

MINUTES OF THE MEETING
EDUCATION SUBCOMMITTEE
50TH LEGISLATURE

February 3, 1987

The meeting of the Education Subcommittee was called to order by Chairman Dennis Nathe at 8:13 a.m. on Tuesday, February 3, 1987 in the SRS Auditorium.

ROLL CALL: All members were present. Also present was Dori Nielson and Jane Hamman of the Legislative Fiscal Analyst office, Sib Clack of the Office of Budget and Program Planning, and Deb Thompson, Secretary.

MONTANA AGRICULTURAL EXPERIMENT STATION

Sib Clack explained the executive position on the budget for the agricultural experiment station, page S-89 of the governor's budget book. (Exhibit 1)

Jane Hamman referred to Page F-43 of the analysis. (Exhibit 2,3)

Dr. Jim Welsh, director of the Montana Agricultural Experiment Station, said the station was responsible for technology that improved economic conditions of Montana agriculture. (Exhibit 4) He gave a brief description of the seven research stations, the livestock and range laboratory, and the main station at Bozeman. He explained that the state was large and the environment diverse as far as interpolating complex research information.

Shortfalls in federal funds were not anticipated and an adjustment had to be made within the past 12-15 months. (278) Research projects that were developed by using grants were mentioned. New uses for ag products being developed include the safflower, hard white winter wheat development, and other entrepreneurial projects. These are opening new businesses in the state and new markets here and abroad. He said that the biennium budget was inadequate to support the program base. The increase in federal retirement costs was discussed. Issues addressed by the research program were listed (Exhibit 5).

(B-037) Dr. Welsh discussed the capable scientists as creative and competitive cultivating relationships with industry that translates into the development of economic activity. He said the grant and contract activity had been vigorous and been increasing so the scientists had been garnering outside funds to help get the job done. The greenhouse facility was mentioned as a state-of-the-art

facility that is expanding research capacity.

Proponents

Harrold Tutvedt, chairman of the state advisory board from Kalispell, discussed agriculture as an answer to economic problems. He described the advisory council and its goal-setting activities. There are regional advisory councils that elect two representatives to sit on the state council. Priorities of the council are to add value in order to market what is grown, farm system analysis, and reducing costs. He pointed out that research and development money cannot be cut back because of its importance.

Bob Sievertson, from Havre and member of the Montana Grain Growers Association (196), testified in support of funding for the agricultural research station. He pointed out that the research is more beneficial to the consumer than to agriculture because millions of dollars are saved in food costs. He said that agriculture is in a world competition and new technology and techniques will enable us to survive. He commented that the extension service people are dedicated and advised to not cut back on programs.

Leo Bratskey, member of the Huntley Advisory Council from the Clark Fork Valley, member of the beet growers research association and Huntley Project, discussed the sugar beet projects and experiments. He pointed out that the only way to get quality is through research and that Montana produces one of the highest quality sugar beets in the country.

Richard Thieltges, (505) state advisory board member elected from Conrad, testified in support of the experiment station. He said information is necessary to survive and be competitive. Specialty crops were vital (Exhibit 6a,b).

George Bohl, from Pompeys Pillar (566) and member of the advisory committee from Huntley Experiment Station, spoke in support of research. One item that has an impact on costs was that the advisory committee served voluntarily with no pay. This is a savings to the taxpayers and the budget.

Jim Stevens (589), on the advisory committee at Bozeman and member of the Montana Grain Growers Association, testified in support of the experiment station. He pointed out that the capacity to produce wheat at 50 bushels per acre was a direct result of research and biotechnology. The new research will find other uses for what we produce.

Lorie Merrill, from a farm in Big Sandy and member of the governor's advisory council on economic development, recommended an increase in funding for research activity. She

said the priorities in the state was to help boost the number one industry.

(2-A) Paul Kroonobush, small grain grower from Conrad, spoke in support of the budget and the maintenance of the Conrad station. He discussed the barley virus that would destroy the malting industry and farmers in the state. The solution can only come from the research people at the station. (Exhibit 7)

Ralph Mannix testified in support of the experiment stations. He said that research that is going on at MSU is exciting, especially the value-added projects. Montana must stop shipping out raw products at very little profit and start shipping out finished, value added products to maintain this money in the state. He said this is the one big hope for agriculture and for Montana.

Brad Hoffman testified in support of the Conrad experiment station. He pointed out that the the station helped save money by acting as a check of private plot breeders on seed that was purported to be high yield. He lost money before he got their research reports.

Lloyd Schmit, from Stanford and past chairman of the agricultural research advisory council and current member of the extension advisory council, expressed his concerns about producing raw materials. He said that when selling raw materials, someone else sets the price. It is time that Montana spends more money on agriculture that are consumer ready so that we can set the price.

Ken Michel, grain farmer from Dutton, supports continued funding, especially on the Conrad station. Research is the most cost-effective investment the state can make (Exhibit 8).

Jim Morrim, small grain grower from Conrad, supports all the experiment stations. He pointed out that the data is needed for farmers who are trying to make a living. He said that farmers can't experiment and make a living too.

Dr. Welsh concluded by stating that the programs were an investment in the future of the state. He said it has a higher possibility of return than other investments the state can make.

There were no opponents.

MONTANA COOPERATIVE EXTENSION SERVICE

Sib Clack discussed the budget reductions and the executive recommendations (page S-91).

Jane Hamman discussed the LFA budget analysis (page F-59). She mentioned the administration consolidation issue and the savings that would result.

Dr. Leroy Luft, acting director of the Montana Extension Service, discussed research (Exhibit 9). He said the extension service is an outlet of Montana State University. People use the extension because the information is useful and important. He pointed out that everyone is eligible and the service helps people help themselves. The service is involved in a three-way partnership of the USDA Landgrant, MSU, and Montana counties. He displayed examples of booklets and pocket books that are developed by specialists and distributed to the public (348). He mentioned the programs that were eliminated and, although it was not part of the budget request, they would like to reinstate the programs at the additional cost of \$140,000. (423) He said, with the exception of farm management and 4-H, there was only one specialist in any program at the state level. He pointed out that programs could not be reduced but only eliminated.

Dr. Luft discussed the agency budget request. He pointed out the new federal retirement plan and the added costs. (2-B) Representative Peck questioned the reduction of county contributions by handling with a supplemental. Dr. Luft mentioned how the level of county funding was determined.

Walt Fillmore, Florence, Montana, testified as an advocate of research and extension. He said the extension service provides new tools, education, and information. He pointed out that the extension program is a bargain and is being financed at all levels of government.

J.T. Hamm, secretary-treasurer of the state Irrigation Society, testified in support of the extension service. He said the extension service helps people. The Lewis and Clark extension service answered one million two hundred thousand requests for help during last year and the information was the truth. A lot of people turn to the extension service for good information. (133)

Jeremiah Cashman, Montana Association of Nurserymen, spoke in support of the extension service (Exhibit 10). He said that the horticulturalist specialist position in the cooperative extension service was important for experimenting on varieties, insects, and methodology development. He said that ornamental horticulture gardening is a number one recreational activity.

Jack Perkins, rancher in Deerlodge valley and representing the conservation district, said the extension service does have a forester. (225) He pointed out the need for a forester since the private landowner doesn't know much about timber and can be ripped off.

Wayne Pearson, rancher from Absorkee and Stillwater County weed control supervisor and representative for the Montana weed control association, spoke in support of the extension service. (Exhibit 11) He said that weed control was a big issue and research is a key to weed control. The county extension service is depended on to organize weed control programs in the district. (317) Farmers spent \$24 million dollars on herbicides last year when they could least afford it, so the experiment station needs funding to continue biological weed control research.

Dewey Schmitt, farmer from Three Forks and president of the Montana Port Producers Council, submitted testimony on the services provided by the extension service (Exhibit 12). He pointed out that the only way to survive was to increase productivity on the farm. The extension swine specialists and the MSU research facilities for swine have been helpful. A producer marketing organization has been put together as an example of economic impact that the extension service has provided. He recommended an increase in the budget as necessary to solve the economic situation in the state.

Paul Kronobush (372), small grain grower from Conrad and member of the advisory council for the experiment stations, testified in support of the experiment stations. He said that the cuts in the budget on travel for specialists and the cuts in publications were a problem. He discussed why researchers in the experiment stations are important.

Scott Mangold, Teton County commissioner, outlined what the county extension agent and cooperative extension service do for people. (Exhibit 13) He said the counties participate in the salaries of the extension agent, and also office space, automobiles, fuel, maintenance, computers, phones, paper, etc. in order to maintain an extension agent. He pointed out that a year ago there were three agents. The agronomist and the livestock specialist were the most important.

Frank Lock, a dryland farmer from Dutton and cooperator with the Conrad experiment station, said he utilized the services of the county agent. (443) He pointed out that the extension service and the experiment station worked together and was for all the people in Montana.

Peggy Hegland, with the extension advisory committee in Missoula, commented on the extension, 4-H, and homemakers program. She is a supervisor of the Missoula County conservation district and use the extension service for expertise. She mentioned the weed problem and other programs and the need for help from the extension service.

Home Economics: Laura Engebretson, from Havre and president of the Montana extension homemakers and member of the extension advisory committee, testified about the mission of the cooperative extension. (Exhibit 14)

Ivy Pearson, retired social worker from Missoula county, discussed the federal funding of the EFNEP program. She said the administration of the program was provided by the extension service. (657) The ethnic program, that serves approximately 200 low-income families and youth, is valuable. She said the purpose of social work is to improve the social functioning of the people. She discussed the importance of continuing the program under the extension service.

(3-A) Elaine Schlinker discussed the need for the publications that are materials provided by the cooperative extension service (Exhibit 16, 16a).

Donna Morgan, president of the Gallatin County extension homemakers, testified in support of the extension service. She said a needs assessment in Gallatin County was being conducted for programs. She mentioned the community services that were provided by extension homemakers. (Exhibit 17, 17a)

Pat Bruer, from Gallatin County and county sheep resource person and past president of homemakers club, testified in support of the extension and their benefits to everybody (Exhibit 18).

Jacyln Folsom, from the Missoula home economic advisory committee, submitted testimony from the Missoula County extension home economic advisory committee. (Exhibit 19)

Eloise Schafer, from Missoula and member of the home economics advisory board, reminded the committee that if the home economist was lost in Missoula the EFNET program would also be lost. (150)

Janie Kington, a 4-H leader and extension homemaker from Lewis and Clark County, said that as a Montana taxpayer she reaped direct benefits from extension services and clubs. (Exhibit 20)

Donna Dugas, state vice president of extension homemaker's, discussed the goals to strengthen the community through education and achievement. (201) She pointed out that the service reaches a 40-80 thousand non-extension membership. She listed the unique services including the volunteer work that is shared by the members (Exhibit 21).

Dot Meskimen testified in support of the extension service (Exhibit 22).

Mary Schlenker, a 4-H member, spoke in support of the extension service and the abilities she had gained from the 4-H club.

Heath Hollandsworth testified in support of the extension service (Exhibit 24). 4-H helped him learn woodworking and start his own business.

Susan Vicker, from Jordan, discussed the many opportunities and confidence and skills she had gained from being a member of 4-H.

D.J. Dixen, Jefferson County, testified in support of the extension service (Exhibit 25). She mentioned the skills she had developed by being involved in the 4-H club.

Diane Hooker, Jordan president of 4-H, discussed the 4,000 volunteer leaders that help make this service possible.

Karin Ludeman, Bozeman, discussed the volunteer work in 4-H that did not cost the communities (Exhibit 27).

Anita Wilson, Wolf Creek, testified about the 4-H club and the information received from the county extension agent (Exhibit 28).

Mary Converse, 4-H leader from Great Falls, discussed the value in the program that taught the youth. She cited one example of the Halloween safety brochure that was distributed to children in four schools. She also mentioned that speakers were available on topics such as nutrition and preventive health problems.

Helen Meadows, a ranch wife and 4-H leader from Huson, gave her personal knowledge of the extension service.

Annette Frank, from Joliett, discussed the important information that could be acquired from the extension office (631). (Exhibit 29)

Terry Calip, from Missoula, submitted a letter in support of 4-H.

Art Kleinjan urged support of the extension service and the 4-H club. He reported the county will lose an agent July 1 and that counties want to keep the county level extension services.

Milt Munson, district sales manager for DeKalf-Pfizer Genetics, spoke about concerns that the 4-H program would be cut (703). He pointed out the volunteer programs were needed.

(3-B) McKell Phiser discussed the need for funding for the extension service. He said the results from research were used a lot. The leadership training with 4-H and the extension help were important.

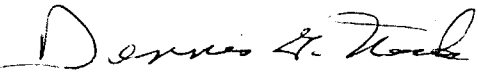
Lois Marcinkowsky, a 16 year leader of the 4-H urban club, said there were 300 city kids from Missoula that were involved in the club. She said that responsibility was one trait taught by the 4-H that could be reinforced for everyone.

Marsha Hollandsworth, Brady, chairman for the Montana 4-H, testified in support of the program (Exhibit 31).

Community Development: Dr. Luft gave closing remarks on the extension service. He submitted testimony from Tony Tyson, Arnold Peterson, David Morgan, William Lockner, and Mark Pederson (Exhibit 32). He said the advisory council people develop tools so county people know what is going on such as the Extension Digest (Exhibit 33).

Dr. Tietz said the Montana State University family is a dynamic dedicated people. There are 9-10 thousand volunteers with an unusual set of resources and he recommended continued funding.

ADJOURNMENT: The meeting was adjourned at 12:23. The next meeting was announced for 8:00 a.m., February 4, in room 104 in the state capitol.


DENNIS NATHE, Chairman

SUB COMMITTEE

Date 2-3-87

CS-30

MONTANA COOPERATIVE EXTENSION SERVICE

<u>Budget Item</u>	<u>Actual Fiscal 1986</u>	<u>Appropriated Fiscal 1987</u>	<u>- - Current Level - - Fiscal 1988</u>	<u>Fiscal 1989</u>	<u>% Change 1987-89 Biennium</u>
F.T.E.	135.30	135.30	121.02	121.02	(14.28)
Personal Service	\$3,484,983	\$3,532,038	\$3,355,392	\$3,355,392	(4.4)
Operating Expense	545,757	689,170	498,984	500,456	(19.1)
Equipment	20,217	14,881	12,829	12,829	(26.9)
Total Expenditures	<u>\$4,050,957</u>	<u>\$4,236,089</u>	<u>\$3,867,205</u>	<u>\$3,868,677</u>	<u>(6.7)</u>
<u>Fund Sources</u>					
General Fund	\$2,237,166	\$2,138,583	\$2,037,937	\$2,039,409	(6.8)
State Special	-0-	63,984	-0-	-0-	---
Federal Revenue	1,813,791	2,033,522	1,829,268	1,829,268	(4.9)
Total Funds	<u>\$4,050,957</u>	<u>\$4,236,089</u>	<u>\$3,867,205</u>	<u>\$3,868,677</u>	<u>(6.7)</u>
- - - - - Fiscal 1988 - - - - -					
<u>ISSUES:</u>	<u>General Fund</u>	<u>Other Funds</u>	<u>General Fund</u>	<u>Other Funds</u>	
1. Administration Consolidation	<u>\$(306,375)</u>	<u>\$ -0-</u>	<u>\$(306,375)</u>	<u>\$ -0-</u>	

The Montana Cooperative Extension Service is the state agency responsible for diffusing useful and practical information on subjects relating to agriculture and home economics, including the 4-H program. Located at Bozeman and four area offices, plus the local county agent offices, the extension service is part of the national land-grant university system.

Authorized FTE are reduced 14.28, including the agency's personnel reduction of 13.38 for the 1987 biennium and the 0.90 FTE vice president who has resigned. These FTE reductions and 4 percent vacancy savings cause a 4.4 percent decrease in personal service. Operating expense decreases 19.1 percent primarily as a result of adjustments for fewer staff. Total expenditures decline 6.7 percent for the biennium. Fund sources for the 1989 biennium are general fund, which decreases 6.8 percent, and federal Smith-Lever funds allocated by the U.S. Department of Agriculture, which decline 4.9 percent.

Fiscal 1986: Comparison of Actual Expenses to the Appropriation

The following table compares fiscal 1986 actual expenditures and funding to appropriations as anticipated by the 1985 legislature.

Table 1
Comparison of the Appropriation to Actual Expenses - Fiscal 1986

<u>Budget Item</u>	<u>Legislature</u>	<u>Actual</u>	<u>Difference</u>
F.T.E.	135.30	135.30	0.00
Personal Service	\$3,593,076	\$3,484,983	\$108,093
Operating Expense	663,133	545,757	117,376
Equipment	24,222	20,217	4,005
Total Expenditures	<u>\$4,280,431</u>	<u>\$4,050,957</u>	<u>\$229,474</u>
<u>Funding</u>			
General Fund	\$2,242,837	\$2,237,166	\$ 5,671
State Special	61,372	-0-	61,372
Federal Revenue	1,976,222	1,813,791	162,431
Total Funds	<u>\$4,280,431</u>	<u>\$4,050,957</u>	<u>\$229,474</u>

Due to funding cutbacks, the agency made reductions in all expenditure categories. The \$108,093 difference in personal services is comprised of reductions in faculty, classified, and part-time employees, plus related benefits. Operating expenses were \$117,376 less than appropriated, with major differences of \$69,759 in publications and \$33,223 for in-state travel, as well as minor reductions in supplies, communications, utilities, and miscellaneous items. Equipment and capital expenses were \$20,217, including \$829 for library books, \$111 for office furniture, and \$19,277 for computers, typewriters, and audio-visual equipment, leaving a balance of \$4,005.

The extension service did not utilize \$5,671 of its fiscal 1986 general fund appropriation. Smith-Lever funds decreased to \$1,813,791, for a total difference of \$162,431. Although the legislature authorized \$61,372 of state special funds from AGNET information system user fees and other revenue, the agency decided this much revenue could not be collected so the program was discontinued and the \$1,609 of revenue collected was put in a designated account.

Current Level Adjustments

As shown on Table 2, the FTE are reduced 14.28. This reduction reflects the agency's fiscal 1987 personnel employee reduction of 13.38 FTE to 121.92 FTE due to federal and state revenue cutbacks, and the reduction of a 0.90 FTE vice president professional who resigned. Vacancy savings of 4 percent is \$133,738 per year, excluding work study and university recharges. University recharges for personnel are \$145,671 each year as budgeted by the agency for fiscal 1987.

Table 2
FTE and Personal Costs for Each Year of the 1989 Biennium

- - - - - FTE - - - - -					
Category	FY 1986	FY 1988	Difference	Average Salary	Total Salary
Faculty	90.27	81.89	(8.38)	\$24,894	\$2,038,591
Professional	11.90	11.00	(0.90)	40,176	441,936
Classified	30.64	26.45	(4.19)	15,790	417,646
Part time	2.49	1.68	(0.81)	16,657	27,984
Total	<u>135.30</u>	<u>121.02</u>	<u>(14.28)</u>		\$2,926,157
Benefits					525,713
Health					37,260
Vacancy Savings					<u>(133,738)</u>
Total Personal Costs					<u>\$3,355,392</u>

Operating expense for fiscal 1988 includes increases of \$2,075 and decreases of \$48,848, for a net reduction of \$46,773 as summarized in Table 3 below.

Table 3
Current Level Adjustments to Operating Expenses
Fiscal 1988 and 1989

Budget Item	Actual	(Decrease) Increase	- - - Current Level - - -	
			Fiscal 1988	Fiscal 1989
Insurance	\$ 4,047	\$ 618	\$ 4,665	\$ 4,665
General Professional	56,504	(2,000)	54,504	54,504
Postage	13,976	(976)	13,000	13,000
Telephone	62,770	(6,160)	56,610	56,610
Advertising	2,119	(1,000)	1,119	1,119
In-State Travel	170,920	(28,628)	142,292	142,292
Out-of-State Travel	18,931	(3,000)	15,931	15,931
Moving New Hires	10,352	(5,002)	5,350	5,350
Leased Equipment	6,034	(1,034)	5,000	5,000
Rent	13,548	(443)	13,105	13,689
Utilities	13,915	1,457	15,372	16,844
All Other	172,641	(605)	172,036	171,452
Total	<u>\$545,757</u>	<u>\$(46,773)</u>	<u>\$498,984</u>	<u>\$500,456</u>

Insurance increases by \$618 due to inflation. General professional services for miscellaneous art photos, clipping services, etc. are reduced by \$2,000 to \$54,504 to the appropriated level. Because the agency decided to spend more money on postage getting information out to the public, costs for this item increased by 1,079 percent

from \$1,185 in fiscal 1985 to \$13,976 in fiscal 1986. Current level reduces postage by \$976 to \$13,000 each year of the biennium with the expectation that there will be economies now that this new program delivery plan has been developed. Telephone is decreased by \$6,160 for the 14 FTE reduction at an average cost of \$440 each. Advertising for open positions and meetings is reduced by \$1,000 to \$1,119 because of fewer openings and because meeting announcements may also be printed as news articles.

In-state travel is reduced \$28,628 to \$142,292. Fiscal 1986 travel was \$170,920 for 102.17 FTE professionals. Current level includes 92.89 FTE professionals budgeted at approximately \$1,413 travel per person, or \$131,292, plus \$11,000 to conduct two statewide training meetings for county agents. Other travel for county agents is budgeted by local counties and, therefore, is not included in the extension service operating costs. The \$1,413 travel for each professional compares with \$659 per person at the agricultural experiment station and \$504 at the forestry experiment station. Out-of-state travel is reduced \$3,000 to \$15,931 because of a duplicative 4-H meeting, a land-grant college meeting attended jointly with the agricultural experiment station, and the staff reductions.

Moving costs for new employees are reduced by \$5,002, leaving \$3,800 for new hires, \$550 for three meetings of the advisory committee, and \$1,000 for the national extension committee. Leased equipment is reduced by \$1,034 to \$5,000 and the equipment budget below includes funds to purchase a copier which has been leased in prior years. Rent for area offices, plus training and exposition facilities, is adjusted to \$13,015 in fiscal 1988 and increased to \$13,689 in fiscal 1989 based on the agency's request. Utilities increase by \$1,457 in fiscal 1988 and \$1,472 in fiscal 1989 due to inflation. Additional miscellaneous reductions total \$605 including passenger vehicles reduced by \$166 consistent with the prior two fiscal years, subscriptions reduced by \$269 with the intent of using the university library for other needed information, and film rentals reduced by \$170.

Equipment is \$12,829 each year of the biennium as summarized in Table 4. The fiscal 1986 costs of \$829 for library books are included each year. Equipment includes four Kaypro personal computers, two printers, a Minolta copier, cassette recorder, software for training and specialists, and audio-visual equipment.

Table 4
1988-89 Current Level Equipment

<u>Item</u>	<u>Fiscal 1988</u>	<u>Fiscal 1989</u>
Library Books	\$ 829	\$ 829
Kaypro PC-20/Mail Room	1,750	-0-
Star Printer/Mail Room	450	-0-
Kaypro PC-20 Pkg/Human Resources	2,450	-0-
Minolta Copier/General Use	4,447	-0-
Kaypro PC-20 Pkg/Beef & Farm	2,600	-0-
Cassette Recorder/General Use	303	-0-
Kaypro PC-20 (2)/General Use	-0-	5,200
Software/Training & Spec.	-0-	4,400
Quietwriter Printer	-0-	1,200
Audio-Visual Equipment	-0-	1,200
Total Equipment Costs	<u>\$12,829</u>	<u>\$12,829</u>

ISSUE 1: ADMINISTRATION CONSOLIDATION

Because the Montana Cooperative Extension Service and the Montana Agricultural Experiment Station are planning to consolidate administration prior to fiscal 1988, this issue is presented to update the general fund savings analysis that was discussed during Special Session III. During the special session, six reasons for considering administration consolidation were presented: (1) state legislation which makes the agricultural experiment station responsible for providing information to farmers and ranchers; (2) effective and efficient combined administration and programs in other states; (3) United States Department of Agriculture evaluation reports which indicated that the present distance between research and extension is hindering programs; (4) work priorities of the extension service allocating 28 percent of total fiscal 1986 staff time to 4-H; (5) confusion among agricultural producers about whether to go to the cooperative extension service or to the agricultural experiment station for information and assistance; and (5) cost savings.

The 1989 biennium cost savings of consolidating administration could be \$612,750. The current administrative staff of both the cooperative extension service and the agricultural experiment station are presented in Table 5.

Table 5
Comparison of Current Level Cooperative Extension Service and
Agricultural Experiment Station Administration Staff

Extension Service Administration - - -			Ag Experiment Station Administration - - -			Fiscal
Average			Average			1988
FY 1988			FY 1988			Total
Title	FTE	Costs	Title	FTE	Costs	Cost
Acting Director	1.00	\$ 57,286	Director	0.65	\$ 47,387	\$ 104,673
Associate Director	0.00	-0-	Associate Director	1.00	61,579	61,579
Admin./Fiscal Officer	1.00	38,870	Fiscal Officer	1.00	41,124	79,994
Ag & Nat. Res. Program Coord.	1.00	50,045	Program Officer	1.00	34,330	84,375
Human Res. Program Coord.	1.00	50,045	---			50,045
4-H Program Coordinator	1.00	50,045	---			50,045
Area Supervisor	1.00	45,295	---			45,295
Area Supervisor	1.00	45,295	---			45,295
Area Supervisor	1.00	45,295	---			45,295
Area Supervisor	1.00	45,295	---			45,295
Editor (Shared with AES)	0.50	20,145	Editor (Shared with CES)	0.50	19,889	40,034
Comm. Spec. (Shared with AES)	0.50	17,259	Asst. Editor (Shared with CES)	0.50	16,938	34,197
Information Specialist	1.00	29,279	News Specialist	0.50	13,297	42,576
Professional Subtotal	11.00	\$494,154	Professional Subtotal	5.15	\$234,544	\$ 728,698
Average Professional FTE Cost		\$ 44,923	Average Professional FTE Cost		\$ 45,542	
Programmer/Analyst	1.00	\$ 31,972	Word Processing Operator III	0.50	\$ 10,415	\$ 42,387
Administrative Secretary	1.00	22,782	Administrative Secretary II	0.75	20,304	43,086
Secretary	1.00	20,785	Receptionist II	1.00	17,376	38,161
Secretary	1.00	18,638	---			18,638
Secretary	1.00	18,521	---			18,521
Secretary	1.00	17,770	---			17,770
Personnel Technician	1.00	24,230	---			24,230
Accounting Technician	1.00	21,782	Accounting Technician II	1.00	23,671	45,453
Stock Clerk Supervisor	1.00	20,848	Accounting Technician I	0.25	4,758	25,606
Stock Clerk (Shared with AES)	0.50	7,733	Stock Clerk I (Shared with CES)	0.50	8,488	16,221
Classified Subtotal	9.50	\$205,061	Classified Subtotal	4.00	\$ 85,012	\$ 290,073
Average Classified FTE Cost		\$ 21,585	Average Classified FTE Cost		\$ 21,253	
Total FTE and Cost	20.50	\$699,215	Total FTE and Cost	9.15	\$319,556	\$1,018,771
	=====	=====		=====	=====	=====

Table 5 shows there are 11.0 professional administrative FTE at the extension service and 5.15 professional administrative FTE at the agricultural experiment station, for a total of 16.15 professionals. The average professional FTE cost in fiscal 1988 at the cooperative extension service is \$44,932 and the average cost at the agricultural experiment station is \$45,542. These cooperative extension service professionals include the acting director, administrative services officer, three program coordinators, four area supervisors, and editor-communications specialists. The agricultural experiment station professionals include the director, associate

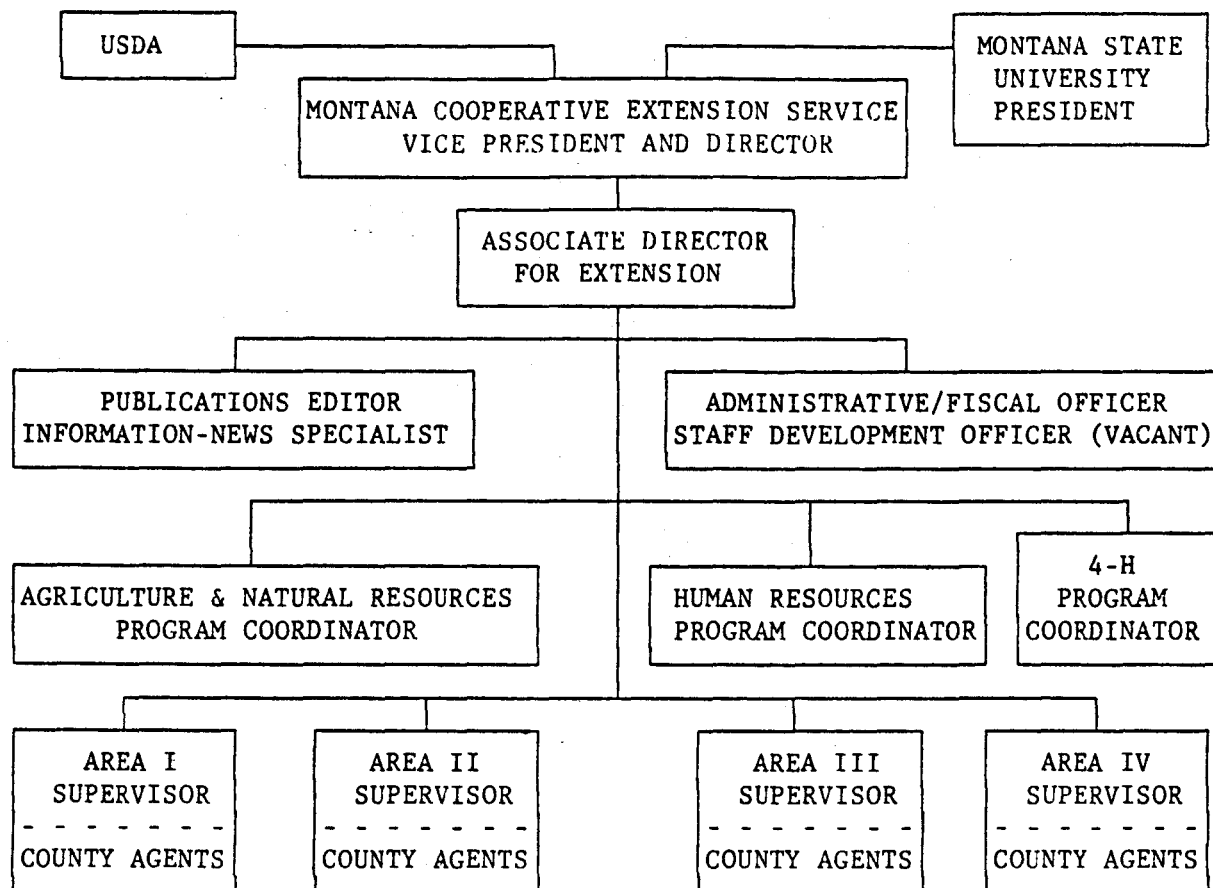
director, fiscal systems officer, program officer, and editor-communications specialists. The agencies are sharing two professional FTE in the publications and news section, and sharing one classified FTE.

The extension service utilizes 20.50 of its FTE at a fiscal 1988 cost of \$699,215 to administer a \$3,867,205 agency budget, plus about \$1.5 million in restricted funds. Personnel costs for administration are 20.8 percent of the \$3,355,392 personal service fiscal 1988 budget at the extension service. The agricultural experiment station utilizes 9.15 of its FTE at a fiscal 1988 cost of \$319,556 to administer an \$8,399,989 agency budget, plus about \$2.6 million in restricted funds. Personnel costs for administration are 4.7 percent of the \$6,835,061 personal service fiscal 1988 budget at the agricultural experiment station. Total personal services costs in fiscal 1988 for administration of the two separate agencies would be \$1,018,771.

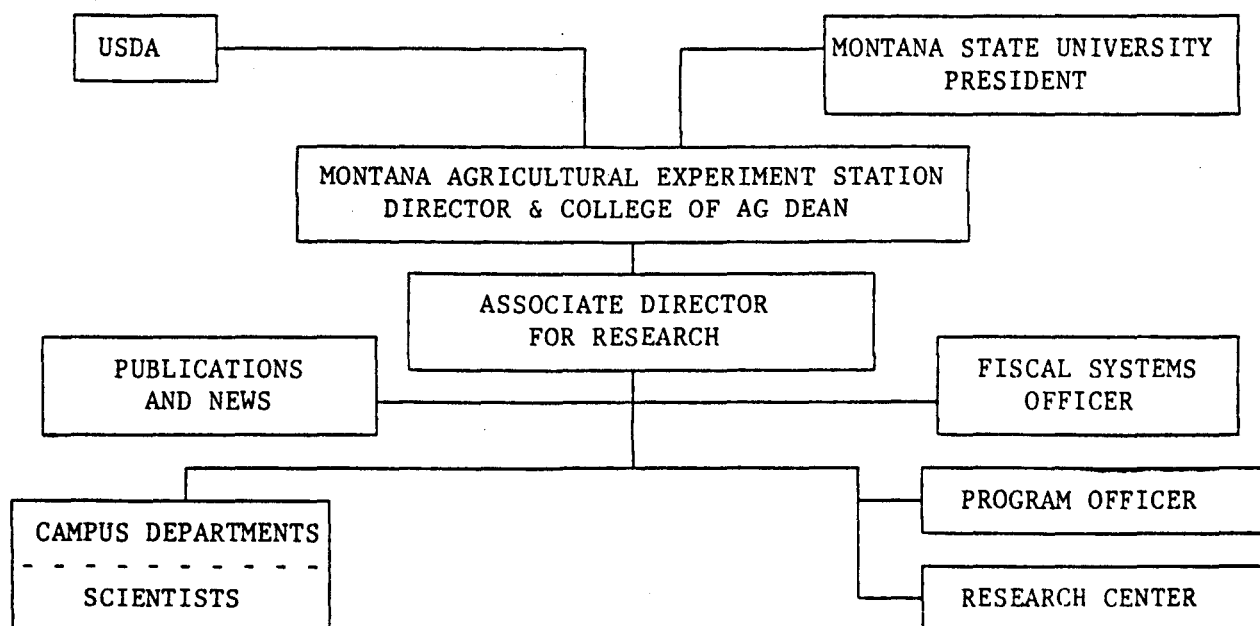
Current level organization charts for the two agencies, presented on Table 6, show similarities in administrative functions and relationships: (1) both agencies are located at MSU and report to the university president; (2) both agencies report to and receive federal funds from the USDA, albeit different federal divisions, but nonetheless similar operationally; and (3) both agencies have associate directors, fiscal officers, and publications-news specialists.

Table 6
ORGANIZATIONAL CHARTS

EXTENSION SERVICE CURRENT ORGANIZATIONAL STRUCTURE



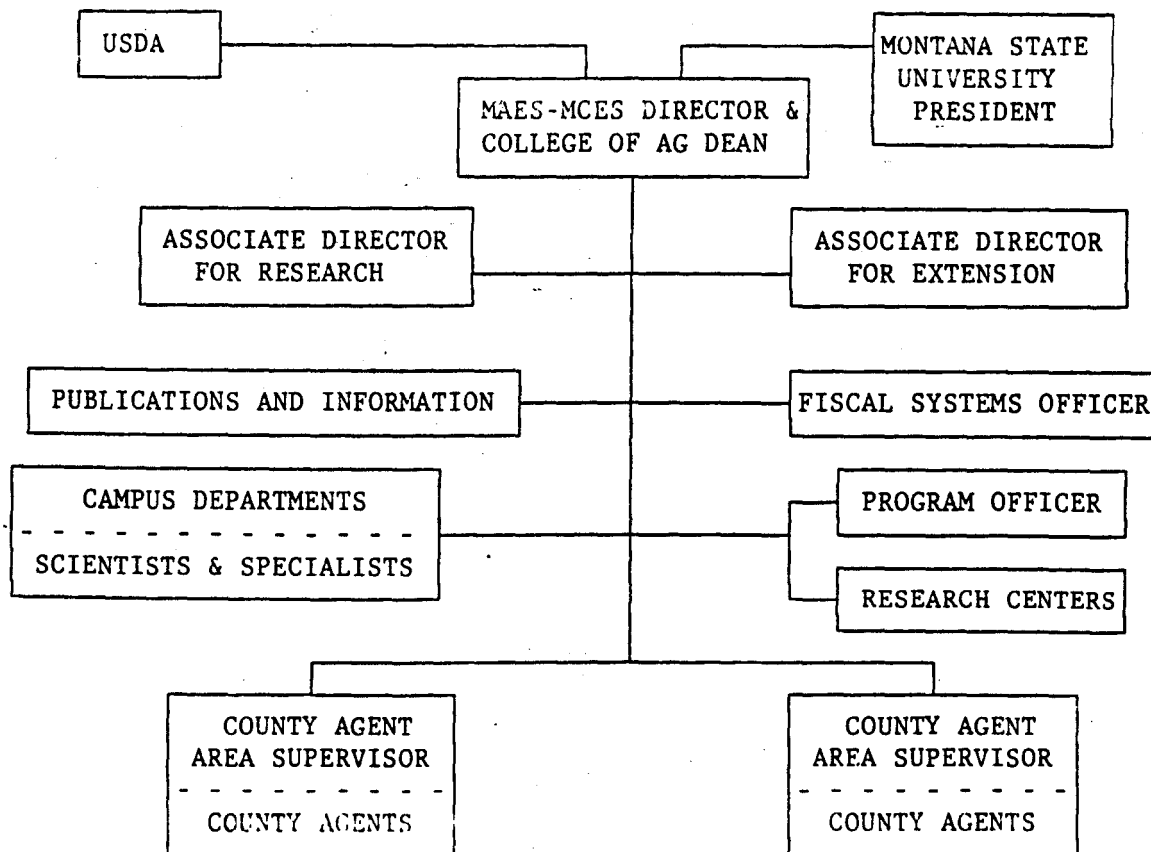
----- AGRICULTURAL EXPERIMENT STATION CURRENT ORGANIZATIONAL STRUCTURE -----



It is also noteworthy that both agencies have computerized financial accounting and reporting systems and that many of the extension specialists and research scientists work side-by-side in the same agricultural experiment station-College of Agriculture departments. The primary point, however, is that there are unnecessary duplications in these two structures. Not only are the duplications costly, but experiences of other states, on-site review reports, and the 1985 survey of producers indicate that maintaining two separate structures hinders program effectiveness and confuses farmers and ranchers about where to obtain assistance.

A potential consolidated structure which streamlines administration and eliminates duplicate positions is presented in Table 7

Table 7
Possible Consolidated Structure



The consolidated administration presented in Table 7 includes the following:

1. Appoint the Montana Agricultural Experiment Station director and College of Agriculture dean the joint Montana Cooperative Extension director, and eliminate the extension director position.

2. Transfer one professional extension service FTE to become the new associate director for extension.
3. Make the agricultural experiment station fiscal officer the consolidated agency fiscal officer, deleting the current extension administrative/fiscal position, and adding 1 FTE fiscal specialist at the agricultural experiment station's average professional fiscal 1988 cost of \$34,330 to assist with the combined workload.
4. Continue the two publications and information shared FTE and add 1 FTE at approximately \$34,330 to this administrative function so that the publications and information office will be able to distribute regularly the most up-to-date materials to farmers, ranchers, and county extension agents.
5. Make extension specialists regular members of the discipline campus departments accountable to the department heads, thereby eliminating three extension program coordinator positions and enabling the dean and director to begin making split extension-research-teaching appointments as appropriate.
6. Transfer to the consolidated structure two county agent area supervisors at salaries commensurate with current level agricultural experiment station salaries and eliminate two area supervisor positions.
7. Transfer 4.75 classified FTE from the extension service to the consolidated structure at an average cost of \$21,585 each and delete 4.75 classified positions.

Streamlining administration and eliminating duplications would result in a consolidated structure with 11.48 professional FTE and 8.75 classified FTE at current level salaries. This is a reduction of 4.67 professional FTE and 4.75 classified FTE for total personal service fiscal 1988 savings of \$231,375. The new administrative personal service fiscal 1988 cost of the consolidated Montana Agricultural Experiment Station-Montana Cooperative Extension Service would be \$787,395.

In addition, analysis indicates that about \$75,000 of related administrative operating expense would also be saved. The total fiscal savings, therefore, could be \$306,375 each year of the biennium.

In conclusion, there are six reasons to consider consolidating the cooperative extension administration with the agricultural experiment station administration: (1) state legislation which makes the agricultural experiment station responsible for diffusing information, (2) effective and efficient combined administration and programs in other states; (3) USDA departmental review reports indicating that the present distance between research and extension is hindering programs; (4) work priorities of the extension service allocating 28 percent of total fiscal 1986 staff time to 4-H and 45 percent to agriculture and natural resources; (5) confusion among agricultural producers about whether to go to the cooperative extension service or to the agricultural experiment station for information and assistance; and (6) biennium cost savings of about \$612,750.

Option A: Consolidate the Montana Cooperative Extension Service and the Montana Agricultural Experiment Station administration under the College of Agriculture dean for a biennium general fund savings of \$612,750.

Option B: Take no action.

Agency Summary
Budget Detail Summary

	Actual FY 1986	Budgeted FY 1987	Recommendation FY 1988	FY 1989
Full Time Equivalent Employees	291.70	279.65	258.59	258.59
Personal Services	6,857,593.68	7,200,421	6,717,917	6,717,917
Operating Expenses	1,478,861.06	1,902,802	1,435,585	1,457,996
Equipment	206,809.70	1,800	285,197	285,197
Capital Outlay	714.06	0	0	0
Debt Service	15,578.20	0	0	0
Total Agency Costs	\$8,559,556.70	\$9,105,023	\$8,438,699	\$8,461,110
Current Unrestricted Fund	8,559,556.70	9,105,023	8,438,699	8,461,110
Total Funding Costs	\$8,559,556.70	\$9,105,023	\$8,438,699	\$8,461,110
Current Level Services	8,559,556.70	9,105,023	8,438,699	8,461,110
Total Service Costs	\$8,559,556.70	\$9,105,023	\$8,438,699	\$8,461,110

Agency Description

The Agricultural Experiment Station was established at Montana State University in 1893 by the Montana Legislature under authorization provided by the U.S. Congress of 1887 (Hatch Act). The station is composed of fourteen research and service departments and laboratories located at Bozeman, and seven research centers located around the state.

The goal of the Agricultural Experiment Station is to contribute to the welfare of the state, national and international communities through relevant research programs on agricultural problems. Research is conducted to improve the com-

petitive position of Montana crop and livestock producers, and to develop agricultural production principles and techniques applicable to semi-arid and intermountain regions throughout the world.

Policy Issues

Plans for consolidating all or parts of the Agricultural Experiment Station and the Cooperative Extension Service were not finalized at the time of the preparation of the Executive Budget. Therefore, budget reductions were applied to the programs of the Experiment Station. The total amount to be cut from the budgets is \$430,056.

AG EXPERIMENT STATION
Budget Detail Summary

	Actual FY 1986	Budgeted FY 1987	Recommendation FY 1988	FY 1989
Full Time Equivalent Employees	255.57	243.91	231.91	231.91
Personal Services	6,414,812.87	6,464,145	6,395,159	6,395,159
Operating Expenses	1,445,558.94	1,706,386	1,429,241	1,451,035
Equipment	204,359.70	0	282,197	282,197
Capital Outlay	714.06	0	0	0
Debt Service	15,578.20	0	0	0
Total Program Costs	\$8,081,023.77	\$8,170,531	\$8,106,597	\$8,128,391
Current Unrestricted Fund	8,081,023.77	8,170,531	8,106,597	8,128,391
Total Funding Costs	\$8,081,023.77	\$8,170,531	\$8,106,597	\$8,128,391
Current Level Services	8,081,023.77	8,170,531	8,106,597	8,128,391
Total Service Costs	\$8,081,023.77	\$8,170,531	\$8,106,597	\$8,128,391

Program Description

The Agricultural Experiment Station conducts research to improve the competitive position of Montana crop and livestock producers. The station has eight research centers, including the headquarters at Montana State University.

Budget Issues

This program has already had to cut 11.66 FTE from its FY86 staff level in order to comply with the cuts in appropriation authority in FY86 and FY87. The amount to be further cut from the base of this program is \$403,813. Twelve FTE were cut to achieve most of the reduction - 5.23 FTE faculty and 6.77 support FTE. Operations were cut by approximately \$37,500.

Vacancy savings was NOT applied to faculty compensation. The amount of vacancy savings foregone is \$129,000. Authorization for \$275,000 per year of equipment purchases and current level of library book acquisition is recommended.

This program has experienced revenue declines from all its funding sources. The original FY87 budgeted revenue has fallen short by approximately 11%: 3% from federal cutbacks, 8% from general fund in pay plan cuts and the 5% cut, and 2% due to income shortfalls from the eight income units of the Station. Scope of operation has been severely curtailed.

US RANGE STATION
Budget Detail Summary

	Actual FY 1986	Budgeted FY 1987	Recommendation FY 1988	FY 1989
Full Time Equivalent Employees	36.13	35.74	26.68	26.68
Personal Services	442,780.81	736,276	322,758	322,758
Operating Expenses	33,302.12	196,416	6,344	6,961
Equipment	2,450.00	1,800	3,000	3,000
Total Program Costs	\$478,532.93	\$934,492	\$332,102	\$332,719
Current Unrestricted Fund	478,532.93	934,492	332,102	332,719
Total Funding Costs	\$478,532.93	\$934,492	\$332,102	\$332,719
Current Level Services	478,532.93	934,492	332,102	332,719
Total Service Costs	\$478,532.93	\$934,492	\$332,102	\$332,719

Program Description

The USDA Livestock and Range Research Station at Miles City is a joint state-federal operation. The station is the largest beef cattle research facility in the nation. Current research includes: beef cattle breeding, reproduction and nutrition; range management and range renovation.

Budget Issues

The amount to be cut from this program is \$26,243. This program will be functioning at approximately a third of its

1987 biennium level due to shortfalls in livestock sales income. The state support of this operation consists entirely of that income - the federal support is not appropriated. The budget request from the agency was almost \$200,000 lower than current level, but the FTE remained the same. The Executive Budget reduces staff level by 8.76 FTE to correspond more closely with anticipated personal services costs. Replacement of ranch horses at \$3,000 per year is included in the budget.

**MONTANA AGRICULTURAL EXPERIMENT STATION MAIN STATION
COMPARISON OF EXECUTIVE BUDGET AND LFA CURRENT LEVEL**

	FTE FY '89	----- Biennium ----- General Fund	----- Total Funds
Executive Budget	231.91	\$12,238,382	\$16,234,988
LFA Current Level	<u>242.00</u>	<u>11,775,539</u>	<u>16,162,145</u>
Executive Over (Under) LFA	<u>(10.09)</u>	<u>\$ 462,843</u>	<u>\$ 72,843</u>

The executive budget is \$72,843 higher in total funds and \$462,843 higher in general fund than LFA current level. The executive budget has higher general fund because it replaces declining federal funds and product sales revenue with general fund. There are four primary areas of difference within the total budget.

ISSUE 1: FTE AND PERSONAL SERVICE COSTS

The executive budget has 10.09 fewer FTE and, excluding vacancy savings, the executive budget has \$478,646 less in personal service costs than LFA current level.

ISSUE 2: VACANCY SAVINGS

The executive budget took \$240,642 less vacancy savings than LFA current level due to exempting faculty compensation from the 4.0 percent vacancy savings policy.

ISSUE 3: OPERATING EXPENSE

The executive budget has \$22,119 less operating expense than LFA current level primarily due to the executive taking greater cuts in supplies and travel.

ISSUE 4: EQUIPMENT

The executive budget includes \$332,966 more for equipment and capital than LFA current level.

UNITED STATES LIVESTOCK AND RANGE RESEARCH LABORATORY
COMPARISON OF EXECUTIVE BUDGET AND LFA CURRENT LEVEL

	FTE FY '89	- - - - - Biennium - - - - - General Fund	Total Funds
Executive Budget	26.68	\$ -0-	\$664,821
LFA Current Level	<u>16.50</u>	<u>-0-</u>	<u>690,000</u>
Executive Over (Under) LFA	<u>10.18</u>	<u>\$ -0-</u>	<u>\$ (25,179)</u>

The executive budget is \$25,179 less for the biennium than LFA current level because the executive changed the agency request by taking \$27,084 for vacancy savings and adding \$1,905 for inflation.

The executive budget is 10.18 FTE higher than LFA current level. The executive budget has a 9.45 FTE decrease from the 36.13 FTE fiscal 1986 approved level. LFA current level used the fiscal 1987 average compensation rate per FTE of \$20,382. The funds available in the 1989 biennium would support 16.50 FTE at the fiscal 1987 average compensation.

MONTANA AGRICULTURAL EXPERIMENT STATION

Budget Item	Actual	Appropriated	- - Current Level - -		% Change 1987-89 Biennium
	Fiscal 1986	Fiscal 1987	Fiscal 1988	Fiscal 1989	
F.T.E.	291.70	291.70	258.50	258.50	(33.20)
Personal Service	\$6,844,711	\$7,384,546	\$6,835,061	\$6,865,861	(3.7)
Operating Expense	1,478,861	1,690,680	1,445,375	1,468,420	(8.1)
Equipment	223,102	29,797	119,553	117,875	(6.1)
Total Expenditures	\$8,546,674 =====	\$9,105,023 =====	\$8,399,989 =====	\$8,452,156 =====	(4.5) =====
Fund Sources					
General Fund	\$5,953,382	\$5,752,574	\$5,861,686	\$5,913,853	0.6
State Special	826,446	1,454,492	865,000	865,000	(24.2)
Federal Revenue	1,766,846	1,897,957	1,673,303	1,673,303	(8.7)
Total Funds	\$8,546,674 =====	\$9,105,023 =====	\$8,399,989 =====	\$8,452,156 =====	(4.5) =====

The Montana Agricultural Experiment Station was established in 1893 at the state's land-grant university in Bozeman to conduct and promote studies, scientific investigations, and experiments relating to agriculture, natural resources, and rural life and to provide information thereby acquired to the people of Montana. In addition to the campus research departments, there are seven applied research centers located around the state to serve specific agricultural areas and to be representative in soil, climate, and other variables for research tests.

The agricultural experiment station budget consists of two primary components -- the Main Station and its research centers, and the United States Livestock and Range Research Laboratory at Miles City. Personal service decreases 3.7 percent due to 33.20 FTE reductions. There have been operating expense cuts across-the-board for an 8.1 percent reduction resulting from loss of federal and state special revenue. Equipment decreases 6.1 percent primarily due to the revenue shortfall.

Fund sources for the Main Station include general fund, state special revenue derived from the sale of livestock and agricultural products, federal Hatch Act formula funds, and federal multi-state regional research funds. The range laboratory is funded solely by state special revenue derived from cattle sales. State special revenue has decreased 24.2 percent from the 1987 to the 1989 biennium and federal funds have been reduced 8.7 percent thereby causing personnel and operating reductions. General fund increases 0.6 percent due to the impact of inflation on several major expense categories.

MAIN STATION

Budget Item	Actual	Appropriated	- - Current Level - -		% Change
	Fiscal 1986	Fiscal 1987	Fiscal 1988	Fiscal 1989	1987-89 Biennium
F.T.E.	255.57	255.57	242.00	242.00	(13.57)
Personal Service	\$6,344,008	\$6,648,270	\$6,498,761	\$6,529,561	0.3
Operating Expense	1,445,559	1,494,264	1,439,675	1,462,720	(1.3)
Equipment	220,652	27,997	116,553	114,875	(6.9)
Total Expenditures	<u>\$8,010,219</u>	<u>\$8,170,531</u>	<u>\$8,054,989</u>	<u>\$8,107,156</u>	<u>(0.1)</u>
Fund Sources					
General Fund	\$5,953,382	\$5,752,574	\$5,861,686	\$5,913,853	0.6
State Special	289,991	520,000	520,000	520,000	29.4
Federal Revenue	<u>1,766,846</u>	<u>1,897,957</u>	<u>1,673,303</u>	<u>1,673,303</u>	<u>(8.7)</u>
Total Funds	<u>\$8,010,219</u>	<u>\$8,170,531</u>	<u>\$8,054,989</u>	<u>\$8,107,156</u>	<u>(0.1)</u>

The Main Station budget funds agricultural research at 13 departments in Bozeman and at seven applied research centers, specifically, central in Moccasin, western in Corvallis, northern in Havre, southern in Huntley, northwestern in Kalispell, eastern in Sidney, and western triangle in Conrad. There are seven advisory committees comprised of representatives from the area served by each center and a statewide agricultural experiment station advisory council consisting of delegates elected by the local committees. From fiscal 1986 to 1987 the number of research projects increased from 139 to 141.

Personnel are decreased by 13.57 FTE from fiscal 1986. Personal service increases 0.3 percent due to the vacancy savings during the 1987 biennium and to the increased costs of benefits. Equipment decreases 6.9 percent. State special cattle and ag-related sales revenue increases 29.4 percent in order to provide an opportunity for the agency to reverse the fiscal 1986 revenue loss and to maintain this program. Federal revenue declines 8.7 percent.

Fiscal 1986: Comparison of Actual Expenses to the Appropriation

The following table compares fiscal 1986 actual expenditures and funding to appropriations as anticipated by the 1985 legislature.

Table 1
Comparison of the Appropriation to Actual Expenses - Fiscal 1986

<u>Budget Item</u>	<u>Legislature</u>	<u>Actual</u>	<u>Difference</u>
F.T.E.	255.57	255.57	0.00
Personal Service	\$6,423,266	\$6,344,008	\$ 79,258
Operating Expense	1,633,850	1,445,559	188,291
Equipment	<u>225,000</u>	<u>220,652</u>	<u>4,348</u>
Total Expenditures	<u>\$8,282,116</u>	<u>\$8,010,219</u>	<u>\$271,897</u>
<u>Funding</u>			
General Fund	\$5,954,537	\$5,953,382	\$ 1,155
State Special	520,000	289,991	230,009
Federal Revenue	<u>1,807,579</u>	<u>1,766,846</u>	<u>40,733</u>
Total Funds	<u>\$8,282,116</u>	<u>\$8,010,219</u>	<u>\$271,897</u>

The Agricultural Experiment Station spent \$271,897 less than appropriated in fiscal 1986 with most of the reductions caused by a \$230,009 loss in state special cattle and ag-related sales revenue and a \$40,733 cut in federal revenue.

The personal service difference of \$79,258 is due to vacancy savings. Operating expenses were cut \$188,291 in all categories except utilities and hay. There were reductions of \$7,000 in computer processing, \$84,000 in supplies, \$4,000 in communications, \$24,000 in travel, \$23,000 in leased equipment, \$37,000 in repair and maintenance, and \$9,291 in miscellaneous items. There were additional cuts of \$4,348 in equipment.

Current Level Adjustments

Personal Service. The Montana Agricultural Experiment Station's general fund was increased only to reflect inflation for the level of service general fund supported in the 1987 biennium. This required reductions of 13.57 FTE. A 4 percent vacancy savings factor was applied to all except work study and university recharge funds, for a budget reduction of \$251,238 each year. If vacancy savings had not been utilized, an additional 8.90 FTE reduction would have been necessary.

Table 2 compares the average salary appropriated by the legislature and that budgeted by the agency in fiscal 1987, plus the resulting FTE change. Due to the higher average salaries 8.66 FTE were reduced.

Table 2
Comparison of Appropriated to Actual Personal Service Costs
Fiscal 1987

		Average Salary		
Category	Legislature	Agency	Difference	% Change
Faculty	\$30,555	\$31,351	\$ 796	2.6
Professional	25,643	25,516	(127)	(0.5)
Classified	17,038	17,347	309	1.8
GRA	17,780	17,965	185	1.1
Part-time	12,764	16,433	3,669	28.8
		FTE		
Faculty	92.42	90.07	(2.35)	(2.5)
Professional	22.90	23.02	0.12	0.5
Classified	103.48	101.65	(1.83)	(1.8)
GRA	17.00	16.82	(0.18)	(1.1)
Part-time	19.77	15.35	(4.42)	(22.4)
Total	<u>255.57</u>	<u>246.91</u>	<u>(8.66)</u>	

For the 1989 biennium, the agency's budgeted average salary by category is used. FTE are reduced to maintain a constant level of general fund support which reflects the legislative action in special session and the policy of not using general fund to replace decreasing federal funds and other revenue. The agency's revised fiscal 1987 operations plan was used as the base and all personnel categories were rounded to the nearest whole equivalent position. In addition, 2.0 FTE classified were cut, for a total reduction of 13.57 FTE from the fiscal 1986 level. Table 3 shows the 242 FTE, average salary, and total personal service costs for the 1989 biennium.

Table 3
Main Station FTE and Average Salaries for the 1989 Biennium

Category	FTE	Average Salary	Total Cost
Faculty	90	\$31,351	\$2,821,590
Professional	23	25,516	586,868
Classified	96	17,347	1,665,312
GRA	16	17,965	287,440
Part-time	<u>17</u>	<u>16,433</u>	<u>279,361</u>
Total FTE and Salaries	242		\$5,640,571
Benefits			862,443
Insurance			246,985
Vacancy Savings			<u>(251,238)</u>
Total Personal Costs			<u>\$6,498,761</u>

Operating Expenses. Current level operating expenses are reduced \$39,558 in seven categories and increased \$33,674 due to inflation, for a net decrease of \$5,884 as summarized in Table 4.

Table 4
Current Level Adjustments to Operating Expenses

<u>Budget Item</u>	<u>Fiscal 1986 Actual</u>	<u>(Decrease) Increase</u>	<u>FY88 Current Level</u>
Veterinary Service	\$ 12,374	\$(2,365)	\$ 10,009
Insurance	14,452	13,039	27,491
Contractual Services	4,556	(800)	3,756
Gasoline	36,195	(2,535)	33,660
Hay	30,926	(14,926)	16,000
Laboratory Supplies	75,000	(1,500)	73,500
Advertising and Bids	9,624	(5,000)	4,624
Out-of-State Travel	53,063	(2,000)	51,063
General Travel	12,002	(3,002)	9,000
Electricity	97,491	19,255	116,746
Natural Gas	74,457	1,377	75,834
Subscriptions	6,188	(330)	5,858
Interest Penalty	100	(100)	-0-
MSU Recharges/Other General	105,758	(7,000)	98,758
All Other	913,373	3	913,376
Total	<u>\$1,445,559</u>	<u>\$(5,884)</u>	<u>\$1,439,675</u>

Table 4 shows that veterinary service is decreased \$2,365 to the appropriated level. Current level insurance costs increase by \$13,039 or 90.2 percent to \$27,491, primarily because automobile insurance goes up 31 percent, and fire protection is included by the state Department of Administration for the first time. Contractual services for harvesting are reduced by \$800. Gasoline is decreased by \$2,535 due to declining prices. Hay is reduced by \$14,926 due to reduced numbers of cattle and to the end of the drought. Advertising and bid costs are \$4,624 compared to the \$4,603 spent in fiscal 1985. Out-of-state travel is reduced \$2,000 and general travel is reduced \$3,002. General travel includes \$2,000 for the advisory council, \$1,000 for the national land-grant institutions meeting, and \$6,000 for interviewing new employees, for a total of \$9,000. This compares with \$21,809 expended in fiscal 1985.

Due to inflation, electricity increases \$19,255 in fiscal 1988 and an additional \$18,212 in fiscal 1989. Likewise, inflation causes a \$1,377 increase in natural gas for fiscal 1988 and a \$2,275 increase for fiscal 1989. Subscriptions are reduced to \$5,858, which is consistent with expenditures for prior years. Interest penalty is reduced by \$100 to zero and Montana State University recharges and other general items are reduced by \$7,000 to include \$63,782 for university operating recharges, \$10,500 for water rights assessments, \$9,500 for Hatch Western District, \$5,976 for work study administration, and \$9,000 for field days and expositions.

These current level adjustments for fiscal 1988 make total operating expenses of \$1,439,675. Gasoline, electricity, and natural gas increase by \$23,045 for fiscal 1989

inflation, thereby accounting for operating expenses of \$1,462,720.

Equipment. Current level equipment averages \$115,714 each year of the biennium. This is a 6.9 percent decrease from the 1987 biennium budget and a 52 percent decrease from the 1987 biennium appropriation considered by the 1985 session. This reduction is made in order to prevent general fund replacement of other lost revenue. The items included for the biennium from the agency's \$937,000 equipment request are cited in Table 5 by department and center.

Table 5
Equipment for the 1989 Biennium

Department/Center	Item (item being replaced)	Fiscal 1988	Fiscal 1989
Central Research	Grain Drill-IHC Model #1 *	\$ 6,000	\$ -0-
Eastern Research	Half Ton Van (1970)	12,060	-0-
	Sharp SF-850 Copier (old dry 3M)	-0-	7,500
Northern Research	Harvester (very old)	13,445	-0-
Northwestern Research	Harvester & Forage Plow	-0-	12,788
	Soils Grinder	-0-	800
Southern Research	Plow Spinner IHC (parts not available)	8,000	-0-
	Swather IHC (1965/parts not available)	-0-	10,599
	Hood Fume Lab (danger to health)	-0-	4,500
	Baler (rented @ \$2,000/yr)	-0-	6,500
Veterinary Research	Sputter Coater in Electron Microscope	-0-	6,000
Entomology	IBM-XT PC, Printer, etc.	10,400	-0-
	Insect Cabinets (4)	-0-	4,040
Microbiology	Men Cages and Brooders (Salmonella R.)	4,700	-0-
	Egg Incubator	-0-	600
Agriculture Economics	Two Microcomputers and Software	9,742	-0-
	Printers for Microcomputers	-0-	1,996
Agriculture Engineering	Lathe (too old for precision)	11,000	-0-
	Weather Station Port	-0-	5,000
Animal and Range	Distilling Unit	6,500	-0-
	Chromatograph Liquid (pay \$17/sample)	-0-	45,000
Chemistry	Solvent Delivery System	8,000	-0-
Home Economics	Mettler Analytical Balance	2,990	-0-
	Barley Pearler	2,050	-0-
	Oven/Range	-0-	838
Plant Pathology	Auto for Statewide Plots (1976 Hornet)	8,652	-0-
Plant and Soil Science	NIR Kernal Quality Lab **	-0-	3,000
	Liquid Scintill Lab ***	7,300	-0-
General Agency	Library Books	5,000	5,000
	Shelves and Lab Facilities	714	714
Total		\$116,553 =====	\$114,875 =====

*Matching designated Foundation Seed funds of \$6,000.

**Matching Wheat Committee grant of \$15,000.

***Matching restricted grant of \$22,700.

Fund Sources. Both the state special revenue and the federal research funds for the Agricultural Experiment Station have declined since the last regular session. Table 6 helps to explain agency revenue.

Table 6
Main Station Fund Sources for 1987 - 1989 Biennium

<u>Fund Source</u>	<u>Fiscal 1986</u> <u>Actual</u>	<u>Fiscal 1987</u> <u>Approp.</u>	<u>Fiscal 1988</u> <u>CL</u>	<u>Fiscal 1989</u> <u>CL</u>	<u>% Change</u> <u>FY86-87 Approp.</u> <u>FY88-89 CL</u>
State Special	\$ 289,991	\$ 520,000	\$ 520,000	\$ 520,000	28.4
Federal Hatch	1,187,879	1,269,390	1,129,299	1,129,299	(8.1)
Federal Regional	578,967	628,567	544,004	544,004	(9.9)
General Fund	<u>5,953,382</u>	<u>5,752,574</u>	<u>5,861,686</u>	<u>5,913,853</u>	<u>0.6</u>
Total	<u>\$8,010,219</u>	<u>\$8,170,531</u>	<u>\$8,054,989</u>	<u>\$8,107,156</u>	<u>(0.1)</u>

The biennium comparison shows that state special revenue increases 28.4 percent when current level is \$520,000 each year of the 1989 biennium. This level is used in order to prevent additional general fund replacement even though agency reports show projected 1989 biennium state special revenue of \$325,000 per year for an anticipated 19.8 percent decrease. If the agency is unable to generate cattle and ag-related sales for this additional \$195,000 each year, further cuts will be required. Federal Hatch Act funds are down \$140,091 and regional funds decrease \$84,563 from the fiscal 1987 appropriated level for total federal funds loss of \$224,654 each year of the 1989 biennium.

U.S. RANGE LABORATORY

<u>Budget Item</u>	<u>Actual</u> <u>Fiscal</u> <u>1986</u>	<u>Appropriated</u> <u>Fiscal</u> <u>1987</u>	<u>- - Current Level - -</u> <u>Fiscal</u> <u>1988</u>	<u>Fiscal</u> <u>1989</u>	<u>% Change</u> <u>1987-89</u> <u>Biennium</u>
F.T.E.	36.13	36.13	16.50	16.50	(19.63)
Personal Service	\$500,703	\$736,276	\$336,300	\$336,300	(45.6)
Operating Expense	33,302	196,416	5,700	5,700	(95.0)
Equipment	<u>2,450</u>	<u>1,800</u>	<u>3,000</u>	<u>3,000</u>	<u>41.2</u>
Total Expenditures	<u>\$536,455</u>	<u>\$934,492</u>	<u>\$345,000</u>	<u>\$345,000</u>	<u>(53.1)</u>
Fund Sources					
State Special	<u>\$536,455</u>	<u>\$934,492</u>	<u>\$345,000</u>	<u>\$345,000</u>	<u>(53.1)</u>

The United States Livestock and Range Research Laboratory at Miles City is a cooperative program of the United States Department of Agriculture and the State of Montana designed to improve the production of beef and to increase range forage efficiency. The state portion of the laboratory is funded completely from state special revenue generated through sale of cattle from the program. The federal portion of the research is funded with restricted revenue.

Fiscal 1986: Comparison of Actual Expenses to the Appropriation

The following table compares fiscal 1986 actual expenditures and funding to appropriations as anticipated by the 1985 legislature.

Table 7
Comparison of the Appropriation to Actual Expenses - Fiscal 1986

<u>Budget Item</u>	<u>Legislature</u>	<u>Actual</u>	<u>Difference</u>
F.T.E.	36.13	36.13	0.00
Personal Service	\$736,519	\$500,703	\$235,816
Operating Expense	168,720	33,302	135,418
Equipment	1,800	2,450	(650)
Total Exp. and State Spec. Rev.	<u>\$907,039</u>	<u>\$536,455</u>	<u>\$370,584</u>

The range laboratory had \$370,584 less revenue than anticipated and, therefore, began cutting back the hours of classified ranch employees for a \$235,816 personal service cost reduction. Operating expenses were cut in all areas for a savings of \$135,418. The two geldings which are purchased every year cost \$650 more than appropriated.

Current Level Adjustments

The budget is included in current level as requested by the agency. Because of a decline in the cattle market and available cattle in the program, state special revenue declines 53.1 percent and total expenses are adjusted accordingly.

Personal service decreases 45.6 percent to \$336,300 per year. A 19.63 FTE reduction has been made to reflect the decrease in personal service dollars. Personal service costs are for 16.50 FTE each year of the biennium at an average compensation rate of \$20,382.

Operating expenses are cut 95 percent from the 1987 to the 1989 biennium, as shown on the program table. There is \$5,700 for gasoline, supplies, telephone, and travel. There is provision for the purchase of two replacement geldings at \$1,500 each for an equipment total of \$3,000 each year. The range laboratory has about 20 geldings for use in management of the 55,000 acre research area. In order to train them to herd cattle during the prime ages of six to fourteen, the range laboratory places a high priority on this annual purchase which, according to terms of the cooperative federal agreement, must be made by the range laboratory.

Agency Summary
Budget Detail Summary

	Actual FY 1986	Budgeted FY 1987	Recommendation	
			FY 1988	FY 1989
Full Time Equivalent Employees	135.80	135.30	116.19	116.19
Personal Services	3,450,869.12	3,532,038	3,223,172	3,223,172
Operating Expenses	545,755.82	689,170	482,699	484,439
Equipment	19,495.48	14,881	15,000	15,000
Debt Service	722.40	0	0	0
Total Agency Costs	\$4,016,842.82	\$4,236,089	\$3,720,871	\$3,722,611
Current Unrestricted Fund	4,016,842.82	4,236,089	3,720,871	3,722,611
Total Funding Costs	\$4,016,842.82	\$4,236,089	\$3,720,871	\$3,722,611
Current Level Services	4,016,842.82	4,236,089	3,720,871	3,722,611
Total Service Costs	\$4,016,842.82	\$4,236,089	\$3,720,871	\$3,722,611

Agency Description

The Cooperative Extension Service was created in 1914. The role of the Cooperative Extension Service is educational; the service disseminates and encourages practical use of knowledge gained primarily from research and experimentation performed at Montana State University. The objective of the Extension Service is to conduct a program of education relating to efficient agricultural production, marketing of agricultural products, human resource development, and farm and home safety. The Service also provides special nutrition programs for low-income people and pro-

motes a development program for Montana communities incorporating economic, natural, and human resources.

Policy Issues

Plans for consolidating all or parts of the Cooperative Extension Service and the Agricultural Experiment Station were not finalized at the time of the preparation of the Executive Budget. Therefore, budget reductions were applied totalling \$189,304.

Staff level was reduced by 5.72 FTE and operations were cut by approximately \$64,000 to achieve the total cut. An annual equipment budget of \$15,000 is recommended.

Agency Summary Budget Detail Summary	Actual FY 1986	Budgeted FY 1987	Recommendation FY 1988 FY 1989	
Full Time Equivalent Employees	19.21	16.54	18.21	18.21
Personal Services	515,808.87	495,825	511,084	511,084
Operating Expenses	133,472.78	132,817	131,569	133,390
Equipment	19,062.40	16,667	13,233	13,233
Capital Outlay	3,468.00	0	0	0
Total Agency Costs	\$671,812.05	\$645,309	\$655,886	\$657,707
Current Unrestricted Fund	671,812.05	645,309	655,886	657,707
Total Funding Costs	\$671,812.05	\$645,309	\$655,886	\$657,707
Current Level Services	671,812.05	645,309	655,886	657,707
Total Service Costs	\$671,812.05	\$645,309	\$655,886	\$657,707

Agency Description

The Forestry and Conservation Experiment Station's purposes include the study of relationships between forests and other dimensions of the environment, the discovery of ways to improve the products of forest lands and the completion and publication of reports about forestry research. Research is carried on at Lubrecht Experimental Forest and at other

locations in Montana in cooperation with private, state and federal agencies.

Budget Issues

The amount to be cut from the base of this program is \$36,877. The reduction was achieved by cutting 1.00 FTE graduate teaching assistant and \$20,000 of operational expenses. Approximately \$13,000 per year is recommended for equipment acquisition.

AGENCY: MONTANA COOPERATIVE EXTENSION SERVICE

		SUBCOMMITTEE ACTION				
BUDGET ITEM	FY 1986 Actual*	Executive Current Level	Fiscal 1988	Difference	Executive Current Level	Fiscal 1989
FTE	135.30	116.19	121.02	-4.83	116.19	121.02
Personal Services	\$3,484,983	\$3,223,172	\$3,355,392	(\$132,220)	\$3,223,172	\$3,355,392
Operating Expenses	\$545,757	\$482,699	\$498,984	(\$16,285)	\$484,439	\$500,456
Equipment	\$20,217	\$15,000	\$12,829	\$2,171	\$15,000	\$12,829
TOTAL EXPENSES	\$4,050,957	\$3,720,871	\$3,867,205	(\$146,334)	\$3,722,611	\$3,868,677
FUNDING						
General Fund	\$2,237,166	\$1,891,603	\$2,037,937	(\$146,334)	\$1,893,343	\$2,039,409
Federal Smith-Lever	\$1,813,791	\$1,829,268	\$1,829,268	\$0	\$1,829,268	\$1,829,268
TOTAL FUNDING	\$4,050,957	\$3,720,871	\$3,867,205	(\$146,334)	\$3,722,611	\$3,868,677

* LFA Actual used. Executive shows FY 86 total of \$4,016,843 or \$34,114 less for the base year.

ISSUES	Add to (Subtract From)		COMMITTEE ACTION	
	Fiscal 1988	Fiscal 1989	Fiscal 1988	Fiscal 1989
1. Fiscal 1986 Base for Personal Services (Executive starts with base of \$3,450,869 or \$34,114 less)	n/a	n/a		
2. Number of FTE and Compensation (Executive 4.83 FTE less)	(\$132,220)	(\$132,220)		
3. Supplies and Materials (Executive \$15,285 less)	(\$15,285)	(\$15,285)		
4. Communications (Executive \$6,817 more)	\$6,817	\$6,817		
5. Travel (Executive \$8,225 less)	(\$8,225)	(\$8,225)		
6. Rent (Executive more)	\$610	\$881		
7. Other expenses (Executive less)	(\$202)	(\$205)		
8. Equipment (Executive \$2,171 more)	\$2,171	\$2,171		

Agency reports as of 1/21/87 show employer costs for federal employees on agency staff will increase in FY 88 and 89 by \$400,000 to a maximum \$668,326 if all eligible employees convert to the new Federal Employees Retirement System (FERS) options. This will cause a decrease in services due to the federally mandated cost increases. There will be no increase in federal funds to pay for the increased federal costs.

LEGISLATIVE ACTION

AGENCY: AGRICULTURAL EXPERIMENT STATION

PROGRAM: U.S. RANGE LABORATORY

BUDGET ITEM	FY 1986 Actual	Executive Current Level	Fiscal 1988 Current Level	Difference	Executive Current Level	Fiscal 1989 Current Level	Difference	FY 86-88 % Change
FTE	36.13	26.68	16.50	10.18	26.68	16.50	10.18	-54.3%
Personal Services	\$500,702	\$322,758	\$336,300	(\$13,542)	\$322,758	\$336,300	(\$13,542)	-32.8%
Operating Expenses	\$33,303	\$6,344	\$5,700	\$644	\$6,961	\$5,700	\$1,261	-82.9%
Equipment	\$2,450	\$3,000	\$3,000	\$0	\$3,000	\$3,000	\$0	22.4%
TOTAL EXPENSES	\$536,455	\$332,102	\$345,000	(\$12,898)	\$332,719	\$345,000	(\$12,281)	-35.7%
FUNDING								
State Special	\$536,455	\$332,102	\$345,000	(\$12,898)	\$332,719	\$345,000	(\$12,281)	-35.7%
TOTAL FUNDING	\$536,455	\$332,102	\$345,000	(\$12,898)	\$332,719	\$345,000	(\$12,281)	-35.7%

Add to (Subtract From)
LFA Current Level

ISSUES	Fiscal 1988	Fiscal 1989	Fiscal 1988	Fiscal 1989
1. Number of FTE (LFA current level based on average salary for FY 86)	\$0	\$0		
2. Vacancy Savings (Executive took 4%; LFA took -0- and included Personal Services as requested by the agency, due to loss of funds.)	(\$13,542)	(\$13,542)		
3. Operating Inflation (Executive added inflation to agency request; LFA presented operating expenses as requested)	\$644	\$1,261		

1/22/87

MONTANA AGRICULTURAL EXPERIMENT STATION

1989 BIENNIUM BUDGET REQUEST

I. BACKGROUND

- A. Agriculture is Montana's largest industry with 1985 gross receipts of \$1.4 billion accounting for 28.3 percent of the state's total receipts.
- B. The Montana Agricultural Experiment Station (MAES) is the public research and development arm of Montana agriculture. It is responsible for technology development to improve the economic conditions of Montana's agriculture and increase competitiveness in the marketplace.
- C. The MAES serves the state through the MSU campus and eight research centers around the state (see Figure 1, page 3).
- D. The state is currently investing less than 2% of the general fund tax dollars in MAES activities.
- E. The MAES is currently operating with a budget 12.1% below FY 1987 appropriated levels (see Table 1, page 4).
- F. Montana's economic base is improved by \$30 to \$50 annually for each dollar invested in MAES research.

II. PROGRAM EMPHASIS

- A. Program direction is provided by the MAES Advisory Council and other agricultural groups.
- B. Emphasis has increased in natural resource conservation, protection against production hazards, expanded demand through new products and processes, and improved marketing efficiency (see Figure 2, page 5).

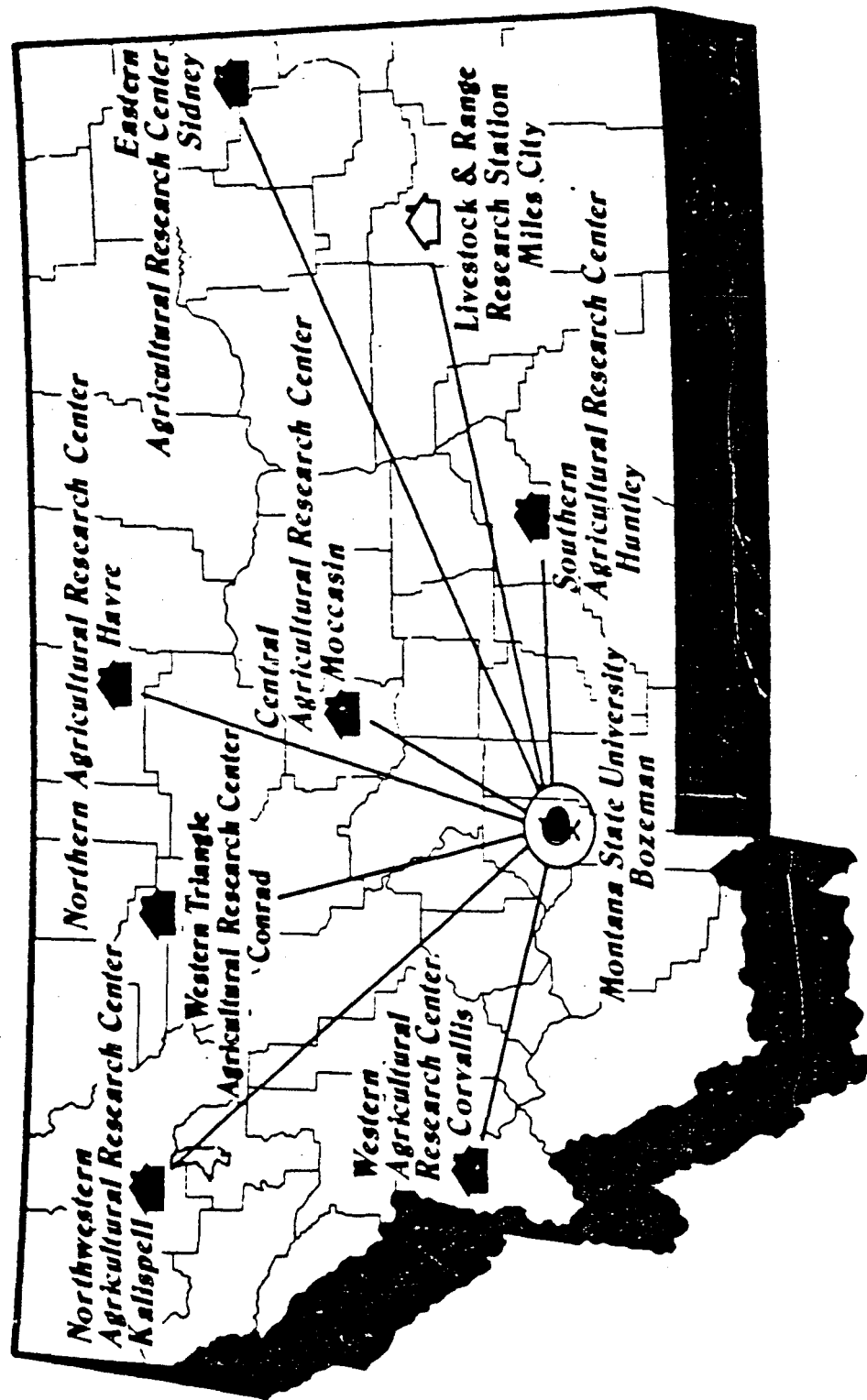
III. 1989 BIENNIUM BUDGET REQUEST

- A. The current funded personal services, operations, and capital equipment budgets are inadequate to support an active, dynamic program base.
- B. Proposed budgets by the MAES, Governor and LFA are summarized in Table 2, page 6.
- C. Main budget issues are: Vacancy savings, retirement costs, capital equipment, Earmarked Revenue estimates, and General Fund level.
- D. Budget modifications. Add \$347,500 per year to increase the value of agricultural products through nutrition and plant biotechnology. This modification request adds a spring wheat breeding and biotechnology program (\$160,000 per year) and expands animal and human nutrition with biotechnology (\$187,500 per year). Summaries are given in Table 3, page 7, and Table 4, page 8.

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Figure 1.

Montana Agricultural Experiment Station System



Main Station
 Agricultural Research Center
 USDA Cooperating Station

Table 1.

MONTANA AGRICULTURAL EXPERIMENT STATION (MAES)

MAIN STATION*

FISCAL YEAR 1987

BUDGET:

HB 500/375 AUTHORIZATION	\$8,693,189
FUNDED BUDGET	<u>7,643,241</u>
FUNDING SHORTFALL	<u>(\$1,049,948)</u>

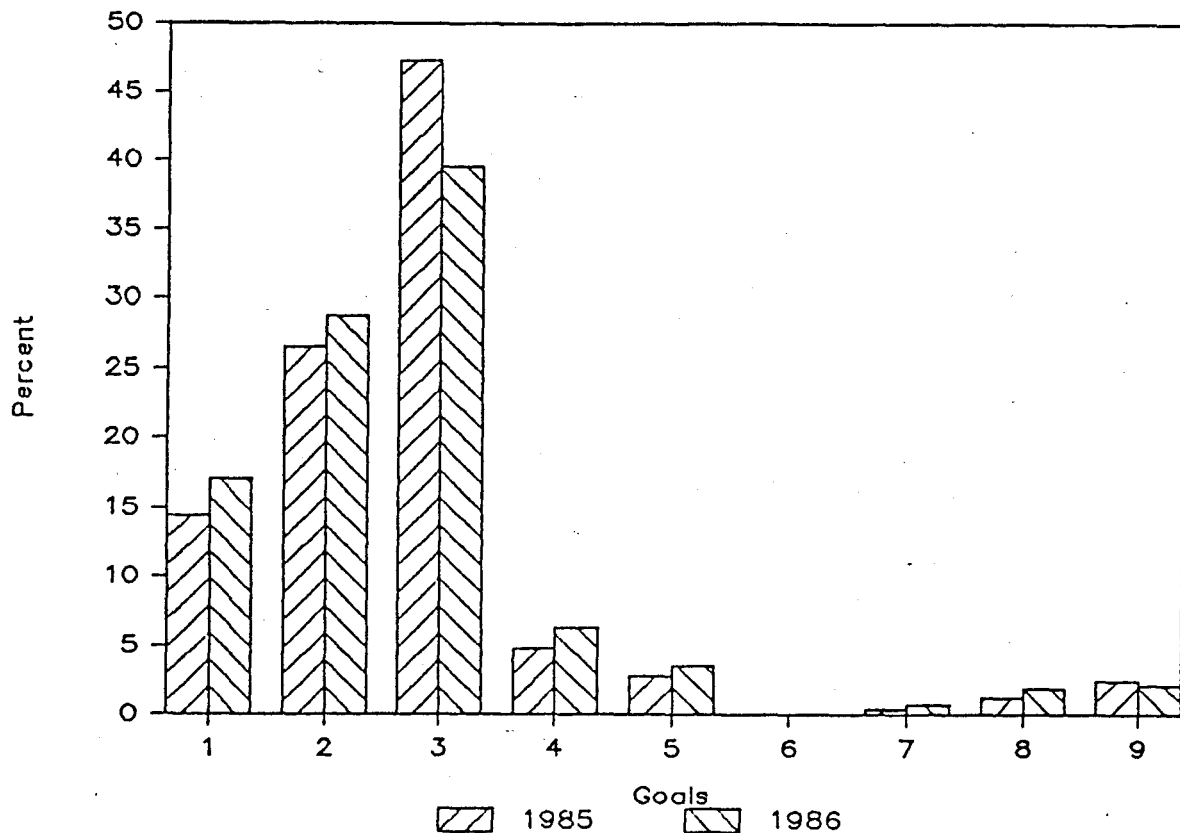
SOURCE OF FUNDS:

	HB 500/375	AVAILABLE FUNDS	FUNDING SHORTFALL	% DECLINE
GENERAL FUND	\$6,275,232	\$5,637,523	(\$ 637,709)	-10.2%
earmarked REVENUE	520,000	330,000	(190,000)	-36.5%
FEDERAL FUNDS	<u>1,897,957</u>	<u>1,675,718</u>	<u>(222,239)</u>	<u>-11.7%</u>
TOTAL BUDGET	<u>\$8,693,189</u>	<u>\$7,643,241</u>	<u>(\$1,049,948)</u>	<u>-12.1%</u>

*Does not include USDA Livestock & Range Research Laboratory

Figure 2.

MAES EXPENDITURES BY GOALS
(Without Grants and Contracts and LARRL)



Goal 1 -- Insure a stable and productive agriculture for the future through wise management of natural resources.

Goal 2 -- Protect forests, crops and livestock from insects, diseases and other hazards.

Goal 3 -- Produce an adequate supply of farm and forest products at decreasing real production costs.

Goal 4 -- Expand the demand for farm products by developing new and improved products and processes (value added).

Goal 5 -- Improve efficiency in the marketing system.

Goal 6 -- Foreign market development.

Goal 7 -- Protect consumer health and improve nutrition and well-being of the American people.

Goal 8 -- Assist rural Americans to improve their level of living.

Goal 9 -- Promote community improvement including development of beauty, recreation, environment, economic opportunity and public service.

Table 2.

**MONTANA AGRICULTURAL EXPERIMENT STATION (MAES)
MAIN STATION***

COMPARISON OF PROPOSED BUDGETS FOR 1989 BIENNIUM

	<u>MAES BUDGET REQUEST</u>	<u>GOVERNOR'S BUDGET</u>	<u>LFA BUDGET</u>
FTE	242.08	231.91	242.00
PERSONAL SERVICES	\$13,708,152**	\$12,790,318	\$13,028,322
OPERATIONS	2,917,208	2,880,276	2,902,395
CAPITAL	<u>952,806</u>	<u>564,394</u>	<u>231,428</u>
TOTAL BUDGET	<u>\$17,578,166</u>	<u>\$16,234,988</u>	<u>\$16,162,145</u>
SOURCE OF FUNDS:			
GENERAL FUND	\$13,581,560	\$12,238,382	\$11,775,539
EARMARKED REVENUE	650,000	650,000	1,040,000
FEDERAL FUNDS	<u>3,346,606</u>	<u>3,346,606</u>	<u>3,346,606</u>
TOTAL BUDGET	<u>\$17,578,166</u>	<u>\$16,234,988</u>	<u>\$16,162,145</u>

* Does not include USDA Livestock & Range Research Laboratory

** Vacancy savings not applied to MAES REQUEST

MONTANA AGRICULTURAL EXPERIMENT STATION (MAES)

RETIREMENT COSTS

Faculty retirement costs in FY 87 will be approximately \$163,722, which is more than twice that experienced in any previous budget year. Retirement costs for FY 88 and FY 89 are \$250,796 and \$87,181, respectively. The cost breakdown is as follows:

	<u>FY 88</u>	<u>FY 89</u>
Sick Leave	\$ 59,187	\$ 20,575
Annual Leave	75,324	26,184
8th Quarter Leave & Retirement Option	98,570	34,265
Benefits Cost	<u>17,714</u>	<u>6,158</u>
Total Costs	<u>\$250,796</u>	<u>\$ 87,181</u>

Vacancy savings, General Fund cuts and the decline in the other revenues have taken away our ability to fund retirement costs from salary savings. If the Experiment Station is forced to pay retirement costs from the operations budget, further deterioration will take place in the research work funds.

Retirement costs are not included in our Personal Services budget request, nor are they included in the Governor's and LFA's budget proposals.

MONTANA AGRICULTURAL EXPERIMENT STATION (MAES)

USDA FT. KEOGH LIVESTOCK & RANGE RESEARCH LABORATORY

The Montana Agricultural Experiment Station (MAES) and the USDA-Agricultural Research Service (ARS) continue the long standing cooperative research program under ARS direction at Miles City. This research has been particularly beneficial to the Montana livestock and range industry. The MAES portion of the budget is funded entirely from earmarked revenue.

Significant adjustments have been made in the operations over the past two years. This has been brought about by changes in program and funding support provided by ARS and earmarked revenue generated from the sales of livestock owned by MAES.

Livestock numbers have been reduced because of economic conditions. A dramatic decline in revenue has resulted from fewer numbers combined with a weak cattle market and a decline in demand for Line 1 breeding stock.

Through a Research Support Agreement, ARS issues task orders which allows them to contract with states to provide the necessary support level to accomplish the research requirements. Hence, they are providing the funds to pay for the salaries and benefits of part of our classified personnel and the majority of operational expenses.

	<u>FTE</u>	<u>FY 88</u>	<u>FY 89</u>	<u>TOTAL</u>
PERSONAL SERVICES:				
Professional	5.00	\$137,715	\$137,715	\$275,430
Classified	11.70	239,539	239,539	479,078
RESEARCH SUPPORT AGREEMENT:				
Classified	17.10	353,448	353,448	706,896
Hourly	2.84	46,727	46,727	93,454
ARS Contracts		<u>(400,175)</u>	<u>(400,175)</u>	<u>(800,350)</u>
TOTAL PERSONAL SERVICES	36.64	\$377,254	\$377,254	\$754,508
OPERATIONS		5,700	5,700	11,400
CAPITAL		<u>3,000</u>	<u>3,000</u>	<u>6,000</u>
TOTAL BUDGET		\$385,954	\$385,954	\$771,908
FUNDING:				
Earmarked Revenue		<u>\$385,954</u>	<u>\$385,954</u>	<u>\$771,908</u>
TOTAL BUDGET		<u>\$385,954</u>	<u>\$385,954</u>	<u>\$771,908</u>

Table 3.

PROGRAM MODIFICATION
MONTANA AGRICULTURAL EXPERIMENT STATION
ANIMAL AND HUMAN NUTRITION

Montana produced agricultural products increase in value through animal or human use. The present research program finds ways to make livestock and crops more desirable in animal and human diets. This modification request will accelerate nutrition research using biotechnology to add competitive value to Montana's agricultural products.

PROPOSED BUDGET

PERSONAL SERVICES:	FTE	FY 88	FY 89
Scientist (including benefits)	1	\$44,000	\$44,000
Technicians (including benefits)	2	50,000	50,000
Graduate Student	<u>1</u>	<u>18,000</u>	<u>18,000</u>
TOTAL PERSONAL SERVICES	4	\$112,000	\$112,000
OPERATIONS		65,500	65,500
CAPITAL EQUIPMENT		<u>10,000</u>	<u>10,000</u>
TOTAL BUDGET		<u>\$187,500</u>	<u>\$187,500</u>

Table 4.

PROGRAM MODIFICATION
MONTANA AGRICULTURAL EXPERIMENT STATION
SPRING WHEAT BREEDING PROGRAM

During the period 1976-1985, Montana produced an annual average spring wheat crop of 55 million bushels with a value of \$186 million.

Until 1984, the spring wheat breeding program in Montana was carried out by the Agricultural Research Service (ARS) of the United States Department of Agriculture (USDA). The USDA has reoriented this research program toward more basic genetic issues and discontinued variety development. Thus Montana currently does not have a spring wheat breeding program to produce new varieties.

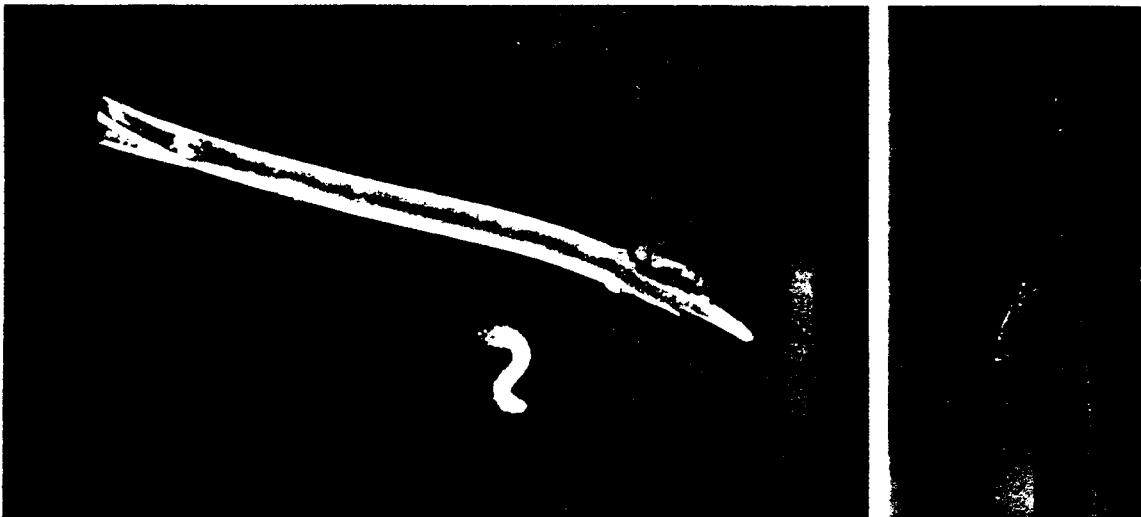
The proposed program will develop new varieties with special emphasis on more desirable market properties and insect and disease biotechnology to develop basic information on spring wheat characteristics with economic impacts.

PROPOSED BUDGET

PERSONAL SERVICES:	FTE	FY 88	FY89
Scientist (including benefits)	1	\$44,000	\$44,000
Technicians (including benefits)	2	50,000	50,000
Graduate Students	<u>1</u>	<u>18,000</u>	<u>18,000</u>
TOTAL PERSONAL SERVICES	4	\$112,000	\$112,000
OPERATIONS		38,000	38,000
CAPITAL EQUIPMENT		<u>10,000</u>	<u>10,000</u>
TOTAL BUDGET		<u>\$160,000</u>	<u>\$160,000</u>

Montana

AgResearch



Planting date and tillage effects on wheat stem sawfly. . .see lead story.

Winter 1987

Montana Agricultural Experiment Station

Montana State University

Volume 4, Issue 1

Winter 1987

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Montana AgResearch is a publication designed to inform Montana's agricultural decision makers and innovators of details of current research at the Montana Agricultural Experiment Station. It is published by MAES and is available free to Montana residents upon request. Contents of this magazine become public property upon publication. Written material may be reprinted if no endorsement of a commercial product, service or company is stated or implied. Please credit the magazine and Montana State University. To simplify reading, trade names of products, services or equipment are sometimes used. No endorsement of such names or firms is intended, nor is criticism implied of those not mentioned. In an effort to make research information more readable, some supporting data has been eliminated. Please write to the author if you wish additional information.

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Art Director: Peg Dirckx

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Influence of Planting Date and Spring Tillage on the Wheat Stem Sawfly

If producers choose a hollow-stemmed variety in a sawfly area, they should consider delaying planting date. No-till methods increase sawfly survival, though tillage alone does not control sawfly.

by Michael J. Weiss, Wendell L. Morrill and L.L. Reitz*

Introduction

The wheat stem sawfly, *Cephus cinctus* Norton, is a native species that was first reported damaging spring wheat in 1896 (1). Most damage is limited to western North Dakota, northern Montana, southern Alberta and Saskatchewan. Montana counties historically having severe sawfly infestations are illustrated in Figure 1.

Adults begin to emerge in early June, and emergence extends into late June. Females may reproduce, with or without mating, and insert eggs into wheat stems soon after emergence. Each female will deposit only one egg per stem, though other females also may deposit an egg in that stem. Only one larva survives per stem. The larva mines the inside of the stem. As the plant matures, the larva moves downward and cuts a V-shaped notch on the inside of the stem. Immediately below the notch, the larva plugs the remaining stub with excrement and plant material. This weakens the plant, and it may lodge prior to harvest. The insect overwinters as a full grown larva within the stub and transforms to the pupal stage in May.

The sawfly causes economic losses in two ways: by causing the plant to lodge thereby decreasing harvest, and because larval tunneling also can reduce kernel numbers (2,3), test weight and protein content (4).

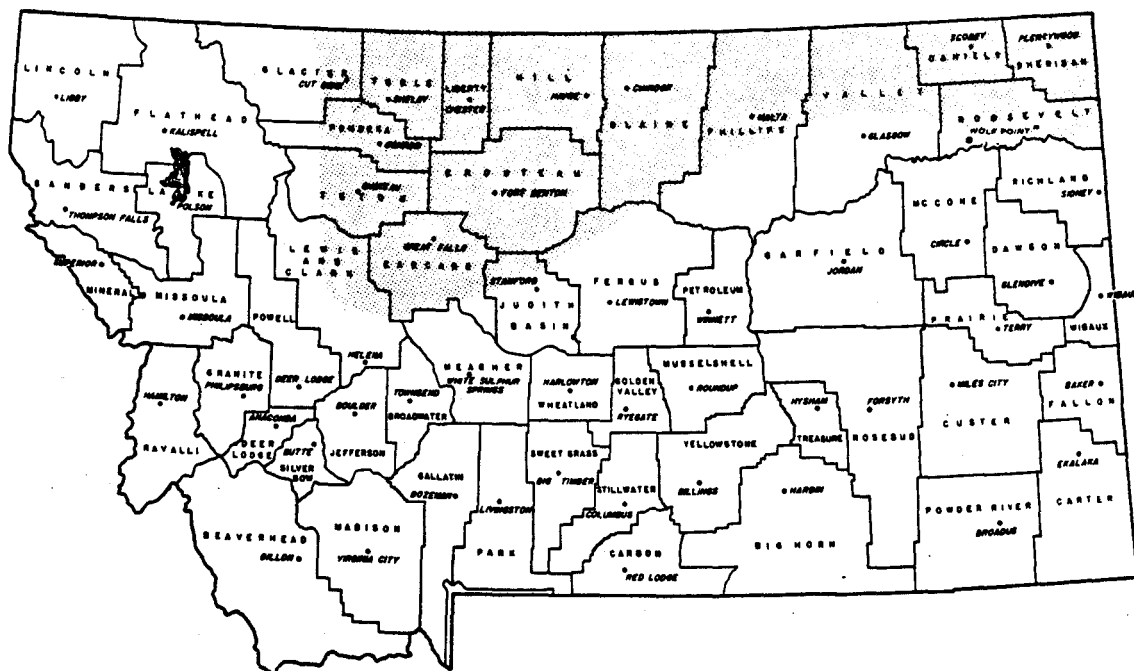
Methods used trying to control wheat stem sawfly include altering tillage practices (3,5), using trap crops (6), swathing (7), changing planting date (2,8,9), and using resistant varieties (10,11). Planting solid stem varieties is perhaps the most widely used and successful way to prevent losses due to sawfly. However, resistance due to solid stems can be reduced by environmental factors (12,13,14). The amount of light the elongating stem receives is the major factor determining stem solidness (14). Solid stem varieties also have lower yield potential, reduction in test weight, protein content, and milling and baking qualities.



Mike Weiss

*Weiss was formerly research entomologist at the Eastern Agricultural Research Center, Sidney, Mont. and is now an assistant professor of entomology, Department of Entomology, North Dakota State University, Fargo, N.D. 58105. Morrill is an associate professor, Montana Agricultural Experiment Station, Bozeman, Mont. 59717, and Reitz is a research technician, USDA-ARS, Northern Great Plains Soil and Water Research Center, Sidney, Mont.

FIGURE 1
Sawfly area in Montana



Although others have investigated the influence of planting date on wheat stem sawfly biology and plant damage, the most recent study was conducted over 20 years ago when agronomic practices were different. Previous studies indicated that delaying planting date reduced damage by the wheat stem sawfly, but the data was based on varieties that currently are not recommended (2,8,9). Therefore, our objectives were:

- to reevaluate planting date as a potential control method, and
- to investigate the influence of tillage on the survival of the wheat stem sawfly.

Methods and Materials

Studies were conducted in 1983 and 1984 at the USDA Research Laboratory/Soil Conservation Farm in Roosevelt County, 7 miles south of Froid. Soil type is a Williams sandy clay loam, pH 8.3, with an organic matter content of 2.5 percent. Ammonium nitrate (34-0-0) was broadcast 3 weeks prior to planting at a rate to give 40 lbs of actual nitrogen/acre. The sawfly susceptible variety 'Len' was used in both studies.

• **Tillage Study.** Treatments used were spring, off-set gang discing and no-till. All treatments were seeded with a hoe drill at 1.5 bushels per acre with 10-inch row spacing. Downy brome (cheatgrass) was controlled in no-till plots with glyphosate. Diclofop and bromoxynil were applied as post-emergence treatments to control green

foxtail (pigeongrass) and various broadleaf weeds in all treatments. The plot design was a randomized block with three replications of each treatment. Prior to sawfly emergence, a 6 x 6 x 6 ft. cage was erected in each plot and sawflies were removed from the cages at weekly intervals.

• **Planting Date Study.** All plots were seeded without tillage using the same drill, seeding rate, and weed control as the tillage study plots. Each year the experiment used a randomized block design with four replications for each of four planting dates. In 1983 plots were planted on April 23, May 5 and 18, and June 3; and in 1984, April 10, May 1 and 20, and June 7. The plots were 21 x 75 ft in 1983 and 21 x 50 ft in 1984.

At the onset of adult emergence, 25 sweep net samples were taken in each plot. This continued weekly until adults were no longer collected. Larval populations were assessed by longitudinally splitting 10 main plant stems per plot at weekly intervals until plant lodging occurred. In two areas (2 rows x 8 ft.) of each plot, lodged plants were collected and the remaining plants were hand harvested. The number of standing plants was determined and a sub-sample of 50 stems was split longitudinally to determine the number of infested (tunneled) plants.

In 1983 plot yields were estimated using a machine harvester and the grain was collected as it augered into the grain hopper. In 1984 plot yield was estimated by hand harvesting two areas (1 square yard) in each plot.

Results and Discussion

• *Tillage Study.* Spring off-set gang discing reduced sawfly emergence 42 percent compared to no-till, (Table 1). There was no difference between discing and no-till on duration of emergence. The tillage results were similar to those of other studies (3,5). Reduced tillage and no-till systems may increase larva survival thus increasing the adult population and damage potential. Although tillage decreases sawfly survival, it is doubtful whether tillage alone would reduce the sawfly population enough to be a sound choice economically. Thus, tillage should be used in conjunction with other control methods.

Planting Date

• *1983 Results.* Wheat planted on the earliest date, April 23, had the highest number of females per sweep sample (Figure 2), larvae per plant (Figure 3), percentage of lodged plants, and percentage of infested plants (Table 2). Delaying planting until May 18 reduced lodging over 30 percent, though the infestation was still very high. Since the most economic loss occurs from

lodging, delaying planting until after May 18 would have reduced economic losses due to sawfly in 1983. Undoubtedly, if high winds had occurred prior to harvest the percentage of lodged plants would have increased.

Based on hand harvesting lodged plants, about 3 bushels of the 4-bushels-per-acre yield difference between the April 23 and May 5 planting dates is due to the combine's inability to pick up lodged plants. Planting after the optimum date for wheat growth resulted in decreased yield.

• *1984 Results.* Total precipitation during the 1984 growing season was 57 percent below average, and no data could be obtained from wheat planted May 20 and June 7. Drought accelerates plant senescence which kills sawfly larva (15). However, even a few females cause significant damage (16). Only 0.08 females per sweep was associated with a 40 percent infestation in 1984 (Table 2).

Reduced tillage and no-till management systems may increase wheat stem sawfly survival rate. So producers must weigh these systems' benefits against potential losses due higher wheat stem sawfly survival.

Delayed planting of hollow-stemmed spring wheat varieties in Eastern Montana will not be economical unless sawfly populations are high enough to reduce yield. In areas with severe sawfly infestations, early planting of solid-stemmed spring wheats will provide the most economical return. However, if the producer chooses a hollow-stemmed variety, delaying planting until mid-May will reduce sawfly damage. If weather delays planting until mid-May, a hollow stem variety should be used because of its higher yield potential. If a field has had a high sawfly infestation and a producer wants to use a hollow-stemmed variety, planting that field last to avoid severe sawfly damage should be considered.

TABLE 1
Wheat stem sawfly survival and emergence, 1983

Sample date	No-till		Spring disc	
	Females	Males	Females	Males
June 7	0.0	0.0	0.0	0.0
June 14	0.0	0.3	0.0	0.3
June 21	6.0	6.6	4.6	2.3
June 28	10.0	5.0	6.0	2.3
July 5	0.0	0.0	0.3	0.3
July 12	0.0	0.0	0.0	0.0
Totals	16.0	11.9	10.9	5.2
	27.9		16.1	

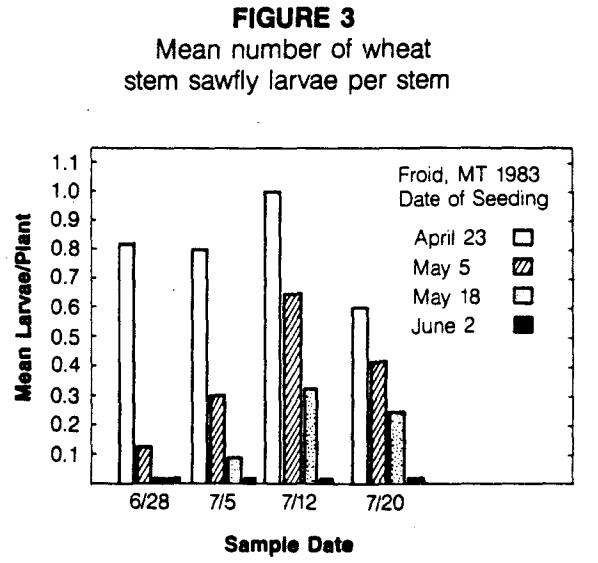
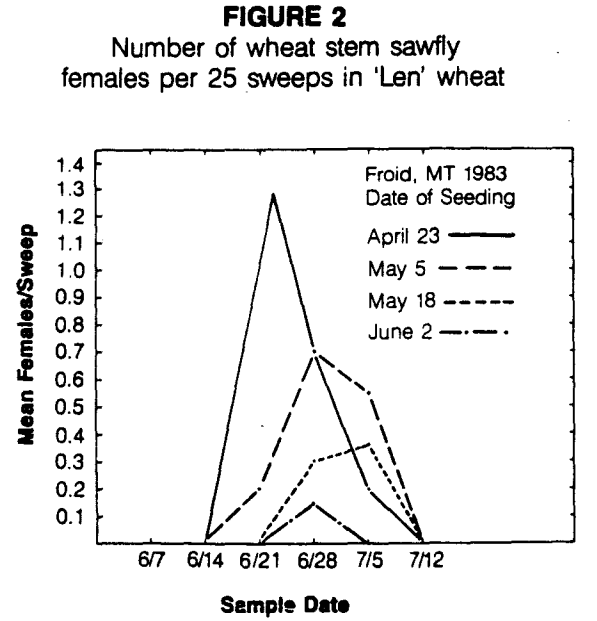


TABLE 2
Damage by the wheat stem sawfly as influenced by planting date¹

Year	Planting date	Mean percent ²		Adults		Larvae	Yield bushels/acre
		Lodged	Infested not lodged	Mean total/sweep	Total	Mean total/plant	
1983	April 23	38.3 ^a	85.5 ^a	0.46 ^a	0.81 ^a	0.75 ^a	16.5 ^b
	May 5	17.6 ^b	71.5 ^a	0.29 ^{ab}	0.61 ^{ab}	0.46 ^b	20.5 ^a
	May 18	7.3 ^c	43.0 ^b	0.15 ^{bc}	0.24 ^b	0.18 ^c	20.0 ^a
	June 3	1.0 ^c	0.0 ^c	0.01 ^c	0.02 ^c	0.03 ^c	15.8 ^b
1984	April 10	12.3 ^a	41.3 ^a	0.08 ^a	0.17 ^{ab}	0.34 ^a	4.1 ^a
	May 1	23.5 ^a	24.5 ^a	0.16 ^a	0.24 ^a	0.23 ^a	3.2 ^a
	May 20	—	—	0.02 ^a	0.03 ^b	—	—
	June 7	—	—	0.00 ^a	0.01 ^b	—	—

¹Means within columns and years followed by the same letter are not significantly different at the 5 percent level using Duncan's New Multiple Range Test.

²Analysis conducted on actual numbers. Percentages given for comparison purposes.

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Montana Pine Needles Cause Abortion in Beef Cattle

Even ingested in small quantities, ground Montana-grown ponderosa pine needles can cause abortion in beef cattle.

by Jess L. Miner, Robert A. Bellows,
Robert B. Staigmiller, Mark K. Peterson,
Robert E. Short and Lynn F. James*

Introduction

Cattle producers, animal scientists and veterinarians have documented abortions in beef cattle after they consumed needles from ponderosa pine (*Pinus ponderosa*). Estimates are that this causes \$20 million worth of lost production in cattle in the western United States. There has been no dollar estimate of losses in Montana.

Observations show that once cows begin to consume needles under natural conditions, they can become habituated. Faulkner (8) claims that cows will even leave good quality hay to eat pine needles.

Scientists were slow to focus research on the problem. Deficiency of nutrients such as vitamin A, phosphorus, or trace minerals were once thought to be the underlying cause of "pine needle abortions." It wasn't until 1952, when MacDonald induced abortion in a controlled study with cattle (13) that effort was made to determine the mechanisms of pine needle abortion.

Deem et al., as cited by Faulkner (8), demonstrated that cows aborted when fed pine needles although blood vitamin A concentration was equal to that of a control group. In this same study pelleted needles did not affect pregnancy. Thus, the heat and pressure of the pelleting process appeared to inactivate the agent.

At Montana State University, Adams et al. (1) fed ground pine needles to pregnant mice and produced cultures of the bacterium, *Listeria monocytogenes*, from needle-fed animals but not from control animals. Furthermore, they observed septicemia, fetal tissue degeneration and a pungent vaginal discharge similar to that previously described (9,4) for cattle infected with *L. monocytogenes*. This bacterium is common in many healthy specimens including mammals, fowl and fish (1). A component of the needle may be the agent which independently acts or promotes susceptibility to *L. monocytogenes*. Adams et al. (1) also found that pregnant and immature mice showed these symptoms after needle ingestion more frequently than adult males or nonpregnant adult females.

Several attempts to isolate a compound in pine needles which causes abortion have been made, with limited success. However, there are clues to the nature of it. For example, scientists at MSU found that at least two separate toxins exist in pine needles which cause resorption of fetuses in mice (3). Other MSU scientists isolated diterpene resin acids which had similar effects (11).

Cook and Kitts (6) showed that immature female mice fed an aqueous extract from pine needles had reduced uterine growth. When they fed immature females diethylstilbestrol (DES) which should stimulate uterine growth, along with the aqueous extract, uterine growth was still depressed as was body weight, though there appeared to be no effects on other organs. Similar results have been attained by other workers (2). Cook and Kitts (6) suggest that the anti-estrogenic substance may function by:

- inactivating naturally circulating estrogens;
- making the uterus non-responsive to estrogen stimulation; or
- decreasing uterine growth directly without interfering with estrogen activity.

Interpretation of the phenomenon is confused somewhat by data of Wagner and Jackson (17). These MSU scientists isolated a phytoestrogen from an aqueous extract of needles which increased uterine weight of mice when either fed or injected.

*Research assistant, Department of Animal and Range Sciences, Montana State University, Bozeman, MT 59717. Bellows, Staigmiller and Short are research physiologists, Fort Keogh Livestock and Range Research Station USDA, ARS, Miles City, MT 59306. Peterson is assistant professor, ARS, MSU. James is director, Poisonous Plant Research Laboratory, USDA-ARS, Logan, UT 84321.

A summary of nine trials, conducted by Short and James (15), stated that cows may abort within 24 hours after ingestion of pine needles or may consume needles for two to three weeks before aborting. They also found serum progesterone concentration to elevate due to pine needle ingestion before showing the normal decline with parturition, in this case with abortion.

No study of pine needle abortion in cattle tested the effect of needles grown in Montana. Therefore the primary objective of this study was to determine whether needles from ponderosa pine trees in Montana could induce abortion in beef cattle. Visual and endocrine changes in the dam associated with the abortions were also determined.

Materials and Methods

Needles were collected in southeastern Montana during January and February from ponderosa pine trees (*Pinus ponderosa*). Needles were stripped from branches and dried at 90 to 100 degrees Fahrenheit and then ground in a hammermill using a 1.25 inch screen.

In March, 10 pregnant Hereford heifers were assigned by breeding date to one of two treatment groups (5/group). The control group was fed chopped hay while the other five were fed a mixture of hay with 30 to 50 percent ground needles as fed weight. This amount was equivalent to that fed in studies in other states. The chopped hay was composed of mature grass and alfalfa.

Mean day of gestation was 244 plus or minus six for the pine needle-fed group and 257 plus or minus .6 for the control. The animals were assigned in this manner to enable assumptions that any abortions would occur well before the normal time of calving. Mean body weight was 800 pounds plus or minus 60 pounds, and condition score was 4.5 plus or minus .3 on a 1 (thinnest) to 10 (fattest) scale with 5 the desired body condition at calving (5).

Before beginning to feed the pine needle mix, both groups were fed chopped hay for three days. The control diet was fed at an intake equal to the pine needle group for three days then fed free choice. The pine needle diet was fed free choice throughout the trial. Feed offered and left over were weighed daily and intake for the two groups was calculated.

Calf birth weights and dates were recorded and adjusted to the most frequent sex (male) according to Lawlor et al. (12). Body temperatures were measured via rectal thermometer three times per week.

Vulvae and udders were visually evaluated and scored, vulvae on a scale of 1 (small, restricted) to 5 (appeared ready to calve), and udders on a scale of 1 (small, almost not visible) to 5 (enlarged and distended).

It should be noted that vulva and udder scores were assigned to both control and pine needle groups during the same time period. Thus scores were assigned on days just prior to abortion in the pine needle group and about 24 days before normal parturition in the control group.

Venous blood samples were obtained from near the base of the tail of the heifers daily at 7 a.m., allowed to coagulate, then centrifuged. Serum was frozen at 0 degrees Fahrenheit and later analyzed for estradiol-17B, an estrogen, and progesterone by radioimmunoassay (16). Differences between treatment means for gestation length, birth weight, and body temperature were tested for significance after variances were tested for homogeneity (7).

Results and Discussion

Heifers fed pine needles consumed about 4.5 pounds a day of needles. The group was fed small amounts throughout the day and consumption appeared to be limited by palatability.

After three days of feeding needles (an average of 72.3 hours after first needle feeding) three or 60 percent of the heifers aborted. A fourth aborted on the eighth day. All four calves were diagnosed as being premature. The fifth heifer produced a normal calf at 276 days of gestation. Gestation length and birth weight were decreased ($P^{.01}$; Table 1) when pine needles were fed.

Udder and vulva scores were similar between treatments and tended to increase prior to abortion. Changes noted in the pine needle-fed group did not differ from those associated with a normal parturition. No changes were noted in the control group, as expected, since scores were assigned approximately 24 days prior to parturition.

Mean rectal temperature in the group fed pine needles ranged from 100.6 to 101.9 degrees Fahrenheit and in CON from 100.5 to 102.5 degrees Fahrenheit. Overall treatment means were not different ($P^{.20}$) and fell into the normal range for healthy beef cattle (14). Thus, body temperature did not indicate bacterial infection.

Estradiol concentration (Figure 1) was elevated on the second and third day of feeding needles in the PN treatment. This rise is interesting since Wagner and Jackson (17) isolated a phytoestrogen from pine needles which competed with estradiol for specific binding to mouse uterine cytosol. Estradiol in our study, however, was elevated only on the day before and day of

TABLE 1
Comparison of gestation lengths and birth weights

Treatment	Gestation length (days)	Birth weight (lb)
Pine needle	254.2	57.8
Control	281.9	68.9

abortion which is typical of the rise in estradiol during the days immediately preceding normal parturition (10). This response is more evident when data were summarized by calving date (Figure 2) although no comparison can be made to the control group since blood sampling was terminated when the fourth pine needle-fed heifer aborted. We concluded that the change in estradiol was associated with the abortion, but cannot determine if it was a cause or result of the abortion.

Progesterone concentration in the pine needle-fed treatment group was similar to the control and tended to decline prior to abortion (Figures

3 and 4), a response typical of normal parturition (10). Three days after the start of feeding needles, progesterone in the pine needle treatment group appeared to decline, probably because three heifers aborted at that time. Short and James (15) found elevated progesterone in pregnant cows fed pine needles prior to the decline at parturition. Our results do not show this effect. However, most of our abortions occurred within three days of needle feeding while they noted the rise in progesterone over a two to three week period prior to abortion.

FIGURE 1

Mean estradiol-17B concentration summarized from start of pine needle feeding

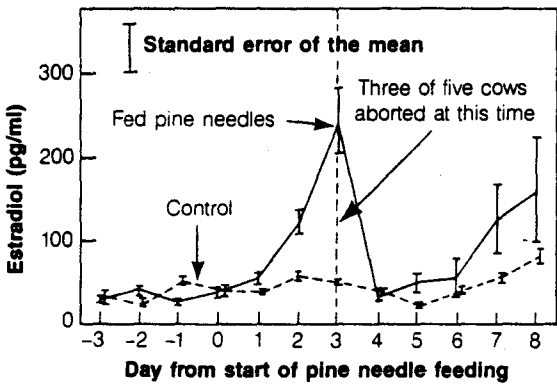


FIGURE 2

Mean estradiol-17B concentration of heifers fed pine needles summarized by day from parturition

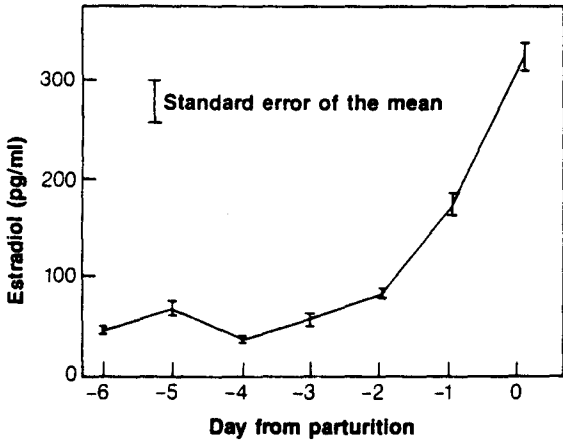


FIGURE 3

Mean progesterone concentration summarized from start of pine needle feeding

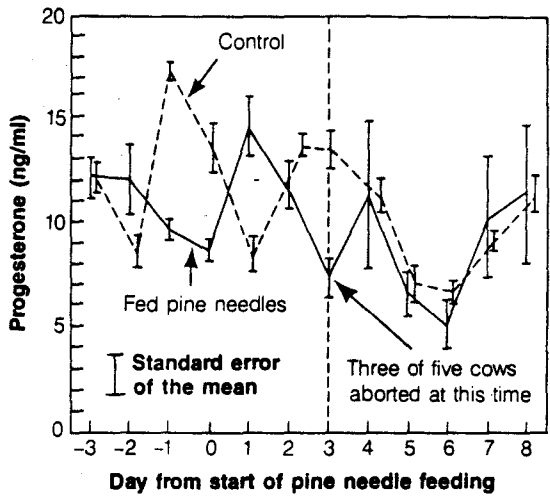
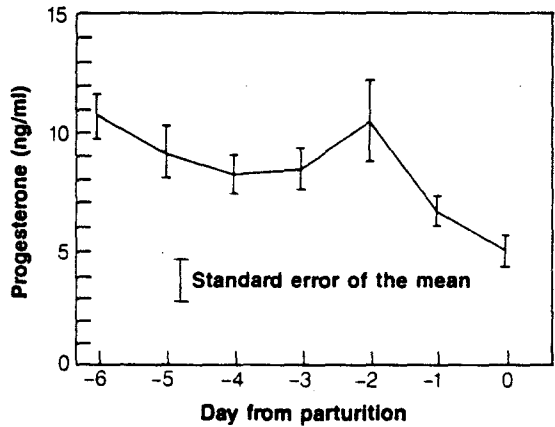


FIGURE 4

Mean progesterone concentration of heifers fed pine needles summarized by day from parturition



Figures 3 and 4: Progesterone dropped when the cows aborted, which is a typical response to normal parturition, but different than results of a study that fed pine needles from Utah.

Figures 1 and 2: Estrogen rises prior to abortion, which is a typical response to normal parturition.

Conclusion

We found that ingestion of Montana-grown ponderosa pine needles can induce abortion in beef cattle. Thus producers need to take precautions to keep cattle away from pine needles. Body temperature changes did not indicate that bacterial infection was involved. Visual appraisal of changes in udders and vulvae along with concentrations of estradiol-17B and progesterone indicated little more than would be associated with a normal parturition.

Acknowledgements

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Spring Wheat and Barley Response to Urea Fertilizer Placement and Nitrogen Rate

Protein and test weight data suggest that to produce acceptable recrop spring wheat a combination of nitrogen with the seed and broadcast may be necessary. Total N levels applied with the seed in spring wheat production probably should not exceed 20 lbs/A. Urea N fertilizer placement is not a significant factor in growing barley if the total N with the seed does not exceed 50 lb/A. Placing more than starter quantities of N with the seed did not increase barley production efficiency.

by Grant D. Jackson and A. L. Dubbs*

Fertilizer often is the highest "out-of-pocket" expense in dryland grain production. New equipment and fertilizer application techniques only add to producers' questions. Between 1976 and 1982 at the Central Agricultural Research Center near Moccasin, we applied nitrogen fertilizer as urea (46-0-0) with the seed and compared yields to when we broadcast fertilizer. Grain yield and quality response curves for spring wheat and barley as affected by N fertilizer are presented so a producer can estimate N fertilizer benefits and costs.

Methods and Materials

Spring wheat and barley plots were seeded on fallowed and recropped land to evaluate various methods of N fertilization. The soil was a Judith-Danvers clay loam. Table 1 summarizes variety, previous crop, tillage and soil test information for each year data were collected. No data were collected in 1978 due to hail damage.

Plots were seeded with a custom built planter equipped with two cones per furrow opener, 3-inch shovel openers with spreader plates and 4-inch rubber packer wheels. Seeding was always done in moist soil. Seeding rate was about 20 seeds per linear foot in a 12-inch row spacing.

While seeding, nitrogen as urea was applied at 0, 15, 30 and 45 lbs. per acre with the seed or was broadcast in front of the furrow opener at rates of 0, 15, 30, 45, 60 and 90 lbs. per acre so a portion of the fertilizer was incorporated.

We used a randomized complete block design with four replications on plots three by 20 feet. All plots received 60 lbs/A of monoammonium phosphate (6 lb N, 30 lb P) with the seed. Yield and quality data were taken from 16 feet of the center row of each plot. Means were compared using the sign statistical test.

Results and Discussion

The average of six years of grain yields are shown in Figures 1 and 2 for barley and spring wheat, respectively. Yield curves for both crops show typical responses (2) to additions of nitrogen. Grain yields of recrop were about 93 percent and 83 percent of fallow for barley and spring wheat respectively. Barley yields at all comparable N (as urea) rates were not significantly different ($P = .05$) when the urea was placed with the seed or broadcast. However, spring wheat appeared less tolerant to urea placed with the seed than was barley, as indicated by yields shown in Figure 2.

As one would predict, recropped land required about 30 lbs. more N/A for maximum grain yields than fallow. Maximum yields under fallow conditions on this soil occurred with 21 lbs. total N/A (6 lbs. N as part of the P fertilizer plus 15 lbs. with additional urea). Also, recrop yields were higher with adequate fertility than fallow yields without any additional N.

The furrow openers mix the seed and fertilizer in a 2- to 3-inch wide band along the bottom of the furrow. Using narrow seed openers which concentrate the seed and fertilizer in a narrow band and seeding into dry soil may create conditions more likely to cause seedling injury.

*Superintendent and former superintendent, Central Agricultural Research Center, Montana Agricultural Experiment Station, Moccasin, Mont. 59462

TABLE 1
Plot history

Year	Previous crop	Tillage practice	Spring wheat variety	Barley variety	Initial soil test				
					NO ₃ -N LG/A	P ppm	K ppm	O.M. %	pH
1982	Winter wheat	Tool bar ¹	Newana	Clark	16	17 ²	392	3.6	7.6
1982	Fallow	Tool bar	Newana	Clark	39	23 ²	331	3.2	7.6
1981	Barley	Burn, disc	Newana	Clark	38	54	345	3.2	7.6
1981	Fallow	Tool bar	Newana	Clark	37	72	392	3.9	7.4
1980	Winter wheat	Burn, disc	Fortuna	Hector	29	35	320	3.7	7.7
1980	Fallow	Tool bar	Fortuna	Hector	64	32	297	3.2	7.7
1979	Winter wheat	Burn, disc	Fortuna	Hector	32	41	326	3.8	7.7
1979	Fallow	Tool bar	Fortuna	Hector	64	39	278	3.0	7.8
1977	Spring wheat	Burn, disc	Fortuna	Hector	18	29	312	4.1	8.0
1977	Fallow	Tool bar	Fortuna	Hector	62	25	284	3.9	7.9
1976	Spring wheat	No-till	Norana	Hector	16	38	341	3.2	7.3
1976	Fallow	Tool bar	Fortuna	Hector	30	41	314	3.5	7.3

¹Tool bar—conventional 14-inch sweeps with harrows; sometimes a rotating rod also was used.

²Olsen method, all others Bray. Soil analysis performed by Montana State University Soil Testing Lab.

FIGURE 1

Six-year average of barley yields

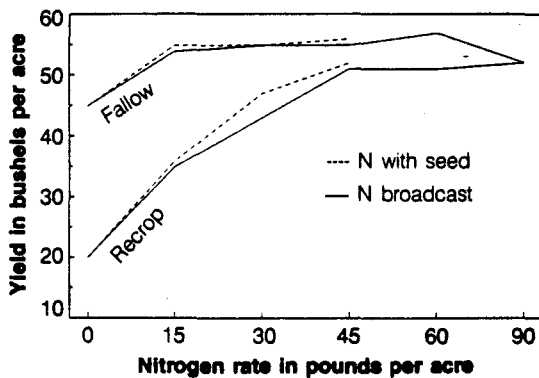


FIGURE 3

Barley protein

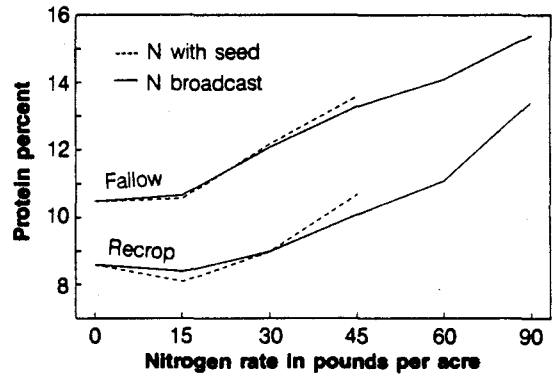


FIGURE 2

Six-year average spring wheat yields

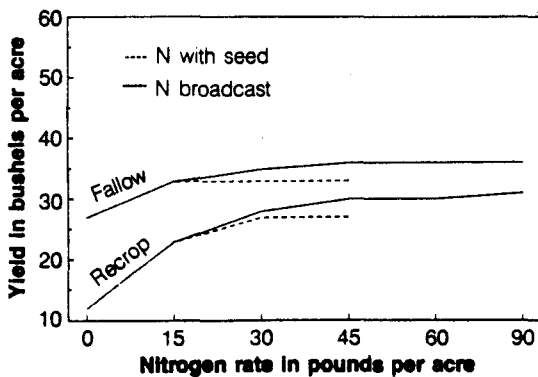
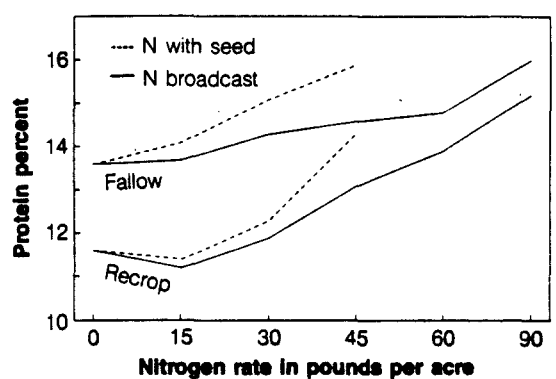


FIGURE 4

Spring wheat protein



Tiller count data supported the shape and magnitude of the yield curves. We observed no differences in barley tiller numbers between methods of fertilization. However, spring wheat tillers declined as N with the seed increased. The differences on fallow at 45 pounds of N were significant ($P = .05$). All other differences were non-significant. Differences between recrop and fallow were evident.

FIGURE 5
Barley test weight

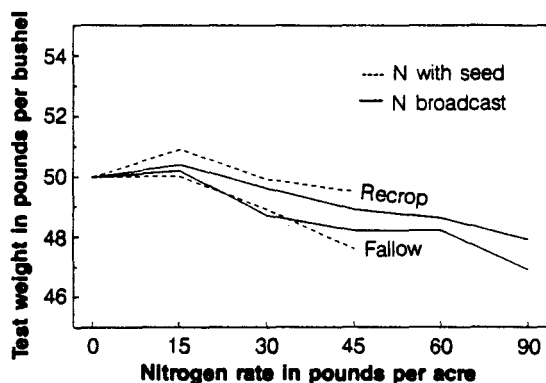


FIGURE 6
Spring wheat test weight

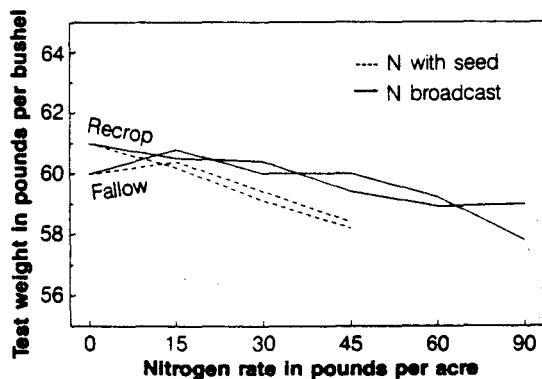
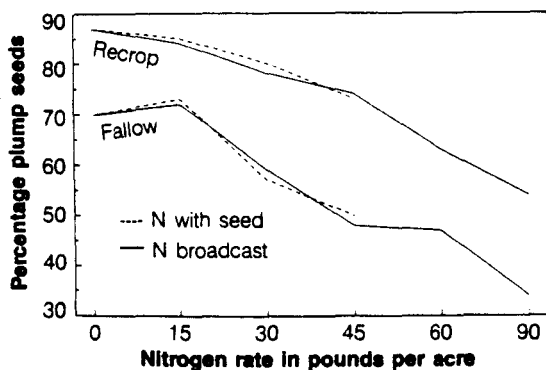


FIGURE 7
Barley plumpness



Some of the most dramatic differences between recrop and fallow, and in the case of spring wheat, between fertilization methods, occurred in the grain quality measurements. Figures 3 and 4 show protein content, while Figures 5 and 6 show test weight and Figure 7 kernel plumpness. The protein curves have the general shape of protein versus N curves shown in the literature (2): increase in N causes an increase in protein and yield increases cause decreases in protein. The protein curves also show rather large differences between recrop and fallow cropping systems.

No differences in barley test weight, protein level or seed plumpness could be attributed to fertilization method. For each N rate, protein levels after fallow are two to three percent higher than recrop while percentage of plump seeds is greater on recrop.

Protein differences between cropping systems can be explained by the lower initial soil $\text{NO}_3\text{-N}$ levels in the recrop acres and that N mineralization rates are usually less on recrop than fallow. Tillering data (available from the author) help explain the kernel plumpness differences between recrop and fallow. If we had the same number of bushels per acre with recrop and fallow, recrop's fewer heads per square foot would result in higher kernel weights. Seed size data were not collected to support this idea, however.

These data support producer comments that malting quality barley is easier to produce under recrop conditions. Though not as dramatic, the test weight response (Figure 5) was similar to the plump data.

The placement of urea had a significant effect on spring wheat quality (Figures 4 and 6). For both cropping systems, both urea placements yielded protein and test weight differences significant at the 5 percent level for only the 30 and 45N application levels. Urea with seed decreased test weight at the higher N rates while protein content increased with the same N rates when compared to the broadcast method. High grain protein contents are often associated with both high N and low test weight. The protein and test weight data suggest that to produce spring wheat with acceptable quality under recrop conditions, a combination of N with the seed and broadcast may be necessary to maintain adequate protein.

Summary

Growing spring grains with yield and marketing quality acceptable at the elevator under recrop conditions presents a real challenge to grain growers. Under most conditions, this cannot be done without fertilizer.

According to these data, urea N fertilizer placement is not a significant factor in growing barley if the total N with the seed does not exceed 50 lb/A. Placing more N than starter quantities with



Grant Jackson, left

the seed, does not appear to increase the efficiency of barley production.

Total N levels applied with the seed in spring wheat production probably should not exceed 20 lbs/A. Growers risk lower yields and test weights when N is increased beyond this point.

These data were collected using a drill equipped with 3-inch shovels and spreader plates which tend to mix the seed and fertilizer with the soil. Therefore growers using drills with disc or harrow point openers or shovels without spreader plates should not apply urea with the seed. Also producers should never apply urea with the seed regardless of the opener type when seeding into dry soil.

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Influence of Early Weaning of Range Lambs on Ewe Weight Change and Lamb Performance During a Drought

To reduce grazing pressure, early-weaned lambs were fed in drylot. They gained 31 percent more per day than those left on range with their dams. However, any economic advantage was offset by additional drylot feed costs.

by Verl M. Thomas, Eldon Ayers
and Rodney W. Kott*

Introduction

Extended drought reduces the forage available for sheep production on native range. Development of practices such as early weaning may provide sheep producers with a management tool to offset the negative impact of serious or extended drought. Removal of lambs through early weaning reduces grazing pressure on range and facilitates earlier culling of ewes. Herding is easier once the suckling lamb is weaned, so ewes travel further and make better use of forage. Early weaning eliminates the nutrient drain of milk production and may result in better ewe body condition at breeding. We studied the influence of early weaning on ewe weight change and compared lamb performance when weaned at 60 days of age and either sold or fed in drylot versus the traditional practice of weaning and selling lambs at 90 days of age.

Methods and Procedures

This experiment was conducted at the Red Bluff Research Ranch near Norris. Elevations

range from 4,600 feet to 6,200 feet and annual precipitation averages from 14 inches to 17 inches at higher elevations. However, 9 inches of precipitation was recorded in 1985, the year this trial was conducted. The upland vegetation is a typical foothill bunchgrass type with the major grasses being bluebunch wheatgrass and Idaho fescue. Rabbit brush, fringed sagewort, lupine, milk vetches, and western yarrow are commonly occurring shrubs and forbs.

Finn-Targhee lambs born in April and May were randomly divided by age of ewe and birth type into the following treatment groups:

- weaned July 10 at about 60 days of age and sold;
- weaned July 10, fed in drylot until August 12 and sold; or
- weaned conventionally August 12 and sold.

At weaning all ewes and lambs were weighed. Ewes that had lambs weaned early were returned to range July 11. Early-weaned lambs fed in drylot were vaccinated for *Clostridium perfringens* C and D (enterotoxemia), self-fed hay and hand-fed one pound of pellets for a week. For the remainder of the period, they were self-fed only the pellet. The pellets were 15.2 percent crude protein, had 2.7 percent metabolizable energy per pound, 0.9 percent calcium and 0.4 percent phosphorus, with 300 IU of vitamin A and 50 IU of vitamin D per pound. Chlorotetracycline was added at 20 grams per ton. On a dry matter basis, pellets were composed of:

- 40 percent dehydrated alfalfa meal
- 50.7 percent barley grain
- 5 percent soybean meal
- 3 percent cane molasses
- 0.6 percent limestone
- 0.4 percent dicalcium phosphate
- 0.3 percent trace mineralized salt

All data were analyzed by least squares analysis of variance using the Statistical Analysis System

*Thomas and Ayers are on the faculty of the Department of Animal and Range Sciences, Montana State University, Bozeman, Mont. 59717, and Kott is a specialist with the Montana Cooperative Extension Service, Montana State University, Bozeman, Mont. 59717.

linear model procedure (13). The lamb performance model included sex, ewe age, weaning treatment and birth type. The ewe weight change model included ewe age, birth type and weaning treatment.

Results and Discussion

Average lamb weight on July 10 was 38.8 pounds and was not significantly different between treatment groups (Table 1). Daily gain from birth to July 10 when the lambs were approximately 60 days of age was 0.38 pounds. No differences in lamb performance from birth to July 10 suggests similar milk production in the ewes and growth potential in their lambs. Correlations between milk intake and liveweight gain are approximately 0.9 (15). Other researchers have reported similar weight gains by suckling lambs grazing improved pastures during the summer (1,2,4,6,7).

Lambs fed a pelleted diet in drylot July 10 to August 12 gained 31 percent more weight (16.9 versus 12.9 pounds) and had significantly higher daily gains than lambs left on range with their dams for the same period. Lambs weaned and fed in drylot initially probably lost some weight due to weaning stress. A daily gain of 0.51 pounds is similar to several comparable studies of early-weaned drylot-fed lambs (3,7,12). Pope et al., (1982) found that lambs weaned at 60 days and fed a 70 percent grain/30 percent hay pellet gained 0.59 pounds daily.

Lambs weaned conventionally gained 0.38 pounds per day from birth to July 10 and 0.39 pounds per day from July 10 to August 12. Milk is essentially the only nutrient source in the lamb's first 3-4 weeks. The level of milk intake strongly influences the pattern of herbage intake (14). The lamb increases its solid food intake from about 3 weeks of age. Energy from the milk fraction of the diet can decline from 88 percent at 5 weeks to 34 percent at 10 weeks of age (5). The same study showed the intake of solid food on a weight basis increased proportionately. This suggests that lambs in our study were able to maintain their growth rate by increasing forage consumption.

Ewe weight was not significantly different between treatment groups (Table 2). However, ewes that returned to range after July 10 weaning gained more weight than ewes suckling lambs on range (7.8 and 7.4 pounds versus 6.2 pounds) for the 30-day period. One explanation for the small difference our lactating and dry ewes had in weight change is differences in forage consumption. Lactating ewes can consume from 50 to 100 percent more forage than dry ewes (10). Higher forage intake by lactating ewes may have offset the nutrient drain of milk.

Lambs born to 1-year-old ewes and those born to 2-year-old ewes weighed significantly less July 10 and August 12 than those born to ewes older

TABLE 1
Influence of early weaning on lamb performance

	Early-sold	Early-fed	Conventional
Number lambs	53	61	59
Weight, 7-10-85, lb	37.2	40.7	38.7
Weight gain, birth to 7-10-85, lb	29.4	32.3	30.9
Daily gain, birth to 7-10-85, lb	.36	.39	.38
Weight, 8-12-85, lb	—	56.8 ^a	51.3 ^b
Weight change, 7-10-85 to 8-12-85, lb	—	16.9 ^c	12.9 ^d
Daily gain, 7-10-85 to 8-12-85, lb	—	.51 ^c	.39 ^d

^{a,b}Means in same row with uncommon superscripts differ ($P < .05$).

^{c,d}Means in same row with uncommon superscripts differ ($P < .01$).

TABLE 2
Influence of early weaning on ewe weight change^a

	Early-sold	Early-fed	Conventional
Number of ewes	38	40	37
Weight, 7-10-85, lb	117.7	119.1	121.5
Weight, 7-10-85, lb	125.5	126.5	127.7
Weight change, lb	7.8	7.4	6.2
Daily gain, lb	.24	.21	.18

^aNo significant differences at $P < 0.10$ level.

TABLE 3
Influence of ewe age at lambing on lamb performance

	Age ewe				
	1	2	3	4	5
Weight, 7-10-85, lb	28.6 ^a	37.4 ^b	42.6 ^c	41.4 ^c	44.2 ^c
Weight gain, birth to 7-10-85, lb	21.6 ^a	30.2 ^b	34.1 ^c	33.0 ^{b,c}	35.4 ^c
Daily gain, birth to 7-10-85	.26 ^a	.36 ^b	.42 ^c	.41 ^{b,c}	.43 ^c
Weight, 8-12-85, lb	42.2 ^a	56.7 ^b	59.7 ^b	59.4 ^b	62.2 ^b
Weight change, 7-10-85 to 8-12-85	13.7	13.6	15.8	14.9	16.5
Daily gain, 7-10-85 to 8-12-85	.41	.41	.48	.45	.50

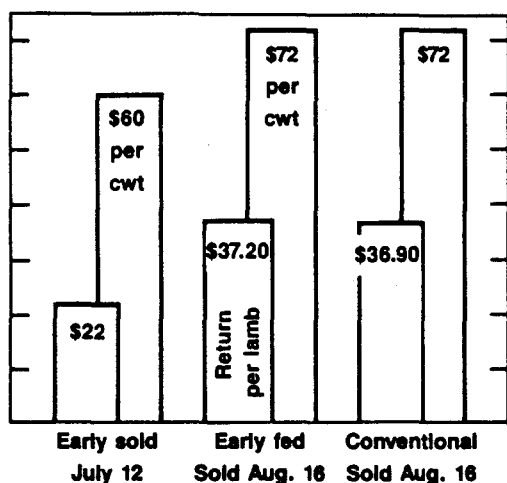
^{a,b,c}Means in same row with uncommon superscripts differ ($P < .05$).

than 1 or 2 years, respectively (Table 3). Since the correlation between milk intake and live-weight of lambs over four months of lactation is approximately 0.7 (15) the differences in lamb weights observed probably was due to milk production differences, with younger ewes not producing as much milk as older ewes.

Lambs sold in July brought \$12 per hundredweight lower than those sold in August (Figure 1). Apparently buyers discriminated against them because they were marketed at 37.2

FIGURE 1

Dollar return by weaning management system



Early-fed versus conventional weaning produced similar dollar returns. Early-sold lambs were heavily discounted by buyers.

pounds. During the last five years in Montana, average price paid for lambs in July has been \$58 per hundredweight versus \$55 per hundredweight in August. Feed cost per lamb for the 30-day drylot period was \$3.70. Dollar return for early-weaned lambs fed in drylot was \$37.20 ($\$40.90 - \$3.70 = \37.20)—similar to the return for those weaned conventionally August 10 (\$36.90). So even though lambs early-weaned and fed in drylot gained more per day than those not weaned until August 12, any economic advantage was offset by the cost of 1.75 lb of pellets daily for 30 days at a cost of \$140 per ton.

Summary

Native range tends to be more fragile than some improved pastures due to limited control over cultural practices. To reduce grazing pressure during a drought and insure future productivity, late born range lambs (April-May) were early-weaned at 60 days of age. Lambs early-weaned and fed in drylot gained 31 percent more per day than those left on range with their dams for the same time period. However, any economic advantage over those weaned later was offset by the additional drylot feed costs.

It also appears that if lambs are early-weaned at 38 to 40 lbs., Montana sheep producers should feed them to an acceptable weight for a target market to prevent buyer discrimination. Lambs

weaned conventionally gained the same from birth to July 10 (0.39 lb/day) as they did from July 10 to August 12 (0.38 lb/day). It appears that they were able to increase their nutrient intake from forage and compensate for a normal reduction in milk production. Lactating ewes grazing range gained about the same weight as dry ewes from July 10 to August 12. This may have been due to higher dry matter intake compared to dry ewes and lower milk production in late lactation.

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A Comparison of Utility Cow Prices Between Geographically Disperse Locations.

Significant differences and seasonal patterns in the differences among cull cow prices are reported from Billings and seven other locations. In the fall when most cows are sold, the differences are smaller than transportation costs between the locations. If cows are sold in the spring, some producers may benefit by transporting their cows to Billings from locations to the south and west.

by R. Clyde Greer and Stacey L. Suydam*

Introduction

Even though revenue from cull beef cow sales equals as much as 20 percent of annual total revenue for individual operators, selling cull cows is often a matter of routine. Culling decisions most often are made in the fall, when producers are busy finalizing calf marketing strategies and getting ready for winter. Consequently, evaluating cull cow marketing alternatives takes a back seat, and the cows are simply shipped as they have been in the past.

The similarity and consistency of cull cow marketing decisions among the many producers is reflected in seasonal price patterns. The index of seasonal variation in monthly average #1-2 utility cow price reported from the Billings market (1) is plotted in Figure 1. The seasonal index, which was calculated from monthly average prices from January 1968 through December 1985, rises rapidly through the winter months peaking in late winter or early spring at about eight percent above the annual average price. The index then decreases through spring and summer reaching the seasonal low in November almost 12 percent below the annual average. The possibility that

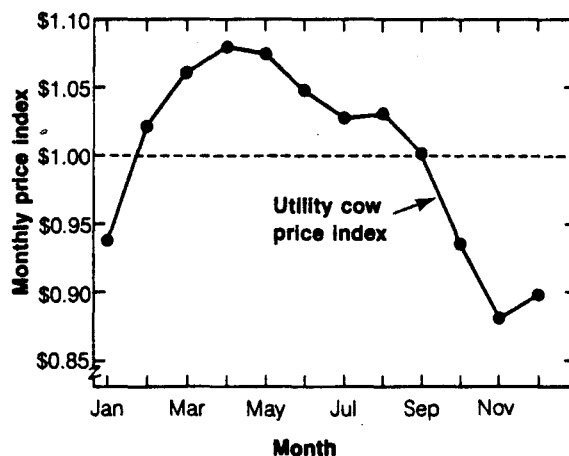
producers might exploit the seasonal variation to increase returns with alternative marketing strategies has been studied previously (2, 3, 4).

We investigated the relationship between prices in Montana and those reported from other locations. Large price differences between Montana and other markets would not be expected for several reasons. There are a large number of active participants, including speculators, and another large group of potential participants when the market is considered from a regional or national perspective. Information through various media is readily available, and, to a considerable degree, utility cows are a homogeneous product. Given these characteristics, consistent price differences between locations greater than transportation and transaction costs would be surprising. Yet, local demand and supply conditions may be such that systematic differences exist and provide an opportunity for some producers to increase returns.

Spatial Price Patterns

To investigate the geographic differences in utility cow price, monthly average prices were collected from USDA Livestock Detailed Quota-

FIGURE 1
Utility cow price index of seasonal variation
Billings, Montana — January 1968-December 1985



*Professor and graduate student, respectively, Department of Agricultural Economics and Economics, Montana State University, Bozeman, Mont. 59715.

tions reported for seven locations, in addition to Billings. The USDA market report locations were Torrington, Wyo.; eastern Washington-Oregon; Colorado (primarily auctions in northeastern Colorado); North Portland, Ore.; West Fargo, N.D.; Sioux Falls, S.D.; and Kansas City. They were selected because USDA market news data were available. There were some differences in the number of years over which data were available: the earliest records available for Colorado, Sioux Falls and Kansas City were January 1970, January 1972, and January 1973, respectively. Records were available from January 1968 for all other locations. Though there are other locations where sales by Montana producers occur more frequently, the selected locations for which data were available are geographically disperse, representative of the directions which Montana cows move, and representative of a substantial volume of cows sold. If market integration or a uniform spatial price pattern is supported by the results, then there is little reason to hypothesize a closer location with consistently large price differences.

The initial comparison among selling locations is made by calculating the index of seasonal price variation for each of the locations. A table showing these indices is available upon request. While the indices are not identical, they are clearly similar. November is consistently the seasonal low, and with the exception of the eastern Washington-Oregon auctions, April is the seasonal peak. The monthly variation is statistically significant for all locations. The inference then is that price at the locations is determined under the same, or at least similar, demand and supply variables.

From the indices, however, nothing can be inferred about absolute price differences. While similar seasonal patterns exist, there may still exist absolute price differences between the locations. Absolute differences between locations are investigated, first by a comparison of mean price differences (Table 1), and second by multiple linear regression analysis. For comparison purposes, one location, Billings, was selected as the base. This selection did not imply dominance or price leadership, but simply the perspective from which this analysis was undertaken.

The mean price differences, Table 1, are at first glance interesting. All are negative. The differences are small with the mean difference from only two of the locations being greater than \$1/cwt. While the mean price differences are statistically significant, except that between West Fargo and Billings, none is large enough to equal or exceed transportation cost between locations. The inference from these results is that there is an absolute difference in utility cow price among the locations. The remaining question is, is the difference constant throughout the year or is there a seasonal pattern in the price difference?

The existence of seasonality in price differences is investigated with multiple linear regression analysis. The regression equations express

TABLE 1

Mean difference between monthly average utility cow price at specified locations and Billings

Location	Mean Price Difference*	Standard Deviation	Number of Observations
West Fargo	-.0732	1.0588	222
Sioux Falls	-.2255	1.1489	174
Kansas City	-.2686	1.2003	156
Colorado	-1.1436	1.1731	192
Torrington	-.4749	1.0980	222
Eastern Washington-Oregon	-1.0057	1.2615	222
North Portland	-1.3114	1.3453	222

*Price difference was calculated: (location price - Billings price). Prices were dollars/cwt.

monthly average price at each of the locations as a mathematical function of the Billings monthly average price, allowing for seasonal differences by including monthly dummy terms. The monthly dummies are variables which take on a value of either 1 or 0, and thus designate the months. The estimated regression coefficients then act to change the regression or constant if the dummy variable is additive or change the regression slope if the dummy variable is multiplicative. Using regression analysis with additive monthly variables thus implies that there is a constant difference between the two prices which varies by month. A somewhat more appealing specification would portray proportionate differences. That is, if seasonal differences exist, they might well be proportionate to the price level rather than a constant dollar amount. Such differences may be expressed as multiplicative dummy variables. If there are systematic price differences, then local-regional demand and/or supply variables, or market imperfections, are important in establishing price.

For all locations, the estimated regression results were consistent. The equations were of the same form which included the additive monthly dummies and a first order autoregressive error term (the regression equation residuals were serially correlated). It is inferred from the estimated coefficients on the monthly dummy variables and associated statistics that systematic seasonal differences do exist between the price series. All of the estimated coefficients significantly different from 0 are negative, thus in each month the price difference is greater than that inferred from the estimated constant and coefficient on the Billings price; price at the respective locations is relatively lower than that at Billings.

There are regional differences in the seasonal patterns. Only for the late summer months are the estimated coefficients significantly different from 0 at the midwest locations: August and September at West Fargo and Sioux Falls; and July, August and September at Kansas City. Thus, the negative mean differences found earlier (Table 1)

TABLE 2
Expected utility cow price at various locations given utility cow price in Billings, by month

Location	Billings	Expected price (\$/cwt) at alternative location when month is:											
	Price \$/cwt	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
West Fargo	30.00	30.02	30.02	30.02	30.02	30.02	30.02	30.02	29.47	29.37	30.02	30.02	30.02
	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	34.45	34.36	35.00	35.00	35.00
	40.00	39.99	39.99	39.99	39.99	39.99	39.99	39.99	39.44	39.34	39.99	39.99	39.99
Sioux Falls	30.00	30.07	30.07	30.07	30.07	30.07	30.07	30.07	29.34	29.61	30.07	30.07	30.07
	35.00	34.89	34.89	34.89	34.89	34.89	34.89	34.89	34.16	34.43	34.89	34.89	34.89
	40.00	39.71	39.71	39.71	39.71	39.71	39.71	39.71	38.98	39.26	39.71	39.71	39.71
Kansas City	30.00	30.35	30.35	30.35	30.35	30.35	30.35	29.57	29.18	29.54	30.35	30.35	30.35
	35.00	35.08	35.08	35.08	35.08	35.08	35.08	34.30	33.91	34.27	35.08	35.08	35.08
	40.00	39.82	39.82	39.82	39.82	39.82	39.82	39.04	38.65	39.01	39.82	39.82	39.82
Colorado	30.00	29.47	29.21	28.81	28.90	28.83	28.88	28.87	28.58	28.71	29.23	29.54	30.02
	35.00	34.20	33.93	33.54	33.62	33.56	33.60	33.60	33.30	33.44	33.96	34.27	34.75
	40.00	38.93	38.66	38.26	38.35	38.28	38.33	38.32	38.03	38.16	38.68	38.99	39.48
Torrington	30.00	29.88	28.95	29.31	29.12	28.94	29.50	29.43	29.45	29.65	29.79	30.34	30.34
	35.00	34.82	33.89	34.26	34.07	33.89	34.45	34.38	34.40	34.60	34.73	35.28	35.28
	40.00	39.77	38.84	39.20	39.01	38.83	39.39	39.32	39.34	39.54	39.68	40.23	40.23
Eastern Washington- Oregon	30.00	30.33	29.10	28.77	28.66	29.02	28.96	28.52	28.28	28.63	29.16	29.85	30.33
	35.00	35.07	33.84	33.52	33.41	33.76	33.70	33.27	33.02	33.38	33.91	34.59	35.07
	40.00	39.82	38.59	38.26	38.15	38.51	38.45	38.01	37.77	38.12	38.65	39.34	39.82
North Portland	30.00	29.92	29.13	28.50	28.29	28.28	28.06	27.99	27.77	28.30	29.27	29.92	29.92
	35.00	34.76	33.97	33.34	33.13	33.11	32.90	32.83	32.60	33.14	34.10	34.76	34.76
	40.00	39.59	38.81	38.18	37.97	37.95	37.73	37.66	37.44	37.97	38.94	39.59	39.59

are to a considerable extent attributable to a lower price in only two months of the year, while at the locations south and west of Billings, a change in the price difference is evident each month of the year. Again, the largest (in absolute value) coefficients are found in the late summer; as much as \$2/cwt at eastern Washington-Oregon and North Portland. The seasonal pattern in price difference at Torrington is an exception, with the largest coefficient being on the May dummy variable. The Torrington result is, perhaps, the most surprising. Torrington is geographically the closest location to Billings and would seem to be situated in a similar climatic and economic environment, yet estimated coefficients on all but the November dummy variable were significantly different from 0.

Some insight into the price differences may be provided by a few calculated examples. Representative prices at Billings are given in column 1 of Table 2. Then the corresponding location expected prices for each month, given the example price at Billings for that month, are reported in columns 2 to 13. For example, if the price at Billings was \$40/cwt in September, then the expected price at Torrington in September was \$39.54/cwt, and at the same time the expected price at North Portland was \$37.97/cwt. There certainly are price differences across space, between locations, yet there would be few if any of the price differences that equal or exceed published transport costs between the locations.

Conclusions

It may be inferred from the results of the above analysis that the cull cow market is efficient or that the market segments are highly integrated. There are price differences between locations, but the differences are less than transport costs between locations. There is also systematic seasonal variation among prices at the various locations. Thus, while marketwide demand and supply variables dominate, there are local/regional demand/supply variables which are important to the price established at each location. There do not appear to be significant distortions or impediments to trade.

It would also appear that a producer's marketing location choice, particularly in November when most cows are sold, is simply to ship to the nearest location. While it cannot be inferred that prices are identical at the various locations, the differences are small during the fall months. This conclusion rests in part on the assumption that transport costs do not differ with direction; that is, shipping cows east costs the same per unit as shipping cows south or west.

The conclusion regarding where to market cows does differ if the cows are to be sold in the spring months. Larger price differences exist between Billings and locations to the south and west. Thus, producers located in these directions and relatively closer to one of the other marketing locations may well benefit from marketing their cows at Billings.

It might be noted in conclusion that participants, and perhaps producers as sellers more than buyers, are concerned about the effect of abrupt changes in the market. One such event was the closing of a relatively large meat processing plant in Billings in February 1985. There was concern that this closing would significantly change the market and be detrimental to producers by lowering price. Such a change was not statistically discernible in the data set used for this study. Such a finding, no evidence of a change in price due to or associated with the closing, is not particularly surprising given the other results of the analysis. It may be inferred from other results presented that the market is efficient or highly integrated. Thus, the loss of one buyer, although seemingly important at one location, was such a small change when viewed from a total market perspective that the market was not perceptibly impacted; competition among

remaining buyers was such that the spatial price pattern was not altered. The conclusion, of course, holds only for the monthly average price and does not preclude the possibility of very short-run change. However, if such change occurred and had lasted more than one or two weeks, it seems that it would have been discernible in the monthly average price.

References

1. Livestock Detailed Quotations, Consumer and Marketing Service, USDA, January 1968 to December 1985.
2. Yager, William A., and R. Clyde Greer. 1977. "Feeding and Marketing Strategies for Cull Cows." Bulletin 698, Montana Agricultural Experiment Station, Montana State University, Bozeman.
3. Yager, William A., R. Clyde Greer and Oscar R. Burt. 1980. Optimal Policies for Marketing Cull Beef Cows. AJAE. 62:456-467.
4. Greer, R. Clyde. 1981. "When to Sell Cull Cows." Big Sky Economics. Cooperative Extension Service, Montana State University, Bozeman.

On Line

Wool Fiber Diameter Determines Thickness of Yarn

Targhee rams were analyzed to find the sources of variation in wool fiber diameter. Diameter is important, say researchers M.J. McInerney, Rodney Kott and Ken Coleman, because it governs yarn thickness. They found that fibers varied from one part of a ram to another part, so skirting the fleece would not necessarily ensure uniform fiber diameter.

Summer Cattle Grazing Doesn't Damage Forage for Elk in Winter

Cattle grazing of bluebunch wheatgrass, rough fescue and Idaho fescue in the summer does not seem to damage subsequent winter forage quality for elk. Researchers William Dragt and Kris Havstad say the shared use of these three forage species during different seasons does not reduce forage quality.

A Little Alfalfa in Barley Swine Diet Won't Lower Performance

Up to 5 percent of a barley-based growing-finishing swine diet can include high-quality ground alfalfa hay without seriously reducing animal performance, say researchers Walt Newman, J.W. Pepper, P.J. Hofer and N.J. Roth. Because most research on alfalfa hay in swine feeds has been done on corn- or wheat-based diets and sow gestation diets, researchers wished to find out how alfalfa performed in a barley-based diet.

Men Lower Cholesterol Levels with Barley

Some men who ate barley reduced their cholesterol levels in a pilot study conducted by Rosemary Newman, associate professor of food science at Montana State University. Men were used in the study because they have more heart disease. Those with cholesterol levels above 175 lowered that level by about 30 points after adding barley products to their diets for 28 days. Men with cholesterol levels of 150 or lower showed no change. Members of a control group given wheat products providing an equal amount of fiber as the barley group showed no change in cholesterol levels. Newman believes the cholesterol reduction is due to beta-glucans, which are present in barley but not in wheat. She hopes to conduct a larger study to verify the results.

Some Growth, Reproductive Measurements of Hereford Bulls Are Heritable

Weight, hip height, heart girth, pelvic height, pelvic width and scrotal circumference of 427 Hereford bulls were measured to find heritabilities and genetic correlations. Scrotal circumference correlated positively with weight and heart girth, but it had a near zero or negative correlation with pelvic measurements, discovered T. Nelsen, R. Short, J. Urlick and W. Reynolds of the Fort Keogh Livestock and Range Research Station in Miles City. All the measurements except pelvic height had positive genetic correlations with preweaning average daily gain. Weights, hip heights and heart girths had positive genetic correlations with birth weight; the pelvic measurements had negative genetic correlations with birth weight, and the genetic correlations between scrotal circumference measures and birth weight were near zero.

Changing Safflower To Get a More Nutritious Animal Feed

Safflower meal used as an animal feed is low in lysine and methionine, which make these two amino acids the limiting factors for animal growth. Through selection of safflower lines having a higher content of lysine and methionine, safflower breeders Jerry Bergman and Charles Flynn at the Eastern Agricultural Research Center, and plant pathologist Dave Sands and graduate student Peter Siderius at MSU hope to develop a more nutritious animal feed.

Raw Soybeans Do Not Interfere with Reproduction of First-Litter Gilts

An experiment was conducted to see if feeding raw or processed soybeans as protein supplements in barley-based diets affected reproductive performance of first-litter gilts. Walt Newman, D. Elliott, N. Roth and T. Ferguson found that raw soybeans did not interfere with reproduction, and that extruded soybeans had no advantage over soybean meal or raw soybeans.

TESTIMONY

Joint Appropriations Subcommittee
Education

My name is Richard Thieltges. I have a grain farm in the Chester area. I am speaking today as a member of the advisory board of the Conrad Ag Experiment Station, and as a member of the State Ag Experiment Station advisory board.

I would like to speak to the budget proposed for the Experiment Station System. As you can probably guess, I am for adequate funding in this area.

As a grain farmer, what I see coming down the road scares me a little. We in this state are right on the edge of not being competitive with the rest of the world in the major industry in the state. We all know what happens to areas that cease to be competitive. There is nothing to say that we can not become another Appalachia or another rust belt area. It has happened before, and it can happen again.

There is only one way to stay competitive. We live in an information age. Information and knowledge are what keep industries competitive. The experiment station system is what keeps this state's major industry one step ahead. It is vital.

I know we need to look at cuts, but if we cut here, we are cutting the source of future growth. We need all of the experiment station units, as each has a job to do, and fits into an over all system. Each station has some special areas of emphasis, and all contribute to knowledge of different areas of the state.

Finally, I would like to speak to the budget modification requests for the spring wheat breeding and biotechnology program, and the nutrition program. The State Advisory Committee has looked at a number of things we feel we need to do to meet the challenges ahead. These are two areas where we think progress can be particularly rapid because some components of these programs are already in place. We feel it is vital to find some way to differentiate Montana products and help provide jobs in value added processing.

These are tough times and they will not get better automatically. If we do turn around it will come in large part from an agriculture that finds its niche and can be competitive there. This knowledge can only come from a healthy Ag. Experiment Station System.

6.2

MAES Research Centers

- I. Southern Agricultural Research Center - Huntley
 - A. Animal Nutrition - Feedlots
 - B. Irrigated Corn - No-till and Hybrid Trials
 - C. Alternate Crops - Irrigated and Dryland
 - D. Drought Management in Cereals
 - E. Irrigated and Dryland Forages (Statewide)
 - F. Cereals Variety Trials (Statewide)
 - G. Soil Fertility - Plant Nutrition
 - H. Weed Research
- II. Eastern Agricultural Research Center - Sidney
 - A. Safflower Breeding and Testing Program
 - B. Cereals Variety Trials (Statewide)
 - C. Sugarbeet Variety Trials
 - D. Sugarbeet Transplant Studies
 - E. Foundation Seed Production
- III. Central Agricultural Research Center - Moccasin
 - A. Conservation Tillage Research and Coordination
 - B. Dryland Legume and Forage Production
 - C. Dryland Cereals Variety Trials (Statewide)
 - D. Weed Biology and Control
 - E. Foundation Seed Production
- IV. Western Triangle Agricultural Research Center - Conrad
 - A. Conservation Tillage (Coordinated with Central)
 - B. Cereals Variety Trials (Statewide)
 - C. Fertilizer Management
 - D. Alternate Crop Testing

V. Northern Agricultural Research Center - Havre

- A. Beef Cattle Breeding and Genetics - Crossbreed Evaluation
- B. Efficient Use of Range Resources
- C. Conservation Tillage (Coordinated with Central)
- D. Cereal Variety Trials (Statewide)
- E. Soil Fertility

VI. Northwestern Agricultural Research Center - Kalispell

- A. Weed Control in Cereals and Forages
- B. Alternate Crops
- C. Forage and Pasture Management
- D. TCK Smut Control
- E. Cereal Variety Trials (Statewide)

VII. Western Agricultural Research Center - Corvallis

- A. Biological Weed Control
- B. Horticultural Crops Management
- C. Soils and Irrigation Management

JRW:sak/200
2/11/86



Montana State University
Bozeman, Montana 59717-0002

College of Agriculture
Agricultural Experiment Station

Office of the Dean
Office of the Director

January 26, 1987

TO: All MAES Advisory Committee Members

FROM: James R. Welsh, Dean and Director *JRW*

RE: Legislative Update

This is to let you know that the Educational Subcommittee meeting hearing for the Agricultural Experiment Station and the Cooperative Extension Service on February 3, 8:00 - 12:00 a.m., will now be held in the Scott Hart Auditorium located in the Department of Justice Building.

A number of you have asked about telephone numbers to contact legislators. The normal procedure is to call 444-4800 and leave a message for legislators you wish to contact. This system is used regularly for transmitting information, returning calls, etc.

The attached article from the Billings Gazette indicates several potential major reductions in the AES and CES budgets. We have not received official word from the Legislature on these items. Undoubtedly, they will receive some attention during the hearings. If all areas identified for potential reduction were actually enacted, major alterations in both programs would be necessary.

If you have any questions on this or any other items, please feel free to give me a call.

JRW:sak/212

Attachment

TO WRITE:

*SENATOR OR REP?
CAPITAL STATION
HELENA, MONT. 59620*

TO FIND TIME OF HEARINGS

1-800-237-5079

HIT LIST

Potential spending cuts listed

HELENA (AP) — Here is a list of the potential spending cuts in education and human-service programs that were identified Thursday in rosters given to joint House-Senate subcommittees working on state agency budgets.

The lists do not recommend that the programs be abolished or reduced, but only offer a picture of where money can be saved, said House Appropriations Chairman Gene Donaldson, R-Helena, who prepared the lists.

The dollar figures indicate the amount of money that could be saved in the next biennium.

EDUCATION • Eliminate 1½ positions in the office of commissioner of higher education, \$209,000.

• Move the office of commissioner to a state building, \$137,000.

• Reduce a program that helps medical, veterinary and dental students pay out-of-state tuition, \$688,900.

• End state support of the work-study program after expected loss of federal funds did not occur, \$552,900.

• Eliminate state support of community colleges, \$6.2 million.

• Close the community improvement, rural life and consumer health programs at the Agriculture Experiment Station, Bozeman, \$678,000.

• Close the 4-year-old Western Triangle Research Center, Conrad, \$200,000.

• Consolidate administration of the Cooperative Extension Service, \$632,000.

• Eliminate nine extension specialists, \$501,000.

• Cut in half state general-fund money for the Bureau of Mines, \$1.2 million.

• Cut in half state general-fund money for the Forest and Conservation Experiment Station if federal replacement funds are available, \$635,000.

• Phase out state funding for the five vo-techs, \$5.6 million.

• Reduce general-fund money for the University System by 4 percent, \$5.5 million.

• Eliminate the Fire Services Training School, \$200,000.

• Transfer audiology services from the School for Deaf and Blind to the Office of Public Instruction, \$367,000.

• Eliminate the gifted and talented program at OPI, \$272,000.

HUMAN SERVICES

• Close the Health Department's nursing bureau, \$190,000.

• Close the department's health planning bureau, \$360,000.

• Close the department's air quality bureau and allow its functions to be handled by the U.S.

Environmental Protection Agency, \$650,000.

• Close the department's water quality bureau and hand its functions to the federal government, \$373,000.

• Eliminate the Labor Department's displaced-homemaker program, \$250,000.

• Eliminate payments for victims of crime, \$817,000.

• Close the veterans' affairs division of the Department of Military Affairs, \$900,000.

• End state management of county welfare programs, \$15 million.

• Reduce benefits in the Aid to Families with Dependent Children program, \$1 million to \$3.7 million.

• Eliminate the spouse-abuse program, \$200,000.

• End state support for the Big Brothers and Sisters program, \$300,000.

• Eliminate the alcoholic and drug treatment program, \$400,000.

• Eliminate referral services for the elderly, \$250,000.

• Eliminate state's share of Medicaid reimbursement for home health care, \$1.1 million.

• Reduce optional Medicaid services for medically needy by limiting them to pregnant women under 21, \$5.5 million.

• Eliminate Medicaid dental services, \$1.3 million.

• Eliminate Medicaid clinic services, \$1.7 million.

• Eliminate sheltered employment in the vocational-rehabilitation program, \$450,000.

• Reduce funding of programs for developmentally disabled by 15 percent, \$824,000.

WESTERN TRIANGLE RESEARCH CENTER - CONRAD

Some associated statistics

The Western Triangle Research Center near Conrad serves the counties of Glacier, Toole, Pondera and Teton; plus the western half of Liberty, Chouteau, and Cascade counties. The portion of Montana's grain production served can be illustrated as follows:

1983 Grain production of Western Triangle counties *

<u>All Wheat</u>	<u>million bushels</u>	<u>Statewide rank in production</u>
Glacier	2.74	18
Toole	6.16	6
Pondera	6.55	4
<u>Teton</u>	<u>6.27</u>	5
4-county total	21.7 = 16% of all Montana's wheat	

Winter Wheat

Glacier	0.43	-
Toole	3.81	6
Pondera	4.60	5
<u>Teton</u>	<u>4.66</u>	4
13.5 = 17% of all Montana's winter wheat		

Barley

Glacier	3.96	6
Toole	2.70	10
Pondera	5.72	3
<u>Teton</u>	<u>7.22</u>	2
19.6 = 25% of all Montana's barley		

If only one-third of the production from the remaining Western Triangle counties (Liberty, Chouteau, and Cascade) are added, then 26% of the state's grain production were being served by the Research Center in 1983.

One example of the Research Center's contribution to the economy is its grain variety testing program, which led to the recent release and recommendation of Lew and Glenman wheat varieties for the Triangle area. These 2 varieties are resistant to the wheat stem sawfly, which causes 25 to 75% yield losses in susceptible wheat varieties. Sawfly is an important local problem; and a 25% loss of the 1983 wheat crop, for example, in 4 of the Western Triangle area counties would have been approximately 5.4 million bushels or approximately \$21.7 million. **

The total annual budget for the Western Triangle Research Center in FY 87 was \$107,000; a certain percentage of which was federal. In view of the sawfly example presented above, the Research Center budget should be regarded as an investment rather than a cost.

* Grain production figures taken from "Montana Agriculture Statistics" dated 1984.

** At \$4.00/bushel

7x 7
1987 LEGISLATURE

House Appropriations

Gene Donaldson (R), Chairman (Helena)
Cal Winslow (R), Co-Vice Chairman (Billings)
Bob Thoft (R), Co-Vice Chairman (Stevensville)
Francis Bardanouve (D) (Harlem)
Dorothy Bradley (D) (Bozeman)
Mary Ellen Connelly (D) (Whitefish)
Gerry Devlin (R) (Terry)
Dennis Iverson (R) (Whitlash)
Rex Manuel (D) (Fairfield)
William "Red" Menahan (D) (Anaconda)
Larry Menke (R) (Glendive)
Ron Miller (R) (Great Falls)
Dennis Nathe (R) (Redstone)
Harold Paulsen (D) (Great Falls)
Joe Quillici (D) (Butte)
Dennis Rehberg (R) (Billings)
Gary Spaeth (D) (Silesia)
Bernie Swift (R) (Hamilton)
Dean Switzer (R) (Richey)

Senate Finance and Claims

Pat Regan (D), Chairman (Billings)
Esther Bengtson (D) (Shepherd)
Paul Boylan (D) (Bozeman)
Delwyn Gage (R) (Cut Bank)
Jack Haffey (D) (Anaconda)
H. W. "Swede" Hammond (R) (Malta)
Ethel Harding (R) (Polson)
Matt Himsl (R) (Kalispell)
Judy Jacobson (D) (Butte)
Greg Jergeson (D) (Chinook)
Thomas Keating (R) (Billings)
Richard Manning (D) (Great Falls)
Ed Smith (R) (Dagmar)
Larry Stimatz (D) (Butte)
Pete Story (R) (Emigrant)
Larry Tveit (R) (Fairview)

Joint Education Subcommittee

Rep. Dennis Nathe (R), Chairman (Redstone)
Sen. Judy Jacobson (D), Vice Chairman (Butte)
Sen. H. W. "Swede" Hammond (R) (Malta)
Rep. Dennis Iverson (R) (Whitlash)
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Rep. Ray Peck (D) (Havre)

Committee Members,

As a farmer and rancher in the Central area, I have had easy access to the Central research station.

Tech is one of the few stations in the M. & H. research program that was actively sought and established by producers in the area. A definite need was shown to exist that would be filled by the other stations.

The legislature at the time was convinced enough of that need that they funded the new station at Central.

We farmers and ranchers are now in a very tight economic condition that is largely brought about by factors beyond our control.

Now is the time that more research is needed to help find a few answers to these problems so that we can make management decisions to help ourselves to become more economically competitive.

Now is not the time to begin closing a station that was formed a short 10 years ago to fill a very definite need. To save \$107,000 this year would do more harm than good to our area farmers.

The yearly reports of results of this station are a valuable tool to us. I would hate to see it taken away from us.

Sincerely
Paul S. Kowalski
Central M. & H.

This letter is to inform you
of our complete support for the continuation
of funding for the experiment station
north of Conrad. The work that is done here
is of immense importance to all farmers
in northern Montana. Agriculture is the
backbone of Montana, and this is one
program that pays for itself many times over.

David E. Tuzet
Bobby L. Tuzet
Kathleen J. Olson

15 N Idaho Conrad, MT. 59425
11 N Idaho Conrad, MT 59425
1008 Sunset Blvd. Conrad, MT 59425

RE. - Potential Spending Cuts--Hit List:

To Educational subcommittee:

From H. Wilson Hodgskiss, Choteau, farmer, rancher, former county extension agent, teacher and reseacher at Washington State U., Pullman, Wa.

I have been close to the Western Triangle Research Center since the idea was conceived and believe it would be a serious error to close the station. In my opinion it has greatly increased the income and tax revenue from the area. With much more to come from this well run unit which is very reponsive to area needs and producer requests. Closing would be a severe blow to agriculture.

A few specifics:

1. Use of Lew spring wheat to counteract saw fly, saved farmers many dollars.
2. By use of 1986 trials - showed 7.8 bushel per acre increase in barley yield over and above our present test procedure-results increased revenue and taxes.
3. Increased yields and adaptability of alternate crops to replace wheat acreage. - Triticale-winter varieties, also high producing spring varieties - Carman and Welch.
4. Many off station trials - producer cooperators.

Vo-Techs - provide excellent training for instate employment.

Alcohol and drugs should be a high priority item, it is greatly altering the lives of the younger generation and more emphasis should be placed on prevention and control. It involves us all.

Work Study - poorly administered - eliminates farm or ranch families.

Social Programs, including Workmens Com., welfare, W. I. C. etc, poorly administered and being bled to death by those not in need.

WITNESS STATEMENT

NAME J. T. HAMM BILL NO. _____
ADDRESS 2931 SPOKANE CROOK EAST DATE 7/3
WHOM DO YOU REPRESENT? Montana Legislative Council
SUPPORT _____ OPPOSE _____ AMEND _____

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

Comments:

Support Extension Funding
Have statement to make

MONTANA COOPERATIVE EXTENSION SERVICE

1989 BIENNIUM BUDGET REQUEST

I. BACKGROUND

- A. The basic mission of the Montana Cooperative Extension Service (MCES) is to disseminate and encourage the application of research-based knowledge to improve agriculture, conserve natural resources, strengthen family and community life, and develop leadership capabilities. These programs are available to adults and youth across the state.
- B. The Extension Service is a three-way partnership consisting of the USDA Extension Service; the Montana Extension Service as part of Montana State University, the state land-grant university; and Montana counties. County Extension staff serve 53 of Montana's 56 counties through 49 offices. Two additional counties contract for some services. Twenty-two counties are currently served by one agent.
- C. The state is currently investing less than one-half of one percent of its general fund tax dollars to MCES activities.
- D. The Montana Extension Service is currently operating with a budget 12.2 percent below the FY'87 appropriated level (see Table 1).
- E. Over 84 percent of the CES budget goes to personal services. The remaining 15+ percent is for operations and equipment.
- F. Three state-level programs are scheduled for termination on June 30, 1987. These are Entomology, Dairy, and Interior Design and Household Equipment. Termination notices have been given to the tenured faculty in those positions; however, these faculty are being considered for other vacancies as they occur. In addition, 3.29 state specialist positions and 5.71 classified FTE's have been dropped.

II. PROGRAM EMPHASIS

- A. The Extension program is developed from the grassroots. County Extension Services have their own advisory councils, with over 800 people serving as council members statewide. In addition, there is a statewide advisory council with 53 members. These councils provide program direction.
- B. The Extension Service provides programming in four major areas. They are Agriculture and Natural Resources, Community Development, Human Resources/Home Economics, and 4-H/Youth. Extension has only one specialist in a program, except for Farm Management and 4-H.

III. 1989 BIENNIUM BUDGET REQUEST

- A. The FY'87 budget authorized by the 1985 Legislature, the MCES Regents approved budget and the proposed budgets by the Executive and the LFA for FY'88 and FY'89 are shown in Table 2.
- B. Budget reductions have already forced the termination of programs at the state level and a reduction of personnel at the county level. Additional reductions in funding for personal services and/or operations will require further elimination of entire programs and will impair the ability to deliver remaining programs.
- C. Significant budget concerns are:
 - (1) vacancy savings on contract faculty;
 - (2) insufficient operating funds; and
 - (3) continued erosion of equipment budget.

4 High - Security Budget
- D. Change in employer costs for retirement. Information was provided in January, 1987, by ES/USDA that employer costs for retirement would increase significantly. These increased costs could amount to an additional \$668,326 per year for the Montana Extension Service (see Table 3).

TABLE 1. AUTHORIZATION AND APPROPRIATIONS FOR FY 1987
FOR MONTANA COOPERATIVE EXTENSION SERVICE

<u>SOURCE OF FUNDS</u>	<u>FISCAL 1987</u>			
	<u>'85 LEGISLATIVE AUTHORIZATION FOR '87</u>	<u>APPROPRIATIONS FOR FY'87</u>	<u>SHORTFALL</u>	<u>% DECLINE</u>
STATE GENERAL FUND	\$2,371,660	\$2,095,811	\$275,849	11.6%
FEDERAL FUNDS	<u>2,097,506</u>	<u>1,829,268</u>	<u>268,238¹</u>	<u>12.8%</u>
TOTAL	\$4,469,166	\$3,925,079	\$544,087	12.2%

¹\$94,253 due to Gramm-Rudman and \$173,985 due to overestimation by 1985 Legislature of Federal funds for FY'87.

TABLE 2. BUDGET COMPARISONS FOR 1989 BIENNIUM FOR
MONTANA COOPERATIVE EXTENSION SERVICE

	FY'87	FISCAL YEAR 1988		
	HB 500/375 AUTHORIZATION	MCES REGENTS BUDGET	EXECUTIVE BUDGET	LFA BUDGET
PERSONAL SERVICES	\$3,765,115	\$3,512,883	\$3,343,247	\$3,355,392
OPERATIONS	689,170	630,381	482,699	498,984
CAPITAL EQUIPMENT	14,881	15,000	15,000	12,829
TOTALS	\$4,469,166	\$4,158,264	\$3,840,946	\$3,867,205
FTE	135.30	121.91	116.19	121.02
SOURCE OF FUNDS:				
GENERAL FUND		\$2,328,996	\$2,011,678	\$2,037,937
FEDERAL FUNDS		1,829,268	1,829,268	1,829,268
TOTALS		\$4,158,264	\$3,840,946	\$3,867,205
	FISCAL YEAR 1989			
	MCES REGENTS BUDGET	EXECUTIVE BUDGET	LFA BUDGET	
PERSONAL SERVICES	\$3,512,883	\$3,343,247	\$3,355,392	
OPERATIONS	630,381	484,439	500,456	
CAPITAL EQUIPMENT	15,000	15,000	12,829	
TOTALS	\$4,158,264	\$3,842,686	\$3,868,677	
FTE	121.91	116.19	121.02	
SOURCE OF FUNDS:				
GENERAL FUND	\$2,328,996	\$2,013,418	\$2,039,409	
FEDERAL FUNDS	1,829,268	1,829,268	1,829,268	
TOTALS	\$4,158,264	\$3,842,686	\$3,868,677	

TABLE 3. ANALYSIS OF INCREASED EMPLOYER COSTS FOR CES
FY'88 AND BEYOND

Current Retirement Costs for Regular Civil Service Retirement System (CSRS) Staff (7.0% CSRS + 1.45% Medicare)	8.45%
Retirement Costs for New Federal Employees Retirement Systems (FERS) Staff (14.80% CSRS + 5.00% Thrift Savings Plan (TSP) + 7.15% Social Security)	26.95%
Increase in Employer Costs Percentage (26.95% - 8.45%)	18.50%
Dollar Increase in Employer Costs	<u>\$668,326</u>

NOTE: It is possible that not all employees will convert, although the incentive is for them to do so.



Montana Association of Nurserymen

P.O. BOX 1871 • BOZEMAN, MONTANA 59771-1871
(406) 586-6042

FEBRUARY 3, 1987

TO: THE EDUCATION COMMITTEE OF THE APPROPRIATIONS COMMITTEE

RE: THE COOPERATIVE EXTENSION SERVICE BUDGET WITH REGARD TO
THE EXTENSION HORTICULTURE SPECIALIST POSITION

THE MONTANA ASSOCIATION OF NURSERYMEN IS A PROFESSIONAL ORGANIZATION OF 124 MEMBERS REPRESENTING THE ORNAMENTAL HORTICULTURE INDUSTRY IN OUR STATE. OUR ASSOCIATION IS DEEPLY CONCERNED WITH THE CONTINUING QUALITY AND QUANTITY OF HORTICULTURAL SERVICES AVAILABLE THROUGH THE COOPERATIVE EXTENSION SERVICE, FEELING THAT IT IS EXTREMELY IMPORTANT TO EDUCATE THE CITIZENS OF OUR STATE ON HORTICULTURAL MATTERS. FOR THIS TO HAPPEN INFORMATION MUST BE PRESENTED TO THE COUNTY AGENTS FROM THE EXTENSION HORTICULTURAL SPECIALIST.

THE EXTENSION HORTICULTURAL SPECIALIST MUST PERFORM TRIALS ON NEW PLANT MATERIALS, DECIDE WHICH ONES ARE SUITABLE FOR OUR CLIMATIC AND SOIL CONDITIONS, PROVIDE INFORMATION ON PLANT DISEASES AND INSECTS, AND METHODOLOGY OF GROWING AND LANDSCAPING.

THIS DATA MUST THEN BE DISSEMINATED TO THE PUBLIC BY BOTH THE HORTICULTURAL SPECIALIST AND THE COUNTY AGENTS. WITHOUT THIS SERVICE, MONTANA WILL SOON SLIP INTO A STATE OF HORTICULTURAL DOOM AND GLOOM.

WHO CARES ABOUT EXTENSION SERVICE HORTICULTURE; WHO DOES IT SERVE?

1. HOMEOWNERS - WANT TO KNOW THAT THE PLANTS THEY BUY ARE HARDY AND OTHERWISE SUITED TO THEIR ENVIRONMENT. MANY THOUSANDS OF PLANTS ARE SHIPPED INTO MONTANA ANNUALLY BY CHAIN STORES WITHOUT HORTICULTURAL EXPERTISE. MANY OF THESE PLANTS ARE NOT SUITED TO OUR CLIMATE. THE PUBLIC DOES NOT KNOW THIS. THOUSANDS OF DOLLARS OF PLANT MATERIAL PURCHASES ARE WASTED EACH YEAR DUE TO THIS LACK OF KNOWLEDGE ON THE PART OF THE BUYING PUBLIC. FOOD AND FRUIT CROPS ARE VERY IMPORTANT TO HOME OWNERS. THEY NEED TO KNOW THE PRINCIPLES OF VEGETABLE GARDENING, WHICH VARIETIES TO USE FOR OUR SHORT GROWING SEASON, AND HOW TO CONTROL DISEASE AND INSECT DAMAGE WHICH COULD DESTROY THEIR CROPS. DISEASE AND INSECT CONTROL IS EQUALLY IMPORTANT WITH REGARD TO THEIR TREES AND SHRUBS. INTERIOR PLANT CARE IS ANOTHER AREA OF CONCERN TO THE HOME OWNER.

2. GROWERS - DEPEND ON THE EXTENSION HORTICULTURAL SPECIALIST FOR INFORMATION ON PLANT HARDINESS, SOILS, DISEASES, INSECTS, AND MORE EFFICIENT METHODS OF OPERATION.

(CONTINUED)

3. NURSERY OPERATORS - WHETHER LARGE OR SMALL, WILL SAVE THEMSELVES AND THEIR CUSTOMERS MANY MISTAKES BY ACQUIRING A VARIETY OF VALUABLE PLANT INFORMATION FROM THE EXTENSION SERVICE. A POLL TAKEN AT THE ANNUAL CONVENTION OF THE MONTANA ASSOCIATION OF NURSERYMEN, IN JANUARY, REVEALED THAT THE MAJORITY OF OUR MEMBERS FIND THESE SERVICES ESSENTIAL TO BETTER SERVE THE BUYING PUBLIC.

4. COUNTY AGENTS - WITHOUT THE BACKUP FROM AN EXTENSION HORTICULTURE SPECIALIST, FEEL "LEFT HANGING", I.E. THEY ARE OFTEN AT A LOSS REGARDING INFORMATION FOR THEIR COUNTIES' CITIZENS. THEY TURN TO LOCAL NURSERYMEN, IF ONE IS AVAILABLE, FOR SUPPORT, BUT THESE INDIVIDUALS DO NOT ALWAYS HAVE THE ANSWER. THIS LACK OF LEADERSHIP WILL MAKE FOR A VERY WEAK SYSTEM.

IT IS OBVIOUS TO US, AS PROFESSIONAL NURSERYMEN, THAT THE STATE OF MONTANA HAS MUCH TO GAIN FROM A STRONG HORTICULTURE PROGRAM WITH THE COOPERATIVE EXTENSION SERVICE.

IT IS OUR HOPE THAT, WITH THIS BRIEF PRESENTATION OF INFORMATION, YOU WILL SEE THE IMPORTANCE OF MAINTAINING A STRONG SECTOR FOR HORTICULTURE IN THE COOPERATIVE EXTENSION SERVICE OF MONTANA.

SINCERELY,



JEREMIAH P. CASHMAN, PRESIDENT
MONTANA ASSOCIATION OF NURSERYMEN
CASHMAN NURSERY, P. O. Box 242
BOZEMAN, MT 59715
PHONE: 587-3406 OR 587-0017

COMPARING MONTANA'S EXTENSION HORTICULTURE POSITION TO OUR NEIGHBORING STATES:

WYOMING: POPULATION 380,000
ONE (1) FULL-TIME EXTENSION HORTICULTURE SPECIALIST

NORTH DAKOTA: POPULATION 652,000
TWO (2) FULL-TIME EXTENSION HORTICULTURE SPECIALISTS
FIVE (5) POTATO SPECIALISTS
ALL SEVEN (7) POSITIONS ARE FUNDED AT THE PHD LEVEL

IDAHO: POPULATION 1,000,000
ONE AND ONE-HALF (1½) FULL-TIME EXTENSION HORTICULTURE SPECIALISTS
\$54,000 SALARIES AND BENEFITS
\$24,000 RESEARCH AND EXTENSION CENTER SUPPORT

MONTANA: POPULATION 786,000
NO EXTENSION HORTICULTURE SPECIALIST - POSITION "FROZEN" DUE TO BUDGET CUTBACKS
\$45,000 SALARY AND BENEFITS - SOME OPERATING EXPENSES

Stillwater Weed Control



Box 344
Absarokee, Montana 59001
ph. 406/328-4165

County Extension Office
Columbus, Montana 59019
ph. 406/322-5334

To: Joint Subcommittee on Education

Re: Research and Extension

I am Wayne Pearson from Absarokee, Montana. I am a rancher, Stillwater County Weed Control Supervisor and representative of the Montana Weed Control Association on the State Weed Advisory Council. My purpose in being here is to present our views as weed control people as to the need for research specialists and Extension Agents in Montana. Weeds have become a major concern to the people of our state as shown by the actions of the past legislature. This concern has spread beyond the farmer and rancher to sportsman and environmental groups and others.

We have some good programs in place but in most cases the key people are Extension Agents working with weed districts. Many weed control programs in the past have been costly and not too effective. We must have the research people and weed specialists to provide new and better technology. This new technology is coming in the areas of biological weed control with insects, diseases or plant pathogens and better livestock management programs. There are new, safer and better chemical control methods coming out of research. Better cultural and mechanical practices are being developed. This is all necessary if we are to stop the rapid spread of noxious weeds in Montana. This technology is of little value until it reaches the people actually doing the work. This is where the local county agent is needed to organize programs and get these practices implemented.

Another big issue of the day is public health, hazardous waste and ground water contamination. Without good pesticide training and licensing programs we will soon be in more trouble than we are now. The Extension Service has been given this responsibility and is doing a good job. Due to the rapid changes in technology I feel this program needs to be expanded to provide some training available in every county each year rather than once in five years as now mandated by the last legislature.

I am sure our weed control program in Montana would really suffer without the research specialist and Extension Agents to pull it all together.
Thank you for your time and attention.

Mr. Chairman and Committee Members:

My name is Dewey Schmitt. In 1977 my wife and I took over the operation of my mother and father's farm at Three Forks. Our operation is a diversified farm which consists of cattle, hogs, hay and grain and is small compared to many others in Montana. However, the farm is our sole source of income.

After taking over the farm it wasn't very long that it became apparent that the only way to survive would be to increase productivity. The gross income is now about three times what it was when I started. The average yield of our dryland barley has gone from 28 to 53 bushels per acre. The wheat average has increased from 24 to 30 bushels per acre. Hay production has more than doubled and we run almost twice as many cows. We also winter our own calves and buy more to help market some of the hay. The first year after taking over the farm we started a new enterprise raising pigs. The hog enterprise has steadily increased and provides cash flow for the operation. It now contributes a major share to our gross income.

All of the improvements, changes in management and technology have come about slowly but steadily and without increasing our debt load. It has been our philosophy to start small and increase slowly without borrowing very much money. In times like these that has sure paid off!

Throughout the years I have been involved in farming I have taken advantage of the services of the Montana Agriculture Research Station and the Cooperative Extension Service on numerous occasions. Some of the things that have allowed me to increase productivity are better varieties of barley, wheat, alfalfa and grasses. Most of the varieties I am using now were developed by the Ag Experiment Station in conjunction with the Cooperative Extension Service. The research that has been done in the areas of fertilization and weed control have also done their share to increase production in terms of pounds or bushels per acre and improve the quality of the crops.

The hog operation has received its share of time and attention because of the cash flow it provides for the farm operation and our special interest in raising them. Therefore, I have become more involved with the Swine Department at MSU and the Swine Extension Specialist. Also, I served on the Board of Directors of the Montana Pork Producers Council for the past seven years holding the offices of Vice President and President.

Throughout the years, the MSU Swine Department, the Cooperative Extension Service and MPPC have worked rather closely together to improve the swine industry in Montana. MSU, the Swine Specialist and MPPC operate a boar test station at MSU to improve genetic quality of the breeding herds in Montana. Adoption of these genetic practices by other producers results in greater earnings for the industry. The Extension Swine Specialist has worked with producers to form a producer marketing organization. These efforts have stabilized hog prices in Montana and actually increased the prices by \$1-2 cwt which amounts to income of over \$1 million for producers annually. This organization now markets about 40 per cent of Montana hogs. The Swine Specialist serves on the MPPC Board of Directors offering the organization access to the resources available through the extension service. Because of the improvements in the

hog marketing situation, and efforts aimed at efficient and profitable production, improving pork quality, education on pork in human diets, and support for MPPC and National Pork Producers Council programs the Swine Specialist was awarded the "Friend of the Industry" award in 1986 by MPPC.

These are some examples of the services that have been helpful in in my operation. Without this expertise and information, I would be thousands of dollars behind where I am today. Everyone would agree that agriculture is this states largest industry and when agriculture is suffering economically the whole state suffers. Therefore, the economy of Montana will not improve until the general agriculture economy turns around. It only seems reasonable to me that the programs directly associated with agriculture within MSU and the Extension Service be funded in such a manner as to continue with the necessary research and education to improve the farm economy. We are all well aware of the budget problems and MSU and Extention Service have been willing to make their share of cuts and do what is necessary to improve efficiency. However, to eliminate programs that are vital to the farm economy or to fund them at such a low rate that they would be ineffective would have a devastating effect on the total industry and in the end would not do anything to solve the state budget problems.

Mr. Chairman and Committee Members, I am not naive enough to believe that further budget cuts won't be made and some should be but I would ask that you carefully consider the long range effects on the major Montana industries and where we will be two years from now when this Legislature meets again.

Respectfully submitted,



Dewey Schmitt
4245 Old Yellowstone Trail
Three Forks, MT 59752

2 - 3 - 87

WHAT DOES COUNTY EXTENSION AGENT FOR THE COOPERATIVE EXTENSION SERVICE DO FOR PEOPLE?

He or she does what the people of the county want by their telephone calls, office visits, or letters requests. County Extension agents are backed up for information by the subject matter specialists located with Agricultural Research staff at M.S.U. It takes an Extension team approach to serve the needs of agriculture, homemakers, and youth. An effective County Extension Agent must be concerned for the people of his county and should be knowledgeable to handle 80% of the informational needs of the clientele.

TETON COUNTY? Teton County is mid sized land area devoted to dryland, irrigated and animal agriculture. Has 6494 people in the county plus two sore heads. Teton County ranks 4th in agriculture income as compared to all Montana counties during the 1985 crop year according to Montana Agricultural statistics. Other production ranking is as follows: All wheat 12th, winter wheat 5th, spring wheat 20, durum wheat 6, barley 1, oats 41, all hay 14, livestock products 10, crops 6, cattle 22, sheep 25, hogs 6.

Teton County has a strong agri-business trade for not only in county but for surrounding counties as well. Teton County probably ranks first for swine slaughter, and malting barley merchandising.

WINTERING CALVES

At the request of a livestock producer who was keeping his calves to winter on excess feed, wanted the County Extension Agent to balance a least cost ration at a rate gain with smallest investment cost per animal. A least cost ration of alfalfa hay, native hay and rolled barley was computed for a two pound per day per head. The ration at 2 lb. daily gain per head was \$.063 cheaper than a 1.2 lb. per day gain. This reduces the invested cost in cattle 18.86 per head for 300 lb. gain.

RETURN ON PAYMENT IN KIND CERTIFICATES

Cooperated with Extension Marketing Specialist Professor Henry Bahn in publishing an informative insert on use of Payment in Kind certificates to 1900 individuals receiving certificates from the Teton County ASCS Office. Received many calls on use of certificates from both in county and out of state. Our operator in Teton County was able to earn 150% on malting barley sales by using certificates to buy back barley under CC loan. It is estimated that the producer netted an additional \$15,000 of income.

COST STUDY FOR FEEDING WEANER PIGS TO MARKET WEIGHT

At the request of the Farmers Home Administration Agricultural Loan Officer and two county producers, the Teton County Extension Agent completed a cost study of feeding moisture damage barley to weaner pigs to market weight. Breakeven costs were computed to be \$39.00 cwt. covering all costs including labor and paying \$3.10 cwt. for barley. At present level and outlook swine prices are at the \$47.00 to \$53.00 cwt. level. The additional dollars can be used to increase the value of barley to the operator or return on investment to producer. As a direct result of the study we had six producers start new enterprises of feeding swine this past fall.

WESTERN TRIANGLE AGRICULTURAL EAXPERIMENT STATION

Cooperation between the Western Triangle Experiment Station and the Teton Cooperative Extension Service is essential for the maximum benefit of the agricultural producer. Nine off station test plots for looking at alternate crops, small grain plots, no till seeding, forages and fertilizer are located on the producers places that are centers for the problem or production as a result of cooperation between the Agricultural Superintendent and County Extension Agent.

Results of these trials have shown: The best sawfly resistant spring wheat for the Triangle area. The best irrigated spring wheat variety. The best winter wheat for the Triangle area hasn't been released for production yet MT8003. We would be growing Redwin instead. Spring triticales have been included in the small grain nurseries. Winter triticales from Canada have been included in the winter wheat nurseries. Identified phosphorus restriction problem to plant growth in small grains, and legumes in the Triangle area counties.

Identified safflower varieties that can be grown in the Dutton and Power area for oil production. All results from Experimental plots are published in the Prairie Star tabloid each year.

GRASSHOPPERS AND GREEN BUG APHID CRISES

Grasshoppers did considerable damage to about 6,000 to 10,000 acres of small grains, legumes and pastures. Considerable amount of spraying was required by producers to protect some crops.

Green bug aphid infested Teton and Pondera counties for the first time ever in late seeded spring wheat and barley. The insects damaged an estimated 9,000 acres where yields were seriously reduced and another 5,000 acres was chemically treated that protected the grain. The Cooperative Extension Agents were responsible for making recommendations and identifying the problems in the field.

FARM PROGRAM ANALYSIS - Worked with producers in the county using computer programs to look at different alternatives to increase net profits. In all instances it has shown producers what they did not anticipate. It has showed producers what they did not anticipate. It has showed producers how to increase their net returns by as much as \$34,000 per year. The question producers ask is how much do I owe you for this. The answer given is - This is part of what the Extension Service does as part of its job.

WEED SEEDLING SCHOOL - 141 producers have attended this educational program this past year that the Extension Agent in Teton County has been involved with alone. The program is designed to teach producers to identify weeds in the seedling stage. By doing this they reduce the amount of chemicals used and decrease their variable cost of production.



MONTANA EXTENSION HOMEMAKERS COUNCIL

Laura Engebretson, President
Montana Extension Homemakers

February 2, 1987

The basic mission of Cooperative Extension is to disseminate and encourage the application of research--generated knowledge and leadership techniques to individuals, families and communities. Dissemination of research knowledge and the application of that knowledge to practical problems is as important today as in the past.

The Extension Homemakers are a large number of Extension clientele implementing the knowledge in the areas of home economics and community development as well as agriculture and natural resources.

The Extension Homemakers serve as a vital link in the educational chain of disseminating of information. We extend or multiply the educational efforts of Home Economics professionals from the college to the communities.

Today's programs zero in on the following areas: nutrition and health, increasing family economics and emotional stability, housing and energy, and leadership skill development. From the beginning Extension has placed leadership development high among its objectives. Programs are provided on leadership styles, group development, group communication skills, conflict management and goal setting.

Extension is people-oriented. It is practical, problem centered and situation based. The Extension Service provides informal, out of the classroom education for all ages. The Cooperative Extension Service is a unique achievement in American Education, one that has changed and will continue to move forward.

The well being of Montana families is essential to the strength of our state, since values that underlie stability are forged by families. The Cooperative Extension is an investment in people - our most valuable resource.

15
Route 2, Box 64
Moiese, MT 59824

Members, Education Subcommittee
Appropriations Committee
Room 104, State Capitol
Helena, Montana 59620

Dear Committee Members:

I would like to express my desire to see the Extension Service, under the auspices of Montana State University, be allowed to continue administering the Expanded Food and Nutrition Education Program (EFNEP).

This program brings in \$60,000 annually in federal funding to Missoula County. It is 100 percent supported by federal dollars; only the administration of the program is provided by the Extension Service of the University. The EFNEP program annually serves approximately 200 low income families and youths, with additional youth being served through the school and after-school programs.

I learned first-hand the value of EFNEP during the twelve years I worked as a social worker for Missoula County. The purpose of social work is to improve the social functioning of our clients. EFNEP provides an acceptable, extremely efficient way of attracting, stimulating and keeping the interest of a group of disadvantaged women in what is often a mundane, tiring, unappreciated task - that of providing three meals a day for their families.

The program has taught mothers of Aid to Families of Dependent Children as well as food stamp recipients to effectively manage food budgets, to comparison shop, and to prepare balanced, tasteful meals. This is a monumental task even when sufficient funds are available; when budgets are tight, it requires exceptional skills, will power to hold desires for more expensive foods down to budget limits, and dedication to maintain that budget.

During my tenure as a social worker, many families benefited greatly by this program. I would like to mention one in particular. This family moved here from a Chicago ghetto; the father was disabled; there were five children; the mother had never cooked meals other than that provided by already prepared foods. The nutrition aide taught her how to purchase groceries, how to prepare inexpensive items in bulk (e.g., biscuit mix, cake mixes, etc.) for future use; she also learned to bake bread, cookies, pies for her family. She had never before used an oven. When she graduated from the EFNEP, she was able to teach her daughters these skills.

Without help provided by this program, this family would not have had balanced, nutritional meals. The children would have grown into adults thinking that meals from tin cans was the only way to eat!

Simple words cannot express my gratitude to this program for the concern and caring that it has demonstrated in nurturing these families. I hope that my few words will give you an idea of how important this program is. It is vital that it remain available to needy families in our community.

Sincerely,

A handwritten signature in cursive script that reads "Ivy Pearson". The signature is fluid and elegant, with a long horizontal flourish at the end of the name.

Ivy Pearson, MSW

Mr. Chairman and Members of the Committee:

My name is Elaine Schlenker and I am from Gallatin County. I am a graduate home economist and I support the Extension home economists. Also I am president-elect of the Montana Homemakers Council representing 5252 Montana families.

1. High protein diets are great, but what if I eat more protein than my body needs?
2. I have just lost my job. Where do I go from here? What is my first step?
3. I received a bill for \$500 to repair my car. How can I prevent this from happening again?
4. I am concerned about the clothes I wore while spraying the garden for grasshoppers. How do I wash them? Will my family's clothes be contaminated?

The answers to these questions are of vital importance to the families of Montana. (I define families as one or more people maintaining a home.) For the family to operate in the best interest of its members, all available resources must be used as efficiently as possible. At this time, I would like to present publications of research-based information prepared by Cooperative Extension Service state and county personnel that will answer the questions.

Information for homemakers is available from many sources: magazines, television, manufacturers - but as CONSUMER REPORT magazine stated, "the credibility of this information is low." In order to make the important decisions for the family, homemakers need unbiased, up-to-date, research-based information. And the most reliable source of this information is the Cooperative Extension Service.

The information is delivered to the homemaker by lessons, workshops, newspaper articles, one-to-one consultations, and printed materials. The Cooperative Extension Service personnel are educators and are trained to present the information in the most effective method.

The Cooperative Extension Service has, since its earliest days, developed leaders at the local level. Using these trained leaders the Extension Service has been able to teach and direct programs that are available to many Montanans. This leadership training flows over into the community with Cooperative Extension Service clientele being in the Legislature, on county boards, town councils and school board members.

Are there any questions?

I will be delivering to your mail boxes in the Capitol Building additional research-based information written by Cooperative Extension Service personnel.

Thank you.

P.O. Box 56
Pray, Mt 59065

January 30, 1987

Finance and Claims Committee
Helena, MT 59620

Dear Committee Members:

We would like to put before you some information which will help you as you consider the needs and value of the present-day Cooperative Extension Homemakers. We know there is no question in your minds as to its value in the past, but to some of our current lawmakers, who may not be aware of the work of Modern Extension Homemakers, its value may be questionable.

As our "National Homemakers Creed" says, "We will strive to promote a better way of life for all, through fellowship, continuing education and service." You may think that in this age of advanced technology and communication, these things are easily accomplished. They are not. Nothing can take the place of the personal human experience involved in the Extension homemakers pursuit of fellowship, education and service.

We offer, for your consideration, some examples of the activities in these three areas:

1. Fellowship

- a. Exchange of ideas and sharing among women of varied backgrounds, ages and education.
- b. The necessary comfort, support and enjoyment (particularly in the rural areas prevalent in Montana) given mutually by members of clubs and councils.

2. Continuing Education:

- a. Active participation in programs on district, county and club levels.

I. District: A seat belt safety presentation.

II. County: A demonstration on the curing, canning and preparation of meats.

A workshop, "Better Health is Your Wealth" at which people participated in programs on stress, exercise, osteoporosis, weight control, cholesterol, diet, and proper use of chemicals on farm, ranch and home.

An in-depth program on child safety which was taken by our members into every school in the area.

III. Clubs: Programs on sewing, cooking, osteoporosis, economics for better homemaking and health.

3. Service:

- a. Many services offered by county office such as testing of microwave ovens and pressure canners.
- b. Activities providing financial help to cancer and other worthy causes.
- c. Activities on club level including benefits for families who lost everything due to fire; also for families under severe financial stress due to illness or job-loss.
- d. Providing meals for families temporarily in need due to illness of mother or homemaker within the family.
- e. Visitation to hospitals and rest homes, bringing friendship and sharing to the ill, homeless and the aged.

If you will notice, all the activities in fellowship, education and service are carried out by a hands-on, personal involvement. To minimize these in any way will detract from promoting a better way of life for both urban and rural communities, but particularly in rural life which is prevalent in Montana.

Hence, we ask you to consider these points with honesty and care, remembering that this is the representation of only one county and that our activities here in Park County, are duplicated many times over in other counties.

We homemakers are the heart of Montana, without which, life, as we know it in our state, could not survive.

Thank you for your consideration.

Yours truly,

Margaret H. Delorey

Margaret H. Delorey
President, Park County Extension Homemakers.

Rose Righi - Shining Mt Club - President
Aptan Blakum - Wallace Ex. Club Pres
John Hendrickson - Park County Extension Homemakers Vice Pres
Randy Jeffers - Castle & Chateau Pres.
Arlene Graham - Secret Pass Club, Sec.
Alice Marie Park Co. Homemakers Extension Sec. Treas.



GALLATIN COUNTY EXTENSION HOMEMAKERS COUNCIL

2 February 1987

TO: EDUCATION SUBCOMMITTEE
JOINT APPROPRIATIONS COMMITTEE
50TH MONTANA LEGISLATURE

FROM: *Donna L. Morgan*

Donna L. Morgan, President
Gallatin County Extension Homemakers Council

Designed 73 years ago for the express purpose of providing university level information and education in the areas of home economics and agriculture via an off-campus delivery system, the Cooperative Extension Service has proven to be both effective and adaptable. Utilizing local level delivery of a wide array of services through its County Agents, and backed up by various specialists on the State level, the Montana Cooperative Extension Service continues to more than adequately fulfill its initial purpose.

Based upon this unique system, the Extension Service is able to meet existing needs within the communities of Montana and to develop programs necessary in meeting anticipated, future needs. Currently the three Gallatin County agents are in the process of conducting a county-wide needs assessment to plan programs for the next four years. Involved in this are all Extension-sponsored groups as well as the general public. Although the final meeting will not be until February 19, the issues raised will reflect actual individual, family, and community needs that our County agents will meet. This is how Extension works.

Through the utilization of Extension-sponsored services, coordinated by the various County agents and Extension personnel, every one of Montana's citizens has the opportunity to become a more informed producer and better educated consumer. Additionally, programs of the Extension service cover citizenship, international relations, family stress/self-esteem and include all types of ag-related needs from beef to barley, pesticides to pollution, corrals to computers. County agents also provide information to cover immediate needs such as dealing with the results of the Milk River flood last year.

The Cooperative Extension Service is distinctive in that it has the potential to educate and affect the lives of such a wide cross-section of people. As the population has become more urban and less rural, so has the scope of the services and programs Extension offers. Whether the material required is for the

individual, business, the family, or simply an interested group the County agents are able to provide it.

One direct effect Extension has deserves special mention: the "community services" provided by Extension Homemakers. Across Montana, Extension Homemakers are actively involved in health fairs; establishing community parks; manning voting stations; providing infant car seats; raising funds for fire stations, libraries, Jaws of Life, etc.; coordinating "latchkey kid" programs; working in convalescent and nursing homes; and the current state-wide promotion of vehicle safety belt use. The bottom line here is that Extension does make a difference - in all our lives!!

Speaking as a ranchwife, Extension Homemaker and, Lord willing, future 4-H leader I sincerely believe that the current Cooperative Extension Service in this state merits continued funding at a level that retains existing services. While recognizing the necessity for cuts, the Extension Service has already absorbed significant cutbacks in both services and personnel. Failure to adequately fund what is left would be, in my opinion, shortsighted and irresponsible. By its very nature, the Cooperative Extension Service puts back into the taxpayers' hands useful information and education - thereby nicely completing a circle of funds. It is obvious from the over 400 letters sent to President Tietz and Dr. Luft within the last four months that grassroot Montanans - your constituents - support Extension. Funding for Extension is an investment in the future of Montana since the people it serves are the future!!

Thank you for this opportunity to submit my testimony.

31 January 1987

TO: EDUCATION SUBCOMMITTEE
JOINT APPROPRIATIONS COMMITTEE
50TH MONTANA LEGISLATURE

FROM:

Darrell S. Morgan

Darrell S. (Steve) Morgan, President
GALLATIN COUNTY AGRICULTURAL PRESERVATION ASSOCIATION

RE: CONTINUED FUNDING FOR THE COOPERATIVE EXTENSION SERVICE

Created by the Smith Lever Act in 1914 as an off-campus arm of the land grant university to provide research-based information and education, the Montana Cooperative Extension Service continues to meet both existing and future needs of all Montana citizens. Initially focused in the home economics and agriculture areas, Extension has adapted to the changing lifestyles and now encompasses a broader range of educational services including youth (4-H) and community development; however, its primary purpose remains intact.

Continuation of the Cooperative Extension Service is vital to the future of Montana's agricultural economy. The current county-level-based system of agents delivering information and educational services has proven to be both effective and adaptable. Agents, supported by various specialists on the state level, are able to identify and meet local agricultural needs. Be it a one-on-one consultation or a group meeting, the County agent continues to function as a cornerstone of the system.

APA recognizes the declining funding base for services within the State and the necessity of making budget cuts. We are aware that the Cooperative Extension Service has already made thousands of dollars worth of cuts in both personnel and services. We do not endorse, however, the use of apparent funding cuts to expand an administrative unit at Montana State University.

We therefore wish to submit testimony in support of continued funding for the Extension Service as it currently exists - especially in the delivery of services on the local level by qualified County agents. In a state as big as Montana with our scattered population, we believe it would be fiscally irresponsible to fund additional administrative services when the potential for cutting local services is being seriously considered.

Thank you for your attention to our testimony.

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Mr. Chairman and members of the Committee,

It is distressing to hear of the cuts in Extension budgets. At a meeting on the subject last week the information was confusing but it was suggested that we write expressing what Extension has done for us. It is hard to know where to start.

Maybe I should start 17 years ago when my oldest child joined 4H. Through 4H he learned to speak in front of a group and give demonstrations for which he received higher than county awards. He learned to raise rabbits and sheep and how to market them. He learned to ride, care for and show horses. He was involved in the Jr Leader project and youth exchange trips.

There is a big age gap between that son and the next two, who are now 14 and 16. They are in the 4H program. The 16 year old is interested in the livestock judging and has competed for 3 years at State Congress at MSU. This year he placed 6th in the state and earned a trip to Canada. He has made friends from all over the state that he would not have had the opportunity to meet if not for 4H. The 14 year old is interested in clowning. This opportunity is found nowhere else in the state but 4H. He has been able to indulge his interest in make up and learn to make people smile. He has clowned for pre-schoolers birthday parties, parades, IFYE, nursing homes and hospitals. From this project he has learned a respect and compassion for the elderly and a bit of patience with the very young.

Extension has also been of benefit to myself. Being a 4H leader, Council officer and key resource person has challenged me to patience and a quest for knowledge. I am also a past president of a homemakers club. Through Extension homemakers I have been involved in many programs that have aided me in managing a home on my own. You see I was widowed when the youngest child was 4 years old. Through the Extension programs I learned basic car maintenance, money management, how to be my own handyman, better nutrition, health, safety and community citizenship. Extension has put me in contact with people that have become friends that give me moral support. It is possible I would have been able to raise the boys to be warm, friendly, respectful useful people without Extension support but I'm glad that the support was there.

Therefore I hope the drastic cuts to Extension will be reconsidered. Instead please help Extension to grow and reach even more people. Our society will definitely benefit.

Sincerely,



Pat Brewer

cc: President Wm. Tietz

February 2, 1987

Dear Committee members:

My name is Pat Brewer. I am from Gallatin County and serve both as a 4-H project leader and member of an Extension Homemaker club. As a widowed mother and grandmother, I am intimately familiar with the programs the Cooperative Extension Service offers. My testimony today focuses mainly in the area of the effects cutting personnel and services has had on our local programs, especially in Human Resources.

Distinctive in Extension, the Human Resources/Home Economics program is unique, in that presumably all Montana residents, while not involved in agriculture or youth: (CES programs or services)

1. are developing human beings. (Health Education, Human Resources)
2. eat. (Foods and Nutrition)
3. wear clothing. (Textiles and Clothing)
4. belong to a family. (Family Economics)
5. live in some type of abode. (Interior Design/Household Appliances, Housing and Energy)

Over half (56.5%) of the average annual expenditures for Montana families fall into these categories. The system whereby information and education in these areas is made available to every Montana citizen must be preserved intact.....or at least what's left.

Should

Currently, local County agents utilize materials prepared in these areas by State specialists. As of the latest funding cuts, the specialist resources available to the County agents have been reduced from the seven areas listed above to four. At the end of this fiscal year, we will not be able to obtain current research-based information or education in the areas of health, clothing, or interior design/household appliances - either on our own or through our County Extension office.

Extension Homemakers has consistently been a supporter of the Extension program. Woman's Week, a tradition at MSU since 1965, brings in annually over 400 people to live on campus for a week of learning and gaining "education for life" skills. Although not directly sponsored by the Extension Homemaker organization, we work with Cooperative Extension personnel in ensuring that quality classes and a positive environment are available at a nominal cost. Additionally, several County Councils offer scholarships to Woman's Week annually. Last year alone there were several thousand dollars contributed.

During this week, the Montana Extension Homemakers Council also determines the recipients of their two scholarships in the Home Economics area. One out of every \$6.00 in dues paid state-wide last year went into these scholarships.

We are aware that budget cuts have been necessary, since we are the taxpayers who provide the funding. I question, however, whether the Cooperative Extension Service could continue to provide the valuable services and programs that it does now with any further cuts. Our County agents are already being required to look for

STATEMENT PREPARED FOR EDUCATION SUBCOMMITTEE
OF THE APPROPRIATIONS COMMITTEE
February 3, 1987

As members of the Missoula County Extension Home Economics Advisory Committee we want to assure you of our support for the Extension Service in Montana. As times become more difficult the Extension Service plays an even greater role in educational programs for youth and adults.

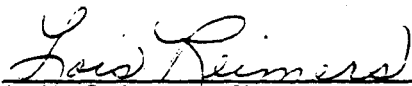
For example, the public is bombarded with a wide range of often conflicting claims regarding health and nutrition. However in 1986, the Extension Service provided nearly 3,000 people with research based information on these topics in Missoula County alone.

The Expanded Food and Nutrition Education Program, a federally funded program administered through the Extension Service, assisted 163 limited income families and 899 youth in learning to stretch food dollars and have a balanced diet.

With tight dollars money management becomes more important. Over 200 people attended workshops or purchased bulletins to improve their financial management. No other agency provides these services for Montana citizens. These are examples of just three programs conducted in Missoula County last year.

"The family is more important to national security, the health of our economic and social fabric and the future of this nation than any other institution," said Judy Farrell of the Economic Policy Council of the United Nations in a recent letter to Newsweek Magazine.

We ask you to give strong attention to the effect the loss of these programs will have on the people in the counties and urge you to reconsider the budget allocated to the education and well-being of our families in Montana.



Lois Reimers, Chairman



Elsie Rieger, Co-Chairman

Members: Marlene Bachmann
Betony Berkley
Mary Feuersinger
Marcia Herrin
Marie Johnson

Debbie McClain
Ruth Royter
Linda Schuler
Eloise Shaffner
Terri Tower

Mr. Chairman and members of the committee. For the record, myname is Janie Kington. I'm a native Montanan, a 4-H club leader, and an extension homemaker for almost 10 years. I am one of over 200 extension homemakers here in Lewis & Clark County.

Montana tax dollars support a wealth of programs, and I hope I never have to use most of them. I don't want to need an unemployment check, a welfare check, or a worker's comp check. And I hope the only contact I have with the Montana judicial system is a rare speeding ticket. But as a Montana taxpayer, I reap direct benefit of my tax dollars whenever I walk into the Extension Office.

The Extension Office provides vital coordination and support for both the 4-H Clubs and our Extension Homemaker Clubs. And both types of clubs enrich their community through many public service projects. Here in Lewis & Clark County these projects range from wallpapering at the Y. W. C. A. to installing new traffic control devices around ~~XXXXXX~~ Capital High School. Incidentally, we're even nice to the Governor's bottom--the needlepoint chair covers in the Governor's Mansion dining room were an Extension Homemaker project!!

We realize the Legislature is having to make tough decisions on the best use of our tax dollars. However, we ask you to please continue this direct service to your taxpayers and we urge your continuing support of the Cooperative Extension Service to the fullest extent possible.

I am Donna Dugas a member of an extension homemaker group in Cascade County. I am also the state vice president of Montana Extension Homemaker Council.

In Cascade County we have 48 extension homemaker groups with a total membership of 800. Our goals are to strengthen our communities through education, to learn life skills, to preserve the home, to stimulate a desire to participate in educational programs and to develop leadership skills. Achievement of these goals develop through our Knowledge for Living. This includes four areas of emphasis (1) nutrition & health (2) Energy and environment (3) Family strengths and (4) Economic stability.

Our extension homemaker program is the vehicle by which we reach 40,000 to 50,000 non-extension homemaker members and new audiences each year. We proudly boast that our membership includes a male legislator, a state legislator's wife, a Credit Union Board member, lady Vice President of a local bank, nurses, teachers, Mercy Home volunteers and board members of the Montana Mental Health Ass'n.

A uniqueness of our educational program is that it includes leadership training which gives members the skills needed to become effective volunteer teachers at their local group and community levels. Leadership training is provided through learning to lead sessions which include information pertaining to communication skills, conflict management, motivation and effective meetings.

As a total community effort to promote preventative health care, members have planned and facilitated a community wide health fair for the past four years. Over 50 health education booths and "action areas" help visitors become more aware of all the health services available in our community. Self-help and preventative health care activities include free blood pressure and blood sugar checks. glaucoma, pulmonary function and iron deficiency tests. In addition our medical community will focus on the following topics at our 1987 health fair on February 19: Exercising Safely, John A Curtis, M.D.; Adult Immunization, Richard Blevins, M.D.; Cancer Prevention, Carl A. Guter, M.D.; and Update Nutrition, Polly J. Poole, R.D.

Two extension homemakers have developed successful home-based businesses which have provided an alternative income for a farm family and a single parent allowing her the opportunity to remain at home with her pre-school children.

Seven scholarships are provided by Cascade County Extension Homemaker Council for members to attend classes at MSU at Women's Week. In order to motivate youth to enter the home economics profession, the Cascade County Extension Homemakers Council awards a \$200 scholarship to a deserving student from Cascade County.

With special emphasis on family safety our members have purchased and made available on a rental basis, 120 infant restraint seats and 13 toddler restraint seats to parents and grandparents. A video program teaching the proper use of restraints is made available for hospitals on closed circuit T.V. for new mothers

and to expectant parent training classes.

A weatherization provided our members an opportunity to work in cooperation with our community in weatherizing 15 homes of local senior citizens.

Our members have registered voters, participated in neighborhood watch, wrapped gifts for the county convalescent hospital, given "Gifts for a Lift" to Warm Springs residents, taught 6 rural communities CPR classes involving 180 families, furnished three rooms for the first women's housing at the Great Falls Rescue Mission, donated food baskets to needy families, taught Sunday School, furnished 2 home economic departments in rural areas, purchased band uniforms for a rural community school.

We are 4H leaders and judges, teachers aides, alcohol and drug abuse teachers, hospital Pink Ladies, adopted nursing home residents, shared our knowledge on family life, instructed child care workshops, adopted two children in group homes, updated county scrapbooks and histories - as you can see, thousands of volunteer hours are shared by our members.

We actively participate in community activities by belonging to the Historical Society, Genealogical Society, Salvation Army, Red Cross, Senior Citizens Ass'n., PTA, Luthern World Relief, V.A. Hospital, Navy Mothers, Soroptomist International, Delta Kappa Gama, Montana Mental Health Ass'n. World Hunger Program, School boards, Communities Food Banks, BPW and Great Falls Rescue Mission.

I am so very proud of my organization as are all of my fellow members. The professionalism of each of our county agents takes a second to none. Continued Education is essential in today's world and the extension programs continually strive to provide the knowledge to meet the needs of our families and communities.

Donna Angus
State VP - MEHC

Ed Meskimen
2860 Valley Drive
East Helena, Montana

When my son was sent on a NO flour -
no milk diet I was lost as how to cook.
I called the Extension office and received much
information on using rice flour, soy flour and
milk substitutes. Several times in my years
of being a home maker I have participated in Extension
sponsored classes and workshops.

I feel the Home Economics division of the
overall Extension program is very important
for the family, the home and the homemaker.
It is a program for all old, young and in between,
rich poor and in between.

The agents have a plan of work from the
State office but adjust it to the individual
needs of their country people. Needs in Billings and
Helena are ^{often} much different than some needs in Sidney
or Wibaux.

The Home Extension Clubs are another important
area of education for the Montana person. Again
the program of work is adjusted to the individual
needs of the group.

I strongly feel the Budget ^{cut} should be made in
the Extension program especially the area
relating to our basic unit in Montana -
the family and home.

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I'm Merry Schlenker from Bozeman, Montana. I am 16 years old, a junior in high school and a 6 year 4-H member.

My experiences in 4-H are very beneficial to my growing up. 4-H not only serves the rural youth, but the urban also. I am here on behalf of the 7,500 Montana urban 4-H members.

The most valuable reward 4-H has given me is speaking experience. Doing both demonstrations and interview judging has given me confidence speaking in front of adults, peers, and youngsters on a group and individual level.

Consumer education is another aspect I'll carry with me into my adult life. I've been taught how to make consumer decisions from buying meats and food to window shades and insulation.

Being treasurer of my 4-H club has given me the knowledge of how to handle all aspects of bank accounts with actual hands-on learning. I've been the president of my club. This has taught me Parliamentary procedure and given me something to be responsible for. Neither banking or presidential responsibilities are taught in school.

Some of the projects such as sewing, gardening, cooking, and the energy unit are all skills useful in adult life and can save money on an everyday basis -- and any urban youth can take these projects.

Rewards of 4-H such as the trips are rewarding besides fun. One trip I went on two years ago was to watch the Montana Legislature in action. This has sparked my interest in politics which has carried over into my everyday life. I have applied to be a page in the 1987 Legislative session, I am Junior Class president, and I am active in Montana Youth Legislature.

In summary, I would like to say that all I've learned in 4-H (and from my county agents) has made me a more informed citizen of my community.

My name is Heath Hollandsworth, I am 15 years old and this is my seventh year in 4-H. I belong to a 4-H club in Pondera County.

4-H has been important to me for the things I have learned. My favorite projects have been woodworking and entomology.

In entomology I now have a collection of 175 insects. Last year I was a Junior Leader of six kids. I helped them with their collections. Last year we went to Bozeman and studied the state entomology collection with the State Entomologist.

In woodworking I started out making book ends and now 6 years I am finishing my shop which I'm going to do my woodworking in. I have been asked to do woodworking for people in the community. I am going to have my own business.

4-H has been important to me for the people I've met. In 1984 I had an exchange student from Japan stay with me. It was interesting to learn about another country. It was even more fun to go to Japan the next year and stay with his family. In 1986 his younger brother came over and stayed with us.

4-H is important to me because I have learned how to talk in front of people. I was in the speech contest and have done many talks and demonstrations.

4-H has been a very important thing in my life.

1945-1946

State has been the same

It is the only one of its kind in the world. It is the only one of its kind in the world. It is the only one of its kind in the world.

The program has given me the opportunity to work with people who are interested in the same things as I am. It has given me the opportunity to work with people who are interested in the same things as I am.

What is a job? A job gives people the chance to grow. It gives people the chance to grow. It gives people the chance to grow. It gives people the chance to grow. It gives people the chance to grow.

This year there for the first time in the history of the State of Montana. The first time in the history of the State of Montana. The first time in the history of the State of Montana. The first time in the history of the State of Montana. The first time in the history of the State of Montana.

It is the only one of its kind in the world. It is the only one of its kind in the world. It is the only one of its kind in the world. It is the only one of its kind in the world. It is the only one of its kind in the world.

goal. This trip was the first time I had ever
seen you and my response (including time and money) to help
the 4th in moving is unconditional.

I will surely leave my little 4th in the hands of
and the responsibilities that I have earned will never be
lost. Thank you 4th!



MONTANANS FOR 4-H

P O BOX 4431 BOZEMAN, MONTANA 59772

**FRIENDS OF 4-H
MONTANA 4-H COUNCIL**

**COUNTY 4-H COUNCILS
MONTANA 4-H FOUNDATION**



I am Diane Hooker from Jordan. I am currently President of the State 4-H Council representing 4,000 leaders; a member of the Montana Extension Advisory Council; and a member of the Montana 4-H Foundation.

4-H is the largest youth organization, both state wide and nationally. We have the largest educational program, outside of the schools. Through personal development, a shy nine-year-old child develops high self-esteem and confidence which are qualities in life that are essential.

Through project work, 4-Hers learn responsibility, record keeping, writing ability and decision making. 4-H'ers are able to learn skills that can develop into small businesses or continue on as a lifetime career.

Through speech and demonstrations, they learn skills that enable them to get up in front of people and communicate with other youth as well as adults. Speech and demonstrations start these skills at age 9 giving many a head start for drama and speech in high school and for some students in smaller schools, it is the only exposure they will receive in speech skills.

Many 4-H'ers learn valuable skills from trips that are funded by the Montana 4-H Foundation, private donations or individually. Our youth are encouraged to attend the Montana Citizenship Seminar in Helena and the Washington Focus Trip on Citizenship held in Washington, D.C. Through the citizenship program, our 4-H'ers gain a pride and responsibility in our government and towards our country.

Project work, as well as trips, help our youth to grow in their tolerance of others as well as learning to work in groups and relating to others while making friends across the state and nation. They gain valuable skills in time and money management.

4-H teaches our youth to set priorities and to set goals. It makes them aware of weaknesses so they can improve them and make them into strengths.

High self-esteem and confidence is something you can't give someone--they must achieve that themselves. As you work with these kids and help them develop a skill, you can see their confidence growing. As they start to feel good about what they are doing, they start to feel good about themselves. They have the confidence to try new experiences in other areas of school and community. They are the ones to step forward and say 'Yes, I'll help, for I am the future.'



MONTANANS FOR 4-H

P O BOX 4431 BOZEMAN, MONTANA 59772

**FRIENDS OF 4-H
MONTANA 4-H COUNCIL**

**COUNTY 4-H COUNCILS
MONTANA 4-H FOUNDATION**



February 3, 1987

I'm Karin Ludeman from Bozeman. I am the office manager at The Bozeman Clinic and currently the chairman of the Montana Extension Advisory Council Youth Committee.

The 4-H mission is to help young people become self-directing, productive and contributing members of society.

One means of developing these abilities is involvement in the community. Youth in 4-H develop abilities to perform and become contributing citizens.

Increased self-esteem, self-confidence, and understanding of others come with skills development., which carry into adulthood providing the community with on-going productive contributing citizens.

Many communities have the quality of life they do because of the services and activities of the local 4-H groups. Examples include: Noxious weed awareness campaigns; seeing eye dog programs with first year obedience training; CPR classes; construction of swimming pool dressing rooms; handicapped programs with riding; demonstrations; basic living skills; community center development and improvements including painting, repair, landscaping, clean-up; rabies clinics; citizenship activities to become informed citizens; and so on.

4-H programs provide opportunities for families to work together, to be doers, to learn together, developing skills, self-esteem and self-confidence.

Adequate funding of the extension program is needed to help us continue the 4-H mission: Productive, contributing members of our society.

I believe that funding should be made for good things to happen; rather than funding to pick up the pieces of the bad.



MONTANANS FOR 4-H

P O BOX 4431 BOZEMAN, MONTANA 59772

FRIENDS OF 4-H
MONTANA 4-H COUNCIL

COUNTY 4-H COUNCILS
MONTANA 4-H FOUNDATION



February 3, 1987

I'm Anita Wilson from Wolf Creek, Mt. I'm a 4H leader, parent and Vice-President of the Montana State 4H Leaders Council.

4H is family involvement. Not only does the 4H member participate in the 4H program, but the family is also involved. 4H builds a link through all generations, young and old alike.

Being a 4H leader or parent is enriching, challenging, involving, broading and educational. It is a challenge to learn more than the 4Her to be able to teach or guide. As a leader I have learnt to give riding lessons, encourage a Jr. Leader to plan and give a clinic, talk in front of a group, learn about computers and ski.

My information and encouragement has come from county agents and extension specialists. They are the people that make the 4H network possible. The more involved they are the more volunteer hours are given to the program. Every federal dollar spent generates 54 volunteer hours.

Some schools do not offer home ec., vo ag, speech and drama. 4H fills this void. It also gives the opportunity for more in depth study in these areas and others. Even when these programs are available 4H lays the groundwork for expanded learning.

Invest in our youth, we can't afford to spend less. Short term solutions are inadequate, we must look to the future. Society is ^{at a} ~~real~~ turning point. But what directions? 4H can make the difference. Please help keep 4H an affordable program, available to everyone.

Mr. Chairman & Committee Members,

Eight years ago was my first experience with 4-H. Our daughter joined! She was an "honorary" member, a responsible young citizen. The next year her brother joined! They, together with myself and my husband learned how to work together as a family. We all learned the importance of helping each other and reaching out to the community. Beyond that they were able to help in a local school, in Kent, Carbon County. Three years after they started in 4-H, we became a very 4-H family! I have learned the importance of Carrot Extension Service. I ~~could~~ have not have worked with many other 4-Hers without the important information obtained through the Extension Office. Our 4-H in Carbon County would have extreme difficulty managing with

largest city that would cause
us to lose our agency and our
office. Two years ago I was
fortunate to be elected to the
State 4-H Council. What a
valuable experience. This would
not have happened without a
State Extension strong in 4-H. I
have had the opportunity to grow
as a mother, not only to my
two children, but to many others
without a good home life, or from
broken homes.

My children have learned the
importance of keeping current and past
accurate records which will ready
them for college and after college.
Their record keeping and discipline
through the 4-H program has been
helping them in high school.

So without Extension Service
we would have been without our
education as such, which 4-H
is most definitely an education
which many young people do not

receive in a school system
with the great organizations.

Learn from just 4-4 way.
Learned a lot from leader, have
learned from the interaction of
the last system which being able
to require information that helped
much and helped to get through
the way which the others will
be able to help.

Thank You,

On the Thank
You, Martha
C. C. C.

February 3, 1987

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They say that to determine the health of a nation, one need only to look at the health of the agricultural industry of that nation.

As an educator and admissions officer at a Montana vocational institution, I'm increasingly concerned about what I'm seeing in Montana. Because of the type programs offered at the institution where I work, we draw heavily from Montana's rural population for our student load.

As Montana's agriculture industry suffers, so does the attendance of Montana's rural population at educational institutions. Technical aid programs do not help most farm/ranch students.

Without the means to further education, Montana agriculture suffers — leading to direct and direct losses of other Montana business and industry. Montana Agriculture pays many taxes.

The Montana Agricultural Experiment Station provides the research, the Montana Extension Services disseminates that information. It is a good system to keep all Montanans. An established system, well-known, providing free or inexpensive, unbiased information. Without the means to attend post-secondary institutions to further their education, Montanans must rely on other available means,

Because of my job, I've had the opportunity to travel extensively in Montana. Because of my commitment to education and what education does to people - for their mental health, as well as how it affects positive growth to all those involved with that person learning.

I know that in Montana - no matter which organization you are committed to, no matter where or at what you work - you will at some time be in touch with the Montana Extension Service or the research of the Agriculture Experiment Station.

Contact with research that is unbiased, free or inexpensive. Education in areas of agriculture, human resources to help survive the 20th century changes of stress, resources in energy, foods & nutrition, business and consumer affairs, child care, housing & so on.

Montana's health is through agriculture. The Montana Extension Service & Ag Research Station help provide the education needed to maintain the "wellness" of agriculture.

I strongly encourage your consideration for full funding of the programs.

Carolyn L. Miller, Member
Montana Extension Advisory
Council

In response to Norine Dixon's request for testimonies in support of 4-H:

As a former 4-Her, I urge anyone considering budget cuts that would affect the 4-H program to reconsider: Do not underestimate the importance of 4-H to your rural Montana youth.

I, like many Montanans, grew up in a rural area and attended a Class C school. While a small school has special benefits for its students, it is also unable to offer students many of the opportunities available in larger schools. 4-H clubs help make up the difference.

For instance, our school did not have an FFA Club. 4-H enabled its members to learn how to raise, breed and show cattle, sheep, swine and other farm animals. In addition, the club taught all of its members some livestock judging skills.

Although I never took an animal project, I benefited from other aspects of 4-H.

Our school could not get enough students interested in a speech program to offer one. However, every member of 4-H was required to present one speech and one demonstration each year. The members were also encouraged to enter a county-level speech competition. Those who received top ratings were then invited to compete at the state level, with a chance to eventually compete at a national competition.

I still don't particularly enjoy giving speeches, but without 4-H, I would never have tried to learn public speaking skills. Now whenever a school class or club asks me to speak about my job as editor of the *Whitehall Ledger*, I call upon those skills and experiences gained through 4-H.

Also in a small school, the opportunities for meeting people and learning about life outside the community are few. Small schools and even larger schools cannot afford to offer many of the experiences 4-H does.

4-H Congress, held each year in Bozeman, encourages the development of friendships with kids from throughout the state and offers workshops. National 4-H Congress brings 4-Hers and leaders from throughout the country together.

As a result of belonging to a 4-H club, I also spent a week on a Kansas farm, learning about a Kansas family's lifestyle. In addition, as members of a 4-H club, my family was able to bring a North Dakota teenager to Montana for a week — it was the first time she'd ever seen mountains! (We still keep in touch with her, although she visited us about 5 years ago.)

Behind all of these activities and experiences are the county extension agents who organize and help promote 4-H. Without their encouragement and planning 4-H, and therefore Montana youth, would suffer.

This is a testimony from District #5.

We are very concerned with anymore cuts for the Extension or 4-H Programs. The children in 4-H learn to work and they will soon be taxpayers.

Our district has over 765 children who have participated in our programs. They learn leadership and life skills that make for good citizens.

Any further cuts would be a detriment to the educational benefits of this family orientated program.

Boyd Briggs
Ray Lombardi
Don Wagner
Donna Wagner

Bessie Jo Woods
Lorraine Klemm
Norma T. Dixon
Terri Sologub
Erna Ruttler Kuer
Uda Miller
David Miller
Regina Maki
Yvonne Jones
Liz Jones

Michael Huker
D.D. Anderson

Carole H. J. Hill
Lucky Smith
Gladys H. Jones
Donna H. Schmianski
Norma T. Dixon
Liana M. - bench
Ann T. - bench
Connie Kinzel
Catherine Wegener Ellerton

Dear Miss Sackbook,

I've been in 4-H for four years now. And I feel I've learned a lot from it. From the projects I've taken. I feel I can hold some responsibility. I would like you to support House Bill 500!

Age: 13

Thanks,
Kristen A. Wheeler
Box 252
Whitehall, Mont.
59759

Dear Miss Sackbook,

I've been in 4-H for 4 years and I really like it. I feel that I have learned new experiences with my 4-H group.

I would like to support
House Bill 500

Thanks,
Kristen A. Wheeler
Box 252
Whitehall, Mont.

59759

To Whom it May Concern,

I am a member of the B-L's
4-H Club in Whitehall.

4-H has been a great learning
experience for me, I've made new
friends; and I've learned many
new things.

I have taken a pig for
the past 5 years. I've learned
about how much money it
takes to raise an animal
and how to take care of
an animal.

I have also taken sewing
& cooking. And if I wasn't in
4-H I never would have
learned any sewing skills or
cooking skills.

Please support House Bill 500.

Sincerely,

Kit Klemm

Rte 1 Box 1090
Whitehall, MT 59759
age: 14

→

Dear Mark

This is my first year
in 4th and I joined
my club because
of the learning
experiences that
will come to follow.

I am looking forward
to this year and I

hope to see you soon.

I will see you next

year and I hope that

you will see me

Have a good day.

Mark

Senior Antiknife

1901 St.

Whitehall Mont.

54759

To Whom it May Concern,

I am a member of the B-Y's
4-H Club in Whitehall.

4-H has been a great learning
experience for me, I've made new
friends; and I've learned many
new things.

I have taken a pig for
the past 5 years. I've learned
about how much money it
takes to raise an animal
and how to take care of
an animal.

I have also taken sewing
& cooking. And if I wasn't in
4-H I never would have
learned any sewing skills or
cooking skills.

Please support House Bill 500.

Sincerely,

Kit Klem

Rt 1 Box 1090

Whitehall, MT 59759

age: 14

→

To whom it may concern
I really feel that the
4-H program is important
to all kids & adults it's a
great learning experience &
it helps people in many ways.
I've been in 4-H for 5 years.
I enjoy it very much & have learned
a great deal. It would
mean a great deal to me if you
support House Bill 500.

Sincerely

Robert Moray
age: 15

Box 1314
Whitcomb Mt.
59759.

Dear Miss

I am writing to you to express my
sincere appreciation for the
kindness and help you have given me.
I am sure that your experience
will be a great help to me.
I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.

I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.
I am sure that you will be
able to help me in my work.

Dear Miss Jacobson:

I am very glad to hear that you have been elected
of the I think it is a very good idea to have
a new member, and that
you will be able to do many new things.
I am sure you will be able to do many new things.
I am sure you will be able to do many new things.

opportunity to acquire knowledge, experience and
a chance to

... .. and I have
great the oppor-
tunity to of
... .. and
... ..

Yours truly,

W. H.

...

...

5900

...

Dear Ms. Jacobson,

I have learned many new things through 4-H. Besides leadership and citizenship, I have learned everything from training animals to sewing buttonholes. I am currently holding the office of President of the Cardwell 4-H Club. I have also helped younger 4-H'ers with their projects. 4-H is my life!

Sincerely,
Molly Carey

Boulder, Mt. 59632

P.S. Support the HB 500. Please!!

Dear Ms. Jacobson,

I have learned many new things in 4-H. I have been in 4-H for seven years. I feel since I have been in 4-H I have learned important skills that I can use for life.

Sincerely

Susan Brozovich
Whitchell Mt. 59759

Please Support House Bill 500

Dear Mrs. Jacobson,

As a parent & volunteer leader in 4-H, I feel that the time I have spent in this program has been one of the most worthwhile experiences. Our family has benefited and the education we have received has been of great value.

I feel my children are learning not only life skills but a feeling of patriotism and citizenship. Kids involved with 4-H are busy and are learning to be worthwhile citizens.

Sincerely,
Carol R. Coghill, Leader
Whitchell, Mo.

P.S.

Please support H.B. 500!

~~Dear~~ Mrs. Jacobson,

I'm a first year member
and I think I will enjoy 4-H
in my previous years. I think
my mom will enjoy helping me
with my projects also.

Sincerely,

Michelle Jones

Box 357 Whitehall

MT, 59759

Please Support House bill 500!!

Dear Mrs. Jacobson,

4-H has been a good experience for
me and family. I enjoy my
4-H projects it helps me learn
about raising animals. And much
more.

Sincerely,

Daralyn Logdill

Box 335 Whitehall

MT, 59759

Please support House bill 500!! ::

Montana 4-H Membership and Enrollment Card

Name of 4-H Club _____ County _____
Last Name _____ First Name _____
Address _____ R.R. Box or Street _____ Town _____ Zip _____
Phone Number _____ Year in School _____

Birthdate	Year	<input type="checkbox"/>	1. Farm or ranch	Race (optional)
	in	Boy	<input type="checkbox"/> 2. Town under 10,000 and rural non-farm	<input type="checkbox"/> 1. White
	4-H		<input type="checkbox"/> 3. City 10,000—50,000	<input type="checkbox"/> 2. Black
Mo Day Yr		<input type="checkbox"/>	<input type="checkbox"/> 4. Suburb of city of 50,000	<input type="checkbox"/> 3. Amer. Indian
		Girl	<input type="checkbox"/> 5. Central city of over 50,000	<input type="checkbox"/> 4. Hispanic
				<input type="checkbox"/> 5. Asian

Approved by _____ Date _____
(parent or guardian)

_____ Date _____
(local leader)

Use "The Montana Clover, Project Selection Guide" to complete this card
Form 70

For the Education Subcommittee Members.

Since I am not able to attend with the 4H group from Montana planning to attend your budget hearing, February 3 I would like to send this letter stating my concern about the proposed budget cuts to the Cooperative Extension Service.

To me and my family this service is very important since we are on the farm and do not always have access to lots of their education material from any other source.

I am a 20 year volunteer 4H leader and have seen many 4H youth develop into confident, well balanced adults. I have had parents tell me that 4H has had a very important part in this development.

I would appreciate your helping me to keep this worth program operating, by granting them their budget Request

Sincerely

Vera Edna Zerbe



MONTANANS FOR 4-H

P O BOX 4431 BOZEMAN, MONTANA 59772

FRIENDS OF 4-H
MONTANA 4-H COUNCIL

COUNTY 4-H COUNCILS
MONTANA 4-H FOUNDATION



February 3, 1987

To Committee Chairman and Committee members:

Our youngest daughter has been sick for a year, using many kinds of medicine and going to many doctors. She came home to recuperate and find foods to eat that didn't make her sick. She went to our hospital dietician and didn't receive any help. I went to our Extension office to ask for help. Our lady agent gave me lots of recipes and called Andrea Pagenkopf our State Nutrition Specialist. Andrea gave me foods to fix every day and told us eggs were o.k. every day without worrying about cholesterol and high blood pressure. She told me to have my daughter drink Ensure every day to help her gain weight and get her vitamins and minerals. She said a potato a day was a must.

I had hope and felt I had better help than I had had for four months. We have been a week on what she told me and my daughter has gained three pounds and doing much better.

Please consider our specialists as for me and my family. She made a difference that no one else could help us with.

Sincerely
Kela Rae Whisnand
RT 3 Box 315
Corvallis Mont 59425

The extension service is of great value in the rural area of Montana, without the extension service we would not be able to get information on the new methods with chemicals and seed, etc and an idea on the new easier ways of keeping a home and our children from harm.

In the more populated areas we have up and about for the youth to get their experience in life in the rural area we have 4-H that is conducted thro the extension service.

The 4-H program is ran through the extension service
could

- 2 -

without 4-H our youth would lose a chance for the experience of a life time. 4-H makes our youth active in their life style instead of taking a passive role.

4-H can not be run with just ~~the~~ volunteer leaders it has to be in cooperation with extension service. The 4-H has to get guidance from the extension service without the Montana Extension service all the information would not be available to the youth.

Kathie DeMeuse
Forsyth, Montana

February 2, 1987

Finance and Claims Committee
Helena, MT 59620

Dear Committee Members:

The 4-H program in Park County is a dynamic and effective part of our youths education. It allows our young people an opportunity to explore new and different experiences and to excel in areas of personal interest. Not only do the rural youth benefit from 4-H's programs, but a broad spectrum of urban and sub-urban youth also participate in a wide variety of projects. Because of this, Park County has above the state average in state and national winners. And as you look at these 4-H'ers in their school activities, they also excel academically largely because of the personal growth and confidence that 4-H instills in members.

Being that Park County is largely a rural area with few opportunities or experiences that youth from more populace communities might have, 4-H offers a wonderful alternative. For example, 4-H rewarded a boy for his work in a self-determined project by sending him to Chicago - a big city, another part of our society. Or the girl who started her own flock of sheep through her 4-H project and was nominated for national recognition. These are experiences that will never be forgotten and will be a positive part of their lives forever. When employers are looking over a resume! 4-H is definitely a positive factor in young people's past.

In Park County we have three agencies funded in part by federal funds dealing with delinquent youth and one that is offering an alternative for all youth - that being the Cooperative Extension Service and more specifically the 4-H program.

In my opinion, the tax payers money is more wisely spent giving our young people some positive force that is the key to this situation - that being the 4-H program and the Cooperative Extension Service.

Respectfully,

Skip McIlhattan
President, Park County 4-H Council

Shoff Point, Mt.
Jan. 28, 1987

Dear Sir,

I hope they will not cut the Extension Service budget as it is important to many men, women and children. The farmers & ranchers are the ones that feed the nation and if our children can learn the right way we will have more staying on the farms. It also keeps both city and urban children busy so they are not getting into as much trouble. Most of our crimes & suicides are done by young people who who have been taught the wrong way or have too much time on their hands.

The city and country children can learn how to get along and work together. Many can be leaders & teach their skills to others as they grow older.

We need the Extension Service to give us nurseries to teach the children as leadership and printed material are available.

I have been a leader for 15 years and am still leading. I enjoy it and believe the 4-Hers I have led have gotten a lot of use out of what they have learned.

Everyone enjoys fairs and can always learn something there or at the county extension agents meetings. It is a joy to a leader to see what the children have done.

There is hoping they do not cut the budget of the County Extensions etc.

A. 4-H leader
Byrl Lund

I would like to write just a few lines in support of 4-H in Powder River County. As you probably know, Powder River County is large in area and small in population. There are many miles of red shale roads here and in order for parents to get their children to meetings and other activities, they have to travel those miles. Many have to get their livestock to the fairgrounds the evening before the Fair in order to get the red dust washed out of their critters. Members of the RWA Club travel 70 shale miles to participate in the 4-Foods Festival, Dress Review, Demonstrations and other activities. The point I'm trying to make is that they do it! 4-H means a lot to us here.

There are 114 members belonging to 13 clubs in Powder River County. We have 49 paid-up leaders and that represents only a part of the parents and outside volunteers who donate their time to 4-H. There are 375 students enrolled in Powder River County schools 3rd to 12th grades and 117 of them are in 4-H. That means approximately 30% of our youth are in 4-H.

We have an active Teen 4-H group who take a responsible part in planning our Little Levi Rodeo, serve at ropings, plan and put on workshops for the younger members and represent us at 4-H Congress in Bozeman and Chicago and in other states during their annual exchange trip.

4-H is a vital part of country and small-town living. We don't have several movie theaters to choose from, or a WMCA, or a roller rink, or many of the other activities the larger towns offer. In an area where there have been two teen suicides in two years, our youth need all the help they can get.

4-H builds confidence. We in Powder River County support it wholeheartedly!

Sincerely,

Sandy Birkland, Secretary
Powder River County 4-H Council

Mark Peterson
Simpson Route, Box 34
Havre, Mt. 59501

February 2, 1987

To Whom It May Concern:

In past years we have seen budget cuts and services consolidated. One of these areas is the Extension Service. This entity can only do so much on so few dollars. It seems that leaders of this country are talking of cutting the fat out of the budgets. Sometimes these leaders have no direct contact with those entities that they are cutting the budgets on. They don't understand how important the services are to the people they serve. Legislators please realize that there is no fat left to cut, only the meat is left.

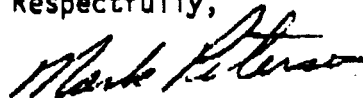
Published figures I have read state that 31% of Montana's State base income comes from Agriculture but only 2% of total legislative dollars goes back into research. This raises a question in my mind -- Is Agriculture being treated fairly?

I am not going to dwell on any one subject within the Extension Service budget. Those people that work within that office know their needs far better than I. But I know they need support. The Extension Service is a valuable and necessary service needed in Montana.

I would hope you would share my views and adequately fund and support this fine service NOW and in the future.

Thank you for your time.

Respectfully,



Mark Peterson
Havre, Mt. 59501

FEB 2

William J. Lauckner
NSR Box 203
Nashua Montana 59248

January 29, 1987

Dr. Leroy Luft
Cooperative Extension Service
Taylor Hall MSU
Bozman Montana 59717

Dear Mr. Luft,

With major cutbacks in the Extension and Research programs I strongly support the continuation of the Test Plot and also the need of ICPM specialist during the growing season here in Valley County.

I beleive these programs has helped farmers find a better variety of grain also what kinds of fertilizer to use also know what kind of insects, weeds and diease they have in their growing crops. Also with other Extension programs Crop and Soils, Spray Check Clinic, No Till Drill Demostrations tree shelter belt etc. Without these programs the agriculture sector of our county will not know what is available to them.

I feel if Agriculture is not going to make it then our whole Nation will suffer which has happened already.

In closing I urge you to support the continuing above programs with the Coopertive Extension Service.

P.S. Please read at the Extension and Research hearing on Feb. 3 1987.

Sincerely,

William J. Lauckner
Farmer Rancher Test Plot Cooperator

President William Tietz
Montana State University

Dr. LeRoy Luft Associate Director
Cooperative Extension Service

Valley County Commissioners
Glasgow Montana

David C. Mogan
Box 366
Hinsdale, Montana 59241

January 30, 1987

Dr. LeRoy Luft
Cooperative Extension Service
Taylor Hall, M.S.U.
Bozeman, MT 59717


Dear Mr. Luft:

The programs which the extension service have are of fundamental importance not only to the current day to day operations of the family farms but also to the farmers future success in the ag industry.

Programs such as the test plots, ICPM specialists and various other programs are needed now more than ever due to the ever changing developments in production and these most difficult financial times challenging the very existence of agriculture itself.

These programs are needed and I urge you to support the future of agriculture by making a commitment to support these extension programs.

Sincerely,


David C. Mogan

Please present these comments at the hearing to be held in the Scopphardt auditorium in Helena on 2-3-87

I am Arnold Peterson from Havre, Montana.

I have farmed and ranched north of Havre since 1932.

I am concerned that many of the projected cuts are poor economy for the State of Montana.

I am convinced that most of the gains made in agriculture during the years I have been active in farming can be traced directly to Extension and Research.

As a member of the first Hill County A.S.C. committee, I found average yields in Hill County to be under 11 bushels per acre. Now that average is 22 to 29 bushels.

While this increase is generally attributed to better farming, weed sprays, and better varieties and breeds of livestock this, after all, reverts back to the education through Extension and Research.

I am convinced that the dollars you invest in Extension and Research will come back to Montana faster than any money you invest (elsewhere).

(Thank you.)

Feb. 3, 1987

I speak to you today on behalf of the County Extension Services offered throughout the state of Montana.

My first contact with the extension programs began as a small child in rural central Montana. Extension programs were then and are now an important source of valuable information ranging from pesticide usages to nutritional facts. In my community the 'agent' was a valuable contact for all the farm and town people, networking us together to share knowledge, skills and experiences.

As a young adult and student much of the material passed onto me by the extension services influenced how I studied and grew. As I look back these contacts certainly influenced my career choices and attitudes toward people, products, and the environment.

Now as a teacher of home economics I find myself well served by these extension services in my quest for materials and information. Access to these materials has enhanced my effectiveness as a teacher and my personal knowledge.

In the past year I moved to a new community and a new job. Perhaps the most valuable service the County Extension has supplied is a comprehensive knowledge of the community, the state and their resources in relation to my job. Specific areas in which I have received materials include:

Visual Aids

Special Education Materials

Commodity Information

Professional Organizations

Services Available to Low Income Families

I like and use the extension service because it is a wonderful and time saving resource.

Toni Gies Tyson
Mountain View School
Helena, Montana

Extension

G E S T

Flood victims call Extension for help

The Extension Service couldn't keep the Milk River from flooding this past fall, but it tried to help the victims find their way out of the disaster.

Extension agents at the Fort Belknap Reservation and in Blaine, Phillips, Valley and Musselshell counties responded to flood victims' questions and requests via call-in radio programs and the telephone. Most questions pertained to canned and stored foods, cleaning up flood-damaged homes and buildings, and salvaging damaged forages and grains.

"Most of the calls I got were on using canned food, damaged furniture and appliances, cleanup and disposal of spoiled food," says JoAnn Doughten, Blaine County Extension agent. She and fellow agent Perry Walborn had a call-in radio program to answer the many questions. Public service announcements were placed in local newspapers where flood victims could get information to people.

Some agents, such as Valley County's Verlin Koenig, also worked with local disaster committees and service agencies to assess damage, help apply for disaster assistance (60 farms in Valley County qualified) and compile resource lists to help disaster victims. One list compiled by Blaine County named some 50 sources of hay for producers.

Phillips County agent Jim Schumacher responded to more than 90 calls during and just after the flood. Calls centered on damaged water wells, livestock feed, septic tanks, household cleanup, stored and canned foods and possible financial assistance. Barb Hoffman, Valley County home economist, answered a few dozen calls concerning canned and stored foods and home cleanup.

Judy Knudsen, Extension agent in Forsyth, responded mostly to calls concerning canned goods and cleaning up houses and dwellings. Knudsen also

submitted articles to the local newspaper on damaged forages and other agricultural concerns.

Extension housing specialist Michael Vogel visited Blaine County to assess structural flood damage to homes in the county as well as on the Fort Belknap Reservation. Because saturated soil poses the potential for spring flooding if there is substantial rainfall, Vogel suggested that homeowners invest little in major repairs beyond cleanup, weatherization and preventive maintenance.

"Floods are tough enough to go through without having them happen twice in a year and losing everything again," explains Vogel. He suggested that, since there is a possibility of spring floods, flood victims take advantage of Extension information on flood prevention and preparation now.



District Extension Homemakers hold fall meetings

District Extension Homemakers conferences were held in six locations around the state last fall. The meetings were held in the following locations: Portland, Astoria, and Seaside. The meetings were held in each of the six conferences by local homemakers. The state president, Michael Stephen, and state vice president, Michael Stephen, were also present at the meetings. The state president, Michael Stephen, and state vice president, Michael Stephen, were also present at the meetings.

In addition, one of the main goals of the conferences was to provide a presentation of materials and information relevant to a particular subject in each district meeting. The subjects were: Sidney, Kay, Stanley, Bradley, David, and others. The state president, Michael Stephen, and state vice president, Michael Stephen, were also present at the meetings.

Extension specialists and Jo Thompson presented a program on household maintenance at the Sidney, Bradley, and Livingston conferences, and specialist Michael Vogel discussed housing problems and other people at the meetings. The state president, Michael Stephen, and state vice president, Michael Stephen, were also present at the meetings.

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"\$262,832 for a \$66,000 house? No way!"

"\$10,000 will grow to \$17,081 in four years? Awesome!"

"A car payment of \$352? I can't afford that."

These discoveries were made by youth who attended 4-H Congress last July. The 4-H'ers didn't find these facts from a book or their banker. They found the answers themselves by using financial calculators. The class on calculators was taught by Extension home economists Gayle Muggli, Custer County; Kim Tompkins, Deer Lodge County; Judy Knudsen, Rosebud-Treasure counties, and Eileen Wilson, Sanders County.

Similar statements of amazement were voiced by 21 women who participated in a financial calculator class during Woman's Week last June. The class was taught by Marsha Goetting, Extension family economics specialist.

"One 70-year-old woman told me she was advised by her son to not take the class. He told her it would be too difficult. By the third session, the woman had gained enough confidence that not only did she complete all of the problems, but she bought a calculator," says Goetting.

Goetting plans to expand the Woman's Week class next year to accommodate more people.

"Calculating" Extension professionals helping folks with finances

commodate more people. "We had a waiting list of 25 who also wanted to take the class," she explains.

The information a hand-held financial calculator can provide amazes participants, regardless of their age, notes Goetting. Most have never operated one, and many adults admit to having a phobia about math that dates from high school. But, after a get-acquainted session, they gain the confidence to do some of their own financial problem solving, says Goetting, a certified financial planner.

She says one couple discovered they could save more than \$13,000 of interest by paying an additional \$50 each month on their home mortgage.

Another woman had been told she would have \$30,000 by the time her 1-year-old grandchild was 18 simply by depositing \$35 a month into a certain type of account. Using the calculator, she discovered the account would grow to only \$13,557.

Financial calculators can make financial goal setting more realistic, says Goetting. "For years, I have emphasized the importance of setting financial goals. A calculator can quickly reveal whether those goals can be attained based on current spending and savings patterns."

To help people feel more comfortable with calculators, Goetting at Muggli developed a self-study manual with step-by-step instructions. The manual, "How a Financial Calculator Can Help You Make Decisions," costs \$3. It is based on one brand of financial calculator that sells for \$14.99 to \$28, depending on where it purchased.

Goetting and Muggli are developing a supplement that illustrates additional uses of the calculator. The supplement includes example problems often requested by workshop participants. For instance, one woman asked Goetting if she could use her financial calculator to compute how much she could save by making her house payments every two weeks instead of monthly.

The MSU Bookstore sells the financial calculator for which the manual was written. The cost is \$27.45, including mailing charges.

Those who want to experiment with a financial calculator before buying one may borrow one from the Extension Service at no charge. County Extension agents have more information on this loan program.

Extension specialists serving elderly audience

Montana's elderly population is receiving more time and attention this year from Extension's human resource professionals. The reason, says Bob Lind, Extension human resource development specialist, is the rapidly growing segment of the society—both nationwide and in Montana. Lind says his schedule of talks on caring for aging parents is also busy. He has sessions set through next spring and summer.

"As the number of older people increases and families become smaller, the need to care for aging parents will become a normal experience. People

...meet to begin plan-
...week. Park
...has been ap-
...for
...with the
...Homemaker

Extending home economists receive national recognition

Four Montana Extension home econ-
omists were recognized at the National
Association of Extension Home Econ-
omists annual session in Grand Rapids,
Michigan this past October.
Lana Loeffler, Boole County Extension
home economist, was elected
national Regional director for the
extension.
Boole County Extension home
economist Gayle Muggill and Rosebud
County Extension home economist
Knutson were given a plaque and
check from the Chemical Manu-
facturers Association for their work
in statewide education programs.
DelGuerra, Cascade County
home economist, was re-
cognized for her continued service to the
extension.

the fastest growing segment of
society—both nationwide and in
Montana.

Lind says at least 49,000 people in
the United States are over the age of
100. By the year 2020, that figure will
multiply seven times.

"And Montana parallels these na-
tional averages. Whatever need exists
today will multiply in the future," says
Lind.

Lind, Extension housing specialist
Michael Vogel and Extension nutri-
tionist Andrea Pagenkopf have each
written Extension publications geared
toward the elderly. Lind's focus on car-
ing for aging parents, Vogel's center on
housing considerations of the elderly,
and Pagenkopf's deal with nutrient-low
diets, drug interactions, exercise and
easy meals.

In addition, each of the specialists
has conducted workshops throughout
the state to focus attention on the
needs of the elderly.

Pagenkopf has spoken at senior
citizen centers and has also provided
information to county agents so they,
in turn, can speak to elderly audiences
in their communities.

"Not a lot of things have been
targeted to the elderly until recently. In
nutrition, we know there are problems.
We just haven't investigated all of them.
What we've attempted to do is put
together information the elderly can
find useful in their everyday lives," ex-
plains Pagenkopf.

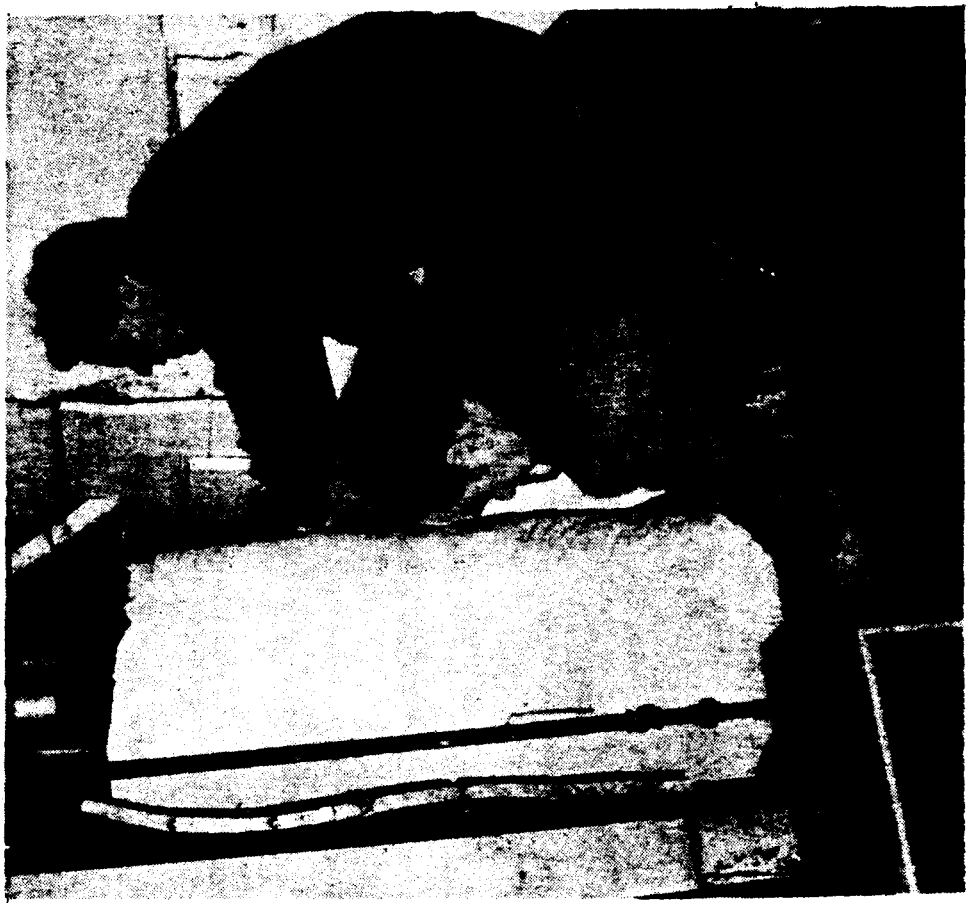
Vogel's program for the elderly in-
cludes information on housing op-
tions, barrier-free accessibility, safety
and security, energy and human com-
fort, and home repair and mainten-
ance.

In November, Vogel, together with
Cascade County Extension agent Claire
Del Guerra, organized a volunteer
weatherization program for the elder-

Homemaker groups to install such
items as water heater jackets and ex-
terior door sweeps. All materials were
donated by Opportunities Incorporated of Great Falls.

"Next year's program will be even
bigger," predicts Vogel. "We hope to
weatherize up to 75 homes involving
volunteers from other interested
groups."

everybody can expect to have the ex-
perience as a part of life," he says.
"Where families used to have 10
children, the responsibility of caring
for the aging parents could be split 10
ways. Now families have only one or
two kids, so the responsibility is shared
by fewer people."



George Malin (left) of Great Falls Gas Co. and Michael Vogel, Extension housing and energy specialist, wrap a water heater as part of a weatherization program for the elderly in Great Falls. (Photo courtesy of Great Falls Tribune)

Reservation housing reps learn energy improvements

An energy improvement workshop in September showed 14 reservation housing authority representatives how to detect and correct energy liabilities in homes.

Energy improvements have been needed in reservation housing, explains Extension housing specialist Michael Vogel, because the homes were constructed using minimal levels of insulation and other cold weather protection methods. In addition, the homes receive little proper maintenance.

"Plus, these homes are generally not properly operated to encourage energy savings—reservation homes typically use excessive amounts of energy. Some occupants have faced winter utility bills of \$300 to \$400 per month," notes Vogel.

Consequently, at the request of the Fort Belknap Housing Authority, a five-day home energy improvement training session was coordinated at Montana State University.

Participants from five of Montana's seven Indian reservations learned the principles of heat transfer and home heat loss, how to measure home heat loss and how to use Extension's home energy conservation simulator. They also were briefed on types of insulation, heating systems, and window and door treatments. Other topics included heating with wood, low-cost but practical solar applications, troubleshooting water heaters, basics of electricity and gas, selecting and maintaining appliances and lighting, and organizing space for safety and energy efficiency.

Besides Vogel, speakers were Extension interior design and household equipment specialist Carol Jo Thompson, Mary and Sam Guglielmo of Blacks Industrial in Spokane, Genie Rodaway of AMFAC Supply in Helena,

he says. It will focus on electrical and plumbing systems.

Training for reservation housing board members is also being planned. It is aimed at helping board members make decisions about building new homes on reservations. Building operations, products, techniques and cost-effectiveness will be discussed.

Vogel is also working with reservations and county Extension agents in planning home improvement fairs for the general Indian population. Vogel

says Fort Belknap agent Don Addy has been instrumental in developing housing programs for reservations.

"Because of Addy's success at Fort Belknap, other reservations want to follow suit," he says.

Fort Belknap is planning a mid-winter fair for February, and Rocky Boy Housing Authority is planning a home improvement fair for spring. Both Vogel and Carol Jo Thompson have helped with similar programs for Fort Belknap and Crow housing authorities.



Ellen A-Horowitz to National 4-H

Ellen A-Horowitz, a 4-H volunteer from the Fort Belknap Reservation, has been named to the National 4-H Council, March 1988. She was named to "Who's Who Among American Colleges and Universities," Morat Board and Alpha Zeta honorary fraternity and is a member of Agricultural Communicators of Tomorrow.

In her new position with the National 4-H Council, March 1988, she will work on news releases, feature stories, photography assignments, and other projects and a 4-H information plan.

She was named to "Who's Who Among American Colleges and Universities," Morat Board and Alpha Zeta honorary fraternity and is a member of Agricultural Communicators of Tomorrow.

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She was named to "Who's Who Among American Colleges and Universities," Morat Board and Alpha Zeta honorary fraternity and is a member of Agricultural Communicators of Tomorrow.

In her new position with the National 4-H Council, March 1988, she will work on news releases, feature stories, photography assignments, and other projects and a 4-H information plan.

She was named to "Who's Who Among American Colleges and Universities," Morat Board and Alpha Zeta honorary fraternity and is a member of Agricultural Communicators of Tomorrow.

certifies the 8,000-
pioneers in the state.
Licensing or certifi-
cates are required for
pesticide application
by individuals, and
for the use of certain
pesticides.

Housing authority representatives from five of Montana's seven Indian reservations participated in an energy improvement workshop at Montana State University this last fall. Purpose of the workshop, coordinated by Extension housing specialist Michael Vogel, was to teach the 14 participants how to improve energy use in their homes. Participants learned how to trouble-shoot heating systems and how high-efficiency systems work.

enrolled in Exploring 4-H and in wildlife projects. All gave demonstrations in their club, and seven competed in county Demonstration Day. By re-

With the help of 4-H program assistant Nancy Norsby and special education teachers, the young people have given demonstrations in their clubs.

The Chocolate Chips 4-H'ers were also involved in community service activities—raising and lowering flags at the fair and sold it in the Junior Livestock Sale, and one participated in the 4-H Dog Show.

"They seem to be more comfortable in public now," says Norsby. "These kids have had a hard time getting up

In 1984-85, six of the original 4-H's transferred to a middle school and formed another club. With both clubs, another club this year at the Custer County District High School, bringing the total number of clubs to three.

Norsby organized the first special education 4-H group after the parent of a special needs child approached her. Spotted Eagle, a recreational area, as the special needs 4-Hers is that they "have become joiners."

about establishing such a club. The special education classroom teacher participated in interview judging at the Chamber's cleanup day. Six of these kids have had a tendency to stick together in their own group, but now they are joining other groups and are fair.

Last year, 14 special needs youth participated in 4-H. All of them took sewing as the club project, but some members added other projects as well.

One joined the Boy Scouts and another is playing softball.

and District V in 1967.
If an applicant is unable to attend
the training program, he or she
is required by law to successfully pass
a comprehensive, closed book
examination.

Montana Extension Advisory Council members

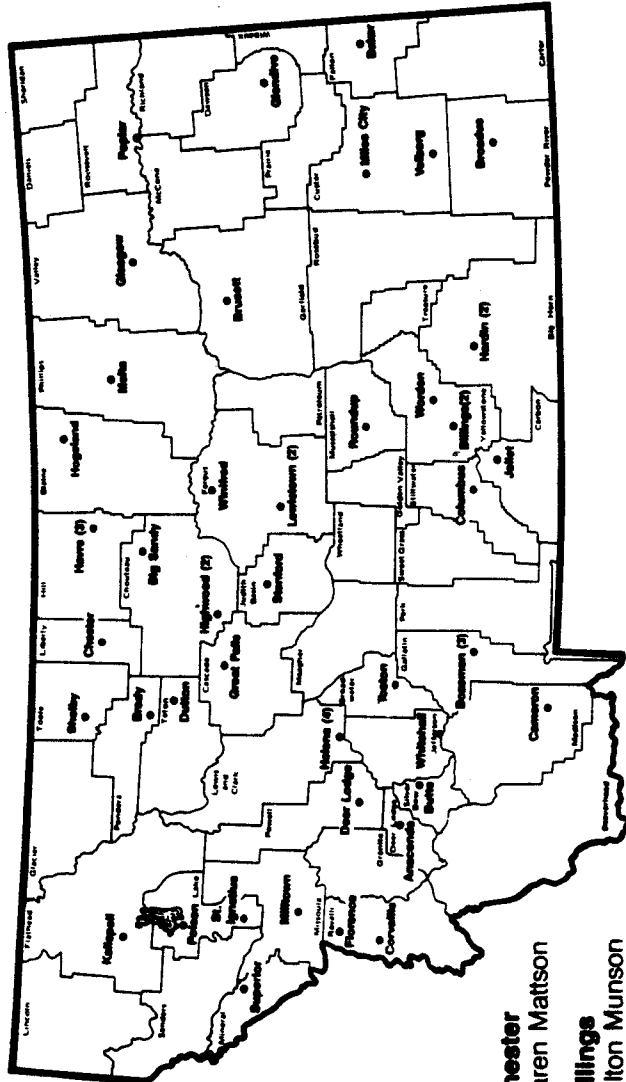
Joy Wicks

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Roundup

Mililown

Butte
Marv Seccombe



1990

Neutron probe making water managers of Roosevelt County producers

Producers in Roosevelt County, discouraged by 20- to 40-bushel wheat crops after trying various tillage practices, planting dates, irrigation strategies and "quality" seed, are finding hope for higher efficiency with a gadget called the neutron moisture gauge.

The gauge, owned by the Roosevelt County Soil Conservation District, determines moisture in both dryland and irrigated soils. It measures the amount of moisture a soil contains by "counting" the neutrons that pass through a tube. Neutrons move slowly when they collide with hydrogen atoms, and hydrogen atoms are abundant in moist soil. The wetter the soil, then, the higher the gauge reading.

Roger Ashley, Roosevelt County Extension agent and ICPM scout, and Richard Iversen, Soil Conservation Service, worked with the conservation district to purchase the gauge. Ashley says the gauge was extremely effective in determining how much water was used on producers' land and when the next irrigation should be scheduled. "The prediction could often be made one week prior to when the water was needed," he says.

The gauge was used in conjunction with the ICPM program in northeast Montana last summer at the Fort Peck

Irrigation Project. A site was selected in each farmer's field where the crop was actively growing, then an access tube was installed. The access tube consisted of a 5-foot piece of 1½-inch steel conduit welded shut on one end. The other end was left open so the gauge could be extended into the tube. Access tubes were read each week during field scouting trips. These data were then plotted. After two or three readings, Ashley says it became clear to both himself and the producers when an irrigation should take place and how much water should be applied.

Ashley reports one producer was able to increase his yield using proper fertility and irrigation water management from 40 bushels per acre of low-protein wheat to more than 70 bushels per acre of 15.6 protein wheat.

About 18 producers took advantage of the ICPM program, he says. Neutron gauge readings taken weekly during the field scouting activities provided sufficient information for the heavy clay soils found on the Fort Peck Irrigation Project to determine the rate of moisture depletion in the soil. The gauge contained a small, built-in computer that calculated the number of inches of water per foot of soil. This reduced the number of steps required to estimate

when an irrigation needed to be done, explains Ashley.

Before the neutron moisture gauge arrived on the scene, producers had to rely on the evaporation pan method. But they said the pan method posed problems for them in calculating how much water the crop was using and when the next irrigation was due.

"Worse yet, some irrigators added water when they felt it was needed, even though they used nothing more than their experience from the previous year. Often, too much water was added and a crop that could have yielded 60 to 70 bushels was injured by excessive water," he says.

"The major drawback with using the neutron probe method of irrigation scheduling is the cost of the gauge itself," Ashley says, which can run about \$3,500. "Fortunately, for northeast Montana producers, the Roosevelt County Conservation District was forward looking in its desire to help farmers modernize irrigation scheduling techniques in the area."

Special training in the use and handling of radioactive materials used in the neutron gauge was provided by Don Tanaka, Agricultural Research Service research scientist at the Northern Plains Soil and Water Research Center at Sidney.

The fall session was "Images of Success." Topics included "Recognizing Your Positive Qualities and Accomplishments," "Setting and Attaining Career Goals," "The Language of Dress," "Building Your Self-Image," "Managing Stress in Today's World" and "Time Management Skills."

Lunch 'n' Learn works for Hill County

resource people or MSU Extension specialists in presenting information in 50-minute noon hour presentations to a variety of people."

Three sessions per year are planned and conducted. Each session consists of six weekly programs.

More than 5,000 men and women have been reached through the Lunch 'n' Learn program approach in Hill County over the last four years.

Judy Ward, Hill County Extension agent, says Lunch 'n' Learn is a cooperative effort with the Havre Adult Education program. "We use local

Montana agents tour southern Alberta

Six members of the Montana Association of County Agricultural Agents toured the research station at Lethbridge last July to learn more about research underway in southern Alberta.

Montana Extension agents Nels Boe, McCone County; Larry Hoffman, Lewis and Clark County; Bill Richter, Teton County; Robert Willson, Lincoln County; Verlin Koenig, Valley County; and Kevin Laughlin, Toole County, visited 14 sites in five days.

The tour was conducted by Laughlin, who also serves as MACAA state scholarship chairman, and Blair Shaw, regional crop production specialist for Alberta Agriculture at Lethbridge.

Besides seeing research on barley, Russian wildrye, crested wheatgrass and specialty crops, the Extension visitors went to the Prairie Agricultural Machinery Institute, Crop and Hail Insurance Corporation headquarters and Alberta Weather Modification Program facilities for hail control. They also visited Lakeside Industries' 25,000-head feedlot, milling and forage research center, soil testing lab and packing plants.

Purpose of the tour, sponsored by the MACAA, was to let agents observe the research in southern Alberta, much of which applies to Montana.



Bill Richter (far left), Teton County agent, and Larry Hoffman (second from left), Lewis and Clark County agent, visit with an employee of Lakeside Industries in Brooks, Alberta. The Extension agents visited Lakeside Industries as part of a professional improvement tour sponsored by the Montana Association of County Agricultural Agents.

County happenings . . .

BIG HORN—A total of 80 women took advantage of Marsha Goetting's training on financial calculators at three separate sessions. Goetting, Extension family economics specialist, provided calculators for each participant to use as well as self-help manuals she had published.

Participant: school parents bank employees and 4-10 teachers—learned firsthand how to work the calculators.

county fair. Elected 4-H'ers served as a county official for a day and learned the duties of that office firsthand. These 4-H'ers shared what they had learned with all of the county youth through half-hour workshops at Project Days in December.

GARY ATIN—On days, C...strategic...yle
shows and a disc jockey cake decorating contest
were part of the National 4-H Week promotion

PONDERA—County agent Jack Barlinger is taking his agricultural information to the kitchen. Barlinger has planned a series of programs called "Coffee Topics." The topics are suggested by a farmer and five or six neighbors. Barlinger and county weed supervisor Steve Becker then prepare a presentation on the topic. They present it in the farmer's home where the group can meet casually over coffee. Some discussions have been

as self-help manuals she had published. Participants—preschool parents, bank employees and 4-H leaders—learned firsthand how to work the calculator.

BLAINE—County agent JoAnn Doughten worked with other planning committee members to make a three-year dream—Public Broadcasting Service—a reality for county residents. "At a time when budgets are tight in Extension, this media form will be an additional way of getting programming to all residents of the county," says Doughten. A total of \$100,000—a \$75,000 Public Facilities Construction grant plus \$25,000 raised locally by donations, coupon redemption in grocery stores and county funding—will establish the low-power mini-television station at Chinook High School. A programming committee will help select programs, both "canned" and original. For Extension, this means that a program could be presented live or taped for later airing. Also, residents in outlying areas who could not attend a live production could watch from their homes and participate via a call-in connection. Specialists with limited travel budgets could send tapes for viewing, then participate in the program through a teleconference call. Extension or 4-H also could capture a weekly time slot for special programming. "We all hate to think about cutbacks in budgets and staff," says Doughten. "But Blaine County residents may feel the pinch less with PBS in our community."

CUSTER—County agent Gayle Muggli conducted four work sessions on food and nutrition for 12 young men at the Pine Hills School residences. The youth helped prepare food and reviewed nutrition principles. Muggli also spoke on conflict management and communication skills, plus nutrition education in the classroom, at the Rural Education Conference in Miles City. Muggli's audience was 30 rural schoolteachers from eastern Montana counties.

DAWSON—Extension agent Charles Peterson doesn't yet have computer capabilities in his county office, but he doesn't let that stand in the way of helping producers. He worked with Jim Squires, a Dawson County farmer, to organize a computer users group. Purpose of the group is to allow agriculturally oriented computer owners to share ideas and help each other overcome some of the complexities of learning how to use available programs.

FERGUS—Do you know the duties of the county assessor? 4-H'ers in Fergus County learned these and other skills through a county citizenship program coordinated by Kathie Bailey, 4-H program assistant. The program began last June when all 4-H'ers completed voter registration forms. Clubs nominated older 4-H youth to run for 12 county offices on the green or the white party ticket. A mock election was held at the

December.

GALLATIN—Displays, demonstrations, style shows and a disc jockey cake decorating contest were part of the National 4-H Week promotion in Gallatin County. Terry Wolfe, county agent, and 4-H leader Lauri Olsen worked with a large group of 4-H and Extension Homemakers to make the public aware of the 4-H program. During the week, 4-H members presented radio spots on local stations, wrote special newspaper articles, had businesses display 4-H on their marquee and participated in the MSU Homecoming parade. In addition, some 5,000 people became acquainted with 4-H through demonstrations and displays at the Bozeman Main Mall. Gallatin County agent Bev Wallace developed a program on building self-esteem and presented it to more than 380 people during the past year. As a result of the program, people have requested the self-help booklet Wallace prepared for the county: "Feelin' Good... Feelin' Fine, 'Bout Myself... Most the Time."

HILL—Fifteen project leaders representing the 10 Extension Homemaker clubs attended a meeting called "What is a mill?" Hill County Commissioner and Montana Extension Advisory Committee member Toni Hagener explained a mill and how its value is determined in the county. Hagener also discussed county budgets, county services, state policies implemented through the county commissioner's office, and city and school budgets. The project leaders then presented the mill program, which was coordinated by the Gildford Jolly Jones Extension Homemakers, to their respective clubs. Hill and Blaine County agents worked together to organize a 4-H microwave cooking project. The project, which drew 55 participants from Havre and Harlem, emphasized nutritious food preparations using safe microwave oven cooking techniques. 4-H'ers prepared jiffy breakfast foods, nutritious snacks, fruit and vegetable dishes and lunch menus.

JUDITH BASIN—"How To Get the Most Out of Your PIK Certificate" was the theme of two grain marketing programs held this past fall. J. H. Bahn, Extension marketing specialist, gave details on various options farmers can use in disposing of the certificates. The 60-plus producers and agribusiness people who attended the programs learned ways to manage and use certificates to earn a return of 10 percent to 20 percent or more of the face value at no cost to the government or producers. County ASCS personnel and local grain merchants reported a surge in grain marketing activity following the programs. They estimated that farmers using PIK certificates to redeem commodity loans earned several thousand dollars over their face value.

prepare information on the topics and present it in the farmer's home where the group can meet casually over coffee. Some discussions have been on weed control, cropping and range management systems, rodent control and handling PIK certificates. "The discussion alone on a small group basis is as educational as what we present," says Baringer.

ROOSEVELT—Extension home economist Sue Hochhalter initiated a program called "Aging: A Celebration of Life." The Culbertson Ministerial Association, Roosevelt Memorial Hospital and Nursing Home, and the Extension Homemakers helped plan and sponsor the workshop. One session on "Growing Older—Don't Take It Lying Down" included a discussion of social needs, exercise, nutrition, communication, living arrangements and a positive attitude. Another session on wills and estates pointed out problems that can arise if a person dies without a will. Hochhalter presented a session on nutrition for the elderly—balanced diet, medications, supplements and osteoporosis, exercise and blood pressure, absorption of minerals and weight control. An area minister discussed stages of grief, the importance of having friends and family present and the importance of listening. Local pastors conducted a session on spiritual needs of the elderly. The day-long workshop ended with a panel discussion on "The Joys of Life."

SHERIDAN—Shella Friedrich, Extension home economist, and Terry Angvick, Extension agricultural agent, established a 4-H Leader and Officer Training Committee. Both agents meet with this committee each fall to plan training for 4-H leaders and club officers. This year the committee focused on training for new leaders with four or fewer years of experience. Full-scale efforts were launched to create awareness, increase interest and encourage attendance at the leader training session. The training focused on foods, clothing and livestock, plus training on record books, recreation, flag etiquette and parliamentary procedures. A special session was held for organization leaders on planning club programs and leader records with 23 leaders in attendance and five leaders involved in the training. Agents also provided part of the training. Another training program for club officers was held with five experienced leaders providing the training. Each leader took one type of office and conducted a mini-workshop. For instance, president, vice president and parliamentarian were one group. The entire group was together for recreation training, and the leaders put on a mock meeting to demonstrate proper procedures. Of a possible 35 club officers, 23 attended.

program at Northern Montana College and other college campuses discussed recreation and educational opportunities. The City-County Library presented a display on the special services to the elderly.



Vince Yablonski, Department of Family, Youth and Parks, explains the characteristics of clubs that are successful. He is speaking to a group of people at the 4-H Leaders Forum this past fall. The forum was held at the University of Montana, Missoula, on October 12-13. The forum was part of the 4-H Leaders Forum, which is a national program that provides training and support for 4-H leaders. The forum was held at the University of Montana, Missoula, on October 12-13. The forum was part of the 4-H Leaders Forum, which is a national program that provides training and support for 4-H leaders.

Missoula gardeners find home for green thumbs

by Lily Tuholske, Missoula County horticulturist

Gardeners who wanted a place to plant their green thumbs found fertile ground in the Missoula County Extension Office last summer.

Fifteen horticultural hotshots were recruited and trained as Master Gardener volunteers to help with Missoula County's home horticulture program.

It was relatively easy to round up volunteers from Montana's "Garden City." Posters were placed in local greenhouses and retail garden shops, and public service announcements were made for radio and television. The Master Gardener Volunteer Program also was announced in the Missoulian.

Recruited candidates were offered 40 hours of free horticultural training in exchange for 40 hours of volunteer

time, answering a variety of questions related to home gardening and landscaping. Master Gardener candidates who attended the 40-hour training workshop and passed a comprehensive exam were asked to donate at least two hours a week from May 1 to Oct. 1, answering the phone and helping walk-in clients. The training program was held for three days in April. Retired Extension horticulturist Orville McCarver and Extension entomologist Gary Jensen were on hand to teach the recruits about tomatoes, lawns and insects.

Regional experts also helped out with the training. Kalispell dahlias grower Bill McClaren lectured to the group about dahlias and perennials. Diane Bilderback, Missoula gardener and co-author of "Garden Secrets" and "Backyard Fruits and Berries" (both published by Rodale Press), offered tips

on growing strawberries, raspberries and blueberries. Nancy Callan of the MSU Experiment Station's Western Agricultural Research Center in Corvallis discussed fruit trees. In all, 17 different sessions were held during the three-day workshop. In addition, each trainee received a comprehensive reference notebook.

Once on board, the Master Gardener volunteers responded eagerly to more than 800 questions on everything from tent caterpillar control to tomatoes. They donated more than 525 hours, averaging 35 hours each. Based on minimum wage, this represents a value of more than \$17,000 to the Missoula County Extension Office.

Master Gardeners were able to keep up with current problems by attending regular training meetings throughout the summer. They also received a newsletter periodically.

1987 Weed School sessions set

Three Extension Weed School sessions have been scheduled at Montana State University—June 29, 30, July 1, July 6-8, and July 8-10.

The school is a hands-on classroom and field training program in weed control. It teaches participants how to identify weed seedlings and control them, says Jim Nelson, Extension weed specialist at Montana State University.

Faucipants are given quizzes to check their progress in handling technical skills, understanding weed control problems and customer problems. Each session is limited to 25 people.

primarily in learning to identify weed seedlings."

Nelson says this year's sessions will also emphasize complaint handling by having producers and agribusiness participants exchange positions and role play.

Last year's participants praised a weed nursery of living plants as "a great learning tool" for seedling identification. They also found the new Extension "Weed Seedling Guide" helpful, says Nelson. The guide illustrates 33 grass and broadleaf weed seedlings and describes how to identify them.

"The weed guide is very helpful to others," says Mike Lang, Northern

"I got more out of it than any school I've been to," says Doug Johnson, Cargill dealer at Fort Benton. "I liked the classroom-field work combination and really enjoyed the herbicide part."

Ken Dart, DuPont agricultural products marketing representative in Bozeman, describes the Weed School as "a great hands-on look at weed identification with a key that gives something to take back to the field and help growers. It benefits a lot of people."

This is the third year for the Weed School. Nelson says early registration may be required to ensure participation. For more information, contact the Department of Agriculture personnel as



ed to determine what crops will be featured during the 1987 sessions," says Nelson. "Based on recommendations of former participants, more time will be devoted to field experience—

upon us," says Mike Lang, Northern Supply Co. dealer at Malta. "The Weed School gives a lot to take home, which I have used since."

participate in agricultural well as professionals from MSU and other agencies.

The program is being conducted as a cooperative effort between NMC and the Hill County Extension Office. A local vendor supplies farmers with the computers, including monitors and wide-carriage printers. The vendor also has supplied units to the Extension office and NMC. Through grants and local budgets, educational software packages have been purchased for classroom demonstrations.

Ten production units enrolled in the fall session, and the winter session is full. A spring session is being considered.

Tom Welch, NMC agricultural technology instructor, is trying to get a grant to help offset producers' costs of purchasing a computer system. This, coupled with the vendor's educational discount and free software package, should enable producers to obtain hardware, software and training at a much reduced rate.

Some class participants will find they are not ready to purchase a computer, and others will find they need a system that will do less capability.

It is hoped that a communications program for producers, the vendor, Extension office and the county can be developed. A second grant is being applied for to develop this linkage. A grant is being developed for a program for county agencies and other educational agencies to carry on the work. The response is high.



New officers of the Montana Association of County Agricultural Agents were elected during an Extension Service updating conference held at Montana State University. From left are Marty Malone, Livingston, secretary-treasurer; Larry Hoffman, Helena, 2nd vice president; Nels Boe, Circle, vice president; and Jack Baringer, Conrad, president.

**Cooperative Extension Service
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Montana State University
Bozeman, Montana 59717**

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Ada Heatherford, Carbon County, Joliet, Mo. 59041

I have been a 4-H Leader for 17 years
served the club, county, district and State
level as a 4-H member 38 years ago.

As a strong supporter of 4-H. I have seen
the many benefits that youth had gained from
being in the 4-H program.

- a. Learning by doing -
- b. Responsibility for one's own project and
seeing it thru to completion
- c. Sportsmanship - also helping one another
- d. Record keeping
- e. Lasting friendships
- f. Transfer into school work the abilities
learned in club work.

1. Giving speeches & demonstrations
2. Learning to write reports
3. Learning to meet deadlines
4. Leadership

- g. Using the above learned abilities in their
young adult lives has given them an
advantage in the work place as

employers are recognizing the value of
being a 4-H member listed on a job
application.

Education Hearing Committee

I am the mother of 8 members who have all completed 8-10 years of 4-H; all successful adults in their own communities.

I am also a 16 year leader of an urban club in the Center of Missoula. All of the over 300 boys and girls I have had in my club are all "city" kids. I feel these kids have all gained "hands on" experience in developing skills for future living.

I am now a witness to the success of 4-H in their lives, and one of the most obvious personal development traits I see in these kids is responsibility. This needs to be reinforced in all our lives, especially youth.

Sincerely, Len Marcinkowski.

We farmers of Northcentral Montana urge you, our legislators, to maintain the Western Triangle Agricultural Experiment Station at Conrad, Montana.

The economic competitiveness of our farm enterprises are at a vast disadvantage due largely to forces outside of agriculture. This is the time for more research to find better cropping practices and more alternate crops.

Name

Address

Boyd Hoffman	Rt 3 Box 389, Conrad, Mt.
Paul H. Heil	315 S. Main Conrad, Mt.
Bob Letteney	Rt 3 Box 412, Conrad, Mt.
Ira W. Wynn	Rt 3 Box 430 Conrad Mt.
Michael Habot	RT 3 Box 383 Conrad MT
Thos F Jones	Star Rd Box 3 Ledger Mt.
Jerry Johnson	Rt 3 Box 338 Conrad Mt
Jerry Habets	Rt 3 Box 419 Conrad MT.
Paul Siefert	Box 967 Valier mt.
Gene Cunt	Box 704 VALIER
Maynard H. Van Tongeren	R 1 Box 34 Conrad
Orville Swanson	Box 910 Valier Mont.
Keith E. Grophey	Box 931 VALIER, MT 59486
John Forde	515 So. Iowa Conrad 59425
James C. Yeager	Conrad, 59425
Bryan A. DeVries	Conrad 59425
Robert E. Sander	Conrad 59425
Don McClain	Conrad 13 So. W. sec.
Florence A. Funchess	Conrad - RR 3 Box 330 - 59425

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Name	Address	
1. Arthur Verstraete	Conrad Mont	R 3 Box 373
2. Richard Freebury	" "	R 3 Box 374
3. Thomas F. Luchinger	" "	RT 1 Box 41
4. Carl Verstraete	" "	117 N. Yungue con
5. Robert L. Sayre	Valier "	R 3 Box 1002
6. Arnold Rohrer	Conrad "	RT 1 Box 47
7. Fay Stokes	Valier "	Box 94
8. Gerald Vandenberg	Conrad	406 So Iowa
9. Ernest J. Souffer	Valier	Box 708
10. Heath R. Malt	Conrad	RR 3 Box 40
11. Ray DeVries	Conrad	RR 3 Box 429
12. Wally F. Wrenn	Valier	Box 963
13. Mahlon W. Wipperfurth	Conrad	" 328
14. Gayro Bellamy	Conrad	Box 40
15. Alice E. Purson	Conrad	418 S. Maryland
16. Kenneth J. Sanders	Conrad MT	RT 3 Box V25
17. Delbert Chittum	Valier	Box 922
18. Bernard R. us	Conrad	RR 3 Box 313
19. Randy Young	"	RR 3 Box 333
20. Greg Egge	Conrad Mont.	RR 3 Box 4141

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<u>Name</u>	<u>Address</u>
Carl S. Kromelund	RR #3, Box 331, Conrad Mont.
Ken Duncan	Box 156 Depue
Robert Wenzel	Box 996 Valier
Paul Wickholm	Box 879 11
Sten 261	415 S. Iowa Conrad
Daniel Nabets	Box 950 Valier Mont.
Tom Mayers	Box 932 Valier, Mont.
Mark Duhler	RR3 Box 349 Conrad
Jay Smith	Rt. 3 Conrad
Dene Egan	Box 930 Valier
Bonnie J. Kromelund	Box 331, RR3 Conrad, Mont.

2-3

Mr. Chairman and ^{committee} members, I am
Sharon Hoken from Garfield Co. I go to
school ~~for~~ for class and I am a junior
since ~~I~~ am from a rural community,
my school is very small and we
don't have a lot of opportunities as we
are quite isolated. Through 4-H I have
learned how to give speeches and
demonstrations, which I would have
never learned in school.

4-H has given me many
opportunities in meeting other people
and ~~making~~ making new friends.
4-H has helped me learn how to
compete and be a good competitor.
I have learned how to manage
my time and money because of
the many projects I have carried
I have learned responsibility while
feeding lambs and calves and
serving as a Jr. Leader for 4-H camp.

Because of 4-H I feel confident
in going to college and preparing
for life. I have had to sit

priorities and goals in my project work. These skills will help me in achieving a place in the future as a productive and fulfilled citizen.

4-H has given me the opportunity to prove to myself I am a capable and worthwhile person. Because of my experiences at the Montana Citizenship Seminar and the Washington focus trip on Citizenship and through 4-H I can honestly say I'm proud to be an American.

Thank you for giving me the opportunity to be here today.

Sincerely,

Shavonne Hooker
Judson, MT



MONTANANS FOR 4-H

P O BOX 4431 BOZEMAN, MONTANA 59772

FRIENDS OF 4-H
MONTANA 4-H COUNCIL

COUNTY 4-H COUNCILS
MONTANA 4-H FOUNDATION



Mr. Chairman and Committee Members,

The Montanans For 4-H is a Committee formed to inform the Legislators what the 4-H Program is really about. As I visited with many Legislators I was informed, by them, that they felt they needed to know more about the 4-H Program and how it fits into the Extension Program.

The Committee has members from the State 4-H Council and the State 4-H Foundation.

We sponsored the breakfast, Jan. 13, 1987.

We also asked the men representing the ag. programs in Extension, the Extension Homemakers, and the Community Development people to join us as we planned our testimony for the committee hearing.

We hope to continue to support efforts in keeping you as legislators informed about what is happening in our Program.

Sincerely,
Marcia Hallandsworth
Chairman

We support the Cooperative Extension Service and the Agricultural Experiment Stations.

Name	Address
Carl Kuschak	Concord
Jim MORRIS	Ledger
Steve Kalkbrenner	Concord
Ann Hansen	Proctor
Wally Carey	Whitcomb
Katy Carey	Whitcomb
Michelle Jones	Whitcomb
Anna Cogdill	Whitcomb (B-4's)
Christen Wheeler	Whitcomb (B-4's)
Misty Wright	Whitcomb (B-4's)
Sam Brozovich	Whitcomb
Tom Rogers	Whitcomb
Jenny Antikainen	Whitcomb (B-4's)
Daralyn Cogdill	Whitcomb (B-4's)
Lepton Jones	Whitcomb (B-4's)
Kit Kleno	Whitcomb (B-4's)
Edna Herwig	Whitcomb (B-4's)
Rich Barnes	Wolf Creek (Jackson)
Carole Cogdill	Whitcomb, NH



Carolyn Jones
J. B. Maurer
Neil Lombardi
Dustin Jones
Al Kingston
Marge Hunt
Louise Merrill
Frank J. Toole
Dorina Morgan

Address
Helena, Mt.
Whitehall, Mt.
Dutton, MT
Whitehall
Whitehall
Helena
Polson
Big Sandy, MT
Plentywood
Belgrade



J. [redacted] Fisher Bor ag
Lionel S. Thompson Wolf Creek ag
Laura Engelbreton Haure Exterior Home

Don K Swenson	Chinoak Mt.	4-H
Frances Armstrong	St. Vls, MT - County	Ext.
Tony Richardson	Gr. Falls, MT	Homemakers
Beth [redacted]	St. Vls, MT	County Ex. Homemakers
Leah Lindblom	Great Falls mt.	County Ex. Homemakers
Madeline Rimmel	Great Falls MT	County Ex. Homemakers
Dr. Dixon	Whitehall mt.	Student; 4-H
Rick Barnes	Wolf Creek,	Servis & Clark 4-H
Elaine Shaffner	Missoula	Extension Homemakers 4-H Advertiser
Dege Kallstrom	Conrad	
Kenneth Michel	Dutton	Farmer
Jerry L. Maurer	Dutton	Farmer
Colin Weinzettl	Bozeman	MSU
Georg Minder	Bozeman	M.S.U. → teacher
Lisa Buffington	Gordcum	4-H
Shavonne Hooker	Jordan	4-H
Diane Hooker	Jordan	4-H
Annette Frank	Joliet	4-H
Annette Durnford	Missoula	Extension (34 yrs) Homemakers
Ivy D Pederson	moose, mt.	EFNEP Extension
Jack Perkins	Deer Lodge	MACD
Walt Fillmore	Flanagan	MEAC CARET
Aida [redacted]	Wolf Creek	4-H
Mary J. Converse	Great Falls, Cascade	4-H
Narcia Hollandsworth	Brady, MT.	4-H Leader
Honey Hollandsworth	Brady, Montana	4-H Leader
Terri Ludeman	Bozeman	4-H - Homemakers
Berry Anderson	Big Timber	4-H - Extension
Jean McLean	Helena	4-H - Extension

OVER-

M. M. Klas	Helena mt
Stanfield	Gr Falls
Major Scott	Great Falls
Dt Meskinen	East Helena
Sherry Mott	Great Falls
Madeline Bobbett	Great Falls
Erwaine Rothweiler	Great Falls -
Bertha Saunders	Great Falls
Gorghild Lee	Great Falls 4-H
Kit Kleno	Whitehall 4-H
Korbyn Kiersey	Whitehall 4-H
Sheldon Jones	Whitehall 4-H
Shelly C. Brun	Bozeman
Sandra Blake	Big Timber (Montana Association of Nurseries)
Jeremiah P. Carlson	Bozeman (Montana Association of Nurseries)
Molly Casey	Whitehall 4-H
Katy Casey	Whitehall (4-H)
Donna Cogdill	Whitehall (4-H)
Susan Brozovich	Whitehall (4-H)
Marion Rogers	Whitehall (4-H)
W. Pearson	Absarokee
W. Munson	Billings
Dustin Jones	Whitehall (4-H)
Neil Lombardi	Whitehall (4-H)
Norma T. Dixon	Whitehall (4-H)
Stan Klummann	Cameron (4-H)
Margaret Cogdill	
Art Kleinjan	Chinook overall

Extension Service
Name

Address

J. J. Hamer

E. Helena

W. J. Meadows

Helena

Peggy Haaland

Missoula

Suzanne Jolly

Helena

Terris Tower

Missoula

Jeff Huffman

Conrad

Doni Lueckner

Great Falls

Russ Corrington

Great Falls

Hildreth Grimes

" "

Ruth Duvall

Great Falls Mont.

Richard Thelges

Cheney

Bob Tackar

Conrad

Carl Veratrato

Conrad

Bin Watter

Conrad

Brad Huffman

Conrad

George Bohl

Pompey Pillar

Paul Gray

Rusby

Ada Heatherford

Vallet, Mt

Leo C. Bratsky

Bridgeport

Wm. Tackler

Great Falls

Wm. Connelley

Great Falls

James Erdman

" "

Gail Zarr

" "

Myrtle Bateman

" "

Harold Tubert

Be'

Lloyd Schmitt

Belea Nathe

Frank Loch Du

Jack Nelson

Major

Vera Cider

Lysia Shortell

Josephine Maney

Julia Johnson

Edna Urick

Nadine E. O'Connell

Melone C. Milner

Cloribel Louine

Mr. Burt

Ledy Russell

Andy Nelson

Connie Pinkley

John Lee

Bruce Shively

Georgia Pearce

Evelyn McGinnis

Pat Kraus

Lois Warren Rausch

Clara Johnson

Bertha Standley

Isabel Johnson

Margaret Freiboth

Loni Tyson

Helen H. Jeppesen

Madelin "Betsy" Jones

Kim Kukurud

Dutton

Flowerie

Great Falls

Haure

Haure

Black Eagle

Belt

Belt

Belt

Smith River

Hysham

Bozeman

Shelby (Toole Co.)

Joplin (Liberty Co.)

Joplin (Liberty Co.)

Bozeman

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Great Falls

Missoula

Cascade

Cascade

Cascade

Cascade

Lewis + Clark / Helena

Haure

"

Helena



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February 2, 1987

Educational Subcommittee
Montana State Legislature
Capital Station
Helena, Montana 59601

Dear Sirs,

I would like to take this opportunity to express my sincere hopes you consider fully the Agricultural Experiment Station System at the original FY 87 appropriations level plus a \$500,000 per annum capital improvement program.

I chaired the Agricultural Debt Subcommittee for the Governors Council on Economic Development and we found that now is a time of great stress in Montana's farm economy.

Much of the problems are related to National policy, however, this program is a proven one to bring innovation and productivity to the local communities plus the rate of return to the state for the investment has proven to be excellent.

The increase for capital improvement is recommended to give the scientists desperately needed new research tools required to maximize the effectiveness of the program.

Please consider this request closely.

Sincerely,

Michael E. Grove
President

MEG/raa

VISITOR'S REGISTER

Education

SUBCOMMITTEE

AGENCY(S)

AG Experiment / Cooperative Extension

DATE

2-3

DEPARTMENT

NAME	REPRESENTING	SUP- PORT	OP- POSE
Carl Verstegen	Conrad	✓	
Al Kierki	AERO - Helena	✓	
Anta Wilson	4-H L & C County	✓	
Brian Watten	Conrad	✓	
Charibel Bonney	W.I.F.E	✓	
Frank Loch Sr	Dutton - self	✓	
Lark C. Thompson	Wolf Creek. R.A.R	✓	
Scott Mangold	Teton County	✓	
CAROLYN G. MILLER	Helena MEAC SELF	✓	
Lula Stock	4-H Polson	✓	
Toni Tyson	Education	✓	
Elaine Schlenker	CEC	✓	
Merry Schlenker	" - 4-H	✓	
Pat Brewer	" - 4-H	✓	
Rain Marcinkowski	4-H	✓	
Heath Hollandsworth	4-H	✓	
Stan Kaumann	Madison Co.	✓	
Loy D Pearson	Missoula Co	✓	
Ken Michel	Self (Teton Co.)	✓	
Dewey Smith	Self		

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT
 IF YOU HAVE WRITTEN COMMENTS, PLEASE GIVE A COPY TO THE SECRETARY

VISITOR'S REGISTER

SUBCOMMITTEE

AGENCY(S)

DATE

2-3

DEPARTMENT

NAME	REPRESENTING	SUP- PORT	OP- POSE
Garry Jutton	MSU - AES	✓	
Doc Bratsky	Beet Mos & Hantley advisory	✓	
Robert Sivertsen	Sivertsen Ranches.	✓	
LARRY Johnson	Montana Grain Growers	—	
Jack A. Perkins	M A E F	✓	
Richard Thutys	Council	✓	
Jim Mowen	Council	✓	
Harold Tuback	Kellogg	✓	
George Behl	Pompey Piller ^{for} Hantley advisory	✓	
Lorrie Merrill	Bea ^{for} JCV Council	✓	
Jim Stephens	Self	✓	
Paul Zumbach	Council	✓	
Mary Converse	4-H		
Brad Huffman	Council	✓	
Ralph Mannix	MT. STATE GRANGE	✓	
John Anderson	Brady	✓	
Lloyd Schwartz	STANFORD	✓	
Herald Gunderson	CONRAD	✓	
Doc A. Hagdahl	Brady	✓	
Doc Pachac	Conrad	✓	

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VISITORS' REGISTER

COMMITTEE

BILL NO. _____

DATE 2-3

SPONSOR _____

[illegible]

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PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

VISITORS' REGISTER

COMMITTEE

BILL NO. _____

DATE 2-3

SPONSOR _____

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Tim M. McLean	471 S. Park Helena	✓	
Donna MORGAN	BELGRADE	✓	
Jeremiah F. Cashman	Bozeman	✓	
Scott Mangels	Choteau	✓	
Frank Lock	Beetown	✓	
Anna Engstrom	Bozeman	✓	
Donna Dugan	Chocoma Co	✓	
Dr. Maskemyer	East Helena	✓	
Diane Lock	Jordan	✓	
Sharon Horner	Jordan	✓	
Karen Luckenbach	Bozeman	✓	
Ellen Meadows	Helena	✓	
Wanda Frank	Libert	A-H	
Milt Murre	Billings	WJ	
Walt Fillmore	Flavours	✓	
Art Kleiman	Chinook	✓	
Sharon Malcolm	Day Mt.	✓	
Terry Nagel	Missoula	✓	
Mary J. Converse	Great Falls	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.