8	10.9
Educational background							
Some high school		-	11.8	15.0	16.4	8.8	10.5
High school grad		-	46.3	41.3	47.8	42.3	52.6
Some college		-	18.5	18.8	7.5	25.5	16.5
College graduate		-	23.5	25.0	28.4	23.4	20.3
Age							
Under 35		16.8	12.1	10.7	10.3	12.2	13.8
35-44		21.5	20.3	17.9	20.6	23.0	18.8
45-54		22.7	21.7	15.5	20.6	25.9	21.7
55-64		23.4	28.0	31.0	27.9	27.3	26.8
65 and over		15.6	17.9	25.0	20.6	11.5	18.8

Table 2. Tests of soil fertility and plant tissue nutrients. Percent conducting practice AT START OF SEASON OR OFTEN DURING SEASON. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Conduct preseason test of soil fertility	(315)	48.6	29.2	55.0	60.5	42.2

	Total sample only	
	n	percent
Test plant tissue for nutrients at start and/or often during season:	(246)	28.4
Potatoes	(38)	86.8
Sugarbeets	(22)	81.8
Corn	(21)	38.1
Dry beans	(14)	35.7
Hay	(33)	33.3
Grains (wheat, barley)	(102)	28.4
Alfalfa	(28)	17.9

Table 3. Management and control of weeds, insect pests and crop diseases. Percent conducting practice AT START OF SEASON OR OFTEN DURING SEASON. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Check for insects, weeds, diseases	(331)	93.0	84.0	94.3	94.9	94.6
Control weeds in/along irrigation ditches	(281)	86.5	81.8	82.4	91.6	84.0
Evaluate weed contamination of stored seed grain	(159)	41.5	40.0	37.5	29.8	53.0
Burn stubble	(291)	8.9	10.0	9.3	6.7	7.7
Percent indicating confidence in identifying MOST OR NEARLY ALL weeds, insect pests and crop diseases.						
	n	Total	North	SW	Central	SE
Weed species	(352)	73.0	61.4	77.4	80.0	69.2
Insect pests	(344)	53.5	44.6	56.6	56.7	53.0
Crop diseases	(326)	37.4	42.6	34.0	36.3	37.6

Table 4. Safety practices. Percent indicating practice is USUALLY followed. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Follow pesticide label instructions	(317)	96.8	100.0	93.5	96.5	97.3
Shields on PTO's, pulleys, gears	(341)	85.0	84.9	78.4	83.2	89.8
Dispose excess pesticides in approved site	(294)	78.2	82.2	70.5	76.0	81.9
Goggles, gloves, long sleeve shirt for mixing chemicals	(310)	51.3	44.4	51.0	50.0	55.6

Table 5. Irrigation practices. Percent indicating practice is USUALLY followed. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Test irrigation system for leaks	(186)	69.9	54.5	44.4	74.0	77.5
Trash screens in irrigation system	(197)	58.9	50.0	39.0	57.5	74.6
Use nozzle size/wear management practices	(152)	44.7	45.0	26.3	52.7	43.1
Use low pressure sprinkler w/offset laterals	(125)	25.6	40.0	6.7	25.0	28.8
Use pump flowload management practices	(117)	25.6	25.0	11.8	26.7	29.8
Evaluate pumping plant efficiency	(153)	22.2	30.8	16.7	33.9	11.7
Apply fertilizer/pesticides through sprinklers	(175)	13.7	11.8	3.6	15.9	16.4
Schedule according to:						
Accepted practice	(235)	76.6	63.6	78.4	78.4	71.8
Feel of the soil		68.1	63.6	75.7	70.6	62.4
Crop water use (ET) table		24.7	0.0	18.9	31.4	22.4
Consultant's advice		8.5	0.0	13.5	10.8	4.7
Tensiometer		5.1	0.0	8.1	5.9	3.5
(Multiple responses possible)						

Table 6. Soil conservation practices. Percent indicating practice is CURRENTLY USED. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Crop residue mulching	(268)	75.4	86.5	67.4	74.0	76.1
Leave stubble during winter	(267)	71.9	82.1	60.0	71.2	73.0
Seeding critical areas (hilltops, gullies, watercourses) to grass	(134)	62.7	69.4	64.7	54.8	62.0
Fall chiseling (soil saver)	(248)	58.1	72.2	53.3	50.0	62.5
Minimum tillage (seeding into minimally worked soil)	(271)	48.3	65.0	45.0	49.0	41.6
Farming on contour	(108)	47.2	60.6	37.5	36.0	45.2
Sediment basins/ponds	(133)	45.9	(NA)	36.4	55.9	50.0
Vegetative filter strips	(120)	34.2	(NA)	54.2	38.0	17.2
Buried drain runoff systems	(109)	22.9	45.5	15.8	15.9	20.8
No-till farming	(224)	8.5	20.0	6.1	7.2	5.5

Table 7. Practices related to producing potatoes. Percent of potato growers indicating practice is USUALLY followed. (Number of individuals responding to the question is given in parenthesis.)

		Total	Central	SE
Potatoes	n =	(54)	(19)	(34)
Adjust harvester chain, ground speeds to minimize bruising		92.5	100.0	91.2
Apply fungicide or suberize to protect seed pieces from decay		90.4	88.2	91.2
Calibrate planter for uniform spacing		80.8	77.8	81.8
Disinfect seed cutting and handling equipment		80.0	94.1	75.0
Use only certified seed stock		77.8	84.2	73.5
Modify equipment to reduce bruising		75.0	72.2	78.8
Schedule harvest according to soil temperature		71.4	56.3	81.3
Equip potato storage with aeration/humidification systems		51.0	66.7	45.5

Table 8. Practices related to growing small grains. Percent of small grain growers indicating practice is USUALLY followed. (Number of individuals responding to the question is given in parenthesis.)

		Total	North	SW	Central	SE
Small grains	n =	(308)	(42)	(44)	(112)	(110)
Use cleaned seed		92.3	100.0	84.1	91.7	93.5
Use treated seed		86.8	88.1	90.9	85.5	86.1
Do not use seed from own storage		84.8	86.8	81.0	92.5	77.7
Clean storage before storing new grain		74.9	55.6	81.0	70.2	82.3
Use certified seed		69.5	65.9	76.7	77.5	59.8
Monitor grain storage		39.4	44.0	29.3	46.1	36.4
Fumigate infested grain before adding new grain to storage		31.0	42.3	32.5	25.0	32.6
Use sized seed		22.7	28.9	24.4	24.5	17.2
Treat bins/augers/elevators with residual insecticide		24.6	23.1	27.9	23.3	24.8
Use storage aeration system to cool grain		9.9	23.1	4.7	7.1	11.2

Table 9. Practices related to alfalfa production. Percent of alfalfa growers indicating practice is USUALLY followed. (Number of individuals responding to the question is given in parenthesis.)

		Total	North	SW	Central	SE
Alfalfa	n =	(254)	(35)	(32)	(106)	(81)
Use certified seed		90.9	94.1	93.5	93.5	85.0
Do not harvest regrowth after frost		89.9	90.3	93.5	92.2	85.1
Cut at late bud/early flower		85.4	83.9	77.4	86.1	88.3
Do not overwinter livestock on field		76.5	83.9	84.4	72.6	75.6
Test moisture for baling time		60.2	53.1	53.1	63.2	62.0
Cover stored hay		35.3	90.6	37.5	12.4	42.5
Fall fertilize based on soil test		19.1	21.4	22.6	20.2	15.3
Test harvested hay for quality		18.9	19.4	29.0	17.9	16.0
Use harvest aid chemicals		2.5	6.7	13.3	0.0	0.0

Table 10. Practices related to livestock operations. (Number of individuals responding to the question is given in parenthesis.)

Beef cattle	Total	Herdsize	
		Less than 100	100 or more
n =	(173)	(115)	(46)
Calving season			
Less than 60 days	52.0	58.6	34.1
61 to 99 days	26.3	21.6	39.0
100 days or more	17.8	15.3	24.4
All year	3.9	4.5	2.4
	100.0	100.0	100.0
Calf crop death loss			
Less than 5 percent	76.9	79.8	69.8
6 to 10 percent	17.7	16.3	20.9
Greater than 10 percent	5.4	3.8	9.3
	100.0	100.0	100.0
Average weaning weight			
Less than 375 pounds	11.3	11.0	12.2
375 to 500 pounds	59.6	58.0	63.4
over 500 pounds	29.1	31.0	24.4
	100.0	100.0	100.0
Ranchers indicating practice is USUALLY followed:			
Cull open cows	77.0	75.7	80.4
Use mineral supplements	72.2	72.1	72.3
Use parasite control	68.9	64.7	79.2
Use rotational grazing system	60.9	58.3	67.4
Provide calf shelters	51.5	56.8	38.3
Use insect control ear tags	31.5	28.7	38.3
Fertility test bulls	27.8	25.0	34.8
Pregnancy test cows	24.8	19.1	39.1
Conduct diagnostic herd health evaluations	23.9	25.5	20.0
Use growth implants	23.3	14.8	43.8
Analyze feed nutrient content	10.5	12.3	6.3
Use Idaho Total Beef Program pocket record books	10.0	5.3	21.3
Analyze least-cost rations	4.6	2.8	8.9

Table 11. Practices related to dairy operations. (Number of individuals responding to the question is given in parenthesis.)

Dairy cattle	Total	Herdsize	
		Less than 50	50 or more
n =	(46)	(18)	(28)
Average pounds milk per cow per year			
Less than 12,000 lb	21.2	42.9	15.4
12,000 to 15,999 lb	36.4	42.9	34.6
16,000 to 20,800 lb	42.4	14.3	50.0
	100.0	100.0	100.0
Calves dead at birth			
Less than 1 percent	28.6	20.0	33.3
1 to 4 percent	33.3	40.0	29.6
5 percent or more	38.1	40.0	37.0
	100.0	100.0	100.0
Death loss from day 1 to weaning			
Less than 1 percent	21.1	16.7	23.1
1 to 4 percent	34.2	41.7	30.8
5 to 9 percent	31.6	8.3	42.3
10 percent or more	13.2	33.3	3.8
	100.0	100.0	100.0
Death loss from weaning to 1 year			
Less than 1 percent	42.5	35.7	46.2
1 to 4 percent	35.0	21.4	42.3
5 to 9 percent	20.0	35.7	11.5
10 percent or more	2.5	7.1	0.0
	100.0	100.0	100.0
Dairymen indicating practice is USUALLY followed:			
Provide individual calf house	71.7	64.7	75.9
Breed cows to AI sires	71.1	62.5	75.9
Follow herd health reproductive program	60.9	41.2	72.4
Balance rations	58.7	47.1	65.5
Provide individual/sanitary calving area	48.9	41.2	53.6
Breed replacement heifers to AI sires	47.8	52.9	44.8
Iodine dip newborn calf navel	46.7	41.2	50.0
Calculate cost of producing milk	42.2	25.0	51.7
Culture cows with mastitis	39.1	41.2	37.9
Pre-dip cows before milking	37.0	41.2	34.5

Table 12. Farm financial management and record keeping. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Percent indicating USUALLY keeping records:						
Equipment maintenance	(349)	62.5	70.6	61.5	61.2	59.3
Field records	(330)	51.8	57.1	58.3	46.1	51.9
Herd productivity records	(234)	54.7	48.8	56.3	56.6	55.3
Herd health records	(233)	49.8	54.8	51.6	45.2	51.3
Percent indicating USUALLY using management/marketing practice:						
Calculate profit/loss	(366)	73.0	72.5	69.0	73.6	74.6
Calculate net worth	(361)	65.9	61.2	63.6	67.2	68.4
Analyze market prices	(360)	62.8	53.7	50.0	68.9	67.5
Prepare annual farm budget	(350)	55.7	38.5	58.9	63.9	55.5
Evaluate alternative crops	(344)	42.2	43.5	40.7	50.0	33.6
Prepare long run farm plan	(351)	41.9	42.4	44.6	40.3	41.8
Analyze market supply/demand	(349)	41.8	35.4	43.4	40.8	45.9
Cash flow analysis	(325)	40.0	41.9	34.7	42.3	38.8
Enterprise analysis	(295)	17.3	21.7	10.9	18.8	16.1
Forward contracting	(301)	13.0	10.5	20.5	11.4	12.6
Futures market hedging	(286)	1.7	1.7	7.1	0.0	1.2
Percent indicating CURRENTLY OWNING electronic equipment:						
Videocassette recorder (VCR)	(390)	41.5	43.4	28.3*	45.7	42.4
Personal or microcomputer	(390)	15.4*	10.7	14.5*	17.5*	16.5*
Cable TV	(385)	10.9	15.8	5.0	8.8	12.9
Satellite dish receiver	(388)	9.0	14.5	4.9	11.1	5.6
Computer-phone connection	(390)	2.3	2.7	3.3	1.6	2.4

*Indicates over 15 percent plan to purchase within 2 years.

Table 13. Changes in Extension program delivery. Possible responses were "Increase," "Decrease," "No Change" and "Not Sure." Only INCREASE percentages are given in table. (Number of individuals responding to the question is given in parenthesis.)

	n	Total	North	SW	Central	SE
Subject matter of programs:						
Marketing	(334)	54.2	54.7	56.3	58.0	49.1
Financial management	(334)	53.3	50.0	60.0	54.1	51.4
Government farm policy	(325)	48.9	50.0	46.0	50.9	47.6
Rural economic development	(317)	31.5	40.6	23.4	26.5	34.6
Primary audience						
Youth (4-H)	(332)	41.3	45.2	45.1	38.2	40.4
Mid-size family farms	(332)	52.4	50.0	58.0	50.0	53.7
Small part-time farms	(329)	33.4	41.3	32.7	18.3	44.4
Large commercial farms	(315)	8.9*	12.9*	10.2*	6.8*	7.9*
Non-farm family	(313)	7.0*	9.7	14.0*	4.0*	5.0*
Methods of program delivery						
Problem oriented publications	(322)	45.0	47.6	51.0	39.0	46.7
Demonstration plots/projects	(327)	39.1	46.9	45.8	34.6	36.1
TV and/or radio specials	(329)	36.5	34.4	34.0	40.7	34.6
Multi-county or area programs	(322)	32.3	39.3	29.2	27.8	34.3
Videotaped programs	(320)	29.7	29.0	18.4	30.5	34.6
Provide information through retail outlets	(311)	28.6	31.7	25.0	25.2	32.0
Computerized information	(322)	28.0	23.0	24.0	26.7	34.0
Problem focused correspondence study	(313)	24.6	29.0	34.0	19.2	23.0
Recorded telephone messages	(313)	11.5	1.7*	14.3	9.8	17.6

*Denotes 20 percent or more indicated item could be decreased.

Table 14. Contact with Extension. Percent indicating doing the following ONE OR MORE TIMES during the past 12 months. (Number of individuals responding to the question is given in parenthesis.)

	Total	North	SW	Central	SE
n =	(432)	(85)	(68)	(141)	(138)
Read an Extension newsletter	72.0	69.4	66.2	77.3	71.0
Read an Extension bulletin	71.5	69.4	72.1	73.8	70.3
Read Extension article in local newspaper	65.3	55.3	69.1	65.2	69.6
Received information from Extension agent	63.9	65.9	55.9	66.0	64.5
Called county office for information	53.9	42.4	51.5	56.7	59.4
Attended meeting or conference where agent presented information	45.1	44.7	47.1	50.4	39.1
Heard an Extension radio report	44.4	34.1	38.2	43.3	55.1
Attended Extension meeting	34.3	35.3	29.4	34.0	36.2
Watched an Extension TV report	25.0	20.0	19.1	23.4	32.6
Visited Extension field plot or project	22.5	37.6	19.1	17.7	19.6
Called on a state Extension specialist	21.1	15.3	22.1	20.6	24.6
Called on a University of Idaho researcher	16.4	20.0	16.2	14.9	15.9
Served on Extension committee or council	6.9	11.8	4.4	2.8	9.4
Percent of respondents by level of contact with Extension:					
No contact	15.0	18.8	19.1	10.6	15.2
Low number of contacts (1-19)	42.4	40.0	41.2	45.4	41.3
High number of contacts (20+)	42.6	41.2	39.7	44.0	43.5
	100.0	100.0	100.0	100.0	100.0
Percent indicating Extension Service assistance/information was:					
Very good	27.7	29.5	29.3	31.0	22.9
Good	45.0	44.3	36.6	41.0	52.4
Fair	22.5	23.0	31.7	18.0	22.9
Poor	4.8	3.2	2.4	10.0	1.8
	100.0	100.0	100.0	100.0	100.0

Table 15. Sources of information. Percent indicating seeking information first from source given. (Generally, the top 3 to 5 sources only are listed in table.)

	Total	North	SW	Central	SE
n =	(349)	(64)	(55)	(120)	(110)
Crop production					
Extension Service	26.9	28.1	25.4	26.6	27.2
Dealer/fieldman	24.6	26.6	32.7	29.2	14.5
Friend	16.0	15.6	14.5	10.8	22.7
Crops variety select					
Dealer/fieldman	32.6	23.4	38.9	37.6	29.4
Extension Service	20.7	26.5	20.4	15.4	23.0
Friend	15.7	15.6	14.8	11.1	21.1
Fertilizer recommendations					
Dealer/fieldman	60.5	52.8	67.2	62.3	60.2
Consultant	10.8	4.2	8.6	11.5	15.3
Extension Service	10.5	16.7	3.4	10.7	10.1
Crop pest control					
Dealer/fieldman	49.0	51.6	51.7	50.0	45.3
Extension Service	24.4	28.1	17.2	20.3	24.0
Consultant	7.0	3.1	10.3	6.8	7.7
Conservation practices					
Government agency	39.9	50.8	45.3	33.9	37.1
Extension Service	24.3	22.2	13.2	28.6	26.7
Other	16.5	11.1	17.0	20.5	15.2
Livestock production					
Other	28.3	34.0	34.2	31.0	20.0
Extension Service	24.1	20.8	21.0	26.0	25.3
Friend	22.7	20.8	26.3	19.0	26.3
Livestock pest control					
Dealer/fieldman	27.9	30.8	28.6	24.8	29.3
Other	25.2	21.2	26.2	30.7	21.2
Extension Service	17.3	17.3	14.3	17.8	18.1
Crop/livestock markets					
Other	37.6	33.9	41.3	42.6	33.0
Consultant	18.6	21.0	21.7	18.5	16.0
Dealer/fieldman	13.4	14.5	15.2	13.0	12.3
Friend	13.0	14.5	8.7	11.1	16.0
Government agency	5.3	4.8	4.3	3.7	7.5
Extension Service	4.9	6.4	0.0	3.7	7.5
Farm financial management					
Other	47.6	50.9	57.7	51.7	36.4
Consultant	32.1	25.5	25.0	30.2	41.1
Extension Service	6.7	0.0	7.7	6.1	6.6
Farm computer use					
Other	54.9	59.5	52.3	53.0	56.2
Consultant	15.8	10.8	15.9	16.9	16.9
Extension Service	11.5	8.1	18.2	7.2	13.5
Selecting/using machinery					
Friend	28.2	33.8	38.0	27.0	21.9
Other	26.7	29.2	24.0	26.1	27.2
Dealer	26.5	20.0	22.0	26.1	32.5
Consultant	7.3	4.6	6.0	8.7	7.9
Extension Service	2.9	3.1	2.0	1.8	4.4
Reducing energy costs					
Other	44.9	50.9	52.3	53.0	56.2
Friend	13.4	17.5	18.6	11.1	11.3
Consultant	12.1	3.5	9.3	18.2	12.3
Extension Service	10.2	14.1	9.3	5.0	13.2
Combined number of first source indications					
Other	27.0	27.4	26.2	30.1	23.9
Dealer/fieldman	24.1	21.8	26.9	24.9	23.4
Extension Service	16.2	17.2	13.6	15.4	17.5
Friend	13.2	15.6	14.1	11.3	13.4
Consultant	11.9	9.6	11.8	12.1	13.0
Government agency	7.7	8.3	7.4	6.3	8.8
	100.0	100.0	100.0	100.0	100.0

Summary and Recommendations

The purpose of this study was to provide information for program planning and evaluation by Extension county and specialist faculty and advisory groups. Findings are tentative due to the size of the sample, but they do provide a beginning point for further local data collection and discussion. Advisory groups will need to examine study findings in light of what is known about conditions and needs within the local area.

Some tentative observations can be made, however, based on these findings. The sample does appear to represent Idaho's general farm population in percentage terms. Background characteristics of the sample group are quite similar to those found in the 1982 Census of Agriculture.

Results from the commodity-specific questions are mixed. The samples of sheep and swine producers were too small to print the results. The sample sizes for dairy (46) and potatoes (54) are small enough that the results should be viewed with caution. The sample size for grain, alfalfa, beef and irrigated farms are much larger and should give more accurate estimates.

The intent of the survey was to obtain information on farm and ranch practices that are recommended by the Idaho Cooperative Extension Service. The list of practices was obtained from Extension faculty but the "best" or recommended practice is not always clear. What may be recommended in one county may not be recommended in another part of the state because of differences in soil, climate, marketing opportunities or the management ability of the producer. This explains some of the variation in practices between districts.

In spite of the diverse nature of agricultural production in Idaho, the survey results should provide data for Extension educational program planning and evaluation. The extent to which practices are being adopted can provide an indicator for future Extension programming emphases. Measurable program objectives can be built from the data base provided by this survey.

The survey also reveals clientele attitudes about Extension program content and delivery methods. The relatively high ratings for increases in Extension efforts in marketing and financial management agree with other recent studies (see UI College of Agriculture Extension Bulletin No. 645, "The Present and Future Role of Cooperative Extension in Idaho" by John E. Carlson, 1985). This indicates that farmers and ranchers are interested in Extension programs that deal with profitability. Traditional Extension efforts have been focused on maximizing total production per acre or per animal, so apparently the focus should now be shifed to maximizing profits rather than production.

The survey indicates that traditional Extension delivery methods such as print, radio and TV media, meetings and telephone calls do reach a large audience. It also shows that the opportunity for using new methods such as videotapes, computers and retail outlets may gain increasing support. The amount of electronic equipment in farm homes is surprisingly large and growing.

The data on sources of information may also be useful to Extension faculty. Consultants, dealers-fieldmen and government agencies all appear to be relied on heavily for information. By being aware of where growers are going for certain information, Extension might increase its educational impact by designing programs with and/or for these providers of information.

The "friend" category is rated fairly high as a provider of some types of information. This reveals the importance of Extension faculty working well with agricultural community leaders whom many of their peers regard as a "friend."

Farm magazines and trade journals were written in by some respondents as sources of information in the "other" category. Other respondents may have been thinking of this source when they checked the "other" category as well. Extension faculty write many of the articles in these publications and are sources of information for many more. Indeed all of the other providers of information have probably at some time used Extension as their source of information.

Extension faculty should not be overly concerned about who provides the information. Rather, they should be concerned about how well the information is being used to solve the problems of Idaho's farmers and ranchers. This survey was an attempt to provide data to assist in the planning and evaluation of that effort.

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