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South Dakota State University Agricultural Experiment Station Cooperative Extension Service

A SPECIAL REPORT TO THE SOUTH DAKOTA
LEGISLATIVE RESEARCH COUNCIL FOR
FISCAL YEARS 1962 THROUGH 1966

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1967

SOUTH DAKOTA STATE UNIVERSITY
BROOKINGS, SOUTH DAKOTA 57006



OFFICE OF THE PRESIDENT

May 25, 1967

Mr. W. A. Stevens
Budget & Finance Officer
Regents of Education
State Capitol Building
Pierre, South Dakota 57501

Dear Mr. Stevens:

Transmitted herewith is a special report on the South Dakota Agricultural Experiment Station and Cooperative Extension Service, prepared for the State Legislative Research Council.

The report covers appropriations and expenditures for FY 1962 through FY 1966 and current summaries and estimates for FY 1967 and FY 1968. Certain programs and activities are summarized briefly.

We would be pleased to provide you and the council any additional information or materials desired.

Sincerely yours,

H. M. Briggs
President

cc: Dean Duane Acker - Director, Agricultural Experiment Station
Dean John Stone - Director, Cooperative Extension Service
Dr. A. L. Musson - Assistant Director, Experiment Station
Mr. Wes Bugg - Director of Finance
Mr. Jim McAdaragh - Chief Accountant

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TERMINOLOGY DEFINITIONS

Income from Research Projects:

Arise from the sale of end products, or by-products, from experimental processes, such as livestock, meat, and grain. This form of revenue was used in support of the experimental programs until June 30, 1965, at which time the State Statutory procedure changed. The revenues are now deposited in the State General Fund.

Continuing Federal Appropriations:

Arise from Federal Acts of Congress and are in effect until repealed. The overall support is therefore dependable, leaving the dollar amount to be set annually by congressional action. These funds are State matching funds in varying amounts. This type of revenue is not to be confused with Commercial or Federal Contracts and Grants.

Federal Grants and Contracts:

Arise from Federal agencies' support to specific research and extension service work the agency wants done. Funds are allotted for a limited period only-- usually 3 years. Grants are paid quarterly in advance of need on a predetermined basis; contract expenditures are reimbursed quarterly on the basis of certified expenditure claim voucher. The salaries paid from these funds are included in the annual Operating Budget.

State Agencies Grants:

Arise from requests by other State agencies to solve technical problems in special areas of competence in the Experiment Station and Extension Service. Examples: Highway Department, Roadside improvements - developing specifications for roadside seeding.

Commercial Grants & Contracts:

Arise from the desire of the Grantor to support research in a particular area of research, and where there is a mutual interest and benefit to the State and Grantor. For example, the American Dairy Association for the development of low-fat dairy spread.

Internal & Statewide Services:

Services to the research operations and to the people of the State, i.e., seed and soil testing, Foundation Seed Stock.

Industry Services:

Arise from reporting services rendered to agricultural industry groups and farmer associations to meet a particular need for which fees are charged. Example: Swine breeding stock evaluation and crop performance testing.

Agricultural Experiment Station

Table 1. COMPARATIVE STATEMENT OF APPROPRIATIONS & EXPENDITURES
FOR APPROPRIATED FUNDS ON DEPOSIT WITH STATE TREASURER

EXPERIMENT STATION

	Fiscal Year Ended <u>6-30-62</u>	<u>6-30-63</u>	<u>6-30-64</u>	<u>6-30-65</u>	<u>6-30-66</u>
Fund Balances - Beginning	\$ 172,347.42	\$ 177,922.12	\$ 219,611.20	\$ 258,933.39	\$ 266,866.01
Less Reversion of Revolving Fund (1)	---	---	---	---	(213,169.57)
Fund Balances - Adjusted	\$ 172,347.42	\$ 177,922.12	\$ 219,611.20	\$ 258,933.39	\$ 53,716.44
Appropriations:					
Personal Services	\$ 668,940.00	\$ 679,540.00	\$ 709,878.00	\$ 855,372.00	\$1,345,132.00
Travel	32,190.00	32,190.00	36,600.00	36,660.00	32,840.00
Operation & Maintenance	281,000.00	281,000.00	325,000.00	269,560.00	524,691.00
Building Repair	10,000.00	10,000.00	13,420.00	13,420.00	- 0 -
Income from Research Projects	343,742.05	497,968.19	475,607.00	555,607.04	- 0 -
Continuing Federal Approp.	448,165.00	470,848.00	513,957.13	601,273.74	622,706.00
Special Operation Approp. (SESD Exp. Farm)	- 0 -	- 0 -	24,800.00	21,000.00	- 0 -
Re-Allocations (Between SDSU Agencies)	(33,435.74)	(20,712.33)	14,191.58	4,549.61	(84,018.50)
Total Net Appropriations	\$1,750,601.31	\$1,950,833.86	\$2,113,453.71	\$2,357,442.39	\$2,441,350.50
Expenditures by Object:					
Salaries	\$ 997,379.68	\$1,036,476.92	\$1,158,646.42	\$1,285,749.36	\$1,430,399.60
Labor	166,737.25	172,545.16	169,885.84	209,965.65	147,711.45
Travel	34,135.59	46,587.51	47,810.70	55,397.11	44,597.44
Operation & Maintenance	546,774.09	653,535.19	697,788.56	798,377.65	835,344.48
Total Expenditures	\$1,745,026.61	\$1,909,144.78	\$2,074,131.52	\$2,349,489.77	\$2,458,052.97
Fund Balance - Ending	\$ 177,922.12	\$ 219,611.20	\$ 258,933.39	\$ 266,886.01	\$ 37,013.97
Special Capital Appropriations Net:					
Real Estate - Dairy Farm	\$	\$ 50,000.00	\$	\$	\$
Swine Research Facility - SESD Exp. Farm			14.68	9,985.32	
Dairy Research & Production Unit			1,340.57	176,962.11	42,331.63
SESD Experiment Farm	52,268.72	47,731.28			

(1) Income from Research Funds reverted \$213,169.57 on 7-1-66 to State General Fund; in addition to this \$545,285.62 was remitted during the fiscal year.

Table 2. COMPARATIVE STATEMENT OF APPROPRIATIONS & BUDGETED EXPENDITURES
FOR APPROPRIATED FUNDS ON DEPOSIT WITH STATE TREASURER

EXPERIMENT STATION

Appropriations:	Fiscal Year Ended	
	6-30-67	6-30-68
State - Personal Services	\$ 1,395,049	\$ 1,367,275
- Social Security & Retirement	---	73,809 ⁽¹⁾
- Travel	34,180	---
- Operation & Maintenance	541,550	---
- Supplies, Equipment & Expense	---	549,620
Continuing Federal Appropriations, State Treasurer	658,492 ⁽²⁾	751,718 ⁽³⁾
Totals	\$ 2,629,271	\$ 2,742,422⁽¹⁾
Budgeted Expenditure Objects:		
Personal Services	\$ 1,831,221	\$ 1,989,815
Travel	56,500	61,500
Operation & Maintenance	741,550	691,107
Totals	\$ 2,629,271	\$ 2,742,422

- (1) Social Security and retirement for previous years were carried in the University budget.
- (2) Subsequent Federal authorization increased appropriations \$30,603 for a total of \$689,095.
- (3) This figure is an estimate made by budget officers prior to Jan. 1, 1967. President Johnson's budget message to Congress in January, 1967, requested funds that would provide the S. D. Station \$729,095.

Table 3. SUMMARY OF RESEARCH FUNDS SOURCES

EXPERIMENT STATION

Fiscal Year Ended	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66
Source by Dollars:					
State Appropriations (General Fund)	\$ 958,694.26	\$ 982,917.67	\$1,123,889.58	\$1,200,561.61	\$1,818,644.50
Income from Research Projects	343,742.05	497,968.19	475,607.00	555,607.04) (1)
Continuing Federal Appropriations State Treasurer	448,165.00	470,848.00	513,957.13	601,273.27	622,706.00
Continuing Federal Appropriations Local	4,500.00	6,000.00	17,789.37	18,896.30	30,846.05
Federal Grants & Contracts (USDA)	3,501.17	3,749.94	12,151.69	53,749.94	74,276.64
Federal Grants & Contracts (not USDA)	75,462.55	116,049.65	197,377.17	249,362.43	270,708.81
State Agencies Grants	- 0 -	3,200.76	4,005.57	2.21	29,349.88
Private Grants & Contracts	43,114.12	39,874.10	62,597.00	49,632.06	63,415.74
Internal & Statewide Services	57,515.54	87,157.88	53,923.54	119,330.56	214,705.66
Industry Services	17,367.33	22,798.54	20,579.22	32,121.84	37,679.82
Totals	\$1,952,062.02	\$2,229,664.73	\$2,481,877.27	\$2,880,537.26	\$3,162,333.10
Source by Percent:					
State Appropriations (General Fund)	49.21%	44.14%	45.29%	41.68%	40.27%
Income from Research Projects	17.71	22.43	19.16	19.28	17.24
Continuing Fed. Approp. -State Treasurer	23.04	21.24	20.71	20.87	19.69
" " " -Local	.03	.03	.72	.66	.98
Federal Grants & Contracts (USDA)	.03	.03	.49	1.87	2.35
" " " " (not USDA)	3.89	5.24	7.95	8.66	8.56
State Agencies Grants	--	.03	.16	--	.93
Private Grants & Contracts	2.21	1.85	2.52	1.72	2.01
Internal & Statewide Services	2.97	3.94	2.17	4.14	6.78
Industry Services	.91	1.05	.83	1.12	1.19
Totals	100.00%	100.00%	100.00%	100.00%	100.00%

(1) Research Project Income of \$545,285.62 deposited to State General Fund.

(2) Appropriations adjusted to reflect research income for comparative purposes.

Note: The above revenues do not include Capital Appropriations

Table 4. SOURCE OF RESEARCH FUNDS

EXPERIMENT STATION

	<u>Fiscal Year Ended</u>	<u>6-30-62</u>	<u>6-30-63</u>	<u>6-30-64</u>	<u>6-30-65</u>	<u>6-30-66</u>
United States Department of Agriculture						
Continuing Federal Appropriations on						
Deposit with State Treasurer:						
Hatch General	\$	354,926.00	\$ 374,748.00	\$ 396,402.13	\$ 451,724.00	\$ 480,591.00
Hatch Regional Research		91,875.00	93,700.00	117,555.00	149,549.74	142,115.00
Research & Marketing		1,364.00	2,400.00	- 0 -	- 0 -	- 0 -
Totals	\$	448,165.00	470,848.00	513,957.13	601,273.74	622,706.00
Continuing Federal Appropriations						
on Deposit Locally:						
Regional Research Travel Trust	\$	4,500.00	\$ 6,000.00	\$ 5,008.37	\$ 5,639.30	\$ 5,697.73
McIntire Stennis		- 0 -	- 0 -	12,781.00	13,257.00	25,148.32
Totals	\$	4,500.00	\$ 6,000.00	\$ 17,789.37	\$ 18,896.30	\$ 30,846.05
Federal Grants & Contracts:						
Entomology Research Division						
Insect Survey	\$	3,501.17	\$ 3,749.94	\$ 3,751.69	\$ 3,749.94	\$ 3,333.28
Coop. States Res. Service						
Pasture Res. Center - Norbeck					\$ 50,000.00	31,650.88
Agricultural Research Service						
Beef Breeding				\$ 8,400.00		700.00
Support Funds for ARS Scientists						17,241.84
Myco-Toxins						10,000.00
Beef Cattle - Newell						6,351.77
Soil & Water - Newell						4,998.87
Totals	\$	3,501.17	\$ 3,749.94	\$ 12,151.69	\$ 53,749.94	\$ 74,276.64

(TABLE 4 CONT.)

	Fiscal Year Ended					
	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66	
<u>Federal Contract Grants -</u>						
<u>Other Than U. S. Dept. of Agriculture:</u>						
U. S. Department of Interior						
Cooperative Fisheries - Yellow Bank	\$				\$ 2,800.00	
Economic Study of Oahe	\$ 2,700.00					
Reservoir Investigation - Fish					\$ 1,200.00	
Saline Water - Economics				\$ 6,000.00	5,000.00	
Cooperative Wildlife - Ferrets			\$ 6,522.83	7,365.07	3,208.78	
Indian Affairs - Economics	\$ 9,992.71	\$ 19,085.06				
Forest Service - Grouse & Prairie Chicken					3,000.00	
Water Resources Institute - Agri.				31,135.72	45,155.85	
Sage Creek Research - Range Mgt.					5,000.00	
Federal Grant Overhead						
IFRRA - Pheasants			\$ 3,000.00	1,000.00	174.81	
IFRRA - Parasites			1,500.00	833.32		
IFRRA - Flax	\$ 1,500.00	60.00				
IFRRA - Grasses	500.00					
Irradiation - Pheasants	\$ 2,000.00	770.00				
Small Business Administration						
Managerial Decisions	\$ 6,400.00	\$ 1,000.00		125.59	400.14	
Others		22,400.00		5,942.40	199.10	
United States Bureau of Reclamation						
Irrigation - Redfield	\$ 15,000.00	15,000.00	15,000.00	15,000.00	15,010.00	
Evaporation - Pactola Dam	\$ 11,745.84	24,377.59	43,036.45	10,000.00	2,015.97	
Irrigation - Clay-Turner		4,000.00				
Big Sioux Basin - Economics				10,000.00	10,950.00	
Atomic Energy Commission	\$ 5,000.00	5,064.00	12,201.50	12,605.50	8,883.49	
National Office of Naval Research	\$ 6,594.00	3,700.00	4,636.39	3,000.00	4,000.00	
Public Health Service			20,420.00	42,902.00	43,460.67	
National Science Foundation	\$ 8,280.00	14,782.00	91,060.00	103,452.83	120,110.00	
National Institute of Health	\$ 5,750.00	5,811.00			140.00	
Totals	\$ 75,462.55	\$116,049.65	\$197,377.17	\$249,362.43	\$270,708.81	

(TABLE 4 CONT.)

Fiscal Year Ended 6-30-62 6-30-63 6-30-64 6-30-65 6-30-66

State Agencies Grants:

State Game, Fish & Parks - Big Sioux Fish	\$	\$	\$	\$	\$ 6,000.00
State Game, Fish & Parks - Coop Fisheries Unit					14,391.32
State Game, Fish & Parks - White-tailed Deer		1,500.00	1,800.00	2.21	1,500.00
State Game, Fish & Parks - Wildlife Research Unit			2,205.57		7,458.56
Highway Commission		1,700.76			
Total		\$ 3,200.76	\$ 4,005.57	\$ 2.21	\$29,349.88

Private Grants and Contracts:

American Potash	\$ 400.00	\$ 85.10	\$ 545.00	\$	\$ 200.77
Dow Chemical	2,508.75	3.25		500.00	1,000.00
Shell	500.00	1,186.53	1,800.00	1,500.00	
Velsicol	500.00	1,500.00	3,155.67	6,266.23	11,966.79
Farm Foundation	72.50	58.71			2.45
Malting Barley Assn.	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
Merck	3,000.00	2,500.00	2,500.00		500.00
Pfizer	1,512.35	2,000.00	2,000.00		
Pittsburgh Coke		13.50		600.00	
Rural Electric Assn.	4,000.00	2,000.00			
Syntex	3,625.00	2,000.00	265.00		
Searle	1,000.00				
Elephant Brand Fertilizer	250.00				
Eli Lilly	2,000.00	350.00	2,500.00		
Elanco	2,000.00				
Hess & Clark	2,296.00				
NOPCO	4,700.00				
Vio Bin	500.00				
American Dehy. Assn.		2,500.00	2,500.00		
Chemagro - Animal Science		2,000.00	4,250.00		500.00
National Plant Food	1,347.00	350.00			
Rockefeller Foundation		500.00			
Selenium Tellurium Assn.		3,000.00		3,000.00	2,700.00
Pabst		1,500.00			
Flax Assn.		45.25			
American Dairy Assn.					6,000.00
Agronomy General Research					215.24

(TABLE 4 CONT.)

Fiscal Year Ended 6-30-62 6-30-63 6-30-64 6-30-65 6-30-66Private Grants and Contracts, cont.

Bennet Chemical	\$	\$	\$	\$	\$ 500.00
Central Exchange Foundation			700.00	700.00	1,240.00
Clinton				3,000.00	1,500.00
Poultry Improvement Assn.			3,200.00	3,228.00	200.00
Quaker Oats			3,000.00	3,000.00	3,000.00
Cominco Products				3,500.00	3,500.00
American Cyanamid					2,500.00
East Dakota Conservancy				7,947.07	7,500.00
So. Dak. Fertilizer Assn.					2,000.00
So. Dak. Wheat Commission				3,500.00	3,500.00
Plant Pathology Research				800.00	
Sigma Xi Research				400.00	
American Smelting Company			2,000.00		
Offset for Indirect Costs	10,802.52	16,781.76	25,040.45	10,190.76	8,067.99
IMC - Flax Dorm.					3,500.00
Wildlife Management Research			2,205.57		22.50
Chemagro - Dairy			5,435.31		
Wildlife Institute					1,000.00
Zoology Research					800.00
Legume Inoculation			600.00		
Total	<u>\$43,114.12</u>	<u>\$39,874.10</u>	<u>\$62,597.00</u>	<u>\$49,632.06</u>	<u>\$63,415.74</u>

Internal and Statewide Services:

Foundation Seed Stock	\$44,641.88	\$63,382.77	\$34,878.70	\$91,751.10	\$91,711.25
Seed Certification	2,100.00	4,066.00	2,200.00	2,000.00	3,000.00
Student Meat Lab.	10,773.66	18,531.11	16,844.84	25,579.46	33,456.18
Farm Service Records		1,178.00			
Seed Testing					3,935.56
Soil Testing					7,033.66
Veterinary Diagnosis					8,267.15
Dairy Sales					31,705.93
Central Feed					32,951.32
Farm Department					2,644.61
Total	<u>\$57,515.54</u>	<u>\$87,157.88</u>	<u>\$53,923.54</u>	<u>\$119,330.56</u>	<u>\$214,705.66</u>

(TABLE 4 CONT.)

Fiscal Year Ended 6-30-62 6-30-63 6-30-64 6-30-65 6-30-66

Industry Services:

Lake County Research	\$ 1,508.56	\$ 1,073.63	\$ 2,242.31	\$ 3,528.47	\$ 6,963.12
Crop Performance Testing	2,790.00	4,690.00	7,160.80	7,225.00	7,200.00
Swine Evaluation Unit	13,068.67	15,994.91	11,176.11	21,368.37	23,455.13
Beef Breeders		1,040.00			
Altamont Prairie Project					61.57
Totals	\$ 17,367.23	\$ 22,798.54	\$ 20,579.22	\$ 32,121.84	\$ 37,679.82

(This schedule has been prepared to supplement Table 1 which provides for funds on deposit with the State Treasurer. The sources of these research funds restrict the expenditures to the objectives included in the memorandum of agreement and/or specific agency purposes.)

FEDERAL CONTINUING APPROPRIATIONS

Hatch Act - Part of the appropriation to the U. S. Department of Agriculture and specifically designated for support of agricultural and home economics research at the state experiment stations. Administered by the Cooperative States Research Service (CSRS). Requires non-federal matching on unrestricted total program basis. May be expended only on Federally (CSRS) approved projects. Reverts to U. S. Treasury unless obligated or encumbered by June 30. Two additional fiscal years are allowed in which to liquidate the encumbrance. Audited annually or biennially by Federal examiners for compliance with Federal regulations. Twenty-one per cent of the Hatch funds above \$90,000 to each state must be spent on marketing research. There is also an earmarked amount for pesticide research.

Regional Research - Twenty-five per cent of the funds appropriated under the Hatch Act are designated to support cooperative research with two or more states participating in solving specific problems of mutual interest. Regional projects require the approval of a majority of the regional experiment station directors, a sub-committee (Committee of Nine) representing the four regions of the United States, and the U. S. Secretary of Agriculture before any regional funds can be spent on such project. These funds are subject to marketing and pesticide requirements of the Hatch Act and all other legal constraints. Annual meetings of the participating research workers are required and special progress reports prepared. State matching is not required.

McIntire-Stennis Forestry Research - Annual appropriation does not revert until end of second fiscal year. Requires non-federal matching on specific approved projects dealing with forestry or national grasslands research. (Shelterbelt work in Plains states is acceptable.)

Federal Contracts and Special Grants - Federal agencies frequently contract for specific research jobs of interest to them with individual experiment stations that have particular competence to do the job. Sometimes these are negotiated contracts, sometimes they are awarded as a result of submitted competitive proposals. Expenditures limited to personal services, expendable supplies and travel necessary to project. Equipment purchased with contract or grant funds remain property of Federal agency. Grants are made for a limited term, usually three years but may be two or four. Often can be extended for an additional year without additional funds. Complete accounting is required usually upon completion, but frequently on a quarterly basis with a quarterly progress report.

Private Grant Funds - Subject to the terms of the standard memorandum of agreement as signed by the University and the donor, with the University assuming full responsibility for the proper administration of the funds in expending them for the purposes designated.

QUOTATION FROM ADMINISTRATIVE MANUAL FOR THE HATCH (Experiment Station) ACT AS AMENDED, and Section 204 (b) of the AGRICULTURAL MARKETING ACT

EXPERIMENT STATION

Miscellaneous Publication 963, August 1964, p. 4, U. S. Dept. of Agriculture

Custody of Funds

Hatch funds allotted to the State stations are payable to the officer appointed by the governing board of the college or experiment station, and the officer to whom the funds are paid thereby becomes their custodian. Because of the specific wording of the Hatch Act, there is no provision whereby any State official, organization, or body may direct that such payments be made to an officer of the State other than an officer of the experiment station, duly appointed by the governing board of such station. Hatch funds are not the property of the State, nor of the appointed officer to whom they are paid, but are only in his custody for disbursement, as authorized by the station Director. The Hatch Act does not specify where or in what depository the custodian shall deposit these funds. He may place them in the State treasury if that is the policy of his institution. However, if he does so deposit them, his custodianship is not thereby terminated until they are expended for the purposes specified in the act.

Deposit of Funds and Accounting for Interest

It is essential that Hatch funds, wherever deposited, be available at all times for disbursement in payment of claims authorized by the station Director. The deposit of these funds in the State treasury, if found necessary and expedient in connection with the safekeeping, disbursement, and control thereof, may be made without legal objection. Such deposit, however, does not relieve the station Director of the responsibility for the budgeting and expenditure of the funds. Nor does it alter responsibility of the duly appointed custodian for accountability of the funds and the payment of claims approved by the station Director.

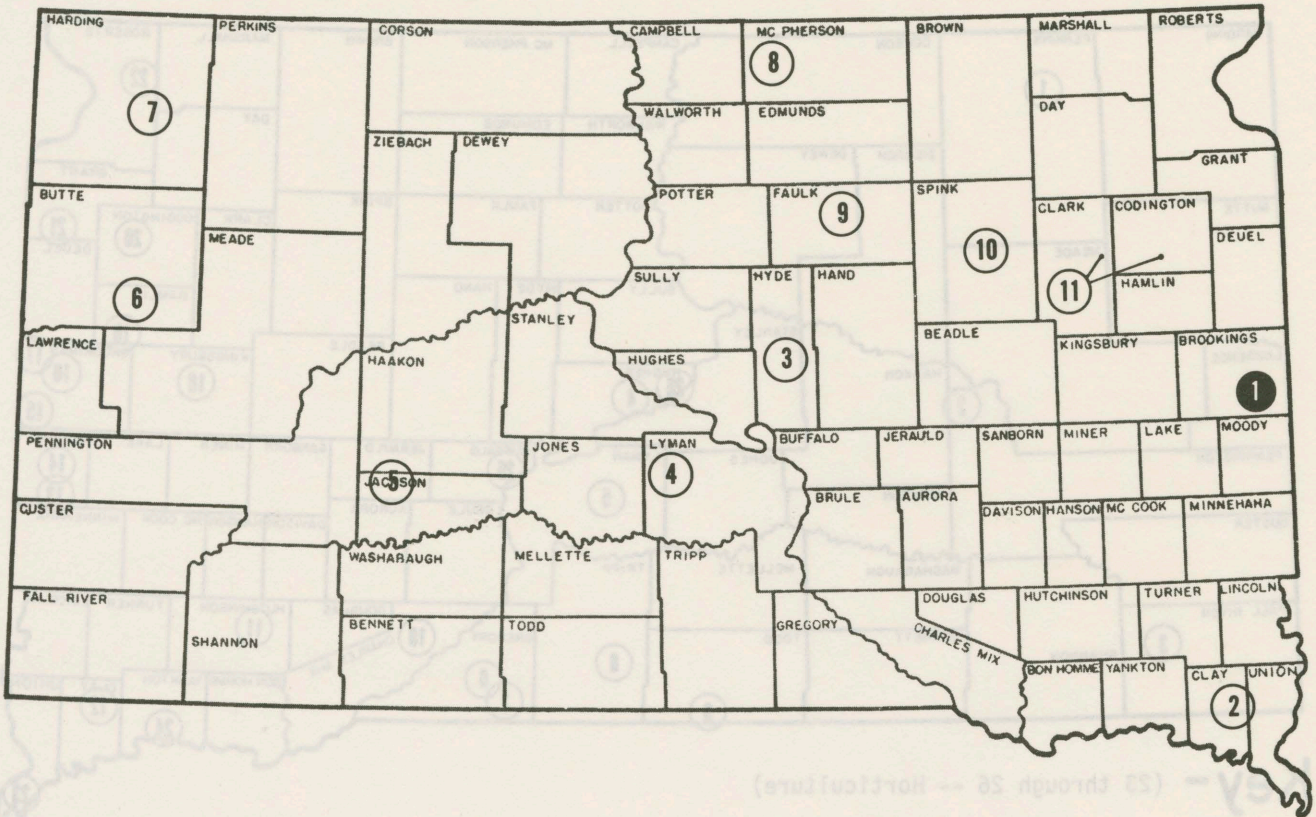
Maintenance of the Hatch funds in a separate deposit account is required if any interest accrues on the deposit of these funds. Provision is made in the annual financial report for certification by the legal custodian and the Director as to any interest that may have been earned on the deposit of the Hatch funds. If any interest has been earned, the amount is to be remitted by check, payable to the Cooperative State Research Service, U. S. Department of Agriculture, for transmittal to the U. S. Treasury.

QUESTIONS AND ANSWERS REGARDING FINANCIAL DATA

1. Why are not all "continuing federal appropriation" funds deposited in the state treasury?
 - a) When the McIntire-Stennis forestry research program was first established by Congress, there was some reservation about it becoming a continuing appropriation.
 - b) Regional travel trust funds are used almost exclusively for out-of-state travel, in which a faculty member may invest \$70 to \$200 per trip. Reimbursement to the faculty member can be made from locally held funds within a week, in comparison to four to six weeks if state treasury funds are used.
 - c) The fact that federal funds deposited in the state treasury must, by state law, be "appropriated" by state legislative action permits confusion among many over the true source of "appropriated" money, and the purpose of the money.
 - d) Depositing funds separately, in local accounts, permits compliance with federal law and administrative regulations regarding (1) research programs on which funds can be spent and (2) complete account records on such expenditures.
2. Why doesn't the personal services figure in Table 2 for fiscal 68, \$1,367,275, equal the salary total for experiment station as printed in the fiscal 68 SDSU salary budget? The figure, \$1,367,275, includes only the state money appropriated by the 1967 state legislature; the printed SDSU salary budget includes some staff salaries from federal continuing appropriations, contracts, and grants.
3. In the private grants and contracts section of Table 4, some of the accounts don't carry a "private" or "commercial" title; an example is Zoology Research. Why? A few grants and gifts are very small, \$25-\$50, and don't warrant separate accounting. They may be given to "further the department's research," etc., not for a specific project within the department. Such are deposited in these accounts. Also, at the close of a specific private-fund-supported project, a few dollars may remain in the private account. If the grantor doesn't want the money returned, it is transferred to the departmental account and the private account closed out.
4. Receipts to the Seed Certification Account, in the Internal and Statewide Services section of Table 4, almost every year is in even amounts, such as \$2,200. This is more than coincidence. What's the reason? The State Seed Certification Board is a part of the State Department of Agriculture and operates under a State legislative act of February 28, 1949. The law provides that seed certification responsibility be delegated to the S. D. Crop Improvement Association, and it is supervised by an experiment station or extension employee. Seed certification fees are received and held by the Board. The Board pays a portion of the salary of one experiment station clerical employee and these salary funds are deposited in this account so monthly salary checks can be drawn on it.

5. What is the account, Offset for Indirect Costs, under the Private Grants and Contracts section of Table 4? It handles some of the administrative and indirect costs of the private grant program. Ten per cent of such private grants is deposited in the account. This money is used for special laboratory equipment that may serve several departments or projects, office supplies, part-time office help, to pay honoraria to research consultants and visiting scientists, and in some cases to pay travel expenses of prospective employees when they visit the campus for an interview.
6. Are any funds counted twice? Yes. Why? Some internal and statewide services accounts (Tables 3 and 4) receive money from both off-campus clients and from on-campus experiment station departments. The intent of this report is to show all income and expenditures and show every operating account. These accounts are included because some of the income is from off-campus. (See also last sentence of answer to question 3. These transferred funds would also be "counted twice" in this report.)
7. Does the increase in grant and contract money replace the need for state money? The answer depends on the assumed purpose of the experiment station. If the assumed purpose is to operate a research agency of a certain size, the answer is yes. If the assumed purpose is to research problems for South Dakota in an order of priority, the answer is no. Here's why. The station spends state money, and federal continuing appropriations to the extent permissible, on the highest priority problems. Grants and contracts are accepted only if they augment these high-priority projects, or if they permit research on projects "next in line."

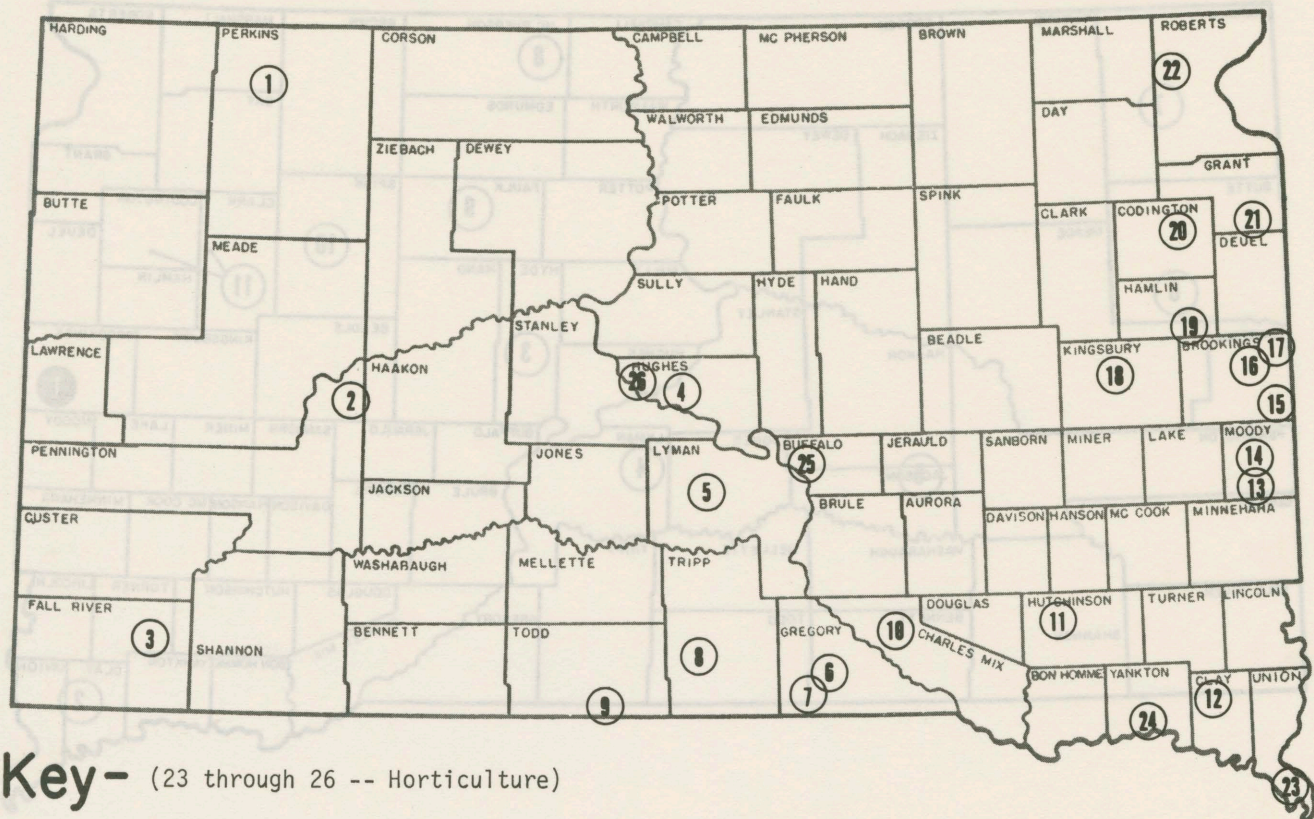
MAJOR RESEARCH LOCATIONS & CENTERS



Key-

- | | |
|---|---|
| 1 -- South Dakota Agricultural Experiment Station, Headquarters at South Dakota State University, Brookings. | 6 -- U. S. Irrigation and Dryland Field Station, Newell, 360 acres. Cooperative with USDA. |
| 2 -- Southeast South Dakota Experiment Farm, Centerville, 320 acres. Farm made possible through cooperation of people in local 9-county area. | 7 -- Antelope Range Field Station, Harding County, 8,000 acres. |
| 3 -- Central Substation, Highmore, 117 acres. | 8 -- North Central Substation, Eureka, 240 acres. |
| 4 -- South Central Research Farm, Presho, 30 acres. | 9 -- Pasture Research Center, Norbeck, 2,665 acres. |
| 5 -- Range Field Station, Cottonwood, 2,640 acres. | 10 -- Redfield Irrigation Development Farm, Redfield. Cooperative with Bureau of Reclamation. |
| | 11 -- Northeast Research Farm, Watertown and Garden City, 50 acres. |

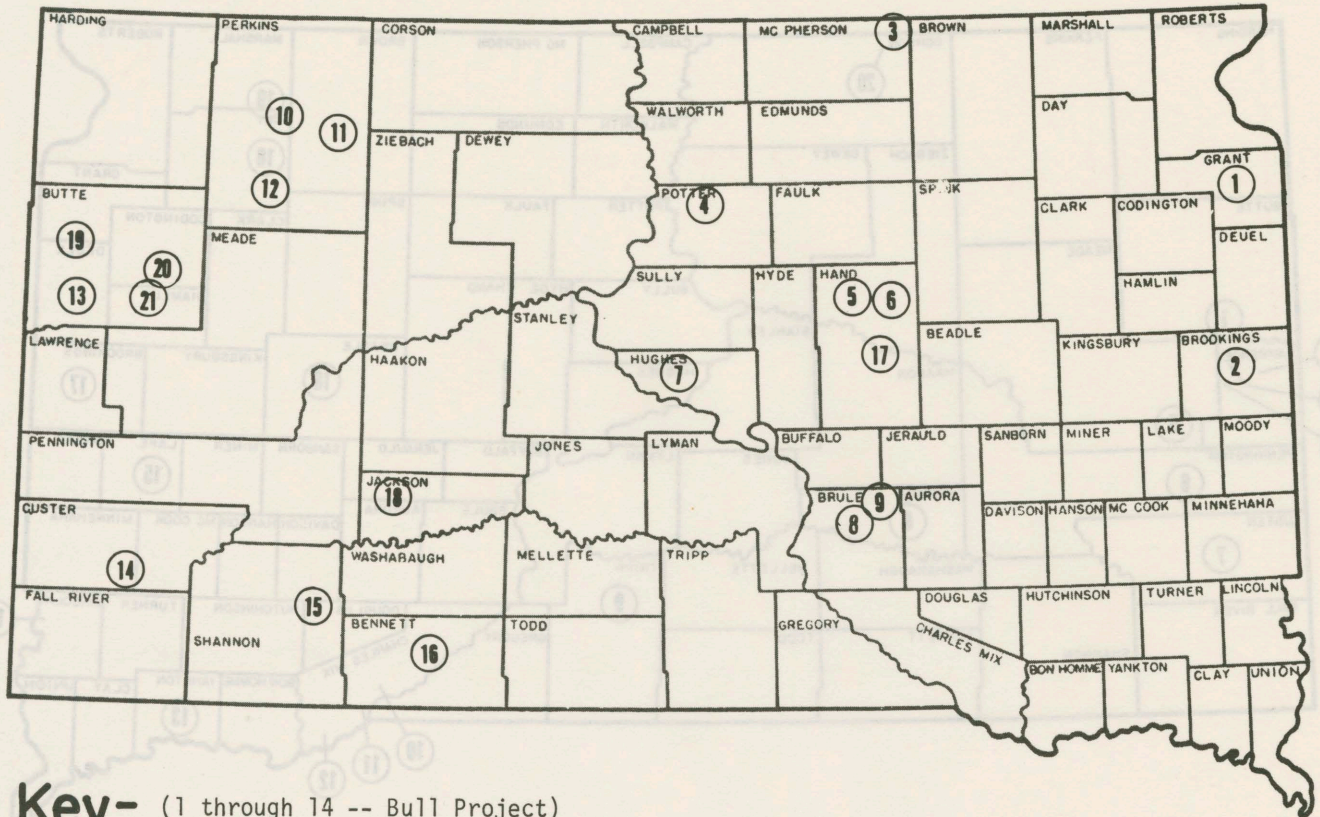
AGRONOMY & HORTICULTURE RESEARCH COOPERATORS



Key- (23 through 26 -- Horticulture)

- | | | |
|---|--|---|
| 1--Bison, Joe Wunder,
spring wheat, oats, barley | 10--Platte, Melvin Hoffman,
corn, grain sorghum
variety trials | 18--DeSmet, Otto Sckerl,
Tordon, 2,4-D for field
bindweed control |
| 2--Wall, LaVon Schearer,
winter and spring wheat,
oats, barley variety trials | 11--Parkston, Willard Konrad,
corn variety trials | 19--Estelline, Einer Salmonson,
wild buckwheat control in
flax |
| 3--Oral, Mr. Zolankowski,
Canada thistle, Russian
knapweed control | 12--Wakonda, Verne Larson,
sterilant chemicals
sickle weed | 20--Watertown, Orrin Korth,
wild buckwheat control in
wheat, oats, barley, flax |
| 4--Pierre, Donald Crothers,
bromegrass control in
winter wheat | 13--Trent, Loyal Eriksen,
cocklebur, quackgrass
control in soybeans | 21--Revillo, (County Agent),
leafy spurge control in
pasture |
| 5--Kennebec, (County Agent),
pennycress control in
winter wheat | 14--Flandreau, Foundation Seed
Stock Farm, cocklebur and
quackgrass control in soy-
beans | 22--Sisseton, Clayton Week,
regional soybean and
variety testing |
| 6--Gregory, Lyle Cook,
fertilizers on ear corn | 15--Elkton, Norris Kurtz,
Tordon residue on native
grass | 23--Jefferson, Leonard Dailey,
vegetables |
| 7--Dixon, Elmer Bailey,
sorghum herbicides, wild
buckwheat control in oats | 16--Brookings, Fred Shubeck,
Canada thistle control in
corn | 24--Yankton, Gurney Seed Co.,
tomato, woody ornamental
test plots |
| 8--Todd County, Leo Reagle,
fertilizer on irrigated corn | 17--Toronto, Laurelle Ness,
flax fertility | 25--Lake Sharpe, Corps of
Engineers, forestry plots |
| 9--Clearfield, Harry Ahlers,
fertilizers on ear corn | | 26--Oahe Reservoir, Corps of
Engineers, forestry plots |

ANIMAL SCIENCE RESEARCH COOPERATORS

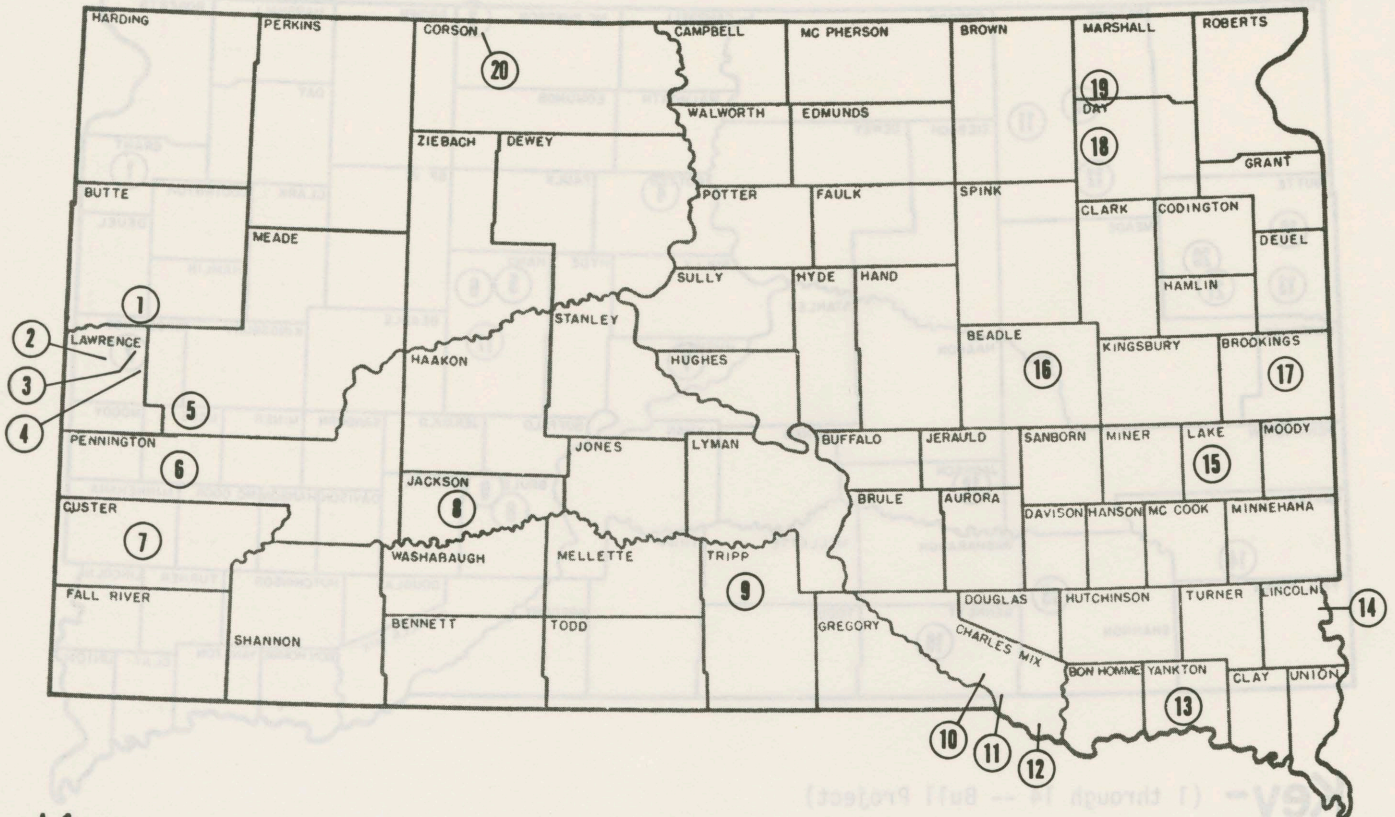


Key- (1 through 14 -- Bull Project)

- 1 -- Hot Springs, 7-11 Ranch
- 2 -- Belle Fourche, Clifford Bean
- 3 -- Sorum, Edgar Johnson
- 4 -- Meadow, Clifford Siedel
- 5 -- Meadow, N. F. Lyon
- 6 -- Gettysburg, Nagel Brothers
- 7 -- Blunt, Roland Klienschmidt
- 8 -- Kimball, John Leiferman
- 9 -- Kimball, Earnest Leiferman
- 10 -- Miller, Merle Bertch
- 11 -- Miller, Moncurs, Inc.
- 12 -- Aberdeen, L & R Corp.
- 13 -- Stockholm, John Stemsrud
- 14 -- Brookings, Ray Barnett
- 15 -- Porcupine, Merton Glover, Grass Tetany Study
- 16 -- Martin, Lawrence and Raymond Kocer, Antibiotics on Calf Sickness and Death

- 17 -- Hand County, Robert Duxbury Horn Fly Control
- 18 -- Cottonwood, Ranchers near Range Field Station, Fly and Grub Control
- 19 -- Butte County Walter and Vincent Crago, (Cooperative with Bureau of Land Management), furrowing, ripping, seeding on mixed claypan and saline upland range
- 20 -- Butte County Dale Richards, fertilizer plus 2,4-D for depleted range recovery and renovation methods on dense clay range.
- 21 -- Butte County Ed and Don Breidenbach, ripping on western wheatgrass range

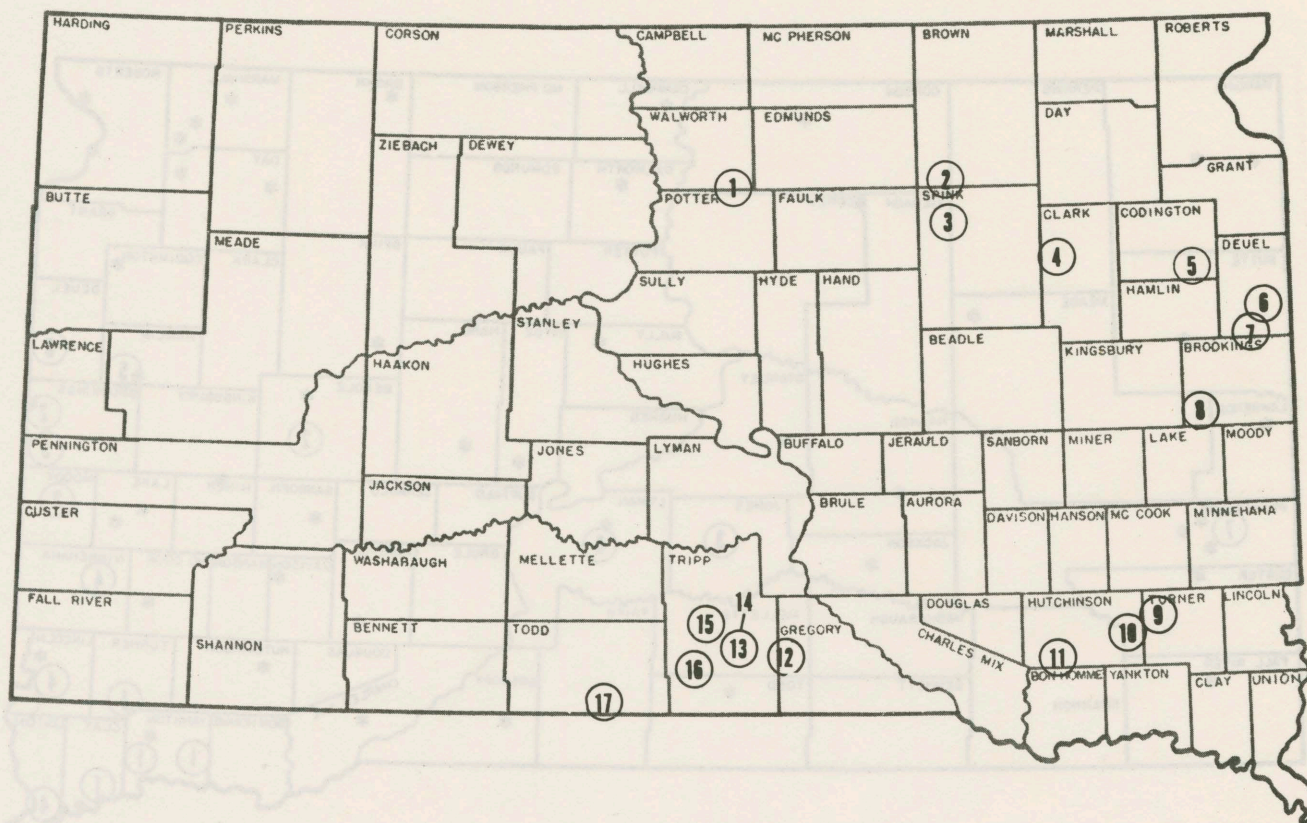
ENTOMOLOGY & ZOOLOGY RESEARCH COOPERATORS



Key-

- | | | |
|--|--|---|
| 1 -- Fruitdale, Alfalfa Weevil
Rodney Larson | 7 -- Custer, Big Game
Parasites and Residues
Arthur Richardson | 14 -- Canton, Corn Rootworm
Herbert Paulson |
| 2 -- Spearfish, Alfalfa Weevil
Albert Pendo
Arnold Kalb
Roy Shaffer
Fred Beets
John Ward
Fred Nicholls | 8 -- Kadoka, Grouse Parasites
Robert Henderson | 15 -- Madison, Corn Rootworm
William Algaier |
| 3 -- St. Onge, Alfalfa Weevil
Alvin Mitchell | 9 -- Ideal, Alfalfa Leaf-
Cutting Bee Test
Donald Jorgensen | 16 -- Huron, Livestock Insects
Walter Ball |
| 4 -- Whitewood, Alfalfa Weevil
Clifford Westburg | 10 -- Wagner, Livestock Insects
Roy Crisman | 17 -- Brookings, Mosquito
Marvin Battig |
| 5 -- Piedmont, Alfalfa Leaf-
Cutting Bee Test
James Gingras
Fred Gingras | 11 -- Lake Andes, Livestock Insects
Elvern Varilek | 18 -- Bristol, Alfalfa Leaf-
Cutting Bee Test
Ralph Hansmeier |
| 6 -- Rapid City, Big Game
Parasites and Residues
Russell Robbins | 12 -- Geddes, Corn Rootworm
Robert Cwack | 19 -- Langford, Alfalfa Leaf-
Cutting Bee Test
Raymond Jones |
| | 13 -- Yankton, Corn Rootworm
Albert Gunderson | 20 -- Lemmon, Big Game
Parasites and Residues
Douglas West |

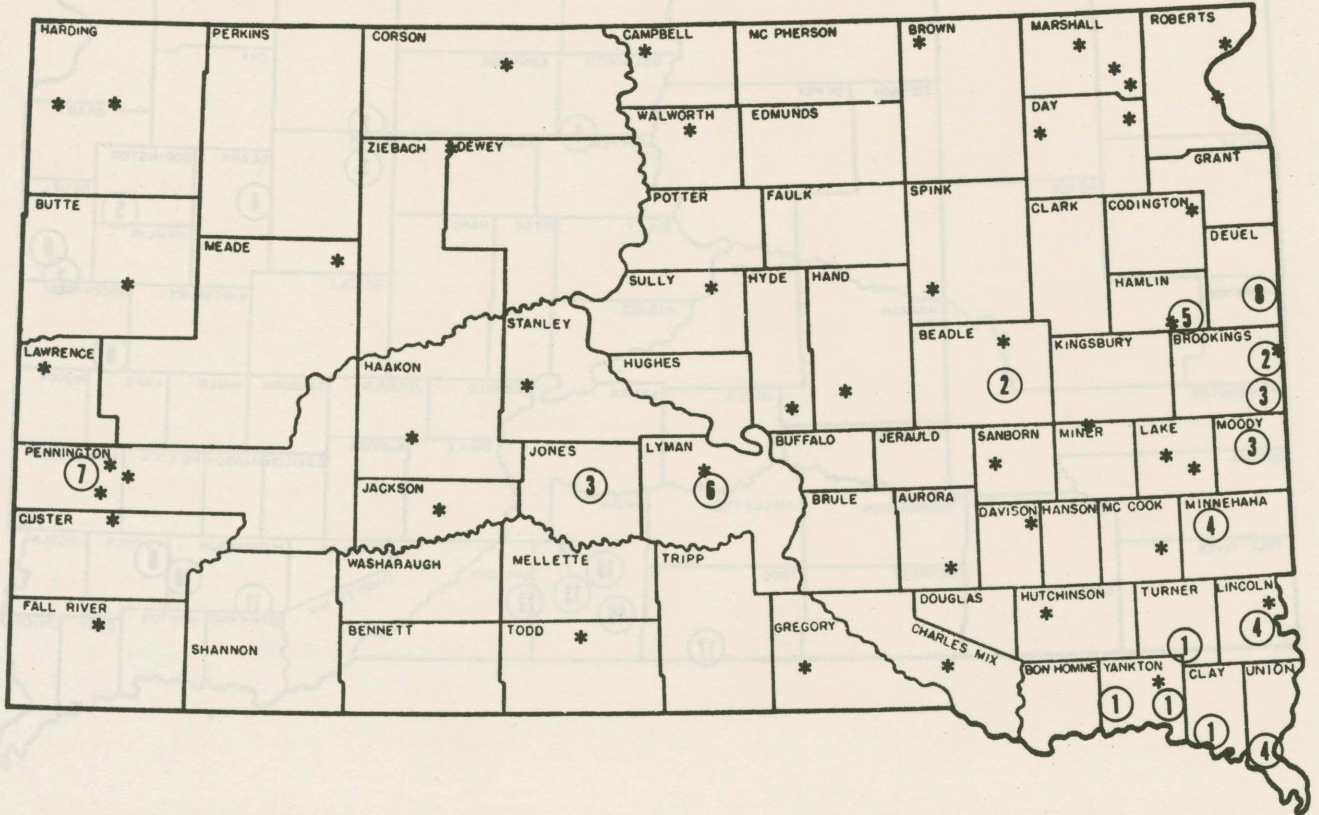
FERTILIZER RESEARCH COOPERATORS



Key-

- | | |
|---|---|
| 1 -- Hoven, Irwin Haas,
wheat, oats, barley | 9 -- Marion, Clarence Schmidt,
oats, barley, wheat |
| 2 -- Mansfield, Ernest Steger,
wheat, barley, oats | 10 -- Freeman, Otto Prehiem,
alfalfa |
| 3 -- Mellette, Jim Goldin,
oats, barley, wheat | 11 -- Kaylor, Ruben Fredrick,
oats, barley, wheat |
| 4 -- Raymond, August Seefelt,
alfalfa | 12 -- Gregory, Lyle Cook,
zinc deficiency |
| 5 -- Kranzburg, William Mack
barley, oats | 13 -- Colome, Larry Bertrum,
oats, barley, wheat |
| 6 -- Brandt, I. S. Christopherson,
oats, wheat, barley | 14 -- Colome, George Shippy,
alfalfa |
| 7 -- Toronto, Dale King
alfalfa | 15 -- Winner, Henry Fisher,
oats, barley |
| 8 -- Sinai, Richard Intermill,
new tree plantings | 16 -- Clearfield, Harry Ahlers,
nitrogen and zinc |
| | 17 -- Todd County, Leo Reagle,
zinc deficiency |

WILDLIFE STUDY AREAS



Key-

- 1 -- Relationship of pheasants to insecticides
- 2 -- Ring-necked pheasant studies
- 3 -- Farm fish pond management
- 4 -- Big Sioux River study
- 5 -- Lake Poinsett study
- 6 -- Prairie grouse study
- 7 -- Deer food habits
- 8 -- Evaluation of trout fishery
- * -- Location of lakes studied on project supported by Water Resources Institute

The South Dakota Agricultural Experiment Station
is geared to be of benefit to all South Dakotans

Here are some of the more recent accomplishments:

- + Developed laboratory tests for diagnosing epizootic hemorrhagic disease of white-tailed deer.
- + Found that manure lagoons in South Dakota are merely storage pits for animal wastes; necessary bacterial action is prevented mainly by low temperatures.
- + Discovered an organism, previously unreported in the U.S., in cattle and swine which may be related to abscessed conditions.
- + Developed a new, low-fat dairy spread which can also be used in cooking and baking.
- + Developed a process using shale -- an abundant South Dakota natural resource -- to make light weight aggregate for concrete blocks and structural concrete for agricultural buildings, public construction and large bridges.
- + Discovered and demonstrated no-cost wheat streak mosaic control (seeding during period September 10-14). Saves \$1 million annually for South Dakota.
- + Demonstrated almost 100% control of loose smut of barley when seed was treated with an experimental chemical (approved by FDA for use on barley seed to be harvested and used exclusively for seed production).
- + Established that raccoons live within limited range, suggesting cheapest control method be aimed at individual, "problem" raccoons.
- + Found no harmful levels of pesticide residues in South Dakota big game animals.
- + Developed wilt and leaf drop disease resistance in alfalfa for western range use.
- + Measured significant differences in phosphorus "availability" within various kinds of mineral supplements for turkeys.
- + Developed an improved line of chickens for producing commercial crossbred layers.

- + Demonstrated that a tranquilizing drug reduces turkey losses from aortic rupture (internal hemorrhaging). Benefits South Dakota turkey growers by about \$100,000 annually -- and the original research cost about \$5,000.
- + Developed a practical means of producing eggs with deep yolk color, needed by the egg products industry.
- + In direct contrast to popular beliefs, showed by taste panels distinct and consistent preference for meat from turkey toms as compared to hens. (Toms are generally priced lower than hens in trade channels).
- + Showed increased egg production and improved feed efficiency when low levels of selected antibiotics or chemibiotic agents were fed to floor-managed layers.
- + Found that pelleting feed for turkeys on range gave up to 10% improvement in feed efficiency (from reduced wind losses and other benefits of pelleting)-- a saving 2-4 times cost of pelleting.
- + Developed Rushmore wheat, resistant to rust strain 56 with tolerance to strain 15B. Saved South Dakota farmers \$23 million in crop losses in 1951-53 and at least \$2 million in 1964. Cost of developing Rushmore: \$30,000.
- + Pushed the Corn Belt north and west through new corn hybrid releases for earliness, low temperature seedling tolerance, disease resistance, better yields. Research annually on this continuing effort costs a little over \$30,000 but benefits South Dakota agriculture by about \$12 million each year.
- + Been a pioneer in development of high-yielding, low-prussic-acid forage sorghums and sudans.
- + Developed Liberty barley which had a 4-bushel-an-acre yield advantage over previous varieties.
- + Developed Hume, a new winter wheat, which, had its rust resistance been available in 1962, could have helped avert a \$25 million South Dakota rust loss.
- + Developed weed control practices, that at the level of actual farm use in 1966, accomplished a net increase in crop yield worth an estimated \$12 million -- about 20 times the total cost of the research program since it started 21 years ago.
- + Developed, in cooperation with USDA, South Dakota's newest barley, Primus. Projected 1968 plantings and yield would give \$20 return for every \$1 spent by the state.

- + Bred and developed rangeland interseeding techniques for Teton and Travois alfalfas. This represents the greatest single potential for increasing grassland productivity in South Dakota. Tests show production up 50% generally and soaring to 250% in at least one county. If applied on only a little more than half of South Dakota's 27 million acres of rangeland, it could mean an additional \$108 million income annually. Cost of development of the two alfalfas, management and interseeding techniques: \$170,000.
- + Established that fertilizer placement increases water use efficiency worth an extra 5.2 bushels an acre of spring wheat, similar response on barley and oats.
- + Developed several less-well-known crop varieties: Ree and Oahe intermediate wheatgrass; Ortley, Waubay, James and Dupree oats; Summit flax; Summer switchgrass; Winner, 39-30-5, Rancher, 252F, SD102, SD441, SD442, SD502, SD503, Norghum, and Reliance sorghums; Manta millet; Homesteader bromegrass.
- + Learned how to break lateral bud dormancy in flax. Technique can be developed to boost yields of flax, soybeans, and field peas.
- + Established that 15% nylon gives some "abrasion resistance" to blue jeans, and that only jeans with nylon were within the 1% shrinkage specified for sanforized fabrics.
- + Established that new-wool fabrics are superior, in performance and appearance, to those that contain a portion or all reused wool.
- + Selected Chinkota elm, hardy strain of Siberian elm for shelterbelts.
- + Developed State Fair, Siouxann, and Bonanza tomatoes and Peter Piper pepper for home gardens. Also, Bellarina, a new processing tomato that could promote commercial tomato growing in the state.
- + Established that wind protection, such as rows of sudangrass, increases vegetable yields. Cucumber processors recommend the practice to all South Dakota growers.
- + Demonstrated that polyethylene greenhouses are practical in the state, especially suited to bedding plant operations.
- + Showed that locally grown Ponderosa and Scotch pine respond satisfactorily to pruning to produce Christmas trees acceptable to the South Dakota market.
- + Demonstrated that population research data provides needed and sound bases for planning and decision-making by school officials, church and farm organization leaders, businessmen, chambers of commerce, legislators.
- + Demonstrated that inbred bulls when used in commercial beef herds should result in more calves born and higher post-weaning gains.

- + Established that live weight accounts for most of the variation in either edible portion or fat trim in beef cattle. This means selection of breeding stock for growth rate will give the fastest improvement in "cutability" or muscling.
- + Demonstrated that carcasses with less marbling increase most in tenderness during aging. Five to 10 days is best time period for aging.
- + Learned that arsenical compounds help prevent selenium poisoning in swine.
- + Established that cattle grubs can be effectively controlled in South Dakota by "pouring on" systemic control chemicals. Full control would prevent up to \$4.5 million in losses -- cattle performance and hide value.
- + Demonstrated that the cob portion of ear corn has a negative value when added to high grain rations, when rapid finishing is desired. When used as a replacement for roughage, the cob value compares favorably with hay.
- + Demonstrated in station and cooperative flocks that antibiotics in ewe rations for 6 weeks before lambing decreases lamb mortality from 16.5% to 4.5%.
- + Developed a simple method, to increase baby pig survival by feeding milk through tube directly into the stomach of weak baby pigs.
- + Determined that adoption of the most profitable farm plans could increase net farm incomes to levels two to five times those of 1962.
- + Established that farmers differ greatly in their ability to recognize and define farm management problems. Those who can best define their problems are the ones who are expanding production and are able to use increasing amounts of capital and credit. This ability can be measured.
- + Developed a cash rent lease that has much of the flexibility of crop share rents, greater tenant security of tenure and freedom to operate and improve the farm, yet maintains return to landlord.
- + Measured the rate central South Dakota farm and ranch operators adopt new and recommended practices (a 38.6% adoption rate of 19 recommended practices was determined).
- + Provided research on which the Milk Control Law, passed by the 1966 Legislature, was based. This law is a means to curb unfair trade practices and preserve competition within the dairy industry.
- + Established that more uniform marketing of manufacturing milk in South Dakota could lead to greater efficiency in processing and higher returns to the producer.
- + Learned how to reduce urinary calculi losses in cattle and sheep, under certain conditions.

- + Established toxic level of nitrates in feeds, and ways to use feeds with excessive nitrate levels in livestock rations.
- + Determined that inadequate protection from air resulted in silage nutrient losses as high as 50% of material originally stored.
- + Established geological relationships between selenium and soils, kinds of plants that absorb the most selenium, factors in soil formation conducive to producing selenium toxic vegetation, (cause of "alkali disease").
- + Demonstrated that magnesium supplementation controls grass tetany. Magnesium-containing supplements now being sold by most feed dealers in grass tetany areas.
- + Provided over 90% of the teaching faculty in the College of Agriculture and Biological Sciences and about 25% of the Home Economics teaching faculty with research experience at the "frontier of knowledge" in their discipline. Courses are more meaningful, graduates better equipped.
- + Established that most women's diets are low in calcium, vitamins C and A.
- + Established that hard water gives best flavor of coffee and tea; scum on tea is prevented by boiling water 7-10 minutes. Soft water gives more tender cooked vegetables.
- + Learned that Sioux Indian children's diets in boarding schools are most frequently deficient in vitamin C.

These might become accomplishments within 1 to 5 years:

- + Organisms in swine and cattle abscesses have been identified, but relationship of abscesses to animal density, climate, genetics, etc., will be pursued.
- + Blood samples from apparently healthy pheasants in 26 counties show 30% carry equine encephalitis virus. Is this related to reproduction and livability of pheasants? We'll find out.

- + Scientists are working on a computer method to convert statewide meteorological data on file from "macroclimate" (5 feet or more above ground) to corresponding "microclimate" (up to 5-foot level, where plants grow). Would be useful for both farmers making crop management decisions and scientists doing research.
- + Newly developed fungicides give wheat leaf and stem rust control. Now searching for best timing and methods of application, for practical field use.
- + New disease-resistant potato varieties are being developed. Goal is to provide South Dakota certified seed growers with varieties that meet standards for out-of-state certified seed shipment.
- + Molds that grow on livestock feeds are being screened for toxicity.
- + Farm ponds research aimed at reducing winterkilling can increase production of bait fish, a growing South Dakota industry.
- + Tolerance of experimental penned pheasants to dieldrin insecticide is higher than anticipated. Now comparing residue levels in wild pheasant hens and eggs.
- + Only 17 out of 91 chemicals tested in 1966 were effective and safe for controlling alfalfa and corn insects. Detailed evaluation of available chemicals will continue.
- + Chemicals can control insects; but other controls, such as cultural practices, insect parasites, etc., are also being developed for South Dakota.
- + Soybean meal is the major protein source in poultry supplements. But two unidentified factors in soybean oil meal should be studied--one factor boosts growth rate, the other causes rickets.
- + Added amino acids can reduce protein requirement of poultry. Best levels of amino acids, for various rations, are being established.
- + New crop varieties are released almost annually. But new pests and diseases emerge. The search for genetic resistance to pests and diseases is continuous. Example: a new spring wheat variety that would increase the average yield by only 1 bushel per acre, would increase farm income \$3,600,000.
- + Minimum tillage and mulch systems give good corn and sorghum yields. But methods must be perfected; weed control techniques must be adapted. Appreciable savings of water and topsoil have been observed.
- + Most South Dakota soils have been mapped. Detailed classification and mapping continues. Data on physical and chemical features of soils will let us better appraise soil and prescribe best crop use, management systems, fertility levels.

- + Water is the bottleneck to South Dakota crop yields. Physical studies of soil water and factors affecting water requirements of crops will point the way to increased water efficiency.
- + There was almost 100% survival of winter wheat seeded in stubble mulch experimental plots at Garden City in 1966-67. This may be a key to moving winter wheat area farther north. We'll find out.
- + Chemicals kill weeds. Effectiveness of each chemical, though, depends on physiology of the weed plant to which it is applied. Study of weed plant physiology should point the way to more effective chemicals.
- + The Norbeck Pasture Research Farm is established. Pasture interseeding, fertilization, renovation projects are underway. Demonstration pastures in eight counties established in the spring 1967. Goal is more grass per acre in 13 county area.
- + A scientist has produced new plants, all genetically alike, from body cells of carrot (circumventing normal sexual mechanisms). This has vast potential, especially in plant breeding work.
- + Direct, service-type activities using available Agricultural Experiment Station personnel and facilities include: 34,657 examinations and tests last year by the animal disease diagnostic laboratory; 10,453 soil samples tested; 5,574 seed samples tested; chemical analyses of 5,541 samples (feed, blood, insecticide, gas, etc.); and 400 water samples tested during first year of operation of new Water Quality Laboratory. Every year, in each laboratory, more samples are submitted.
- + Line-cross Holstein heifers average 26 and 33 pounds heavier at 3 and 6 months than inbred calves. What will be the effect on milk production and prolificness? Cooperative research with Ohio, Minnesota, and Iowa is aimed at finding out.
- + Low moisture alfalfa silage has more protein and less fiber than well-cured, barn-stored hay. Next step is to measure cattle performance, calculate if harvesting alfalfa as silage pays.
- + Limited feeding of brood sows can increase litter size. Is frequency of feeding important? Research is underway.
- + The amino acid, lysine, added to swine rations can lower total protein requirement and feed cost. We're adding lysine to the water for pigs; may be cheaper; is as effective or more so.
- + The effects of antibiotics, roughage, moisture and oyster shells in all-grain rations on rumen fermentation may show the way to cheaper feedlot gains.

- + Semen quality may be a predictor of fertility level. Research will disclose accuracy and usefulness.
- + Guidelines for determining desirable combination of farm enterprises at various price combinations for wheat, feed grains, and livestock, have been established for one region of the state. Needs to be applied to other regions of South Dakota.
- + Farmers vary in management talent. Research is aimed at isolating personality characteristics in farmers; probable success of prospective or young farmers can be predicted.
- + Irrigation is increasing in South Dakota. Feasibility is being considered by individuals and groups. Labor, capital, and management requirements when a farmer shifts to irrigation farming, are being assessed.
- + Livestock prices are influenced by market efficiency. Operational costs for alternative systems of marketing are being gathered and compared.
- + There's a hint that a high calcium level in the ration may reduce back-fat in cattle, improve meat quality. This is being pursued.
- + Research has shown the way to decrease incidence of urinary calculi, especially in feedlot cattle and sheep. Next problem is range cattle and sheep. May apply knowledge to prevent calculi in man.
- + More carpeting is used in South Dakota homes, schools, and businesses. The effects of traffic and of cleaning methods on carpets of different fibers are being measured.
- + Selection of improved strains, hybrids and clones of windbreak trees and woody ornamentals.
- + Development of better fruit varieties for South Dakota; some apple selections are especially promising.

Here are some of the problems which await attention:

- + Relationship between epizootic hemorrhagic disease virus in white-tailed deer and the virus causing hemorrhagic fever in humans.
- + Establishment of safe contamination maximums in water, air and soil of animal wastes and agricultural chemicals.
- + Interrelationships of equine encephalitis virus among pheasants, chickens, horses, perhaps deer, and man.
- + Animal stress, disease and behavior under confinement or in environment-controlled housing.

- + Economic determination of the best use, agriculturally or other, for the land resources of the state including low-productivity land.
- + Establish maximum-efficiency irrigation systems, sprinkler vs flood, pipe vs ditch; distribution, conservation of excess water.
- + Minimizing evaporation and seepage from water storage facilities.
- + Machinery for seeding and harvesting specialty crops.
- + Rangeland machinery for low-cost ripping, renovation, reestablishment.
- + Procedures and machinery for low cost ditching, drainage, terracing.
- + Data processing of current climatological information.
- + Adapt high-lysine corn lines to South Dakota.
- + Develop high-protein oat variety adapted to South Dakota.
- + Exploit principles of hybrid vigor in adapted small grains.
- + Determine influence of land use and farm management practices upon wild bird and animal populations.
- + Aerial application of ultra-low-volume sprays for livestock insect control.
- + Effective and safe methods of statewide mosquito control, with special emphasis on the species, Culex tarsalis, which transmits equine encephalitis.
- + More effective and safer methods of European corn borer control.
- + Mineralogical studies of soils in irrigation areas, as related to drainage problems, permeability, reclaimability of sodium and saline areas.
- + Effects of soil temperatures on forms of soil phosphorus and nitrogen.
- + Techniques to renew productivity of land where sheet, gully and wind erosion have reduced topsoil.
- + How soil fungi, bacteria and other organisms respond to soil and crop management practices. May show how biology of the soil can be managed to the farmer's advantage.
- + Nutrient requirements of hens and/or pullets maintained in cages. Likely different from birds on floor.
- + Improve fertility level of South Dakota turkeys. A modest change could greatly expand one of South Dakota's "infant" industries.
- + Optimum facilities and management for confinement-raising of pullets.

- + Relationship of cow size and efficiency of grass use, and extent to which this is inherited.
- + Exploiting hybrid vigor in range cow herds.
- + Basic information on the cause of grass tetany in cattle is needed. May give clue to even better preventatives.
- + Biochemistry of the resistance of South Dakota plants to disease. Would assist plant breeder as well as development of chemical preventatives.
- + How to alter chemical composition of plants by means other than breeding. Can improve nutrient value of crops.
- + Analyze the changing human fertility patterns, to anticipate state's future population.
- + Study and inventory health, facilities, personnel, and needs; provide citizenry the bases for developing and implementing physical and mental health programs.
- + Appraise impact of social and economic changes on rural and urban churches.
- + Explore techniques of achieving representation by farmers and by farm and commodity organizations at local, state and national level.
- + A study of farmer organizations in South Dakota.
- + Complex virus infections of cattle.
- + Cause of abortions in cattle and swine (75% are unexplained).
- + Diseases affecting the central nervous system of cattle.
- + Causes of losses in newborn calves.
- + Cultural requirements, quality, and cost of producing horticultural crops in South Dakota under irrigation.
- + Relationship of microclimate and soils to production of horticultural crops near the large reservoirs of South Dakota.
- + Stain removal and soil release from synthetic fabrics and from those with chemically treated finishes.
- + Conserving water use in the home.
- + Characteristics of low income families in South Dakota.
- + Transportation as it relates to economic development.

- + Further development of consumer products from South Dakota agricultural products--fish, pheasant, ready-to-serve meats, woolen garments, etc.
- + Local government organization and taxation.
- + The role of banks and credit institutions in community development.
- + The feasibilities of selected types of industrialization in South Dakota.
- + Determine design and economic value of field windbreaks in production of crops.
- + Studies of microclimate and aesthetics in improving communities.
- + Establishment of sound, practical patterns of eating which are nutritionally correct based on today's work or recreational schedule rather than the traditional clock.
- + Finding the factors which limit the production of uniform quality meat.
- + A "breakthrough" in cow prolificness is needed. Basic research on fetus development could provide clues.

Cooperative Extension Service

TABLE 1. COMPARATIVE STATEMENT OF APPROPRIATIONS & EXPENDITURES
FOR FUNDS ON DEPOSIT WITH THE STATE TREASURER

	Fiscal Year Ending:				
	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66
Fund Balances - Beginning	\$ 44,402.34	\$ 12,548.29	\$ 65,145.77	\$ 21,134.52	\$ 72,055.66
<u>Appropriations:</u>					
Personal Services	\$ 618,580.00	\$ 637,160.00	\$ 705,975.00	\$ 838,528.00	\$ 877,785.00
Travel	67,330.00	67,330.00	72,500.00	72,415.00	72,500.00
Operation & Maintenance	37,170.00	37,170.00	37,600.00	32,140.00	64,500.00 (1)
Income from Publications, Tuitions, etc.	22,547.18	22,398.16	22,478.61	38,278.03	-0-
Continuing Federal Approp.	655,868.96	710,789.50	740,932.00	807,928.00	820,387.47
Federal Grants & Contracts	117,001.62	136,100.00	140,900.70	141,510.47	145,789.00
Re-Allocations	(1,023.63)	(3,152.65)	(12,676.02)	(4,610.44)	(14,710.17) (1)
Totals	\$1,517,474.13	\$1,607,795.01	\$1,707,710.29	\$1,926,189.06	\$1,966,251.30
<u>Expenditures</u>					
Salaries	\$1,306,774.78	\$1,345,855.55	\$1,500,986.77	\$1,603,165.80	\$1,739,719.28
Labor	31,321.96	27,914.48	26,737.46	37,683.09	32,454.80
Operation & Maintenance	122,098.00	103,192.65	133,086.76	126,734.70	125,080.81
Travel	89,133.44	78,234.85	90,910.55	107,684.33	92,860.44
Totals	\$1,549,328.18	\$1,555,197.53	\$1,751,721.54	\$1,875,267.92	\$1,990,115.33
Fund Balances - Ending	\$ 12,548.29	\$ 65,156.77	\$ 21,134.52	\$ 72,055.66	\$ 48,191.63

(1) This appropriation increase in the amount of \$25,000.00 represents a special allocation for the off-campus credit courses program. Formerly, this program was funded from local income fund which reverted to the State July 1, 1966. The re-allocation was made to University from this special appropriation.

TABLE 2. COMPARATIVE STATEMENT OF APPROPRIATIONS & BUDGETED EXPENDITURES
FOR FUNDS ON DEPOSIT WITH THE STATE TREASURER

	Fiscal Year Ended:	
	6-30-67	6-30-68
<u>Appropriations:</u>		
Personal Services - Salaries & Labor	\$ 961,241	\$1,041,196
" " - Employee Benefits		33,000 (1)
Travel	73,500	---
Operation & Maintenance	41,000	135,943
Supplies, Equipment & Expense	---	---
Continuing Federal Appropriation	900,466	930,500
Federal Contracts & Grants	130,000	130,000
Totals	\$2,106,207	\$2,270,639
<u>Budgeted Expenditures:</u>		
Personal Services	\$1,880,572	\$2,079,548
Travel	107,500	99,152
Operation & Maintenance	118,135	91,939
Totals	\$2,106,207	\$2,270,639

(1) This is the first year that Employee Benefits have been allocated to Extension Service. Previously, these costs were paid from clearing account for the three agencies of the University.

Note: Federal Appropriations & Grants are stated at actual and/or estimated amounts which are reasonably certain.

TABLE 3. SUMMARY OF SOURCES OF EXTENSION FUNDS

	Fiscal Year Ended				
	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66
Source by Dollars:					
State Approp. (General Fund)	\$ 722,056.37	\$ 738,507.35	\$ 803,398.98	\$ 938,472.56	\$1,000,074.83
Income from Publications, Tuitions, etc.	22,547.18	22,398.16	22,478.61	38,278.03	-0- (1)
Continuing Federal Approp.	655,868.96	710,789.50	740,932.00	907,928.00	820,387.47
Federal Grants & Contracts (other than USDA)	117,001.62	140,400.60	141,541.79	141,510.47	145,789.00
Industry Services	8,542.06	12,116.59	19,917.65	20,591.12	18,789.51
Internal & Statewide Services	269.50	---	---	215.00	17,222.55
Totals	\$1,528,725.46	\$1,631,712.20	\$1,736,602.32	\$1,956,795.22	\$2,002,403.36
Source by Percent:					
State Approp. (General Fund)	47.23%	45.27%	46.28%	47.93%	49.94%
Income from Publications, Tuition, etc.	1.47	1.37	1.30	1.95	-0- (1)
Continuing Federal Approp.	42.90	43.56	42.68	41.37	40.97
Federal Grants & Contracts (Other than USDA)	7.65	8.60	8.15	7.21	7.27
Industry Services	.56	.74	1.06	1.04	.94
Commercial Grants & Contracts	.16	.46	.53	.50	-0-
Internal & Statewide Services	.03	-0-	-0-	-0-	.88
	100.00%	100.00%	100.00%	100.00%	100.00%

(1) Income from publication, tuition, etc. was remitted directly to the State General Fund due to a statutory change in procedure.

TABLE 4. SOURCES OF EXTENSION FUNDS

	Fiscal Year Ended:				
	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66
<u>United States Department of Agriculture</u>					
<u>Continuing Federal Appropriations</u>					
Federal Smith-Lever - General	\$ 653,259.65	\$ 701,989.50	\$ 732,132.00	\$ 780,090.00	\$ 800,628.00
- Pesticide				19,038.00	10,959.47
Agricultural Marketing Act	2,609.31	8,800.00	8,800.00	8,800.00	8,800.00
Totals	\$ 655,868.96	\$ 710,789.50	\$ 740,932.00	\$ 807,928.00	\$ 829,387.47
<u>Federal Grants & Contract—Others than the United States Dept. of Agriculture</u>					
<u>Department of Interior</u>					
Indian Contract	\$ 117,001.62	\$ 127,000.00	\$ 127,000.00	\$ 127,000.00	\$ 130,000.00
<u>Office of Civil Defense</u>					
Rural Civil Defense		9,100.00	13,900.70	14,510.47	15,789.00
<u>State Department</u>					
Agency for Int. Dev.		4,300.60	641.09		
	\$ 117,001.62	\$ 140,400.60	\$ 141,541.79	\$ 141,510.47	\$ 145,789.00
<u>Industry Services</u>					
So. Dak. Poultry Improv. Assn.	\$	\$	\$ 3,200.00	\$ 3,228.00	\$ 200.00
Advance Herd & Reg. Improv- Dairy	8,542.06	12,116.59	15,817.65	17,363.12	18,589.51
Totals	\$ 8,542.06	\$ 12,116.59	\$ 19,017.65	\$ 20,591.12	\$ 18,789.51
<u>Commercial Grants & Contracts:</u>					
Deuel County Farm & Home Dev.	\$ 2,439.77	\$	\$ 1,733.29	\$ 2,300.04	\$
U&I Sugar-Sugar Beets Demon.		7,500.00	7,500.00	7,500.00	
Pine Ridge Research					140.00
Totals	\$ 2,439.77	\$ 7,500.00	\$ 9,233.29	\$ 9,800.04	\$ 140.00

TABLE 4. SOURCES OF EXTENSION FUNDS (Continued)

	Fiscal Year Ended				
	6-30-62	6-30-63	6-30-64	6-30-65	6-30-66
<u>Internal & Statewide Services</u>					
Film Foundation	\$ 269.50	\$	\$	\$ 215.00	\$ 408.50
Extension Revolving - Reimbur-Publications, etc.					16,814.05
Totals	\$ 269.50	-0-	-0-	215.00	\$ 17,222.55

ADMINISTRATIVE AND LEGAL RESTRICTIONS OF SPECIFIC FUNDS--EXTENSION SERVICE

Smith-Lever

An equal amount of State funds is required for matching Federal funds. State matching funds must be used for approved projects and accounted for in the same way as the Federal-Smith-Lever funds. Federal Smith-Lever funds may be carried over for 1 year provided the balance is not a result of the inability to meet the offsetting requirements in the current fiscal year (year in which the Federal funds were received).

Pesticide Allocation

Separate accounting required. Funds are to cover new or expanded work on the safe use of pesticides. State matching required.

Agricultural Marketing Act

State matching required and must be in addition to any amount of State support provided in 1947 for educational marketing work.

Rural Civil Defense

Not a section of Smith-Lever Act. Special funds for purpose defined. No matching required.

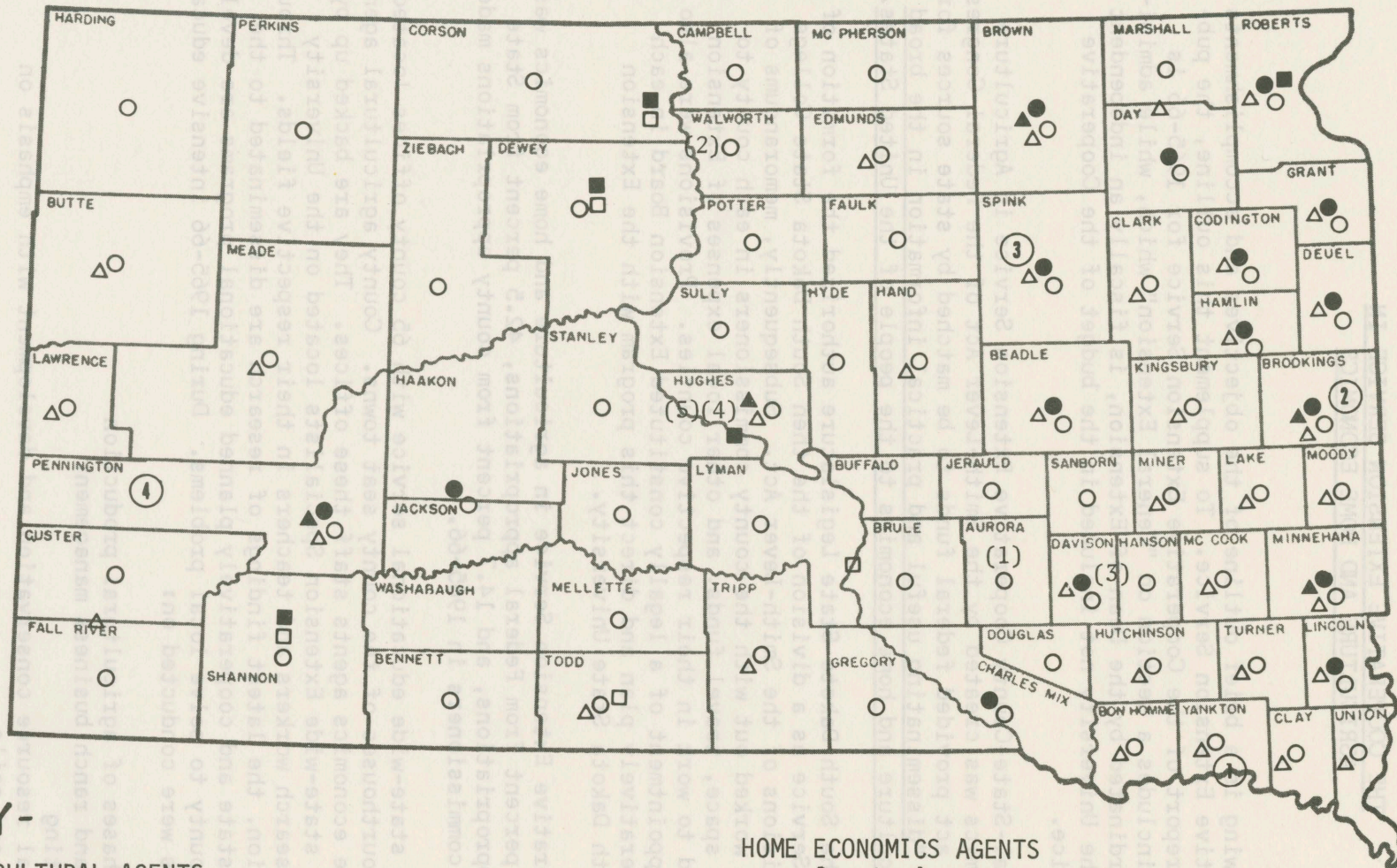
Indian Contract

Bureau of Indian affairs, USDI, contracts annually with the Cooperative Extension Service to provide a special program of agricultural and home economics extension in Indian Reservation areas.

QUOTATION FROM FEDERAL EXTENSION SERVICE REGULATIONS

"Federal funds, wherever deposited, must be available at all times for disbursement in payment of claims authorized by the Extension Director. The deposit of these funds in the State treasury for safekeeping as a depository, if found necessary and expedient, may be made without legal objection. Such deposit, however, does not imply any control whatsoever of funds by the State treasurer nor relieve the Extension Director of responsibility for the budgeting, expenditure, and proper accounting of the funds."

LOCATIONS of COUNTY and AREA EXTENSION AGENTS



KEY-

AGRICULTURAL AGENTS

- --County Agent
- --Assistant County Agent
- --Reservation Agent

Area Agents:

- ① --Union, Clay, Yankton, Turner Counties
- ② --Eastern South Dakota, excluding above Counties.
- ③ --Oahe Area
- ④ --Three West River Agents

HOME ECONOMICS AGENTS

- △ --County Agent
- ▲ --Assistant County Agent
- --Reservation Agent

Area Agents:

- (1) --Aurora, Brule, Charles Mix, Gregory Counties
- (2) --Campbell, Corson, Dewey, Walworth Counties
- (3) --Douglas, Jerauld, Hanson, Sanborn Counties
- (4) --Hughes, Stanley, Jones Counties
- (5) --South Dakota Reservations

THE COOPERATIVE EXTENSION SERVICE IN
AGRICULTURE AND HOME ECONOMICS

The following is a brief outline of the objectives and accomplishments of the Cooperative Extension Service. To supplement this outline, the published annual report of the Cooperative Extension Service for 1965-66 is attached. It includes a section on "General Extension" which, while administratively coordinated by the Dean of Extension, is fiscally an independent operation of the University not included in the budget of the Cooperative Extension Service.

The Federal-State-County Cooperative Extension Service in Agriculture and Home Economics was created by the Smith-Lever Act of the Federal Congress in 1914. This act provided federal funds to be matched by state sources for the purpose of "disseminating useful and practical information in the broad fields of agriculture and home economics to the people of the United States."

In 1915 the South Dakota State Legislature authorized the formation of the Extension Service as a division of the then South Dakota State College under the provisions of the Smith-Lever Act. Subsequently, memorandums of agreement were worked out with the county commissioners in each county to provide office space, travel funds, and other local expenses of Extension agents assigned to work in their respective counties. Provisions were also made for the appointment of a legally constituted Extension Board in each county to cooperatively plan and direct this program with the Extension Service of South Dakota State University.

The Cooperative Extension Service in agriculture and home economics was financed 42.8 percent from Federal appropriations, 42.5 percent from State legislative appropriations, and 14.7 percent from county appropriations made by the county commissioners in 1965-66.

This is a state-wide educational service with 65 county offices located generally in courthouses of the county seat towns. County agricultural agents and county home economics agents staff these offices. They are backed up by highly trained state-wide Extension Specialists located on the University campus with research workers and teachers in their respective fields. Through this organization, the latest findings of research are disseminated to the people of the state and cooperatively planned educational programs are developed in each county to solve local problems. During 1965-66 intensive educational programs were conducted on:

- 1) all phases of agricultural production
- 2) farm and ranch business management
- 3) marketing
- 4) natural resource conservation and development with emphasis on water and soils
- 5) public policy and economic understanding

- 6) farm and ranch building and construction
- 7) home management and finances
- 8) home improvement and landscaping
- 9) family nutrition and human relations
- 10) clothing
- 11) youth development through the 4-H club program

During 1965-66, 19,471 boys and girls 9 through 19 years old were enrolled in 4-H clubs, making this the largest out-of-school youth educational program in the state. There were 16,000 homemakers enrolled in over 12,000 community study groups, representing every county of the state. Approximately 331,000 individual consultations took place between Extension staff members and rural people on farms, in homes, or at county offices. Extension personnel conducted 19,000 educational meetings throughout the state--attendance was over 900,000 people. There were 12,955 radio broadcasts made on timely subjects, and 841,636 educational publications were prepared and distributed during the year. These, combined with 11,730 news articles and 36,026 individual letters mailed, made available to the people of South Dakota a continuous flow of information.

Agricultural Programs

While it is extremely difficult to measure the results in dollars and cents of education, there is reasonable evidence that the state's investment in Extension education pays good dividends. One of the most dramatic examples is the treatment of 1,000,000 acres of corn in 1965-66 with Extension-recommended treatments to control the western corn rootworm, resulting in an increase in farm income of \$4½ to 5 million a year in contrast to a probable loss of this amount if these practices had not been rapidly adopted. The intensive educational efforts over the last several years to help farmers expand efficiently their livestock feeding programs have without doubt contributed significantly to the state's farm income. Extension agricultural engineers and county agents helped 208 farmers design new feed lots, 610 remodeled old feeding systems, and Extension personnel were influential in the construction of 1,201 new silos for more efficient cattle feeding in 1965-66.

Extension workers continue to provide a wide range of technical assistance to the great agri-business industry of South Dakota. For example 127 managers of farm service cooperatives completed a series of business management lessons taught by Extension economists. Intensive technical production and management assistance to the dairy industry has been partly responsible for doubling the amount of cheese processed in South Dakota in less than 5 years. Another example of the close working relationship between Extension and the agriculture industry was the special training meetings held for over 700 feed, seed, and fertilizer dealers and salesmen on new scientific developments in nutrition and the uses of chemicals in agricultural production.

Youth Development Through 4-H

Roughly one-fourth of the working time of Extension staff members was devoted to development of the State's greatest single resource--its youth. Significant research findings just released on the factors influencing the

economic development of nations clearly show people to be more important than physical resources. Through the many different 4-H club projects and activities, boys and girls not only learn new skills, but learn to achieve, to make the best better, and to compete effectively as well as cooperate with others.

Four-H education is family and community oriented, designed to not only develop the individual boy and girl through practical work experience, but to strengthen the home and community. Its educational success cannot be measured directly in dollars but proof of its effectiveness is repeatedly demonstrated through the achievements of former 4-H Club members.

South Dakota 4-H Club enrollment increased in 1965-66 to 19,444 members. The Extension staff was assisted in carrying out this program by 2,286 volunteer organizational leaders; 1,665 project leaders; and 2,533 junior leaders in 1,431 4-H Clubs throughout the State.

Home and Family Life Education

Organized home demonstration groups with over 16,000 women enrolled are the basic unit through which Extension home and family life educational programs are channeled. Carefully prepared lessons were taught during the year in the following areas: clothing; food and nutrition; home management--money management, estate planning, wills, trusts, joint ownership, insurance and taxation were subjects discussed in home demonstration clubs with technical aspects given by professionally-trained people; family life--which includes emphasis on concerns of child growth and development, parent education, and family relationships.

Water Resource Development

The Extension Service has provided the educational leadership leading to the formation of the conservancy subdistricts -- the irrigation districts and existing irrigation development on the farms and ranches of the State. The contribution of the Extension Service to the understanding of the issues, alternatives, and opportunities of the Oahe irrigation project is a matter of record.

Marketing

The Cooperative Extension Service has increased its educational efforts in the field of agricultural marketing. Extension specialists provided farmers and ranchers information on: marketing supply and price outlook, government marketing programs, marketing costs and alternatives, bargaining power, market demands and quality requirements, marketing regulations, new market opportunities.

Extension also worked with the marketing cooperatives and private firms. A series of management training workshops was held. Marketing firms were provided information on new products and encouraged to modernize their operation to provide improved outlets for South Dakota products. Feasibility studies were conducted relative to the location and operation of cheese plants, a beef kill-and-chill plant, and a quality egg market. Sixty-three quality egg producers with 280,000 layers were assisted in organizing the Dakota Quality Egg Producers Association to improve their bargaining power in the market place.

Other Educational Programs

During the past year the Extension Service also conducted many other local and state-wide educational programs in such fields as: civil defense, the safe use of pesticides, farm safety, special training of Indian people, farm business planning and management, home grounds improvement, timber and shelterbelt management, grasshopper control, livestock health, community planning, community actions programs, etc.

EXTENSION ...

An
Educational Opportunity
for Every
South Dakotan

COOPERATIVE EXTENSION SERVICE
SOUTH DAKOTA STATE UNIVERSITY
U. S. DEPARTMENT OF AGRICULTURE



1965
ANNUAL
REPORT

INTRODUCTION

This is the 52nd consecutive year during which the Cooperative Extension Service of South Dakota State University has served all the people of South Dakota through dissemination of useful and practical information in the broad fields of agriculture and home economics.

Extension, through its educational programs, has stressed how to apply this knowledge for a better life in which virtually all people of the state have shared.

The faculty of South Dakota State for many years has accepted and met the traditional land-grant university's responsibility of providing information and knowledge to thousands of persons not formally enrolled in the institution. This has been accomplished through short courses, workshops, conferences, publications and institutes on many subjects.

Today, as one of the nation's land-grant institutions, South Dakota State has reaffirmed its policy of continuing educational opportunities to every South Dakotan. In 1965 to better coordinate its many and varied extension programs not only in agriculture and home economics but throughout the entire university, a Dean of Extension was appointed. The Dean of Extension was given administrative responsibility for both the Cooperative Extension Service in agriculture and home economics and the General University Extension Services of all State University's colleges which include Agriculture and Biological Sciences, Engineering, Home Economics, Nursing, Pharmacy, Arts and Sciences.

The primary objective of this coordination is to better serve the growing educational interests and needs of all segments of the population of South Dakota. It will encourage and facilitate the mobilization of the total resources of State University to help people solve the complex problems in a fast changing society. It will facilitate more effective interaction between the State University and citizens of South Dakota.

Each of the 67 counties of South Dakota, in effect, through Extension has a branch of South Dakota State University. The key people who actually disseminate most of this knowledge so it is of value at the user level are the county Extension agents—agricultural, home economics and 4-H. The Extension agent in your county is a staff member of South Dakota State. In addition to Experiment Station research programs of State University, a reservoir of knowledge is available through various Federal agencies, including the U. S. Department of Agriculture, from which Extension can obtain information if necessary. Specialists in various fields usually assemble and organize this information and train county personnel.

This 1965 annual report summarizes only a few of the many activities of South Dakota State University Extension. You will note that many participants and their activities are from urban and city areas as well as from rural areas. The work of Extension is specifically tailored to meet a diversity of needs from throughout the state.

Briefly, here are figures which give an idea of the impact and range of Extension activities for 1965:

- 19,444 boys and girls, ages 9 through 19, enrolled in 4-H clubs (almost a third of them from urban areas and cities).
- 16,000 homemakers enrolled in more than 12,000 community study groups.
- 331,000 individual consultations between Extension staff members and people at home or in county offices.
- 19,000 educational meetings held in the state.
- 900,000 people attended educational meetings.
- 841,636 educational publications prepared and distributed.
 - 850 news articles sent to newspapers, radio, and TV.
 - 359 radio broadcasts and 53 films for TV produced for home economics use alone.
- 3,800 man-days devoted to adult education sessions involving 46 different types of agri-businesses and industrial firms.
- 4,190 man-days for community development.

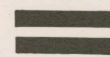
COOPERATIVE Extension Service

Agriculture
Home Economics
Youth
Marketing
Resources
Community Development
Agri-business

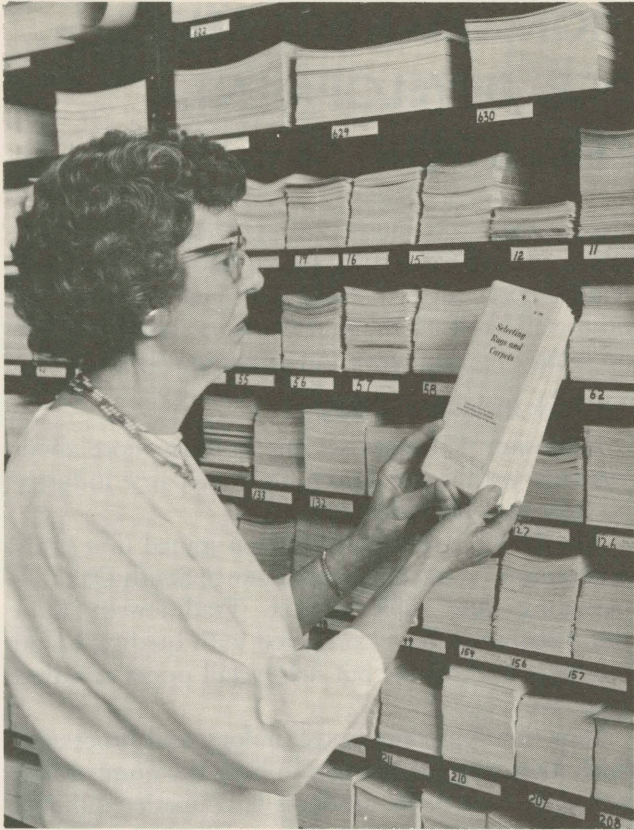


GENERAL Extension Service

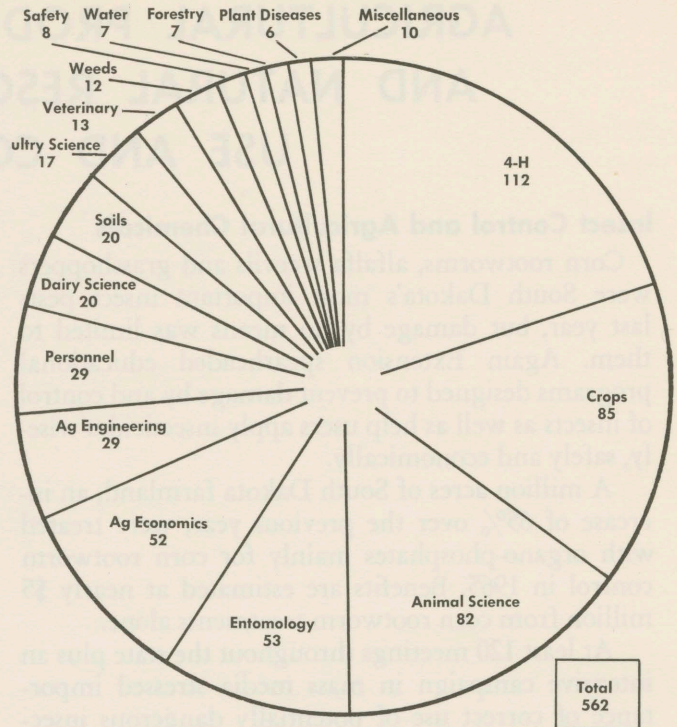
Adult Classes
Workshops
Shortcourses
Business-Industry Aids
Educational Resources
from SDSU's 7 Colleges



An Educational
Opportunity
For Every
South Dakotan



More than 800,000 educational publications were distributed through Extension offices and personnel in 1965. Publications distribution center is the SDSU bulletin room.



Extension news articles about agricultural subjects distributed to news media in 1966.

Home economics leaders from four countries take part in an Extension TV program at the SDSU television studio.



AGRICULTURAL PRODUCTION, MANAGEMENT AND NATURAL RESOURCE DEVELOPMENT, USE AND CONSERVATION

Insect Control and Agricultural Chemicals

Corn rootworms, alfalfa weevils and grasshoppers were South Dakota's most important insect pests last year, but damage by no means was limited to them. Again Extension spearheaded educational programs designed to prevent damage by and control of insects as well as help users apply insecticides wisely, safely and economically.

A million acres of South Dakota farmland, an increase of 65% over the previous year, were treated with organo-phosphates mainly for corn rootworm control in 1965. Benefits are estimated at nearly \$5 million from corn rootworm treatments alone.

At least 120 meetings throughout the state plus an intensive campaign in mass media stressed importance of correct use of potentially dangerous insecticides. No serious mishaps were reported due to carelessness or misuse of the insecticide chemicals. Five reported accidents with insecticides were checked. In one, after a child swallowed herbicide granules, the local county agent used the SDSU Herbicide Encyclopedia to provide the attending physician with antidote information.

Livestock Industry—Beef

Cooperative Extension personnel during 1965 were involved in every aspect of South Dakota's top ranking livestock industry. Activities varied from range and pasture management to meat evaluation clinics dealing with merchandising the finished product. Extension efforts were aimed at making what was already a good livestock year an even better one for South Dakota producers.

Construction during the year of some 208 new feed lots, expanding or remodeling 610 others, and building 1,200 new upright and horizontal silos, reflect changes in livestock feeding. South Dakotans, through Extension, are getting latest information on how to make silage, take care of it and the best way to use it.

Nutrition was discussed at 14 special feeder outlook meetings attended by about 1,200 persons.

A 5-lesson, workshop training series for county agents on cow-calf herd management was the basis of an educational effort that reached hundreds of commercial growers. Besides the training meetings in which more than 2,400 cattlemen participated, the workshop subject matter was also used in some 2,000 personal contacts. A total of 12,500 fact sheets on the

subject were distributed. Study sessions included ways to increase the calf crop in both numbers and weight; beef cattle diseases, artificial insemination and the effect of hormone treatments; crossbreeding, and wintering beef cows and growing calves.

Livestock Industry—Dairy

Extension personnel set out to learn more about problems within the South Dakota dairy industry and how to cope with them.

The SDSU Experiment Station joined in a study to determine factors that contribute to South Dakota's fluctuating fluid milk market. Traditionally fluid milk distributors have competed with quality, brand preference and service but held retail prices at rather stable levels.

New developments in technology and processing which have spurred changes in both the number and sizes of various dairy products have made equitable pricing more difficult.

The SDSU study revealed that unfair trade practices existed and that they were the basis of a crucial problem in the state's dairy industry.

A publication, "Trade Practices in South Dakota's Dairy Industry" (EC 644), was prepared and distributed to fluid milk producers, dairy processors, handlers, distributors, major retail stores and legislators.

Following the study, meetings were held throughout the state to discuss the topic. Industry leaders report that the study had much to do with providing a basis of public understanding of the problems involved. They also credit the educational programs for the success of obtaining favorable legislation to regulate trade practices.

In another effort to help iron out marketing problems, Extension worked with dairy industry personnel in the Sisseton area to evaluate possibilities of establishing a cheese plant. The study indicated establishment of a cheese plant capable of processing 36.5 million pounds of milk annually was feasible. A series of meetings was conducted to explain details to producers, area dairy plant processors and local industrial committees. Estimates indicate the plant would employ from 12 to 15 people and increase farm income in the area by a quarter of a million dollars.

Investigations in western South Dakota showed dairy producers were virtually without a market for manufacturing grade milk in the area. Butterfat

prices were 30 cents per pound below that received by Eastern South Dakota producers living in a manufacturing milk market area.

The Extension dairyman participated in meetings in the Black Hills area where the problem was discussed. A feasibility study indicated that enough milk volume existed to support one cooperative cheese factory in the Black Hills area. Four different groups began conducting surveys and developed plans to build cheese plants. Plans for two plants, one at Rapid City and the other at Sturgis, were completed and both were expected to open in early 1966.

Livestock Industry—Swine

South Dakota swine producers have greatly improved the quality of hogs marketed but reports from markets indicate many animals are still received which are fat and lacking in meatiness.

Extension sought to help producers understand the implications of marketing poor quality hogs and urged marketing producers that would smooth out peaks and valleys in hog marketing supplies.

High quality meat coupled with higher meat percentages were promoted through a series of meetings programmed by Extension and Experiment Station personnel. The meat packing industry and marketing firms helped in four of these carcass evaluation clinics

attended by more than 400 persons. In addition, carcass data was collected on 1,000 hogs from slaughtering stations and at the meat laboratory at SDSU in an effort to show producers how carcass quality is related to market demand for pork.

Support and follow-up for seven producers recognized in South Dakota's Master Pork producer program was provided to encourage small producers in developing efficient, high quality pork producing plants. A producer must have above average standards before his nomination can be accepted. Many of the producers who have been recognized in past years have become even more interested because of the encouragement they received through this program.

Livestock Industry—Poultry

Extension was instrumental in developing new market outlets for quality eggs by encouraging out-of-state marketing and retail firms and agencies to consider South Dakota as a source of supply.

As a background for this, the egg marketing picture was studied and analyzed. Meetings were held throughout the state to familiarize producers, processors and agricultural leaders with quality egg marketing, the effect long distance hauling could have on egg quality and pros and cons of contract marketing.

Extension entomologist, pilot and chemical company officials confer during first demonstration of low volume malathion applications in South Dakota. Preliminary results indicate the technique is effective for grasshopper and horn fly control on large acreages.





Small but efficient swine producers are recognized annually for outstanding management. Six commercial producers plus one purebred producer were recognized during 1965. The program is operated jointly between the Cooperative Extension Service and various segments of the South Dakota swine industry.

Fact sheets explaining production, marketing, and the financing contract were prepared and distributed.

It is estimated that 17.3 million dozen eggs (16% of the total production) were sold through quality controlled markets in South Dakota during 1965. Producers marketing in this manner average about 5 cents per dozen more than the USDA published average price received for all eggs sold in the state. Using this as a base it would indicate that Extension helped producers in South Dakota gross an additional \$865,000 in poultry income just through more effective and efficient marketing.

Extension specialists were also instrumental in bringing all South Dakota hatcheries under official supervision of the livestock Sanitary Board for Pyloriform-Typhoid control work. Plans were worked out with the Board and the South Dakota Poultry Improvement Association. Extension trained personnel in testing procedures and hatchery inspections.

Crops and Soils

An estimated 25% more livestock producers use sudan-sorghum hybrids for tame pasture today than 5 years ago. Sudan-sorghum mixtures are excellent for increasing production on poor pastures.

Educational emphasis has been mounting steadily because increasing livestock production has put pressures on range in Western parts of the state and contributed to abuse and neglect of tame pastures in Eastern areas.

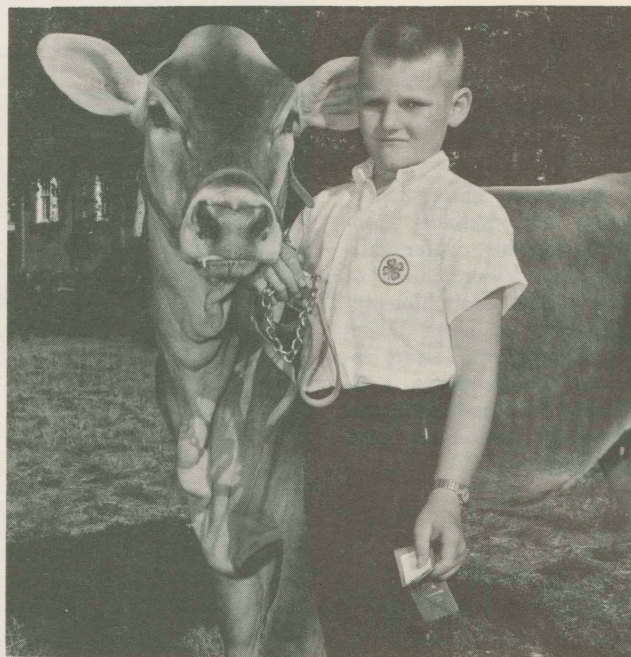
Agents in 23 counties conducted pasture demonstrations during 1965. Records were kept on production and weed population trends. Data were sum-

marized on how introduced grasses and legumes perform in competition with native grasses and Kentucky bluegrass.

Under an Extension-recommended system of pasture rotation a producer near Beresford kept 85 heifers on three brome grass-alfalfa pastures of 14, 12, and 11 acres throughout the summer. In addition he harvested 1,100 bales of hay from the same acreage. Another farmer near Groton rotated 50 cows on two 20-acre brome grass pastures and harvested 800 bales of hay. As a result of interseeding demonstrations conducted by Extension workers in Sanborn County over 400 acres were interseeded in 1965.

In 1965 South Dakota farmers applied 18,000 tons more of commercial fertilizers than in 1964. Extension agents conducted strong educational programs on fertilizer use in 21 counties. Estimates indicate that 20% of the corn, 15% of spring wheat, oats and alfalfa and about 10% of the tame grass were fertilized last year. Ninety per cent of irrigated corn and 50% of the irrigated alfalfa is now fertilized.

Increased fertilizer use in some individual counties was outstanding. For example, commercial fertilizer use has increased 400% and soil testing increased 300% over a 5-year period in one county. In another, five leading fertilizer dealers sold a total of only 22½ tons of fertilizer in 1961 and four years later their sales totaled 1,363 tons.



Dairying is a major segment of South Dakota agriculture. Industry leaders say a SDSU marketing study did much to help public understanding of problems and in an educational program that resulted in legislation to regulate trade practices state-wide.

MARKETING AND UTILIZATION OF AGRICULTURAL PRODUCTS

Planning Farm Businesses

Top-notch farm management can add an additional \$50 million to net income of South Dakota farmers, according to estimates. Opportunities for change in farm businesses most often involve reorganization of present resources and more efficient and productive use of the family labor supply. Some additional capital is usually required. A study of planned management changes for 55 farms indicated increases of net income from \$500 to \$2,500 per farm, averaging about \$1,000.

At least 3,000 South Dakota farmers have been involved in workshop sessions on farm or ranch planning with County Extension agents during 1965. Two circulars by extension farm management specialists provided the basis for a 2-day workshop with agents. Agents in turn use the material to conduct similar sessions with farmers in their respective counties.

While some work has been started in all counties, at least 35 agents have finished or are conduct-

ing a series of sessions using the workbook "Ten Steps in Planning Your Farm or Ranch Business," and the guidebook that goes with it. The workbook includes reference tables and budgets plus an example farm.

The agents adapt the material to the particular situation. In one case an agent has worked with 80 farmers on an individual basis. In another the agent works with three groups of 10-12 farmers for a 6-to-8-week period. The most common situation is for an agent to work with a group of five to 12 farmers in a series of six meetings to analyze present plans and make management decisions to increase farm income.

In many counties Extension agents obtain the help of other individuals and groups. A vocational agriculture instructor said "This is the best approach to farm management I have used." A Farmers Home Administration supervisor has found the system helpful and hopes to convince clients to use the procedure. "Then I will have more time

With an expanding livestock economy the interest in pasture management has grown considerably, spearheaded by personnel of the Cooperative Extension Service. Pasture fertilization, grass management and interseeding of native grasses have been important facets of this effort which is the cornerstone of the livestock economy in the western part of the state.



to help them with management problems," he says. A soil conservation technician says "Farmers who have worked with the county agent understand farm planning. It is much easier and takes much less time for me to get his farm conservation plan set up for best land use." A banker is optimistic about the project: "We have a line of credit set up with one farmer now that is four times as much as we would have done if he did not have a complete farm plan worked out."

Other groups involved in the farm planning workshops and training include the Production Credit Association and Bureau of Indian Affairs.

Forestry

During 1965 Extension joined the Game, Fish and Parks Department, Custer County Soil Conservation Service and forest product processors to study and evaluate the total forest product industry in the Black Hills area.

Background investigations revealed that substantial amounts of usable wood species exist but manufacturing is restricted. It appears that coordinated efforts of producers and processors can help overcome many restrictive obstacles.

A meeting of producers, processors and various government agencies produced recommendations that the entire Black Hills forest complex function as an integrated operation. The order of priorities include: forestland ownership and forest management programs; methods of logging and transporting logs to processor for maximum efficiency; and the procedure for converting logs into various products using available machinery.

These efforts are expected to result in forming a producers cooperative to coordinate harvesting

and marketing of timber among small producing units. Follow-up meetings will assist producers in a step-by-step approach to establish the cooperative and make it functional.

Agri-business Planning

Two hundred employees of agri-business firms in South Dakota participated in management training programs planned by Extension. The programs were sponsored by the South Dakota Association of Cooperatives and the Omaha Bank for Cooperatives.

The institutes were planned to make business management training available to small firms that must grow and expand to remain competitive. Training was designed to help managers understand their role as it relates to financial and business management planning, understand what happens when there is no manager control, the amount of time they can profitably spend on non-management activities, and ways they can keep the business efficient.

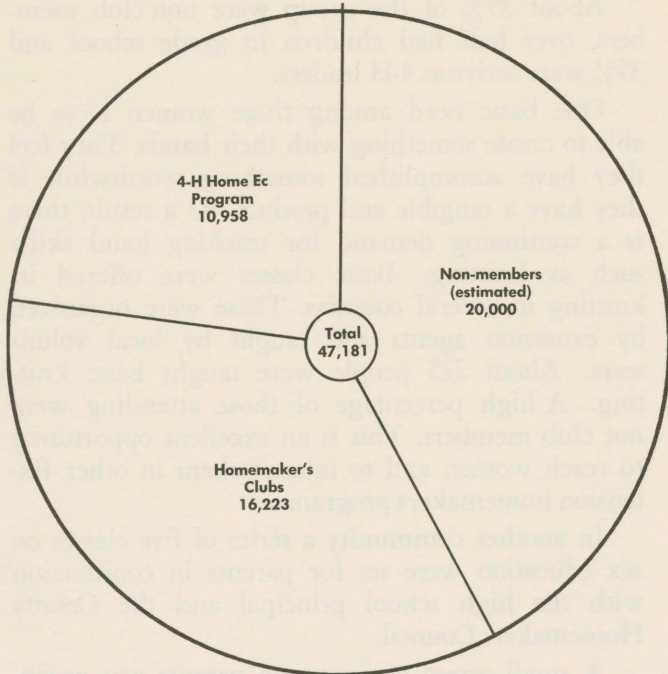
Extension's role started in 1963 with the planning of a series of five management institutes. The fourth of a series has been requested for 1966. Extension prepared a handbook which emphasizes the importance of financial analysis as a control factor. The handbook has served as a textbook for the workshop series.

More than 90% of those attending indicated the institutes were "practical and helpful." They like the exchange of ideas, group participation, and informative presentations. Every person filling out an evaluation sheet would recommend the course to other directors and managers. The group included 79 directors and 25 managers.



Extension personnel were involved in dozens of adult education workshops and clinics during the year. Here livestock commission men in Sioux Falls look at carcasses during a clinic requested by yard personnel. The shortcourse series was previously conducted for farmers in several counties.

EXTENSION HOME ECONOMICS



Extension home economics educational programs reached more than 47,000 women in South Dakota in 1965.

Nearly 50,000 homemakers, 4-H club girls and others took part in Extension home economics education activities in 1965. Included were 16,000 Homemakers Club members, 11,000 girls in 4-H, and 20,000 non-member women.

This was the first year that all Extension Home Economists used television to reach their audience. Their 53 films (of 12½ minutes each) were aired on four TV stations reaching all areas of South Dakota.

Management of financial and human resources in the home is a problem for South Dakota homemakers. Intensive training to meet this problem was conducted in eight counties during 1965. Lessons related to money management (consumer credit and determination of real interest rates); life insurance (types, pointers for how to buy insurance and understand the clauses in policies); and building financial security, (preparing for financial emergencies, protection against death of the wage earner, determining family goals and preparing for retirement).

A food marketing survey in 11 counties had 185 homemakers keeping detailed records from July 1964 and February 1965. Results correlate closely with regional and national studies and the 1964 bench mark study conducted in Hutchinson County, especially regarding nutritional deficiencies and amount of money spent by families for food.

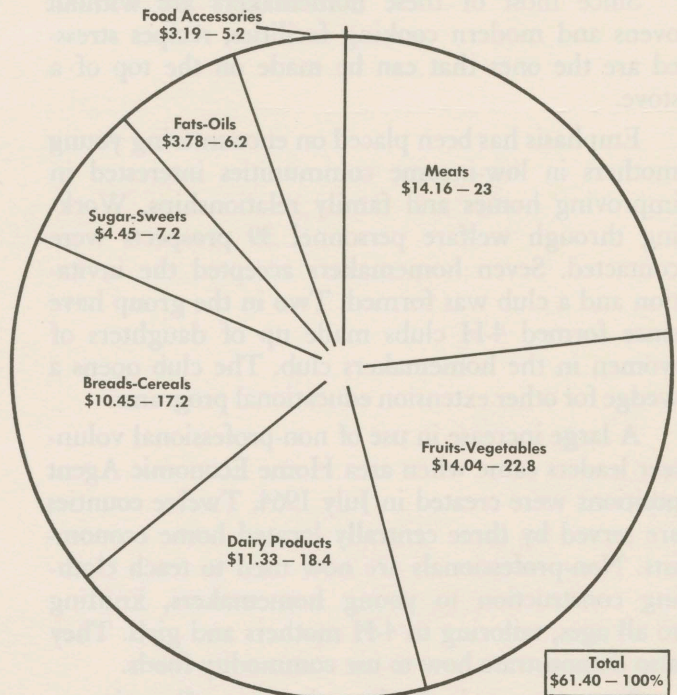
The survey revealed that 43% of the families keep records regularly, others kept partial records or none. Participants were asked if the family made any changes in marketing as a result of the survey. One third said "no" but 60% said they felt the experience made them more efficient shoppers.

The survey showed that an average South Dakota family of 4.5 persons spent \$61.40 per month for food items. Of this amount 18.4% was for dairy products, 23% for meat and poultry products and 17.2% for breads, cereals and grain products.

As a result of the survey a nutrition-family economics workshop was planned to help home economics agents become acquainted with materials usable in helping homemakers manage food dollars, help them understand how South Dakota food dollars are spent and point out nutritional deficiencies in present diets of South Dakota families.

A number of workshops on different subjects were developed to assist homemakers solve day-to-day problems of living. It was found many homemakers do not even realize that such assistance is available through the County Extension office.

Workshops were designed for specific group needs. For example, clothing construction workshops were conducted for beginning seamstresses in 19 counties. Basic instruction include care and use of the sewing machine.



Distribution of food dollars (excluding school lunches and restaurant meals) February 1965.

Home Economics agents worked frequently with low income families and families of minority groups in an attempt to help them improve home care and maintenance. In one case an extension worker supervised complete installation of drapes in 100 public housing units.

Part of the house maintenance problems resulted from lack of cooperation by other family members in helping keep the home clean. The housing units were without playground facilities, so a community group was organized to secure a playground area and equip it. Application was made for a recreational program under Community Action Programs. One measure of how such cooperative programs have an impact: a Halloween program including a costume parade was organized. Ten mothers accompanied small groups of children. As a result there was no vandalism on the housing project grounds.

All Home Economics agents on Indian reservations plus 10 other agents worked with homemakers using commodity foods. Lessons are planned to help mothers make good use of commodities provided and to help them balance meals nutritionally.

Commodity food demonstrations were provided for 93 Indian homemakers in one area. Simple visuals and charts were used to explain the need for balanced diets.

Since most of these homemakers are without ovens and modern cooking facilities, recipes stressed are the ones that can be made on the top of a stove.

Emphasis has been placed on encountering young mothers in low-income communities interested in improving homes and family relationships. Working through welfare personnel 39 prospects were contacted. Seven homemakers accepted the invitation and a club was formed. Two in the group have since formed 4-H clubs made up of daughters of women in the homemakers club. The club opens a wedge for other extension educational programs.

A large increase in use of non-professional volunteer leaders came when area Home Economic Agent positions were created in July 1964. Twelve counties are served by three centrally located home economists. Non-professionals are now used to teach clothing construction to young homemakers, knitting to all ages, tailoring to 4-H mothers and girls. They also demonstrate how to use commodity foods.

Sixty women in Brule and Aurora Counties attended five classes on tailoring. Topics studied included pattern and fabric selection, pattern measurement and alteration and tailoring supplies. One

woman in the group intends to start a business as a result.

About 35% of the group were non-club members, over half had children in grade school and 35% were active as 4-H leaders.

One basic need among these women is to be able to create something with their hands. They feel they have accomplished something worthwhile if they have a tangible end product. As a result, there is a continuing demand for teaching hand skills such as knitting. Basic classes were offered in knitting in several counties. These were organized by extension agents and taught by local volunteers. About 225 people were taught basic knitting. A high percentage of those attending were not club members. This is an excellent opportunity to reach women and to interest them in other Extension homemakers programs.

In another community a series of five classes on sex education were set for parents in conjunction with the high school principal and the County Homemakers Council.

A small group of interested parents was organized. A specialist served as program director and discussion leader. The group formulated their own aims for graded sex education for children, evaluated the series as being "most helpful" and the group may continue to study other areas of education such as school curriculum programs in community organization.

Twenty counties carried on programs in consumer education in either clothing, home furnishings or equipment. In a 4-county area where family incomes average about \$3,000 annually, six project leader sessions were held. The 85 leaders attending represented 49 clubs. An evaluation based on interviews indicated enthusiasm for this kind of educational effort. More sessions are planned but subject matter will be confined to a smaller scale.

In another case 34 project leaders received training in furniture selection. Taste in furnishings, selection of good quality, budgets for furnishings and care and repair were included in the training.

A broad array of other educational and informational meetings was provided through family life lessons. Included were subjects on citizenship, understanding of self, flag etiquette, creative activities for young people, what happens to high school dropouts, getting along with your nerves, public taxation, and civic and community problems.

In a western county forty-six rural women completed medical selfhelp classes. Training schools were conducted in such varied subjects as educational and health concerns, safe rural water supplies, yard improvement, and landscaping.

4-H AND OTHER EXTENSION YOUTH PROGRAMS

Although the age limit dropped from 21 to 19 during 1965, South Dakota's 4-H enrollment came within 144 of reaching the record 19,588 set in 1964. Enrollment included 10,958 girls and 8,486 boys. About 20% of the enrollment comes from rural non-farm families and 10% from urban or city youth.

South Dakota led the nation in 4-H re-enrollment in 1964 with 77.1%. Although national rankings have not yet been published, South Dakota's re-enrollment was 72.76% for 1965. Over 2,000 vol-

unteer organizational leaders gave leadership and guidance to 1,443 clubs. They were assisted by 1,839 club project leaders, 549 county project leaders and about 2,900 4-H members who learn responsibility while serving as junior leaders in the program.

The first state-wide horse show was held with 200 members showing horses in 18 classes of competition. A record-breaking 6,000 entries were exhibited at the State Fair, including the first of a new "Science in Nutrition" project in which 16 girls from four counties participated.

South Dakota was selected as the first state to host participants in the new short term international training program for extension workers. Two rural youth leaders from Mexico attended the two-month study program in this state.

There was "fun in the sun" for 2,380 4-H members and 135 volunteer leaders who participated in 19 summer camping sessions at Camp Lakodia on Lake Herman and Camp Tomaha in the Black Hills.

South Dakota 4-H'ers may now choose from 22 projects and 16 activities when they enroll. The projects include six phases of livestock and poultry production, four areas of horticulture, four areas of home economics, tractor, handicraft, automotive, crops, forestry, range management, electricity, and entomology.

The most popular project in 1965 was handicraft with more than 10,500 enrolled. Gardening enrolled about 6,000 members and clothing and beef 5,000 members each. The horse project is growing in popularity with an enrollment of 2,253, an increase of 800 members since 1962 when it began.

Health and community service had the largest activity enrollment with about 8,000 members in each. Recreation and safety enrolled over 7,000 each. Clubs are organized on both community and individual project basis with two adult volunteer leaders and any number of assisting project leaders per club.

The property and equipment at Camp Lakodia on Lake Herman was transferred to the 4-H Club Foundation of South Dakota. In addition the Foundation distributed about \$47,000 in private funds to support 4-H activities during 1965.

Private funds are needed for many award programs that are so much a part of the South Dakota 4-H program as it is known today. About half of



Many girls became so proficient through 4-H sewing projects that they make complete wardrobes. Here is a creation by a participant in the Dress Revue competition at the 1965 State Fair.

those provided last year were used to sponsor the summer camp activities. Trips sponsored through the Foundation included 30 National Club Congress trips, 75 home economics and agricultural judging trips, five trips to National 4-H Club Conference, and the International Farm Youth Exchange program. About 500 attended State Club Week which is also sponsored through the Foundation.

Private funds handled by the Foundation also bought some 13,000 awards, ribbons, trophies, plaques, and pins awarded to 4-H members annually.

The project leader system is now in its third year. Its impact on the 4-H program is demonstrated in an example from Faulk County. There, as in most counties, 4-H leaders were over-burdened with many programs and activities. It is virtually impossible for one or two persons to become well informed on all existing programs. Leaders become frustrated and feel inadequate, hesitating to assume responsibility when faced with such a work

load. The county program included the goal of training one or two adults in each of 8 projects and activities emphasized during 1965 to help lighten this work load.

Project leaders were selected in clothing, sheep, dairy, electricity, forestry, entomology, safety, and conservation.

Clothing project leaders were most energetic and efficient. About 80 attended judging schools in the county and more interest was taken in the clothing project than in any previous year in spite of the fact that there is no full-time home agent in this county. A summer home agent helped organize and carry on the summer judging schools. Clothing exhibits numbered 180 at Achievement Day in 1964 and grew to 216 in 1965 because of the program.

While the project leader approach does not solve all of the problems in overloading 4-H club leaders, Faulk County found they had little difficulty in securing project leaders for 1966 with this system.

School begins before State Fair in some areas of the state. To keep up their school work, these 4-H participants study atop a footlocker in a barn where they care for animals brought to the fair as 4-H projects.



RESOURCE DEVELOPMENT AND PUBLIC AFFAIRS

It is becoming increasingly clear that for maximum, logical growth a community needs a planned multi-development program which takes into account the various agricultural, industrial, business, recreational and public service aspects of the locality.

Such relatively long-term and community-wide undertakings are initiated and carried through only when people are informed about and understand the realistic opportunities for development. People must know how various parts of community activities and demands are interrelated and contribute to the development structure for an entire area.

Community development is a thread that runs through most programs currently sponsored by Extension. But there has been an increasing trend to provide a network or umbrella effort for community development.

For example, the program of education for the "war on poverty" was conducted on many fronts. It was first introduced to county technical action panels by a series of five workshops held throughout 1965. Workshops were conducted by Extension specialists. Follow-up meetings were held for community leaders in 11 counties. In addition, the same information was presented to several other groups interested in community development work.

As a result, community action programs are being funded or are in the process of being funded in a number of counties. A summer Neighborhood Youth Corps was established which employed 100 young boys and girls.

County and area Extension agents were active in planning and development of community action programs on six Indian reservations. They provided training for eight home management aides and four clothing aides for the home management projects in the community action program on the Cheyenne River Reservation. These aides work directly with low income families in 15 districts of the reservation.

Rural area development work continued and expanded during 1965. Two new county organizations were established in Lincoln and Campbell Counties. Activities in county RAD groups overlap a number of other activities. One example is the new recreation complex planned under Extension guidance in Bennett County. The complex will include a 9-hole golf course, an indoor swimming pool, a community park and campground. This

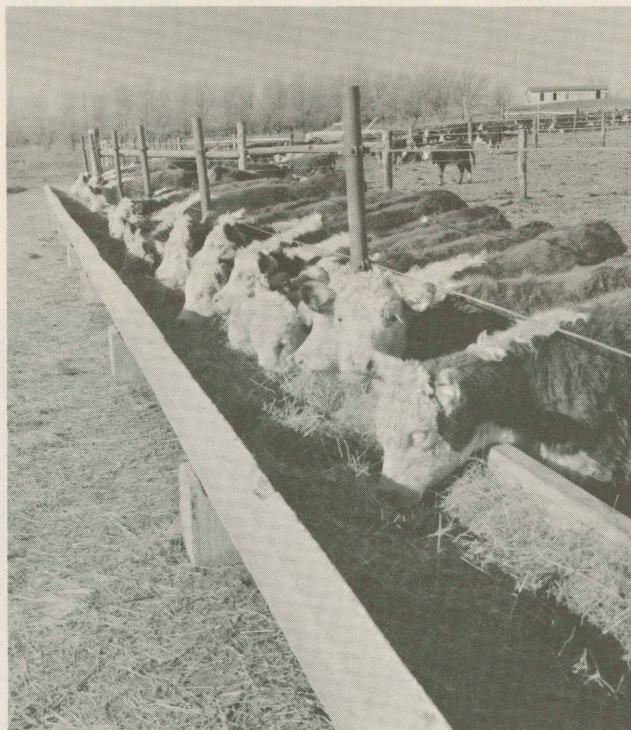
was made possible through community effort and a \$100,000 community facility loan through the Farmers Home Administration.

In Lincoln County the newly formed organization attacked sewage and water problems in the town of Harrisburg. Results: Application for loan to construct new facilities. Similar efforts are underway in Haakon, Beadle, Hamlin, Douglas and Hutchinson Counties.

RAD committees in Tripp, Sanborn, Davison, Hyde, Charles Mix, and Campbell Counties have undertaken educational activities. Marshall, Roberts, and Day Counties are planning a multi-county community action program.

Committees in McPherson, Hutchinson, McCook, Brown, Aurora and Gregory Counties have undertaken feasibility studies for obtaining loans for a low-rent, senior citizen housing.

An important segment of community development has been the planning, analyzing and study needed to encourage small industry in various areas. In addition to industries dealing mainly with ag-



Beef is South Dakota's top ranking livestock industry. During 1965 Extension personnel helped design 208 new feed lots, helped plan expansion for 610 others. Construction of more than 1,200 new upright silos during the year points up changing livestock feeding picture.

gricultural products, other types of enterprises received assistance from Extension employees during 1965.

A plastic company now appears to be a reality in the Mobridge area. It resulted from 3 years of hard work by the Mobridge Development Corporation, and the Extension resource development agent for South Dakota. The plant is now under construction.

A combination feeding yard, packing plant and fertilizer plant also appears to be a reality in the same area with construction scheduled for 1966.

Development corporations in Selby and Hoven have been considering one of several projects that appear feasible. Excellent cooperation has been received from groups such as the Standing Rock Economic committee, Bureau of Indian Affairs, IDEA and other industrial contacts.

Short course sessions with lumbermen conducted by agricultural engineers have had a marked influence on construction and design of farm buildings in South Dakota. This represents another aspect of community development. Lumbermen now know of State University Extension Service plans, publications and planning help available in the farm buildings field.

A dozen counties were given specific help in the development of recreation areas to provide better facilities for the tourist trade and for the use of local people.

One unit in Sully County which was planned in 1963 became operational during 1965. The unit has good public response. As a result of the apparent success of this area two more are being developed in an adjacent area along the Missouri reservoir.

Forty-two counties are now a part of one of five different conservancy sub-districts. The South Dakota Water Conservancy District Act passed in 1959 inspired organizational effort with Extension and the Water Resource Commission taking the bulk of the educational programs.

Every general election since the passage of the act has produced more additions to the sub-districts. Sub-districts now include 84% of the people and 60% of the land in the state.

During 1965 two Black Hills counties have been contacted. There is a possibility that they will join the Black Hills sub-district. Extension personnel prepared a document for use by sub-district directors in all areas. It is called "Policy Scope of Conservancy Sub-districts in South Dakota" and explains the breadth and scope that sub-district programs can take if the directors so desire. It encourages sub-districts to go beyond the work of water resources alone and develop other natural resources as well as human resources using available state and federal economic development programs.

Sub-districts have also been helpful in encouraging ground water surveys. Enabling legislation was passed in 1963 and underground water surveys have been encouraged. Sub-districts have been able to provide some of the funds to begin this work.

SDSU's practice of combining water resource development policy with technical aspects of water resource development has taken on a regional look. The subject was discussed at the 1965 North Central Regional Extension Agricultural Engineers workshop along with the implications of an interdisciplinary approach.



Eleven South Dakota towns were visited by the 1965 SDSU traveling exhibit. Agricultural engineers here at one of the booths discuss materials handling on farms and ranches.

GENERAL EXTENSION

In 1965 South Dakota emphasis was placed on education. The national focus as an investment was pinpointed as one of the first steps toward the reduction of poverty and the raising of the general standard of living for all the people of the nation.

Much federal legislation was passed resulting in the increased need for informing people of the new opportunities available to them. The Higher Education Act, State Technical Services Act, Vocational Education Act, and the Elementary-Secondary Education Acts have resulted in a considerable number of inquiries. People want to know what actual professional and financial assistance is available to them to help improve existing educational programs and to provide new and broadened opportunities for adult and continuing education in technical service areas as well as business and industry.

The problems associated with areas of low population and limited financial resources are still reflected in the elementary and secondary schools as well as the colleges and universities of the state.

The rapidly changing rural community is facing problems of decreasing population as well as a shift in age groups within the population. The change in size of farm and ranch operations is reducing the number of jobs available in agricultural production on the farm and ranch. This job shift or employment change requires education for new skills or related "know-how" to off-farm jobs.

The present educational programs of the public schools, elementary and secondary, as well as that of the higher education institutions is being reviewed in the light of current needs of the people and available federal assistance to meet these needs.

More assistance is needed in providing technical and consulting services for business and industry in the state. A plan is being developed which should provide the ways and means of making these services readily available throughout the state.

Objectives for the past year's program of continuing education included:

To assist people in identifying problems of rural and urban communities and attempting to find solutions to the problems through education; to encourage public support in providing greater training opportunities for South Dakota youth;

To encourage public support in funding general extension through adult and continuing education programs throughout the state for job change and adjustment;

To expand the offerings of short courses, workshops and seminars to business and industry as well as technical and consulting services, both on the University campus and off-campus;

To increase emphasis on off-campus course offerings, credit and non-credit, for professional growth and advancement;

To conduct survey and study activity to identify service areas that need extension education to expand and develop.

Summarized accomplishments in 1965 are:

Organizing extension classes off-campus for college credit, both at the undergraduate and the graduate level. In addition to undergraduate and graduate work taught at the Watertown Center, graduate classes were taught in Mitchell and Sioux

The first statewide 4-H horse show was held in Huron in late July with 191 registered participants. The 4-H horse project is one of the fastest-growing in the state.



Falls. An undergraduate class is organized and will be taught at Pierre and a graduate class is scheduled for Huron. The organization of the later two classes was the result of work during the last half of the year. The table below indicates the growth of service rendered in 1965 compared to 1964 in the college credit courses Extension offered off-campus.

	1964	1965
Total class enrollments (graduate and undergraduate)	231	315
Total courses taught	9	15
Total semester hours of courses offered	24	40
Total semester hours of credit earned by enrollees	619	791

Extension provided data and consulting service regarding establishment of a vocational school in Watertown. The school has been approved and is one of the six area vocational schools designated in South Dakota under the Vocational Education Act of 1963.

A survey by Extension of the potential technical and consulting services of the colleges of South Dakota State University provides an educational service directory available to business and industry. There appears to be a need to identify, catalog and then develop a Directory of Specialized Services for the entire state.

In August a 2-week workshop was conducted for 83 rural leaders from five South American countries (Bolivia, Colombia, Chile, Peru and Venezuela). The workshop was developed around rural community development and social and economic problems as well as communication skills in leadership training. The Latin Americans were in the United States under the sponsorship of a project of the National Farmers Union. The 2-week program arranged by Extension included housing, feeding, instruction and recreation. This program is expected to be continued in 1966 with a similar group.

Plans were developed for training home management aides and sewing specialists for the Cheyenne River Indian Reservation at Eagle Butte. This training program was developed under an Indian

Community Action Program of the Office of Economic Opportunity and the specific training will be conducted by the staff provided through Extension. The management training will cover three separate weeks of instruction over a three-month period dealing with foods, clothing and money matters. Follow-up service will furnish additional help to the aides on the job through June of 1966. This training program is a cooperative endeavor with the office of the Indian Community Action program at the University of South Dakota in Vermillion.

An application for membership in the National University Extension Association was prepared and arrangements made for a campus visitation by a team designated by NUEA.

In addition to the established seminars, workshops and short courses, new programs were worked out for adult education in developmental reading, an investment seminar, and an electrical users seminar. A detailed workshop for the Iron Workers and Welders Association of South Dakota was prepared and presented to the annual meeting of the association which approved the short course for March. More than 9,000 persons took part in the wide variety of educational workshops and conferences held on the SDSU campus.

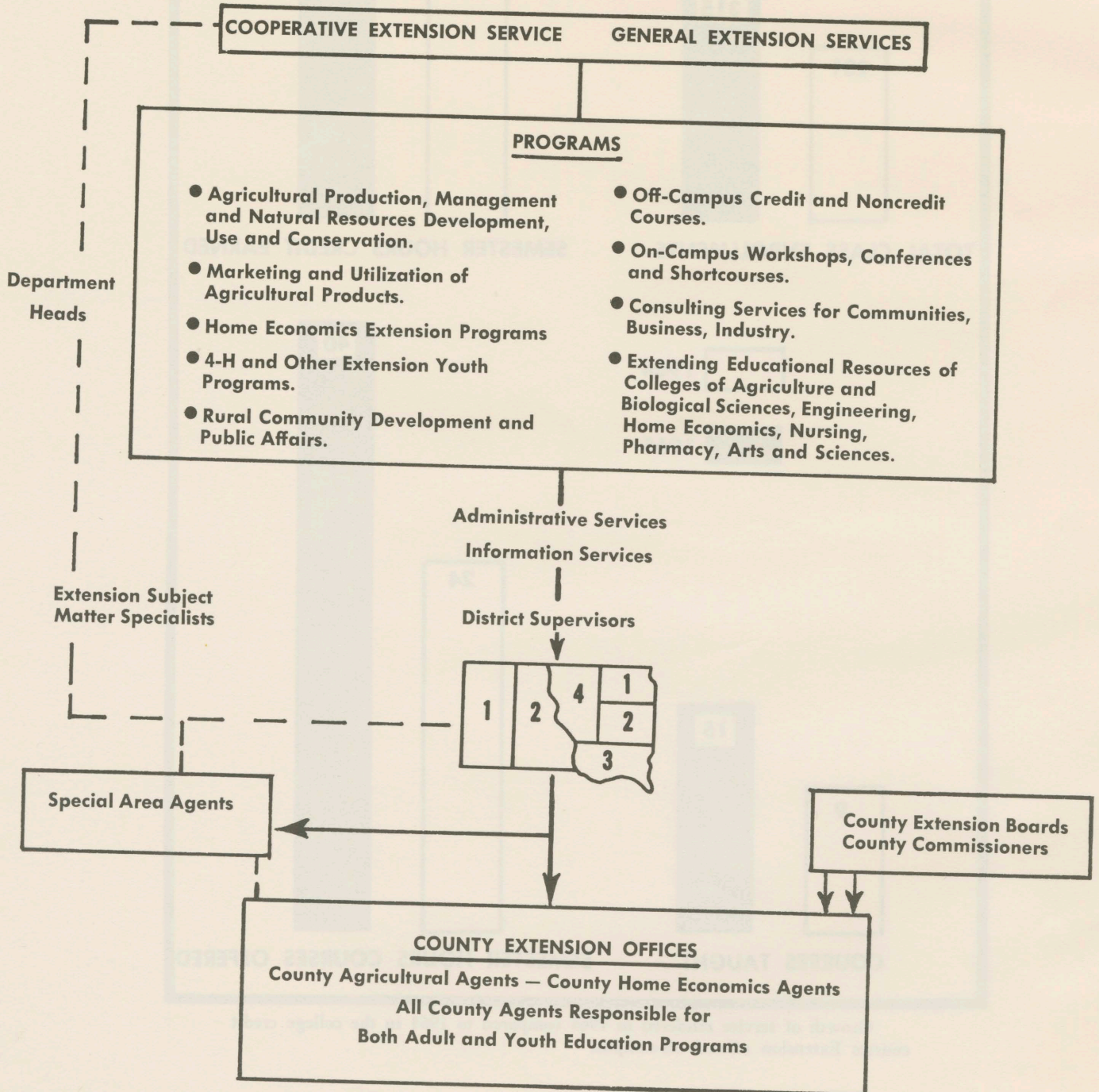
Meetings have been held to point out educational needs and opportunities for South Dakota youth. New possibilities under recent federal acts were explained in light of possible services and funding. A brochure was distributed listing less than college degree types of training available in South Dakota. Talks have been given urging community leaders to look seriously and critically at present public school offerings with a view to broadening programs to more nearly include all the youth of the state.

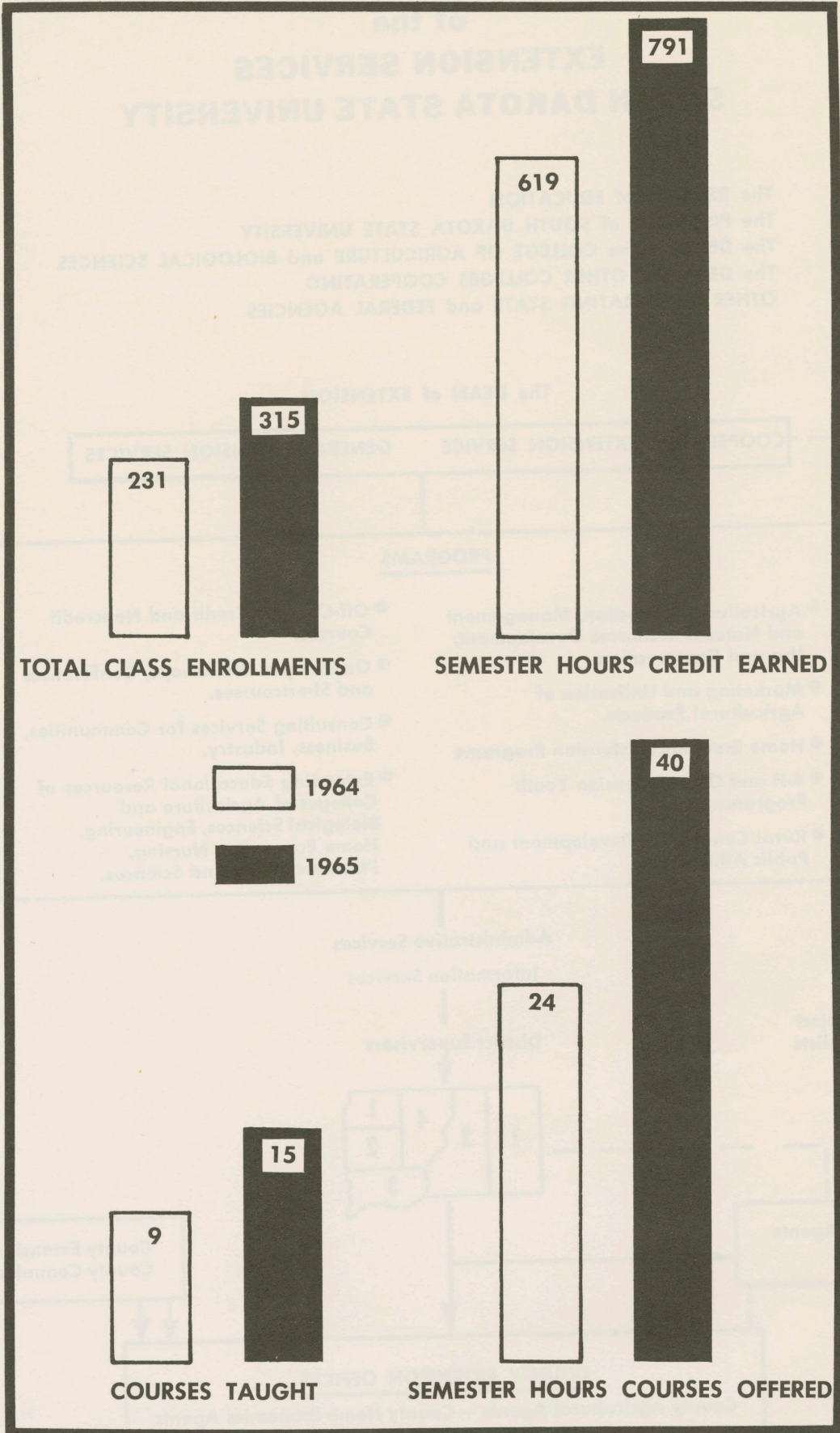
Educational services for all of the people for professional growth, retraining and for technical as well as consulting services have been more broadly accepted as a responsibility of continuing education for the adult population served through extension during 1965.

Organization of the EXTENSION SERVICES SOUTH DAKOTA STATE UNIVERSITY

The REGENTS of EDUCATION
 The PRESIDENT of SOUTH DAKOTA STATE UNIVERSITY
 The DEAN of the COLLEGE OF AGRICULTURE and BIOLOGICAL SCIENCES
 The DEANS of OTHER COLLEGES COOPERATING
 OTHER COOPERATING STATE and FEDERAL AGENCIES

The DEAN of EXTENSION





Growth of service rendered in 1965 compared to 1964 in the college credit courses Extension offered off-campus.

Special Series No. 2

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