

UNIVERSITY OF MISSOURI      COLLEGE OF AGRICULTURE  
AGRICULTURAL EXTENSION SERVICE  
COLUMBIA, MISSOURI

# Making the Farm Pay

PROJECT ANNOUNCEMENT 25

JUNE, 1928

COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE AND THE UNITED STATES  
DEPARTMENT OF AGRICULTURE COOPERATING

A. J. MEYER, Director, Agricultural Extension Service

Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914

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# Making the Farm Pay

By A. J. MEYER AND A. A. JEFFREY

The last published report of the Agricultural Extension Service—Project Announcement No. 23, entitled “Forward Steps in Agriculture”—sets forth in considerable detail the general plan of organization of the Extension Service, the manner of its functioning, and its field of service. A limited supply of Project Announcement No. 23 is still available for free distribution to persons who want to know just what the Agricultural Extension Service is and how it operates.



Fig. 1.—These three litters at six months of age netted John Sam Williamson of Boone County \$125 a litter. At 180 days the 33 pigs weighed 7542 pounds.

We have chosen as the title of the present publication “Making the Farm Pay”. We choose to interpret this title rather broadly. Farm labor must be properly compensated in dollars for capital invested and labor expended. The farm must, at the same time, offer other compensations which, in many cases, dollars cannot buy. The farm must pay in terms of satisfactory living conditions for the farm family. The farm must pay in terms of a progressive environment in which boys and girls may grow to manhood and womanhood. The farm must pay in terms of communities which satisfy that inborn desire of human beings everywhere to mingle with their kind in work, in play, and in giving expression to their community, state, and national patriotism. To make the farm pay from each and all of these angles is the purpose of the Agricultural Extension

Service. The following pages may reveal the extent to which that purpose is being accomplished.

This report, if it may be so designated, comprises two divisions. The first of these is a general statement by the Director of Extension covering matters of immediate administrative concern. The second division has been prepared for publication by the agricultural editor. Division two is not a report, but rather an analysis of reports by one intent upon the purpose of interpreting for farmer readers agricultural facts and figures.

### THE FINANCIAL SITUATION

The effectiveness of extension work lies largely in its continuity. Changes in the agriculture of a state are brought about through continued application of effort over periods of several years as a minimum. But continuity of effort is, in turn, dependent upon the permanency of the staff of workers. In the face of tremendously uncertain financial support the staff of the Agricultural Extension Service has continued on a reasonably permanent basis. With state revenues hopelessly inadequate to meet the needs of the various branches of the state government, the year 1926 opened with no state funds available for extension work. The legislature of 1925 had appropriated \$100,000 for the year and the Governor of the state had given assurance that, should funds become available, this amount, or some portion of it, would be released for the continuance of extension work in the state. It was not until late in the year that Governor Baker found it possible to release \$45,000, a sufficient amount to carry the work through the calendar year. The present biennium, 1926-27, opened with a state appropriation of \$100,000 per year, which amount has been authorized in full by Missouri's Governor. With a definite knowledge as to the actual amount of money available during the biennium, extension plans have been made on a positive, rather than a speculative, basis.

The financial problem in Missouri is one of granting sufficient state support so that every county in Missouri, desiring it, may have the benefits of at least one county agent. This situation cannot obtain until the State of Missouri is ready to expend as much for extension work as is now being expended in the state by the Federal Government under the Smith-Lever and Capper-Ketcham Acts.

According to the census of 1925 Missouri has 260,473 farms. If the state were to furnish an extension fund equivalent to one dollar



per farm per year, every county could have the services of a county agent.

### SOURCES OF INCOME AND EXPENDITURES

Because of relationships with the U. S. Department of Agriculture financial reports are made on the basis of the federal fiscal year—July 1 to June 30, next succeeding. The following financial statement, therefore, covers the two years ended June 30, 1926 and June 30, 1927.

INCOME		
	1926	1927
Federal Smith-Lever.....	\$200,921.32	\$200,921.32
State Appropriation.....	62,739.28	83,267.81
U. S. Department allotments.....	13,000.00	13,000.00
County funds used as offset to federal Smith-Lever.....	128,182.04	107,653.51
EXPENDITURES		
(All funds)	1926	1927
Administration.....	13,498.44	12,468.88
Publications.....	10,948.06	8,727.00
County Agent Work.....	210,280.18	201,853.54
Home Demonstration Work.....	35,328.79	24,629.06
Boys and Girls Club Work.....	15,134.34	17,628.04
Publicity.....		3,296.65
Clothing.....	10,422.66	10,763.01
Health and Home Sanitation.....	4,253.64	4,247.59
Nutrition.....	4,133.88	4,347.08
Home Management.....	7,832.37	11,415.36
Soils.....	8,842.81	11,907.67
Field Crops.....	15,041.59	15,295.99
Animal Husbandry.....	11,878.94	13,461.92
Dairy Husbandry.....	10,484.80	9,858.16
Poultry Husbandry.....	7,989.39	9,285.67
Horticulture.....	6,522.60	9,582.39
Entomology.....	970.35	84.83
Agricultural Economics.....	4,787.52	5,391.38
Agricultural Engineering.....	4,479.10	6,333.39
Rural Sociology.....	4,368.12	4,882.84
Farm Management.....	4,067.75	4,471.25
Farmers Week.....	350.21	1,834.49
Junior Farmers Week.....	227.10	76.45
Totals.....	391,842.64	391,842.64

## THE AGRICULTURAL EXTENSION SERVICE STAFF

The staff of the Agricultural Extension Service November 30, 1927 included the following members:

### WITH HEADQUARTERS AT THE UNIVERSITY

S. D. Brooks.....	President of the University
F. B. Mumford.....	Dean of the College of Agriculture
A. J. Meyer.....	Director, Agricultural Extension Service
B. J. Carl.....	Secretary, Agricultural Extension Service
J. W. Burch.....	Extension Associate Professor of Animal Husbandry
H. M. Garlock.....	Extension Assistant Professor of Animal Husbandry
D. C. Wood.....	Extension Assistant Professor of Agricultural Economics
H. C. Hensley.....	Extension Assistant Professor of Agricultural Economics
A. J. McAdams.....	Extension Assistant Professor of Agricultural Engineering
Harold LeMert.....	Extension Instructor of Agricultural Engineering
M. J. Regan.....	Extension Assistant Professor of Dairy Husbandry
A. F. Stephens.....	Extension Assistant Professor of Dairy Husbandry
C. E. Carter.....	Extension Associate Professor of Field Crops
K. G. Harman.....	Extension Assistant Professor of Field Crops
Ide P. Trotter.....	Extension Assistant Professor of Field Crops
Essie M. Heyle.....	Extension Professor of Home Economics
Gladys Muilenburg.....	Assistant State Agent
Fra Clark.....	Extension Assistant Professor of Home Economics
Mrs. Bina Slaughter Davis.....	Extension Instructor in Home Economics
Marion Dunshee.....	Extension Assistant Professor of Home Economics
Lois Martin.....	Extension Assistant Professor of Home Economics
Julia M. Rocheford.....	Extension Assistant Professor of Home Economics
Mary E. Robinson.....	Extension Associate Professor of Home Economics
Mary E. Stebbins.....	Extension Assistant Professor of Home Economics
Mrs. Edith G. Van Deusen.....	Extension Assistant Professor of Home Economics
Marion K. White.....	Extension Assistant Professor of Home Economics
E. A. Bierbaum.....	Extension Assistant Professor of Horticulture
Berley Winton.....	Extension Assistant Professor of Poultry Husbandry
Harold Canfield.....	Extension Assistant Professor of Poultry Husbandry
B. L. Hummel.....	Extension Assistant Professor of Rural Sociology
P. F. Schowengerdt.....	Extension Associate Professor of Soils
R. J. Silkett.....	Extension Assistant Professor of Soils
O. T. Coleman.....	Extension Instructor in Soils
J. F. Nicholson.....	State Extension Agent
P. B. Naylor.....	State Extension Agent
C. C. Hearne.....	State Extension Agent
R. R. Thomasson.....	State Extension Agent
T. T. Martin.....	Boys and Girls State Club Agent
Jane Hinote.....	Boys and Girls State Club Agent
Margaret Huston.....	Boys and Girls State Club Agent
R. H. Emberson.....	Boys and Girls State Club Agent
Sara Chiles.....	Assistant Boys and Girls Club Agent
A. A. Jeffrey.....	Agricultural Editor
Thos. L. Cleary.....	Assistant Agricultural Editor
W. H. Rusk.....	In Charge, Field Instructors, U. S. Veterans Bureau Trainees

COUNTY EXTENSION AGENTS

<i>Name</i>	<i>County</i>	<i>Headquarters</i>
O. E. Allen.....	Cass.....	Harrisonville
M. D. Amburgey.....	Pemiscot.....	Caruthersville
F. R. Cammack.....	Marion.....	Palmyra
A. J. Clayton.....	Chariton.....	Keytesville
Robt. S. Clough.....	Pettis.....	Sedalia
Jas. E. Crosby, Jr.....	St. Francois.....	Farmington
F. H. Darnall.....	Butler.....	Poplar Bluff
Marvin B. Ditty.....	Lafayette.....	Higginsville
Ira Drymon.....	Jackson.....	Independence
T. A. Ewing.....	Boone.....	Columbia
Jas. A. Fairchild.....	Perry.....	Perryville
J. Ross Fleetwood.....	Nodaway.....	Maryville
D. R. Forrester.....	Livingston.....	Chillicothe
H. W. Guengerich (Asst.).....	Jackson.....	Independence
J. Robt. Hall.....	Linn.....	Linneus
H. W. Hamilton.....	Saline.....	Marshall
J. R. Hansen.....	St. Louis.....	Clayton
S. E. Hargadine.....	Pike.....	Bowling Green
E. T. Itschner.....	Holt.....	Mound City
Scott M. Julian.....	New Madrid.....	New Madrid
C. C. Keller.....	Greene.....	Springfield
T. M. Keyser.....	Cape Girardeau.....	Jackson
A. W. Klemme.....	Lawrence.....	Mount Vernon
R. A. Langenbacher.....	St. Charles.....	St. Charles
W. W. Lewelling.....	Callaway.....	Fulton
T. F. Lueker.....	Cole.....	Jefferson City
Owen McCammon.....	Clinton.....	Plattsburg
C. W. McIntyre (Asst.).....	Jackson.....	Independence
E. S. Matteson.....	Monroe.....	Paris
Oscar W. Meier.....	Lincoln.....	Troy
Dan E. Miller.....	Howard.....	Fayette
Jas. A. Muster.....	Vernon.....	Nevada
Coe Pritchett.....	Buchanan.....	St. Joseph
A. J. Renner.....	Scott.....	Benton
Wm. A. Rhea, Jr.....	Ralls.....	New London
L. A. Saunders.....	Gentry.....	Albany
V. B. Sheldon.....	Carroll.....	Carrollton
E. T. Steele.....	Jefferson.....	Hillsboro
E. W. Stewart.....	Platte.....	Platte City
Frank Stonner.....	Randolph.....	Huntsville
C. R. Talbert.....	Dunklin.....	Kennett
P. H. Teal.....	Mississippi.....	Charleston
Ross Welsh.....	Johnson.....	Warrensburg

DISTRICT EXTENSION AGENTS

<i>Name</i>	<i>Counties</i>	<i>Headquarters</i>
E. E. Brasfield.....	Howell, Ozark.....	West Plains
J. C. Caldwell.....	Washington, Iron.....	Ironton
Roy I. Coplen.....	Camden, Dallas, Laclede.....	Lebanon

DISTRICT EXTENSION AGENTS (Continued)

Wendell Holman.....	Polk, St. Clair.....	Humansville
E. T. Mallinckrodt.....	Bollinger, Madison, Wayne.....	Fredericktown
John S. Matthews.....	Christian, Stone, Taney.....	Ozark
John R. Paulling.....	Oregon, Ripley.....	Doniphan
F. E. Rogers.....	Douglas, Wright.....	Mansfield
W. C. Shotwell.....	Carter, Reynolds.....	Ellington
O. V. Singleton.....	Benton, Hickory.....	Warsaw
Jay W. Stratton.....	Barry, Newton, McDonald.....	Neosho
L. F. Wainscott.....	Crawford, Dent, Phelps.....	Rolla

COUNTY HOME ECONOMICS AGENTS

<i>Name</i>	<i>County</i>	<i>Headquarters</i>
Florence Carvin.....	Jackson.....	Independence
Louise McClellan.....	Buchanan.....	St. Joseph
Mabel McMahan.....	Saline.....	Marshall
Cecile Manikowske.....	St. Louis.....	Clayton
Mrs. Claire Montgomery.....	Lincoln.....	Troy
Margaret Nelson.....	Cass.....	Harrisonville
Ione Rhoades.....	Callaway.....	Fulton
Anne Sillers.....	Lafayette.....	Higginsville

DISTRIBUTION OF EFFORT

Missouri has 114 counties. Of this number 42 had neither county nor district agents at the close of 1927. State extension workers give some service to the 42 non-agent counties. Twenty-nine counties in the Ozark section of Missouri are served by district agents, five of whom have three counties each, and seven have two counties each.

The following summary indicates how subject-matter specialists and 4-H club state agents distribute their field time as between county-agent, non-agent and district-agent counties.

Year	Agent Counties			Non-Agent Counties			
	No. Cos.	Days Spec. help	Av. per Co.	No. Cos.	Days Spec. help	Av. per Co.	% of I
1923	58	3072½	52.9	43	572½	13.3	25.1
1924	55	3452	62.7	57	662	11.6	18.5
1925	51	3034½	59.5	63	758½	12.	20.
1926	70	2992	42.7	44	523	11.8	27.6
1927	72	3292½	45.7	42	782	18.6	40.7

## RELATIONSHIPS

The Agricultural Extension Service is happy to report that throughout the year it has had the active cooperation of all agencies interested in the development of agriculture.

The State Board of Agriculture cooperates with the College in the conduct of Farmers' Week. The Board has charge of, and supplies speakers for, the evening programs. It also furnishes speakers for some of the agricultural association meetings. It assists the College in the registration of Farmers' Week visitors and carries on a strong advance publicity campaign. The Board has also supplied speakers for occasional farmers' meetings and agricultural trains in cooperation with the College.

The State Department of Public Education has continued to encourage the school type of 4-H club work by giving school children credit for this work in lieu of other agricultural courses, and by encouraging teachers of vocational agriculture to cooperate with county agents and others in the promotion of Boys' and Girls' 4-H Clubs.

The Missouri Farmers' Association and its associated women's organization known as the Women's Progressive Farmers' Association, have both cooperated in many sections of the state, particularly in the matter of supplying local leadership and making arrangements for farmers' meetings, demonstrations, and tours.

The various county farm bureaus, as well as the State Federation, have continued their unqualified support of extension activities in every possible way.

The Missouri Bankers' Association has continued its support of 4-H Club work by offering \$1600 in premiums in connection with an inter-county contest. As an incident to this organized effort, individual bankers in all parts of the state are throwing their moral influence and encouragement back of the 4-H Club program.

Breed associations and other organizations are continuing their active cooperation in support of 4-H Club work as well as in the promotion of adult extension activities.

The Women's National Exposition of the city of St. Louis contributed \$1000 in 1927 to provide for the holding of a state club leaders' training school of four days at the College of Agriculture. This fund paid the expenses of 27 leaders and left a balance of \$252.41 to bring others to the 1928 school.

Commercial clubs and chambers of commerce have contributed in various ways to the promotion of the extension program. The

Kansas City, Nevada, and Springfield Chambers of Commerce have been especially active as they have in years past.

The press of the state has given its active and effective support to the entire extension program. The newspapers and farm papers of the state have not only broadcast the message of the Extension Service, but they have paved the way for extension work to reach new homes and new communities.

No statement of cooperation would be complete unless mention were made of the scores of individual farm men, women, and children who have assisted in numberless ways to make extension work effective. Cooperation of individuals has taken many forms. From their ranks have come demonstrators, project leaders, and community committeemen.

### **RAISING THE STANDARD OF EFFICIENCY**

All members of the extension staff are constantly studying ways and means of improving their methods so as to secure greater net results with equal expenditure of time, effort and money. Frequent conferences are held. Methods specialists of the U. S. Department of Agriculture are brought into frequent conference with individuals or project groups as seems most proper in order to bring to Missouri extension workers the best information available as regards methods developed in other states. The general extension conferences each year held in December are devoted largely to consideration of methods of doing extension work. State supervisors devote their energies largely to the working out of better methods with individual county or district agents. The result of all this effort is, not to bring about radical changes in methods of extension teaching, but rather, to strengthen weak spots and eliminate lost motion.

### **MEASURING RESULTS**

No accurate method of measuring extension results has been devised. Extension work in Missouri is conducted on the theory that if one person or a few persons in any community are led to adopt better practices, in their homes or on their farms, their example will spread to their neighbors so that ultimately large numbers will be reached through the medium of the relatively few direct contacts. It is fairly easy to state the results of extension work in terms of improved practices adopted by the few farm people with

whom direct contact has been made. The difficulty lies in determining the spread of influence. The survey is one, at least fairly effective, way of arriving at a knowledge on this point. The survey has not been attempted in Missouri because it has seemed that neither time nor money could be spared from the regular project work to check on what has been accomplished. Critical observers maintain that the beneficial effects of extension activities in agent counties are so conspicuous that even "he who runs may read". This is as it should be, yet it is no more than personal observation. It is hoped that in the not too distant future, Missouri may find itself in position to conduct a survey so that it may know with a more positive degree of assurance what is being accomplished by the expenditure of public funds to support extension work.

### AGRICULTURAL TRAINS

During the past two years, the College of Agriculture has participated in the conduct of agricultural trains of the Santa Fe, Wabash, and Burlington systems. In each case the College assumed responsibility for the program and its exhibits. The railroads bore the cost of installing exhibits, supplied much of the publicity material, and furnished the operating equipment, including sleeping and subsistence facilities for all participants. These trains functioned in a definite and positive way to strengthen and promote the extension program in the counties traversed. The cooperation with the Burlington Railway is being continued with definite follow-up at all points where original stops were made.

There has been some cooperation with other railroads; the Missouri Pacific, the Frisco, the Kansas City Southern, and the Rock Island. The participation of the College has, however, been of a minor nature with these.

All cooperation with railroads has been extremely satisfactory measured in terms of actual results accomplished. These trains supply a background of favorable sentiment toward better agricultural practices which assists materially in promoting the extension program.

### EXTENSION WORK IN FORESTRY

Under the impetus of the Clarke-McNary Act of Congress providing funds for so-called "farm forestry", the College of Agriculture undertook an extension project in forestry beginning July 1, 1925. Funds were made available through the financial support of

the Missouri Forestry Association to enlist the half-time services of an extension forester.

Due to lack of funds, the work was discontinued June 30, 1927. We have had enough contact with the project to demonstrate that the chief problem is to develop favorable sentiment toward tree preservation and timber conservation. Until farmers recognize the problem, there is little chance for extension work in forestry to function successfully.

Missouri, undoubtedly, has much land that under a wise forestry system, could add materially to the farm income. When farmers, owning such land, see the opportunity which its wise utilization presents, farm forestry will come to occupy a very definite place in the state extension program.

### GENERAL SUMMARY

An attempt has been made to summarize the extension activities of the year using project reports as the basis for the summary. The following tables represent the total net result of the attempt:

TABLE I.—SUMMARY FOR YEAR ENDED NOVEMBER 30, 1926

Project	No. of counties reached	No. of meetings	Attendance	No. of 4-H clubs	No. enrolled	No. completing	No. dem started	No. dem. completed	Improved practices adopted
Poultry .....	82	273	6,123	34	368	97	624	385	3,216
Rural Sociology.....	45	97	4,088	----	----	----	294	----	----
Farm Management.....	10	16	342	----	----	----	138	60	461
Dairy.....	74	203	19,980	20	184	66	559	559	4,186
Agr. Engineering.....	38	76	1,462	----	----	----	6	5	1,554
Horticulture.....	59	234	13,370	10	95	54	302	237	6,520
Agr. Economics.....	51	93	9,120	----	----	----	----	----	6,441
Soils and Crops.....	103	330	27,830	59	541	228	602	192	8,013
Nutrition.....	11	54	602	88	775	518	51	45	914
Health.....	29	74	1,691	52	686	348	200	149	2,390
Home Management.....	47	207	2,641	13	135	94	324	289	2,583
Clothing.....	46	173	2,797	464	4,029	2,331	----	----	5,146
Animal Husbandry.....	57	312	37,474	208	2,176	1,072	203	203	1,674
Entomology.....	----	----	-----	1	8	8	----	----	----
Totals.....	2,142	2,142	127,520	949	8,997	4,816	3,036	2,090	42,998



TABLE 2.—SUMMARY FOR YEAR ENDED NOVEMBER 30, 1927

Project	No. of counties reached	No. of meetings	Attendance	No. of 4-H clubs	No. enrolled	No. completing	No. dem. started	No. dem. completed	Improved practices adopted
Poultry.....	68	262	6,365	20	274	74	440	290	4,221
Rural Sociology.....	54	156	25,162	----	----	----	----	----	----
Farm Management.....	33	18	2,487	----	----	----	----	----	644
Dairy.....	59	264	16,272	20	175	54	84	65	2,414
Agr. Engineering.....	52	99	1,685	----	----	----	19	14	2,544
Horticulture.....	54	128	6,382	8	64	41	138	129	4,380
Agr. Economics.....	55	48	1,101	----	----	----	----	----	2,885
Crops and Soils.....	113	441	132,562	47	522	171	809	633	15,599
Nutrition.....	21	117	3,897	53	568	418	293	203	848
Health.....	25	71	1,836	100	1,201	819	9	----	1,707
Home Management.....	27	57*	610*	28	143	87	145	119	1,287
		137†	3,938†						
Clothing.....	60	110*	1,084*	300	2,271	1,590	302	206	13,838
		21†	24,124†						
Animal Husbandry.....	64	265	19,279	43	427	188	239	136	4,146
Totals		2,204	246,784	619	5,645	3,442	2,478	1,795	54,513

\*Schools and leaders.

†Meetings and attendance

### PUBLICATIONS

During the biennium ending November 30, 1927, thirty-one new publications have been issued, varying in size from one to ninety-six pages, with a total of 791 pages and a grand total of 201,600 circulars with a grand total of 6,807,200 printed pages.

The publications are divided into five series:

1. The Project Announcement series which is devoted to reports, plans, and methods of conducting extension work.

2. The Circular series giving information on farm and home practices in language that is free from technical and scientific terms.

3. The Leaflet series which differs from the circular series in size only. It is never more than a single sheet of paper.

4. The Poster series is intended to call the attention of the public to a timely idea.

5. The Boys' and Girls' 4-H Club series is issued to give information to club members and to assist them in getting the

most out of their 4-H club work. Publications of this series are available to 4-H club members only.

The following is a list of publications issued during the past biennium by the Agricultural Extension Service:

No.	Name of Publication	Pages	Edition
<b>Project Announcements</b>			
23	Forward Steps in Rural Life.....	84	3,000
24	Plans for Conducting Boys' and Girls' 4-H Club Work in Missouri.....	96	5,000
<b>Extension Circulars</b>			
172	Brood Sow and Litter.....	12	10,000
173	What to Produce in 1926.....	20	6,000
174	Common Internal Parasites of Poultry.....	4	5,000
175	Essentials of Alfalfa Production.....	8	10,000
176	Summer Chinch Bug Control.....	4	5,000
177	Promoting and Judging an Egg Show.....	4	5,000
178	Some Substantial Milk Dishes.....	4	5,000
179	Sweet Clover in Missouri.....	8	10,000
180	Health and Home Care of the Sick—I.....	16	5,000
181	Health and Home Care of the Sick—II.....	12	5,000
182	Health and Home Care of the Sick—III.....	16	5,000
183	Community Organization in Missouri.....	72	5,000
184	Making a Modified Comber Test for Soil Acidity.....	4	5,000
185	The Practice of Health.....	12	5,000
186	Producing and Feeding Beef Calves.....	16	10,000
187	Common Parasitic Worms in Poultry.....	8	15,000
188	Culling for Egg Production.....	16	15,000
189	Factors in Beef Production.....	8	5,000
190	The Use of Dynamite for Ditch Blasting.....	20	5,000
<b>Extension Leaflet</b>			
24	Tomato Plant Bed Spraying.....	2	4,000
<b>Poster Series</b>			
11	Grow Healthy Chicks.....	1	5,000
<b>Boys' and Girls' 4-H Club Circulars</b>			
17	Poultry Club III.....	24	3,000
18	Songs and Yells.....	48	10,000
19	Baking Club I.....	40	3,000
20	Lamb Clubs.....	36	3,600
21	Garment Making I.....	64	10,000
22	Baby Beef Club.....	40	10,000
23	Garment Making II.....	48	10,000
24	Garment Making III.....	44	4,000

### Farm News Service

With the cooperation of the Experiment Station, the Extension Service has issued weekly during the two-year period a five-column clipsheet containing about 4,000 words weekly to all newspapers and farm journals in the State. By the press of the state this information has been relayed to the people, giving them practical help on the farm and home problems incident to each week of the year.

Following is a brief statement regarding each publication :

#### Project Announcements

*Forward Steps in Rural Life*, by A. J. Meyer, Director of Extension (Project Announcement 23). This publication is the Director's Biennial report for the period December 1, 1923, to November 30, 1925. It not only gives a complete report of extension work for that period but answers these three important questions, "What is the Agricultural Extension Service?, How Does it Function?, Whom Does it Serve?"

*Plans for Conducting Boys' and Girls' 4-H Club Work in Missouri*, prepared by T. T. Martin (Project Announcement 24). This publication is a hand book for club leaders, extension agents, specialists, and others who are responsible for organizing and conducting 4-H club work in the state. It consists of one part on "How to Organize and Conduct 4-H Clubs in Missouri", a second division on "Boys' and Girls' 4-H Club Projects", and a third section on "Methods of Teaching in 4-H Club Work".

#### Extension Circulars

*Brood Sow and Litter*, by L. A. Weaver (Extension Circular 172). This circular tells of the importance of keeping the right type of hogs. Care of the pregnant sow is discussed with emphasis on the proper methods of feeding, exercise, and housing. The care of the brood sow and litter at farrowing time is discussed with the precautions that should be exercised immediately before farrowing, the proper rations, quarters, and bedding, the importance of sanitation and the method of removing the needle teeth of the young pigs. The common ailments of pigs, such as scours, thumps, etc., are discussed. The proper remedial measures are indicated.

*What to Produce in 1926*, by S. D. Gromer (Extension Circular 173). This circular attempts to give the farmer in advance of planting and breeding time the best information obtainable bearing on supply and demand conditions for his products which may be expected to prevail at the time his products are ready for market.

*Common Internal Parasites of Poultry*, by A. J. Durant (Extension Circular 174). This circular was prepared to assist in combating the ravages of worm infestations in poultry. Methods of prevention, diagnosis and treatment of internal parasites are discussed.

*Essentials of Alfalfa Production*, by C. E. Carter (Extension Circular 175). No other crop Missouri farmers can grow will furnish as high an acre value for the labor expended as a successful crop of alfalfa. Its place on Missouri farms is where there is need for hay and pasture in addition to that furnished by the clover in the regular rotation. The selection of the soil, soil treatments with lime and phosphate, good seed, time of seeding, and a properly prepared seed bed are thoroughly discussed in this publication.

*Summer Chinch Bug Control*, by L. Haseman (Extension Circular 176). This circular was written for the purpose of giving in a few words the necessary information regarding the habits of the chinch bug and the use of effective summer barriers to enable the farmers to control the pest.

*Promoting and Judging an Egg Show*, by H. L. Shrader (Extension Circular 177). The community, county, or state egg show furnishes an excellent educational means of stimulating interest in the production and consumption of quality eggs. Equipment necessary in staging an egg show and an explanation of a score card for judging eggs are contained in circular 177.

*Some Substantial Milk Dishes*, by Marion E. Dunshee (Extension Circular 178). This circular was printed to aid in increasing the consumption of milk in the average family. It contains foundation recipes with modifications showing the possibility for greater variety in milk dishes as the main item in meal planning.

*Sweet Clover in Missouri*, by C. E. Carter (Extension Circular 179). Sweet clover is increasing in popularity in Missouri due to its usefulness as a pasture crop and its value as a soil builder. A thorough discussion of the cultural methods including soil treatment, is given in this publication.

*Health and Home Care of the Sick I, II, and III*, by Mary E. Stebins (Extension Circulars 180, 181, and 182). These circulars contain information and practical suggestions to help the homemaker care for the sick in her home so as to add to their comfort, limit the duration of the disease, and assist in restoring health. They also contain suggestions for promoting health and caring for common emergencies.

Circular I (No. 180) deals specifically with the sick room, bed making, bathing and caring for the patient.

Circular II (No. 181) explains the daily routine of the patient; devices for his comfort; taking of temperature, pulse, and respiration; and medicines.

Circular III (No. 182) presents such subjects as invalid's diet, elimination, sick room sanitation, disinfection, first aid measures and bandaging.

*Community Organization in Missouri*, by B. L. Hummel (Extension Circular 183). This publication sets forth the plans for community organization which are being developed in Missouri through the Agricultural Extension Service. In addition to the plan of organization, the procedure advised in developing the work and source of materials for the use of officers and committeemen are also given.

*Making a Modified Comber Test for Soil Acidity*, by M. F. Miller (Extension Circular 184). This circular was published to meet the needs for standardizing the methods of soil sampling and testing for acidity and to secure a more uniform practice in the recommendations of amounts of limestone to apply for given conditions. It contains a color chart showing the varying degrees of acidity and the lime requirement necessary to correct each.

*The Practice of Health*, by Mary E. Stebbins (Extension Circular 185). This publication presents briefly the importance of health, the health habits that should be formed, the prevention of contagious diseases, and methods of maintaining healthy surroundings.

*Producing and Feeding Beef Calves*, by H. M. Garlock and J. W. Burch (Extension Circular 186). Missouri produces an enormous crop of roughages and pasture much of which is utilized in the maintenance and feeding of beef cattle. Records kept by twenty-two Missouri farmers on their 520 beef cows form the basis for this circular which describes a practical method of producing beef at a profit under prevailing Missouri conditions.

*Common Parasitic Worms of Poultry*, by A. J. Durant (Extension Circular 187). Circular 187 has replaced publication number 174 on "Common Internal Parasites of Poultry" in that it gives more recent methods of prevention, diagnosis, and treatment for worms in poultry.

*Culling for Egg Production*, by H. L. Kempster (Extension Circular 188). Hens vary in their inherent ability to produce eggs. This has given rise to the study of various factors and the many characteristics that are correlated with egg production. This circular describes in detail how low producing hens may be detected and eliminated from the flock.

*Factors in Beef Production*, by H. M. Garlock (Extension Circular 189). This circular is a discussion of feeding experiments and market information relating to cattle feeding and has for its purpose the answering of questions asked by many feeders.

*The Use of Dynamite for Ditch Blasting*, by A. J. McAdams (Extension Circular 190). This circular gives specific instructions for staking out ditches, spacing and depth of the holes for the dynamite, and methods of handling the explosives. Several types of ditches are described. Attention is given also to special difficulties likely to be encountered, and to the use of dynamite in cleaning out old ditches.

#### Extension Leaflet

*Tomato Plant Bed Spraying*, by E. M. Page (Extension Leaflet 24). By plant bed spraying the grower is enabled to prevent the loss of plants through insect injury and the spread of leaf diseases from the bed to the field. This leaflet tells when to spray, what to use, and how to use it.

#### Poster Series

*Grow Healthy Chicks*, by Berley Winton (Extension Poster 11). The idea of this poster is to promote the growing of healthy chicks and it presents five essentials for the consideration of the poultry producer: 1. Hatch before May 1; 2. Raise on clean, fresh range; 3. Feed a growing ration; 4. Brood each hatch separately; 5. Separate pullets and cockerels.

#### Boys' and Girls' 4-H Club Circulars

*Poultry Club III*, by Berley Winton and T. T. Martin (4-H Club Circular 17). Club Circular 17 was prepared for the purpose of giving third year poultry club members additional training in organization work and an introduction into the principles of poultry breeding.

*Songs and Yells*, (4-H Club Circular 18). This is a collection of songs for use in club meetings. They are songs selected by the boys and girls themselves because they express the real spirit and true sentiments of club work. They are listed under the following headings: Missouri Songs, Patriotic Songs, Club Project Songs, Greeting Songs, Round Songs, Other songs for group singing and club yells. Available only to 4-H club groups.

*Baking Club I*, by Essie M. Heyle (4-H Club Circular 19). This circular teaches 4-H girls the importance of baking good bread, and the underlying principles of bread making. It develops appreciation of what good bread is and interests girls in making good, wholesome, easily digested bread in their homes.

*Ewe and Lamb Club*, by S. F. Russell (4-H Club Circular 20). This circular contains information concerning the organization and conduct of Boys' and Girls' 4-H Ewe and Lamb Clubs. The purpose as outlined is to interest farm boys and girls in farm life, develop leadership, and give them information concerning the place of sheep on the farm. Emphasis is placed upon the production of market lambs. The rations are based on home produced feeds.

*Garment Making I*, by Essie M. Heyle (4-H Club Circular 21.) This publication was written for the purpose of teaching rural girls some of the fundamentals of sewing, the selection of suitable designs, colors, and materials for household articles, how to repair garments and to interest the girls in sewing and improving the appearance of their homes.

*The Baby Beef Club*, by H. M. Garlock (4-H Club Circular 22). This circular contains information concerning the organization and conduct of Boys' and Girls' 4-H Clubs. The purpose as outlined is to interest farm boys and girls in farm life, develop leadership and give them information concerning beef cattle. Recommendations for subject matter cover the feeding, management, judging, and showing of beef calves.

*Garment Making II*, by Essie M. Heyle (4-H Club Circular 23.) This circular was prepared for those 4-H club members who have finished the first year club work in garment making. It takes up the selection and making of artistic, healthful, and suitable summer clothes including under and outer garments and accessories.

*Garment Making Club III*, by Essie M. Heyle (4-H Club Circular 24). This circular is for the third year's work in garment making and was prepared for use in teaching rural girls the selection and making of artistic, healthful, and suitable winter clothes including under and outer garments and artistic, appropriate accessories.

### Distribution

During the past biennium the Extension Service has distributed 418,064 publications, an average for every working day of nearly 670.

Copies of each new publication are sent to public libraries and Missouri county extension agents.

An accurate record of the distribution of publications outside of Missouri has not been kept. However, we have, in response to requests, sent circulars to every state in the United States as well as to many foreign countries, totalling 83,040.

As shown by the accompanying list, Missouri counties have received an average of 2938 publications each. These have been

sent in response to personal requests from farmers, homemakers, students, teachers, county extension agents, and others.

<i>County</i>	<i>Number</i>	<i>County</i>	<i>Number</i>
Adair.....	5,256	Knox.....	1,944
Andrew.....	2,184	Lafayette.....	6,504
Atchison.....	5,736	Lawrence.....	3,024
Audrain.....	1,423	Lewis.....	2,368
Barry, Newton, McDonald.....	9,648	Lincoln.....	4,872
Barton.....	3,192	Linn.....	2,400
Bates.....	3,480	Livingston.....	1,464
Benton, Hickory.....	3,072	Macon.....	4,896
Bollinger, Madison, Wayne.....	7,929	Maries.....	2,976
Boone.....	18,120	Marion.....	3,624
Buchanan.....	3,120	Mercer.....	696
Butler.....	1,864	Miller.....	2,784
Caldwell.....	4,296	Mississippi.....	1,744
Callaway.....	1,920	Moniteau.....	1,320
Camden, Dallas, Laclede.....	7,872	Monroe.....	3,936
Cape Girardeau.....	1,926	Montgomery.....	4,128
Carroll.....	5,208	Morgan.....	1,040
Carter, Reynolds.....	4,296	New Madrid.....	2,616
Cass.....	4,176	Nodaway.....	5,304
Cedar.....	1,688	Oregon, Ripley.....	2,882
Chariton.....	4,392	Osage.....	672
Christian, Stone, Taney.....	5,457	Pemiscot.....	2,160
Clark.....	1,164	Perry.....	3,048
Clay.....	962	Pettis.....	4,128
Clinton.....	826	Pike.....	2,040
Cole.....	1,376	Platte.....	1,248
Cooper.....	4,728	Polk, St. Clair.....	6,912
Crawford, Dent, Phelps.....	8,280	Pulaski.....	2,568
Dade.....	3,345	Putnam.....	1,320
Daviess.....	1,944	Ralls.....	2,136
DeKalb.....	2,376	Randolph.....	6,096
Douglas, Wright.....	4,056	Ray.....	613
Dunklin.....	2,180	St. Charles.....	2,760
Franklin.....	1,730	St. Francois.....	2,352
Gasconade.....	1,272	Ste. Genevieve.....	4,056
Gentry.....	1,776	St. Louis.....	12,456
Greene.....	2,496	Saline.....	4,728
Grundy.....	2,664	Schuyler.....	3,744
Harrison.....	3,144	Scotland.....	2,064
Henry.....	1,440	Scott.....	1,128
Holt.....	3,120	Shannon.....	432
Howard.....	2,328	Shelby.....	864
Howell, Ozark.....	12,936	Stoddard.....	598
Iron, Washington.....	4,096	Sullivan.....	5,184
Jackson.....	6,480	Texas.....	3,264
Jasper.....	3,340	Vernon.....	1,416
Jefferson.....	2,776	Warren.....	312
Johnson.....	3,744	Webster.....	4,095
		Worth.....	576



### BOYS' AND GIRLS' 4-H CLUB WORK

Four-H club work conducted by the Extension Service among the farm boys and girls of Missouri has reached 99 counties in the last two years. The total number of clubs organized in this period was 1962 with a total membership of 18,694. These boys and girls owned club property and products worth \$160,554.35. Their costs of production amounted to \$101,648.03, leaving a net profit or labor income of \$58,906.32.

Of the total number of clubs organized during the last two years 934 finished all the requirements of the standard 4-H club. In meeting these requirements 10,064 boys and girls carried to completion the work outlined in their respective club projects as necessary to cover the subject matter and round out their experience in judging, demonstrating, and exhibiting. Practical experience in judging was gained by 8100 boys and girls, in demonstrating by 6201, and products were exhibited by 8581.

The extent to which this club work has influenced the communities in which these club members live, in addition to its effect on the boys and girls themselves, may be judged by the fact that 5936 individual demonstrations and 2472 team demonstrations of improved farm and home practices were given during the two-year period, and that 14,126 visitors attended the club meetings besides those witnessing the demonstrations at fairs and similar public meetings. As a direct result of 4-H club work the men and women of the communities cooperating in this activity adopted 2155 improved farm and home practices.

**Some 4-H Club Values.**—Every Missouri 4-H club member who carried to completion a productive project during the last two years realized a satisfactory income from the work. The average labor income of each of the 3112 club members who completed productive projects in 1926 was \$9.84. Similarly each of 2779 members in 1927 realized an average labor income of \$10.17.

The chief value of 4-H club work, however, cannot be measured in terms of dollars and cents. In addition to these 5891 members whose projects yielded definite and immediate financial returns, there were 4173 other boys and girls who just as successfully completed projects whose chief value consisted of systematic training in the practical discharge of their responsibilities relating to the farm and home.

The underlying purpose of 4-H club work is the better development of boys and girls through the training gained in meeting

present-day problems to better advantage. Home economics clubs, in particular, develop poise and self confidence in the members. They give an opportunity for setting and maintaining a standard for health by following health habits and learning how to select and prepare proper food. They teach economy of time, effort and money. They create an interest in improving the appearance of the home, instill love of home, teach the dignity of labor, and contribute to a happier and more satisfying home life.

**Indications of Progress.**—During the last year of the biennium covered by this report the Extension Service of the Missouri College of Agriculture, in cooperation with 1,013 local club leaders, organized and conducted club work in 99 of the 114 counties of the state. The year's work showed a substantial gain in number of clubs, total enrollment, and percentage of completions, as compared with the records of the preceding year. With a gain of 64 in the number of clubs and 700 in membership, the work of 1927 was finished with 42 more clubs and 432 more members completing all requirements than in the preceding year. This is a gain of 6 per cent in one year, and also a gain of nearly 29 per cent in four years.

**Comparison of Club Work in Agent and Non-Agent Counties in 1927.**—The records of 4-H club work in Missouri in 1927 reveal the comparative effectiveness of club work in agent and non-agent counties. In 65 agent counties, 6,141 members were enrolled in 649 standard 4-H clubs, and 3,638, or 59.2%, completed their club work. This was a gain of 1.5% in completions over the record for agent counties in 1926, and a gain of 2.7% in completions over the record of 1925.

In 34 non-agent counties, 3,556 members were enrolled in 364 standard 4-H clubs, and 1,610 or 45.2%, completed their club work. This was an increase of 4% in completions over the record of non-agent counties for 1926, and a total gain of 13.4% over the results of 1925.

It is generally accepted that one of the best indications of the efficiency of 4-H club work in any given unit is the percentage of completions secured. Missouri's increase in the percentage of completions, in the main, has been slow but consistent.

**State-wide 4-H Club Leaders' Conferences.**—The first annual state-wide 4-H club leaders' conference ever held in Missouri was conducted in 1927 in connection with Junior Week. There was an attendance of 75 leaders, prospective leaders, outstanding club members, agents and subject-matter extension specialists. These

leaders have since become more useful in their respective counties because of the inspiration and training thus secured.

Prior to 1927 Missouri's 4-H club leaders had been trained largely in regional conferences. In 1926 the state club staff, in cooperation with the county extension agents, county home economics agents and district agents, conducted 25 leaders' conferences for both home economics and agricultural clubs in 22 counties with 205 4-H club leaders present. Three of these counties conducted two meetings each for the 4-H club leaders. Thirteen of these conferences



Fig. 2.—The first state-wide conference of 4-H club leaders at the College of Agriculture, Junior Week, 1927.

were all-day meetings. The other 12 conferences were half-day sessions.

The change from the regional to the state-wide plan of holding leaders' training conferences was hastened by the Woman's National Exposition Contest for Missouri 4-H club leaders in home economics projects, which closed November 30, 1926. In order to supplement the extension activities of the College of Agriculture and the U. S. Department of Agriculture by facilitating the training of outstanding 4-H club leaders, and to further develop the spirit

of cooperation and good will between country and city people by working on common problems, the Woman's National Exposition of St. Louis instituted this contest, by the terms of which their organization offered to pay \$900 on the travel expense, board, and lodging of 30 outstanding 4-H club leaders attending a state-wide conference at the following Junior Week at the College of Agriculture.

**Junior Week at the Missouri College of Agriculture; 1926 and 1927.**—During each of the last two years the Extension Service has conducted a state-wide gathering of 4-H club members and leaders



Fig. 3.—Winners of the Missouri Bankers' Association 4-H Club demonstration trip in 1926.

early in May at the Missouri College of Agriculture. The combined registration of 1926 and 1927 shows an attendance of 643 persons at the 4-H club section of Junior Week. This attendance included 495 club members and 148 leaders and chaperons. They came from 34 counties in 1926, and from 52 counties in 1927.

The growth of attendance at Junior Week during the last two years is shown by these figures to include an increase of 132 club members and 54 club leaders.

Of the 495 boys and girls who attended Junior Week during the last two years 290 were sent by the Missouri Bankers Associa-

tion and cooperating local organizations from the fifteen counties ranking highest in the annual Inter-County Club Achievement Contest of the Missouri Bankers Association. For this purpose the Association has appropriated \$1600 a year for the last three years.

Other agencies that have cooperated with the Extension Service in 4-H club work by financing trips to Junior Week for outstanding club members, together with the number of members which each has sent to Junior Week during the last two years are as follow: Wabash Railway Company 36, C. B. & Q. Railway Company 28, Missouri State Fair 21, Woman's National Exposition 27, Hazel-Atlas Glass Company 2, Ball Bros. Company 2, local farm organizations 23, Holstein-Friesian Association 4, American Jersey Cattle Club 4, Purina Mills 1, Four-H Clubs 16, local schools and communities 34, public spirited individuals sent 7, civic and commercial clubs sent 18, and livestock associations sent 6.

It is significant to note that 64% of the boys and girls registering at Junior Week in 1927 stated definitely that they were planning to attend college.

**Banker Awards Scholarship to Short Course in Agriculture.**—Supplementary to the Inter-County Club Contest of the Missouri Bankers Association, Edward Buder of St. Louis, president of the Association, has donated \$400 a year for the last two years as a scholarship fund for outstanding 4-H club members who desire to attend the winter short course in agriculture at the Missouri College of Agriculture. This fund is keeping two young men in the short course each winter, supplying each with \$100 for each term. The two-year winter short course comprises four terms of eight weeks each. Awards are made on the basis of 4-H club achievements, leadership, and the traits of character which 4-H club work fosters.

**Four-H Club Camps.**—For the purpose of rounding out the experience of 4-H club members, providing healthful recreation, and affording opportunity for group activity and leadership the Extension Service conducted nine club camps in 1926, and nine in 1927. The number of counties sharing these camps was 15 in 1926, and 14 in 1927. The camps varied in duration from three to five days each.

The attendance at these camps in 1926 included 425 girls, 146 boys, and 101 adult leaders; a total of 672. In 1927 the attendance included 346 girls, 116 boys, and 110 adult leaders; a total of 572.

**Four-H Club Work at the Missouri State Fair, by Years.—**  
*Record of 1926.*—In 1926 the club department of the Missouri State Fair represented the best of the 4-H club activities that had been developed during the year 1926 by the Extension Service of the Missouri College of Agriculture in 39 counties of the State. This was an increase of 14 counties over the record of three years earlier.

There were 956 entries in the club department. In all, 49 representatives of the Missouri College of Agriculture, including 36 county extension and home economics agents and 13 subject-matter and club extension specialists, identified themselves with the 4-H club program, either as judges, as assistants in definite club activities, or in charge of county club delegations who appeared on the club program.

*Record of 1927.*—In 1927 club activities and exhibits at the State Fair represented 25 of the 99 Missouri counties in which club work was in progress. This is the same number of counties shown in the records of four years earlier. There were 414 entries in the club department, which was 542 fewer entries than in 1926. In all, 25 representatives of the Missouri College of Agriculture were identified in some way with the activities of the club department at the State Fair in 1927, which was 21 fewer than the number who assisted the preceding year. The total budget of State Fair money for the club department in 1927, not including specials, was \$1,250.00. In 1926, the total budget, not including specials, was \$3,346.00.

**State Fair 4-H Club Camp (1926).**—During the 1926 Missouri State Fair, 231 Four-H club workers lived in a club camp, which included 174 club members, 44 local club leaders and chaperones, and 13 county extension and home economics agents, all of whom actively assisted with the club program in some capacity. The dining hall consisted of a permanent framework, 36 by 72 feet, covered with canvas and equipped with mosquito-bar netting and screen doors. Meal tickets were sold to club members and leaders at the rate of \$1.00 per day, or 35c per single meal. The girls were quartered in four rectangular tents surrounded by a tent wall. The boys were housed in the old club building and in two tents near the University Building.

**Missouri 4-H Club Work at Inter-State and National Club Events.**—Missouri was represented at inter-state and national club events during the last two years as follows: At the Inter-State Fair Sioux City, Iowa, by three club teams; at the St. Joseph Inter-State

MAKING THE FARM PAY

TABLE 3.—FOUR-H CLUB STATISTICS FOR THE YEARS 1926 AND 1927

Club Projects	Number of Clubs				Number of Members				Value of Products		Profit or Labor income		Prizes won	
	Or-ganized		Com-pleting		Enrolled		Com-pleting		1926	1927	1926	1927	1926	1927
	1926	1927	1926	1927	1926	1927	1926	1927						
Garment Making	464	431	228	4,029	3,802	2,331	2,132	\$11,843.92	\$10,391.51	\$5,301.59	\$4,717.76	\$319.51	\$345.38	
Health	52	174	28	102	686	2,011	348	1,230	*	*	*	*	*	
Supper	28	33	23	24	220	271	177	185	*	*	*	7.00	*	
Canning	17	12	8	9	136	110	85	83	911.38	367.47	386.00	96.75	43.00	
Hot Lunch	43	30	21	18	418	303	257	165	*	*	*	*	*	
Young Housekeepers	9	12	6	9	110	142	85	94	*	*	*	*	*	
More Attr. Homes	4	2	2	2	25	11	9	10	*	*	*	*	*	
Baking	1	1	0	0	15	15	0	0	---	---	---	---	---	
Cow Testing	---	---	---	---	---	---	---	---	---	---	---	---	---	
Baby Beef	37	39	9	9	395	245	233	216	31,594.08	37,597.97	5,368.94	12,609.61	3,098.78	
Swine	26	29	3	2	237	282	66	80	11,231.64	13,496.81	5,912.76	5,388.89	421.50	
Sheep	9	5	1	1	71	34	36	10	2,683.35	462.20	1,238.94	156.20	6.00	
Stock Judging	136	51	57	20	1,475	501	736	227	*	*	*	*	*	
Dairy	20	6	2	184	194	66	54	54	8,998.17	5,616.17	2,501.10	1,798.61	67.00	
Grain Judging	19	103	8	47	192	1,118	92	552	*	*	*	*	13.50	
Corn	22	23	3	3	176	250	38	59	1,468.66	2,903.62	706.38	1,786.25	---	
Cotton	16	---	4	---	155	---	87	---	12,637.50	---	5,759.46	---	172.00	
Soybean	2	---	1	---	18	---	11	---	1,423.50	---	1,102.08	---	---	
Poultry	34	30	6	6	368	302	97	91	2,310.91	1,218.41	1,186.78	583.51	48.45	
Potato	7	8	3	4	67	64	35	41	677.09	1,155.75	397.47	739.00	12.20	
Tomato	1	3	0	0	8	22	0	0	---	---	---	---	35.00	
Sweet Potato	2	---	1	---	19	---	19	---	778.60	---	590.72	---	---	
Bees	1	1	1	1	8	13	8	13	267.75	151.00	150.30	105.50	38.00	
TOTALS	949	1,013	446	488	8,997	9,697	4,816	5,248	\$86,826.55	\$73,727.80	\$30,632.99	\$28,273.33	\$4,339.94	\$3,582.19

\*Benefits not adapted to appraisal in dollars and cents

Baby Beef and Market Pig Show by nearly 800 boys and girls who exhibited 456 baby beeves, 460 hogs, and 8 ton litters; at the Tri-State Fair, Memphis, Tenn., by 48 club members; at the National Dairy Exposition by four club teams; at the American Royal Live-stock Show, Kansas City, Mo., by 300 club members who exhibited 83 head of cattle besides a number of hogs and sheep; at the National Club Camp, Washington, D. C., by four club members; and at the National Club Congress at Chicago by 30 club members. At this last named event in 1927 Missouri ranked 3rd in the girls' club style show and fifth in each of two canning contests.

TABLE 4.—GENERAL SUMMARY OF 4-H CLUB STATISTICS; 1926 AND 1927

Measure of Service	1926	1927
Number of counties in which club work was done.....	87	99
Number of 4-H Clubs organized.....	949	1,013
Number of 4-H Clubs finishing as standard clubs.....	446	488
Enrollment in 4-H clubs.....	8,997	9,697
Boys Enrolled.....	3,054	3,345
Girls Enrolled.....	5,943	6,352
Members Completing club project.....	4,816	5,248
Boys completing.....	1,388	1,599
Girls completing.....	3,428	3,649
Home and Farm Practices changed through club work.....	1,009	1,114
Demonstrations of better practices by club teams.....	1,099	1,373
Demonstrations by individuals.....	2,594	3,342
Members who received experience in judging.....	3,691	4,409
Members who demonstrated.....	2,790	3,411
Members who exhibited.....	4,078	4,503
Visitors at club meetings.....	8,042	6,084
Value of 4-H club products.....	\$86,826.55	\$73,727.80
Profit above cost of products.....	30,632.99	28,273.33
Value of prizes won by 4-H club members.....	4,339.94	3,582.19



## Agricultural Extension Work

### EXTENSION AGENTS

**County Extension Agents.**—During the last two years the number of Missouri counties having county extension agents has varied from 38 to 47. The number of county agents at work in the state on Jan. 1, 1926 was 44, on Feb. 1 it was 46 with no change until August when it became 47. In October it dropped back to 45, in November it was 46, and in December 45 again. On Jan. 1, 1927 the number of county agents was 42, in February it was 41, in March it was 38, in April 41, in May 40, in June 41, in July 40, in August and September 41, in October and November 40, and on Dec. 1, 1927 it was 41.

This two-year period has been marked by a gradual decrease in the financial support provided by the county farm bureaus and a corresponding increase in the sums appropriated for county agent work by county courts. In two years the total amount of county court appropriations for this purpose in Missouri has grown from \$92,375 as of Dec. 1, 1925 to \$123,000 as of Dec. 1, 1927. There have been in the last two years, some very material increases in the county court appropriations of the leading county-agent counties. Greene county's appropriation was increased from \$3000 to \$3600 a year, Ralls from \$1500 to \$3200, Butler from \$1200 to \$2750, St. Louis from \$5000 to \$9000, Boone from \$1550 to \$2750, Carroll from \$2500 to \$3000, Jackson from \$7600 to \$11,000, Clay from \$1200 to \$1800, Livingston from \$500 to \$2500, Monroe from \$1500 to \$3000, Cass from \$1800 to \$4000, Lawrence from \$1200 to \$2750, and Pettis from \$2000 to \$2400.

With decreasing funds from farm bureaus and increasing county court appropriations, it would appear that the time is approaching when county agent work may be financed entirely from public funds.

County agent work in Missouri during the last two years has continued on the basis of a cooperative relationship between the farm bureau, the county court, the State, and the Federal Government. During this period the plan has been to pay \$1,550 per annum from the state and federal funds toward each agent's salary. The balance of his salary is paid by the county from the county court appropriation, farm bureau membership dues, other sources, or from all combined. All local expenses of the county agent have been paid from local funds.

The course of progress in the financing of county agent work in Missouri during the last four years is shown in the following table. Counties marked with an asterisk (\*) aided in the support of district agents.

TABLE 5.—COUNTY COURT APPROPRIATIONS FOR EXTENSION WORK IN MISSOURI, AS OF DECEMBER 1 EACH YEAR FOR THE LAST FOUR YEARS

COUNTY	1924	1925	1926	1927
Atchison	\$2,000	\$2,000	\$2,000	\$2,000
Boone	1,550	1,550	2,700	2,700
Buchanan	3,600	4,000	4,000	4,000
Caldwell	1,000	1,000	---	---
Carroll	1,500	1,500	2,500	3,000
Chariton	1,500	1,550	1,550	1,550
Clay	2,000	2,000	2,000	---
Clinton	1,200	1,200	1,800	1,800
DeKalb	1,550	1,550	1,550	---
Gentry	1,000	1,000	1,000	1,000
Harrison	1,000	---	---	---
Holt	2,400	2,400	2,400	2,400
Howard	1,000	1,000	2,000	2,000
Linn	---	1,500	1,500	1,500
Livingston	---	500	2,500	2,500
Monroe	1,500	1,500	3,000	3,000
Nodaway	2,000	2,000	2,000	2,000
Platte	900	900	900	---
Randolph	1,500	2,000	2,000	2,000
Ray	1,500	1,500	---	---
Saline	2,450	2,450	2,450	2,450
Greene	1,200	2,400	3,000	3,000
Jasper	1,500	---	---	---
Vernon	250	---	---	---
Cass	1,800	1,800	4,000	4,000
Lafayette	2,000	3,000	3,000	3,000
Cole	1,200	2,000	2,000	2,000
Lawrence	1,200	1,200	2,400	2,750
Bates	---	---	1,200	1,200
Johnson	---	600	600	1,000
Pettis	2,000	2,000	2,000	2,400
Jackson	3,600	7,600	11,000	11,000
Pulaski	500	---	---	---
Newton*	1,200	1,200	400*	400*
Douglas*	---	---	---	400*
Dent*	---	---	250*	250*
Wright*	---	---	---	600*
Dallas*	---	---	250*	250*
Camden*	---	---	---	250*
McDonald*	---	---	300	300*
Barry*	---	---	300*	300*
Ozark*	---	---	300*	300*
Taney*	---	---	---	300*
Howell*	---	---	700*	700*
Christian*	---	---	---	300*
Polk*	---	---	500*	500*
St. Clair*	---	---	500*	500*
Hickory*	---	---	---	300*
Bollinger*	---	250*	250*	250*
Butler	1,200	1,200	1,200	2,700
Callaway	1,500	3,100	3,100	3,100

TABLE 5.—COUNTY COURT APPROPRIATIONS FOR EXTENSION WORK IN MISSOURI, AS OF DECEMBER 1 EACH YEAR FOR THE LAST FOUR YEARS (Continued)

COUNTY	1924	1925	1926	1927
Cape Girardeau.....	-----	-----	-----	1,550
Carter*.....	-----	-----	300*	400*
Dunklin.....	2,150	3,000	3,000	2,550
Iron*.....	-----	-----	400*	600*
Jefferson.....	1,800	1,800	2,500	2,750
Lincoln.....	3,000	4,000	4,000	4,000
Madison.....	500	500	500*	500*
Marion.....	1,620	1,500	2,000	1,500
Mississippi.....	1,500	1,500	2,450	2,450
New Madrid.....	1,800	1,800	1,800	1,800
Oregon*.....	-----	-----	300*	400*
Pemiscot.....	1,800	3,000	3,000	3,000
Perry.....	1,200	1,200	1,200	1,200
Pike.....	1,200	1,200	1,800	1,800
Ralls.....	900	900	1,500	3,200
Reynolds*.....	-----	-----	300*	600*
Ripley.....	600	600	400*	-----
Scott.....	2,000	3,000	3,000	3,250
St. Charles.....	3,675	3,675	3,675	4,000
St. Francois.....	800	-----	-----	3,000
St. Louis.....	3,000	5,000	5,000	9,000
Washington.....	-----	300*	-----	400*
Wayne.....	1,000	250*	250*	250*
Totals.....	\$78,895	\$92,375	\$112,775	\$123,150

**District Extension Agents.**—In the last two years extension work in Missouri has been greatly expanded through the use of a temporary plan which consists of assigning an agent to two or three counties with headquarters in the district and a program designed to carry out the same efforts as would be done if he were situated in a single county. The mode of financing this kind of work was as follows: All salary and travel expenses of the agent were paid out of state and federal funds. The expenses of office, office help, supplies, furniture, etc., were paid by the counties of the district, preferably through county court appropriations.

It was estimated that about \$1,000 would be necessary from the local district to cover expenses. This \$1,000 has been ample in practically every case and in some districts leaves a balance on hand at the end of the year. There were twelve of these so-called districts established with an agent in each. Five of these districts had three counties each and seven of them had two counties each. Twenty-four of these counties made county court appropriations to meet the local financial requirement. Four counties raised the money through private subscriptions and donations from chambers of commerce.

Each district agent cooperates locally with an extension board composed of appointees of the county court. This extension board

meets regularly at the district agent's office for the purpose of paying the local bills, auditing accounts and in other ways assisting the work in the district. This board assists in formulating the program on which the agent works in the respective counties in his district. The members of this board serve without compensation or expense to the county.

The counties in which this district work is in operation are Ozark counties. The amount of taxable property in this region is so low that the support of a regular county agent by a single county is difficult. The reaction on the part of the local people toward this sort of extension work on a district-wide basis has been very good. The work has resulted in much good being done for people who otherwise would be barred from the benefits of the Extension Service.

The name of each county comprised in an extension district under this new plan, is marked with an asterisk (\*) in Table 5, and the amounts of the county court appropriations during the last four years are shown. It will be noted that, during this period, some counties have changed from the county-agent to the district-agent plan.

**County Agricultural Extension Boards.**—In six counties, Vernon, Lawrence, Greene, Boone, Livingston, and Jefferson, the local farm bureaus have ceased to function so far as extension work is concerned and it was necessary to have some kind of organization of local people with whom to deal on matters of extension and particularly on matters of finance. In each of these counties a board was set up, known as the agricultural extension board, whose duty is to formulate policies, build programs, audit bills and act in an advisory way to the county agents. In Greene, Boone, and Jefferson counties the county courts appointed in each case a board of three to act as the agricultural extension board, and this system has proven very satisfactory the past year.

Lawrence and Livingston counties have two farm organizations desirous of sponsoring extension work who joined their forces and secured from the county court sufficient appropriations to finance the work locally and decided on the extension board as the direct cooperating agency. The plan decided upon was for each farm organization to appoint twelve members to this board and to include, exclusive of these representatives, the entire membership of the county court, which in this state consists of three judges. This extension board in Lawrence county has functioned very satis-

factorily. They have represented the farm organizations and with the county court sitting on the board all of the interests of the county have been served.

In Vernon county the Chamber of Commerce of Nevada has financed the entire local share of extension work for the last two years. The chamber appointed an agricultural extension board from its own membership, with whom the county agents could confer and advise as to programs, policies, finances, etc.

All the other regular county agent counties are cooperating directly with the local county farm bureaus.

**Statistics Relating to Extension Agent Work.**—The following tables contain information concerning the salary, travel and office expense, age, length of service, division of time, and activities of the Missouri extension agent.

TABLE 6.—COUNTY AGENT STATISTICS, EXCLUSIVE OF DISTRICT AGENTS

	1926	1927
Highest salary paid any agent.....	\$3600	\$3800
Lowest salary paid any agent.....	\$1800	\$2000
Average salary paid county agents.....	\$2795	\$2708
Average number of miles county agents travelled in county.....	5967	6472 miles
Average annual cost of each agent exclusive of salary....	\$1692	\$1896
Average age of agents.....	36 yrs.	32 yrs.
Average length of time each has been in agent work.....	4.3 yrs.	4.3 yrs.
Average number of days during the year that the agent was absent from his county on official business....	12.7	13
Percentage turnover in county agents.....	41.0	17.7
Counties with no change in agent during year.....	32	33
Counties discontinuing agent work.....	4	3
Counties with change of agent during the year.....	14	8
Counties resuming agent work.....	1	1
Average number of days state extension specialists spent with each agent.....	44.7	45

TABLE 7.—SOME FIGURES TAKEN FROM THE ANNUAL REPORTS OF AGRICULTURAL EXTENSION AGENTS FOR 1926 AND 1927\*

	1926	1927
Voluntary leaders engaged in forwarding the extension program.....	-----	6,914
Total number of different farms visited.....	10,832	11,481
Total number of news articles prepared by agents for the press.....	-----	9,413
Total number of individual letters written.....	-----	108,477
Total number of all meetings held.....	4,789	5,950
Total attendance at all meetings.....	255,034	256,590
Total number of office calls.....	72,468	66,699
Average number of office calls per agent.....	1,342	1,188
Total number of improved farm practices adopted.....	-----	37,620
Average number of farm practices adopted per agent.....	-----	660
Total number of result demonstrations completed.....	-----	2,109

\*These figures apply only to that portion of the State served by extension agents; consequently they do not agree with totals for the entire state given elsewhere in this report.

## AGRICULTURAL ECONOMICS EXTENSION

More than 10,221 men received instruction in agricultural economics through the activities of the Extension Service of the College of Agriculture during the last two years. Most of this teaching was done in one-day schools which covered in considerable detail such phases of the subject as cooperative shipping of livestock, small fruit marketing, cotton grading and marketing, cooperative buying and selling, and the agricultural outlook. In addition to this personal instruction the Extension Service established early in 1926 a publication on livestock marketing which now reaches 830 addresses each month. An agricultural outlook chart service was established in 1927 and by the end of the year was going out regularly each month to more than 100 banks, county agent offices, and livestock shipping association offices.

Much of the extension work in agricultural economics has been directed toward the dissemination of knowledge of established principles of cooperative marketing among the members of Missouri's five hundred or more cooperative marketing organizations. Such knowledge on the part of the members is the most pressing need of cooperative marketing in this state, and it must precede any widespread improvement in the technical methods of operation.

The cooperative marketing movement in many states has been characterized by three rather distinct phases. These are the period of organization, the period of retrenchment and understanding, and the period of sound growth and development brought about by a solution of the various problems encountered in conducting the enterprise. In this state the movement apparently is in its second phase, having passed the peak of the first phase in 1920 and 1921 when 299 associations were organized. About three years later, the peak of retrenchment was reached when 24 organizations were reported as failing during the years 1923 and 1924. This may seem large, yet a recent study in Missouri shows that the percentage of cooperative failures is comparatively small, being 9.3% as compared to 31% in private business organizations during the same period of time. In many cases lack of success may be attributed to a lack of understanding of the possibilities and limitations of cooperative marketing among members, since the management has been so occupied with the details of operation that insufficient attention has been paid to giving the members the kind of information which will enable them to reach sound conclusions.

In order to meet the growing need for a wider dissemination of knowledge concerning established principles of cooperative marketing among the members, the present program of extension teaching in cooperative marketing was developed. The principal provisions of this program are as follows: (1) Conduct short courses in the principles of cooperative marketing for managers, directors and other leaders in this field. (2) Arrange method demonstrations in the grading and standardization of farm products in cooperation with central sales agencies and their member organizations. (3) Secure the adoption of sound business practices in cooperative organizations by conducting county conferences of directors and managers. (4) Encourage the setting up of research and field service departments within state and regional cooperatives. (5) Work with the heads of field service departments in planning and carrying out a constructive field service program. (6) Encourage cooperatives to aid their members in securing a better adjustment of production to market demand, through the discussion and dissemination of outlook and similar information.

**Livestock Marketing.**—Schools of intensive instruction for the officers and directors of livestock shipping associations have been held by the College of Agriculture throughout the state and at the two leading livestock terminal markets of the state during the last two years. Four such schools of one day each were held in 1926 and two schools of two days each in 1927. More than 100 officers and directors, representing 39 associations, received this training. In 1927, at the two-day schools at Kansas City and St. Louis, for the first time officials of the stock yards companies, livestock exchanges, packers, cooperative commission companies and the College of Agriculture appeared on joint programs. The attendance reached a total of 75 men representing 29 livestock shipping associations from 27 counties. Practical problems of shipping associations received attention. At the close of the short course an examination was given in classification, grading, and other factors affecting the price of cattle.

Livestock marketing days, including demonstrations and contests in grading livestock, were conducted during the two-year period in eight counties. There were eight of these grading schools in 1926 and four in 1927. A total of 1065 men received this training in the former year, and about half that number in the latter. The programs of these schools included grading contests and the discussion of price-determining factors and marketing problems. A

salesman from a commission firm handled the livestock, directed the grading contests, and discussed livestock prices. The extension specialist discussed problems in livestock marketing and livestock price movements. The officers of the shipping association provided the livestock. All present took part in the grading contests. At Cape Girardeau this work has now been featured for three consecutive years with constantly increasing attendance and interest on the part of producers. It has been instrumental in developing one of the three largest and most successful organizations in the state in the point of volume of business and number of satisfied members.

Livestock outlook meetings in two counties in 1926 were attended by 454 farmers. Nine county conferences of directors and managers of livestock shipping associations were conducted in 1927 for the purpose of securing the adoption of better business practices, and to study problems of livestock marketing. These conferences resulted in the adoption of the following practices by associations: Four associations adopted standard record forms, 8 adopted the Midwest system of marketing livestock in mixed shipments, 3 the flat rate of pro-rating, and 5 the standard articles of incorporation.

For the past three years at the county conferences and short courses of association officials the advantages of such organizations sponsoring livestock production programs have been emphasized and methods have been worked out for their successful cooperation. The past year has resulted in the leading associations in Boone, Monroe, Callaway, and Howard counties sponsoring the extension program in sheep and hog production. The far reaching effects of this work cannot as yet be fully appreciated and its possibilities are just beginning to be recognized by leaders in the associations as well as by extension agents. With 463 associations serving 94,900 members in the state, the possibilities for effective campaigns to improve the efficiency of livestock production, may be visualized. Missouri associations are leading the country in this work.

**Small Fruit Marketing.**—Thirty-six new small fruit marketing associations were helped to make permanent their organization during the last two years. Of this number of new associations 24 were incorporated with standard constitution and by-laws. Instruction was given also to the officers, directors, and members of old as well as new organizations, the total number of associations



thus assisted being 49 in 1926 and 53 in 1927. The average membership of these associations was 105 members each.

Intensive instruction in group conferences on business management was given to 257 officers and directors of small fruit associations in the last two years.

A total of 4861 producers were given instruction in the picking, packing, and grading of strawberries, and in the economics of production and marketing.

A two-day tour for members of new strawberry associations was conducted by the College of Agriculture in 1926 through the fields, grading sheds, sales offices, and shipping points of the most successful of the old, established associations. About 300 men representing 40 associations took part in this tour.

**Cotton Marketing.**—Extension teaching of better methods in cooperative marketing of cotton is emphasizing the selling of cotton in the lint on the basis of grade and staple as opposed to selling in the seed. Missouri is one of the few states where the practice of selling in the seed still is being followed by a majority of the producers. It is estimated Missouri cotton producers lose nearly \$1,000,000 per year from selling cotton in the seed.

In order to stress the need for selling cotton in the lint where the grade and staple can be determined, 1215 producers were given training in cotton grading schools conducted in five counties during the last two years. Each of these men was required to grade samples from ten bales of cotton and to compare it with the government universal cotton standards. The work was supervised by the official classer for the Arkansas Cotton Growers Association. The effect of grade and staple on price was emphasized.

A steadily increasing interest in selling cotton in the lint is apparent as a result of this work. One of the leading cotton buyers in Dunklin county has discontinued buying in the seed and is buying on a lint basis. The Cotton Association reports substantial gains in membership in this same county.

In addition to the work of training farmers in the elements of grading cotton, the Extension Service also gave instruction in the factors affecting the price of cotton and in the possibilities and limitations of the cooperative marketing of cotton. The field service representatives of both the Missouri and Arkansas Cotton Growers Associations took the course of instruction.

Cotton outlook meetings were held in five counties in 1926 with a total attendance of 1844. At these meetings no campaign was

made either for increase or reduction of the cotton acreage but the facts in connection with the 1926 outlook for cotton prices were presented and each producer was urged to make such changes in his farming plans as the conditions seemed to justify. Missouri was one of the two states in the United States that reduced their cotton acreage in 1926.

**Outlook Conferences.**—Agricultural outlook meetings have been held during the last two years with a total attendance of 4776.

In 1926 the outlook meetings were attended by 2772 persons who were given instruction in the factors determining the outlook for various farm products with special emphasis on the economics of production and marketing.

In 1927, at the beginning of the year, the state was systematically covered in a series of 25 regional outlook conferences attended by 2004 delegates representing farm organizations, banks, business men's clubs, and community associations. The basis of the subject matter presented was the agricultural outlook report issued by the Bureau of Agricultural Economics of the U. S. Department of Agriculture, and the facts were charted and presented graphically.

These conferences were followed six months later by a series of ten minor conferences covering the same area, attended by representatives of the same groups, and giving particular attention to a discussion of the June pig survey report and the hog outlook.

The Missouri plan for conducting outlook conferences in 1927 was approved by a committee at Washington, D. C., appointed to consider methods for the dissemination of the outlook subject matter. The plan was sent to the various state agricultural colleges and is being followed to a large extent by a number of states throughout the country.

**Cooperative Buying and Selling.**—Supplies for use during 1926 in special agricultural improvement campaigns, such as the use of lime, fertilizer, explosives, etc., which could not be handled to advantage otherwise, were taken care of by means of local pools handled by extension agents to a total value of \$99,517.00. The saving thus made for the users of these supplies was \$18,062.00.

Similar activities were carried on in 1927 with the total value of supplies handled that year reaching \$148,462.99, and a resultant saving of \$28,906.68 for the farmers using the supplies and adopting the practices advocated in these campaigns.

**Special Publications.**—Since May, 1926, a special mimeographed publication known as *Livestock Marketing News* has been issued each month and mailed to the leaders in livestock marketing work throughout the state. By the end of the two-year period this information service was being mailed regularly to the offices of 463 livestock shipping associations, to 113 teachers of vocational agriculture, 54 county and district extension agents, and 200 other leaders, making a total circulation of 830 copies a month.

In addition, in 1927, extension agents reported counseling with 43 cooperative marketing associations previously organized having a membership of 10,583, purchasing supplies valued at \$976,145.00 at a saving of \$109,797.00, and selling products valued at \$2,167,853.00 showing a profit of \$47,923.00.

A total of 2,860 different farmers are reported as having adopted improved marketing practices.

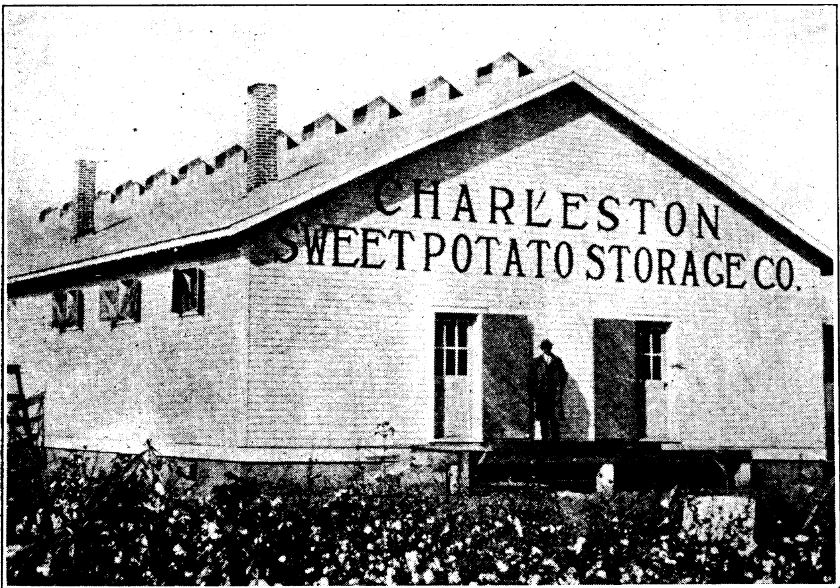


Fig. 4.—Cooperative sweet potato storage house of 18,000 bushels capacity at Charleston, Mo.

## AGRICULTURAL ENGINEERING

Extension work in agricultural engineering during the last two years has included land reclamation, pyrotol distribution, drainage ditching, limestone blasting, installation of farm home water systems and sewage disposal units, farm building plans, and erosion control. Better practices in one or more of these subjects were newly established during the last two years on 4098 Missouri farms as a direct result of extension work.

Better systems of drainage were installed on 433 farms during the two-year period, with beneficial results to 26,305 acres of land. Terracing to prevent soil erosion was done for the first time on 110 farms, guarding the fertile top-soil of 3258 acres. Stumps were cleared by 799 farmers from 46,127 acres of cultivated fields.

More convenient and sanitary farm homes were newly built from plans furnished by the College of Agriculture on 30 farms, and homes were remodeled on 26. Sewage disposal systems were installed by 69 families, water systems by 106, modern heating systems by 9, and lighting systems by 70 families.

Better farm buildings were constructed in accordance with plans furnished by the College as follow : 167 barns, 713 hog houses, 2162 poultry houses, 159 silos, and 319 other buildings.

In carrying forward this work the Extension Service conducted 194 method demonstrations and 30 result demonstrations of the better agricultural engineering practices.

**Land Reclamation.**—Under the general term of land reclamation the Extension Service has been teaching the most economical methods of clearing stumps from fields already under cultivation and the most economical and effective construction of drainage ditches through occupied farm lands. Although this included the making and use of home-made appliances for pulling and piling stumps, the greater portion of the work had to do with stump removal and ditching with explosives.

During the past five years the United States Department of Agriculture, through the state colleges, has been distributing war surplus explosives to farmers for the cost of packaging, transportation, and distribution. The price of these explosives was considerably less than commercial explosives and this fact interested a large number of farmers in clearing their cultivated fields of stumps. To make them particularly desirable the war explosives had certain qualities: non-headache, non-freezing, low price, and good execution. Through the distribution of these explosives this project has

endeavored to establish regular distribution points for these explosives which would continue to function after the exhaustion of the surplus of war explosives.

The work in stump removal by the use of war surplus explosives in the last two years has distributed to Missouri farmers 342,700 pounds of pyrotol at a direct saving of more than \$40,000. The cooperative buying of commercial explosives for ditch blasting has effected an additional saving of nearly \$5,000.



Fig. 5.—Ditch blasted with dynamite cartridges  $1\frac{1}{8}$  by 8 inches in size. Cape Girardeau county.

Since 1923, beginning with the distribution of picric acid, up to the end of 1927 more than 613,000 pounds of war explosives have been distributed in Missouri at an estimated saving of \$73,460. In addition 350,000 blasting caps were distributed at a saving of \$1.50 per hundred or about \$5,200, making a net saving to the farmers of the state in war surplus explosives of nearly \$80,000.

The direct saving was but the beginning of the benefits to be realized from this work, however. The gains through reduction of crop loss, time loss, and equipment breakage will be many times greater even in a single year, and will continue year after year.

To show definitely the loss of crops because of stumps in cultivated fields, a result demonstration was arranged with Mr. E. T. Mallinckrodt, district extension agent, on the Shulte Brothers Farm

near Fredericktown. One acre containing 43 white oak stumps averaging 26 inches in diameter was cleared at an average cost of 23.8c per stump. Pyrotol was used and all the work was done with ordinary farm labor. An adjoining field was left with 36 white oak stumps averaging 26 inches in diameter. Both fields were planted to corn. The cleared acre was worked down with a tractor and other modern machinery, while the stump acre was worked with horse-drawn plow and single-row cultivator. On the stump acre,



Fig. 6.—Pulling stumps with a homemade stump puller (Paul Bunyan's hammer) in Buchanan county.

by actual measurement, 9,331 square feet or more than one-fifth of the acre was lost to cultivation. At harvesting time the cleared acre yielded 16.5 bushels more of ear corn than the stump acre. Figuring corn at 80c a bushel the increase in yield of corn had a value of \$13.20, which more than repaid in the first year the \$10.23 spent for pyrotol, caps, fuse, and labor. The increase in wealth for Missouri farmers in the last two years through the use of explosives alone was probably \$100,000 a year.

Great as were the benefits from the use of war explosives in land clearing, an almost equal acreage of cultivated land was clear-

ed of stumps by the use of stump pullers made according to plans furnished by the College of Agriculture. By the end of 1926 more than 200 of these home-made stump pullers were in use in Missouri.

In the land reclamation work alone in the first year of the biennium the Extension Service conducted 82 stumping and ditching demonstrations and 21 winter meetings. At all the fairs in Southeast Missouri and at the State Fair the College had demonstration exhibits showing the losses due to "tramp" stumps and how to remove stumps with explosives and with the home-made stump puller. The press gave such liberal notice to this work that the College in 1926 received requests for information concerning it from 94 Missouri counties and from all the states adjacent to Missouri.

A great deal of work was done also with commercial dynamite in constructing drainage ditches, straightening streams, and cleaning weeds and silt from clogged drainage ditches. Dynamite necessary for this work was bought cooperatively in large lots at a total saving of nearly \$5,000 for the users. In 1926 alone 23,465 cubic yards of earth were moved by explosives in ditch construction under the teaching of the Extension Service.

**Farm Buildings.**—During the five-year period from 1920 to 1925 the value of farm buildings in Missouri depreciated \$28,500,000 or an average of about \$5,700,000 per year. The annual percentage cost of upkeep on farm buildings in Missouri ranges from 5 to 8% of their total value, according to estimates of lumbermen, statisticians and economists. In addition, there has been a very noticeable decrease in the construction of farm buildings, other than poultry houses and brooder houses. According to every indication a movement toward the erection of farm buildings is about to take place. This movement is being anticipated by the Extension Service by promoting a campaign for greater efficiency in farm buildings and the use of more permanent materials, in order that the cost of maintenance may be reduced and the rate of depreciation lessened.

During the last year considerable work has been done by the College of Agriculture to promote the use of permanent materials, more judicious construction and arrangement of farm buildings, and a wider understanding of building design and blueprint reading. In the last year the College has sent out 1213 blueprints of farm buildings, 90% of them in response to orders from farmers. This service was used by farmers in 100 of Missouri's 114 counties.

Progress in this work is shown by a comparison of the records of actual construction during the two years, 1926 and 1927. The farm buildings constructed according to College plans during these respective years numbered as follow:

TABLE 8.—BUILDINGS CONSTRUCTED ACCORDING TO COLLEGE PLANS IN 1926 AND 1927

Kind of building	1926	1927
Barns.....	119	48
Hog houses.....	116	597
Poultry Houses.....	637	1525
Silos.....	119	40
Other buildings.....	138	181
Total.....	1129	2391

**Farm Sanitation.**—The subject of farm sanitation as it applies to the home and protection of water supply is ever present with the majority of farmers. During the year 1927 the Extension Service conducted a tour, at each stop of which a septic tank was built and a demonstration of proper uses of concrete was given. This tour was conducted jointly by the College of Agriculture and the Portland Cement Association. The College was represented by extension specialists in home economics and agricultural engineering. With a truckload of demonstration material the specialists visited 18 Missouri counties and gave 28 construction demonstrations with a total attendance of 796 persons.

This tour, known as the "Home Help and Health Tour", involved the construction of a concrete septic tank at each scheduled stop, besides lectures and demonstrations on home management, installation of home water systems, and the making of concrete. Prior to each stop the local extension agent had secured the cooperation of a farm family willing to pay for the materials necessary for a septic tank and to have the hole dug and the material on the ground at least one day before the demonstration date.

On the day scheduled for the demonstration, the field engineer from the Portland Cement Association, the home management specialist and the agricultural engineering specialist from the College, and the county agent, together with the truckload of equipment, arrived at the farm of the cooperator about nine o'clock in the morning. The first task was to unload, get the engine and mixer set into position, and get the form for the septic tank built. In some cases, it was possible to get part of the tank poured before noon, depending upon the assistance available and the material at hand.



Following a picnic lunch, the concrete mixer was started and run for about an hour, at which time operations ceased and the lectures started. In order to allow more time to supervise the construction of the tank, the water systems and concrete lectures were given first. The first lecture took up the installation of water systems in the farm home and explained the five steps of the Missouri plan for installing. At this time, individuals were given a chance to ask questions about their problems of installing sinks, pumps, and other equipment.

Following the water system lecture, the field engineer of the Portland Cement Association explained how to make and mix concrete properly. Following the lecture on concrete, the home management specialist talked to the ladies on home problems and their solution.

**Limestone Blasting.**—The use of limestone for agricultural purposes is increasing each year, and there are many problems relating to blasting and to adequate practical equipment for drilling. If limestone is to be used in sufficient quantity in districts five miles or more from railroad shipping points, some means must be provided whereby farmers can quarry their own stone at a cost which will compare favorably with the cost at railroad distributing points. The determining factors in this work are the need of more adequate drilling equipment, as well as information on the proper spacing of holes and the load of explosive to use.

During the last two years the subject of limestone blasting received only a small part of the attention it deserves; yet seven limestone blasting demonstrations were held with an attendance of 161. From information gathered at these demonstrations, the greatest cost where limestone is quarried on individual farms located five miles or more from a railroad is in drilling the holes. This cost ranged from 40c to 60c per foot of holes drilled. Records from one quarry show that a ton of stone for the crusher costs 82c of which 60% was for drilling holes. The other 40% was for explosives and for labor in breaking the rock for the crusher. In order to reduce this excessive drilling cost the College is searching for a system of economical practical drilling equipment especially adapted to this type of work. To assist the farmers in limestone blasting, a mimeographed circular was issued.

**Erosion Control.**—Terracing for the control of soil erosion was handled jointly by the extension specialists in soils, crops, and agri-

cultural engineering. Terraces were newly constructed during the two-year period on 110 farms, effecting erosion control on fields containing a total of 3258 acres.

Terracing has long been needed on three-fourths of the farms in Missouri, since fully that portion of the State's cultivated fields is subject to soil washing. A home-made terracing frame designed by the department of agricultural engineering at the Missouri College of Agriculture has, within the last three or four years, greatly simplified the work of laying out the terrace lines. Using this device, the extension specialists have been able to teach the farmers themselves to lay out and construct their terraces without the expense of employing an engineer.



Fig. 7.—Last round with the grader in building a soil saving terrace in Perry county.

## ANIMAL HUSBANDRY EXTENSION

Extension teaching of more profitable practices in livestock management, during the two-year period covered by this report, included 133 hog feeding demonstrations, 934 hog sanitation demonstrations, the awarding of 35 medals to winners in the ton litter and hog production contests, 65 beef herd demonstrations, 49 cattle feeding demonstrations, intensive sheep improvement campaigns in five counties, 5 demonstrations of big team hitches, and the instruction of 4-H club members who owned and cared for nearly 1500 head of cattle, hogs, and sheep.

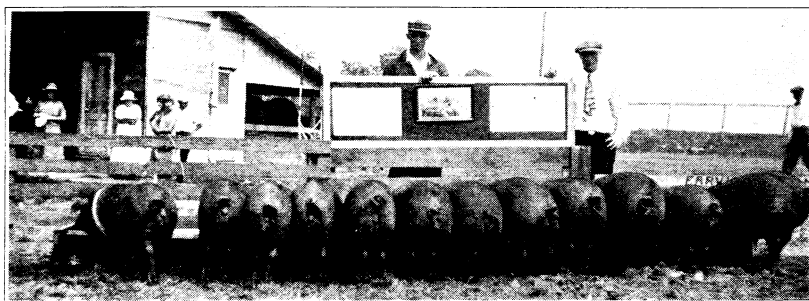


Fig. 8.—The champion ton litter of Missouri in 1926. This litter, produced by Roy Beal of Caldwell county, weighed 3022 pounds and was shown at the Hamilton Fair.

The demonstration of hog feeding and sanitation practices resulted directly in an increase of \$113,250 in the profits of the 1067 cooperators, in addition to the indirect benefits realized by the thousands of men who adopted the improved practices through the influence of these demonstrations.

Ton litters in 1926 were brought to marketable size and finish at a feed cost as low as \$5.83 a hundred pounds gain. Entire herds in the hog production contest of 1927 returned profits as great as \$125 a sow.

Beef herd and cattle feeding demonstrations showed that beef cows will profitably utilize the rough feeds produced in Missouri's general farming system and will supply choice young cattle as feeders to meet the most profitable market demands, and that such young cattle make gains at lower cost than older cattle.

Sheep improvement work started intensively in one county in 1926 has been carried forward on the same scale in five counties in 1927, with six fat lamb shows at which the lambs produced in these

campaigns were graded, grouped, and shipped cooperatively with resultant sales at premiums as great as \$1.00 a hundredweight above the tops on the days they reached the market.

**Hog Feeding.**—Ten dollars a head on 2685 early spring pigs was saved for the cooperators who fed pigs according to college recommendations in 37 demonstrations in 1927, making a total gain of \$26,850 directly traceable to the better practices. Similar work during the previous year gave demonstration feeders a cash return of \$32,250.

Hog feeding demonstrations completed in the two-year period numbered 133, demonstration meetings 77, and general meetings 51. The total attendance at these meetings was 22,900, and the recommended practices were adopted on 1525 farms.

Early spring pigs fed on pasture numbered 6594 with an average daily gain of  $1\frac{1}{4}$  pounds per head. The feed required for each hundred pounds of gain included 6.08 bushels of corn and 20.7 pounds of tankage in 1926, and 6.15 bushels of corn and 18.8 pounds of tankage in 1927. The feed cost per hundred pounds gain was \$5.83 with corn at 70 to 80 cents in 1926, and \$6.91 with corn at 85 cents to one dollar a bushel in 1927. These demonstrations proved to farmers in practically half the counties of Missouri that healthy spring pigs fed from three-fourths to a full feed of corn and tankage on good pasture can be made to gain 100 pounds with a trifle more than 6 bushels of corn and 20 pounds of tankage.

In most cases the corn and tankage were fed by hand at the rate of 3 pounds ( $\frac{1}{2}$  gallon) of tankage for each bushel of corn.

Because of the higher cost of feed in 1927 it was very difficult to get feeders to follow the recommendations for pushing their spring pigs; yet those who fed a full feed sold their hogs for about \$11.00 a hundredweight, while those who "saved money" by "growing" their pigs on grass and waiting for new corn took from \$8.00 to \$9.00 a hundredweight for their hogs and suffered a consequent loss of \$4 to \$6 a head.

The cost of weight gains in the demonstrations of 1927 was \$3 to \$6 per head less than on the average farm where straight corn was fed on poor pasture. This, coupled with a \$4 to \$6 increase per head in the selling price due to early marketing meant a saving of \$10 a head, or a total of \$26,850 on spring pigs actually fed and marketed in these demonstrations. This saving, if applied to the 872 farms where the practice was adopted last year, would reach an enormous total.

In feeding fall pigs, in a much smaller number of demonstrations during the two-year period, excellent results were obtained by feeding a protein mixture of 2 parts tankage, 1 part oil meal, and 1 part alfalfa meal as a supplement to corn. The gains were  $1\frac{1}{4}$  to  $1\frac{1}{2}$  pounds per head daily, practically as rapid as those made by spring pigs on pasture. The feed required per hundred pounds of gain approximated  $6\frac{1}{2}$  bushels of corn and 35 pounds of the protein mixture.

**Hog Sanitation.**—On 934 Missouri farms where hog sanitation demonstrations were completed in the last two years a total of 41,400 hogs were raised at a total saving of \$74,150. An analysis of this demonstration work shows that raising pigs under strict sanitation, to avoid the unthriftiness due to worms and disease, will save one bushel of corn for each 100 pounds of gain or two bushels of corn on each 200-pound hog produced.

With corn at 75 cents a bushel in 1926 the 17,300 demonstration pigs were thus raised at a saving of \$1.50 each or a total of \$25,950. With corn at \$1.00 a bushel in 1927 the 24,100 demonstration pigs showed a similar saving of \$48,200.

The foregoing figures do not take into account the additional advantage shown by surveys completed last year in Howard and Lafayette counties, where it was found that one more pig per litter was marketed when the sanitation plan was used. Moreover, no attempt has been made to calculate the savings that have resulted on the hundreds of farms where sanitation practices have been adopted through the influence of newspapers, circulars, and unrecorded public meetings.

Nodaway county started a campaign on hog sanitation in 20 school districts in 1927 and will continue the work in these and 20 additional districts in 1928. In districts doing the most effective work 68 per cent of all the pigs farrowed in 1927 were handled according to the sanitation plan.

**Ton Litters (1926).**—Twenty-nine ton litters were produced in the 1926 contest. Roy Beal of Polo produced the state's heaviest litter, 13 cross-bred Poland-Hampshires. Their official weight was 2955 pounds, but had they been figured to the 180th day their weight would have been 3022 pounds. It cost \$176 to produce this litter. The cost per hundred pounds gain, including the sow's feed from breeding to farrowing was \$5.83. They sold on the St. Louis market for \$13.75 per hundredweight leaving an extremely high margin of profit. This litter was shown at the Northwest Missouri Fair

at Hamilton. With their feed record over them they made an effective demonstration of good pork production practices.

Three ton litters were produced by Ernest Heberling of Mayview. Eleven pigs weighed 2365 pounds, ten pigs weighed 2300 pounds, and eleven pigs 2180 pounds, or a total of 6845 pounds from three litters in 180 days.

Nine of the 29 ton litters were produced by 4-H club members. This was the third and last year for the ton litter contest in Missouri. It served its purpose to draw attention to the possibilities in producing pork. It was succeeded in 1927 by the Missouri Hog Production Contest, which is the application of the ton litter idea to the entire herd.

**Hog Production Contest (1927).**—The six medal winners in Missouri's first Hog Production Contest, in 1927, raised an average of 8 2-3 pigs per litter from 79 sows and made them weigh at six months an average of 184 pounds each. The cost of 100 pounds of gain, including the feed of the sows from breeding to farrowing, ranged from \$6.03 in the case of the smallest herd to \$7.26 in the largest.

There were 52 entries in the contest and the recommended practices were used with varying degrees of success by all. All the medal winners used corn as their main fattening feed and tankage as their chief source of protein. With only one exception the medal winners followed every detail of both the sanitation plan and the feeding plan.

This contest was started in 1927, with requirements adapted to the entire pig crop. The contest was divided into four sections, based on the number of sows farrowing on the farm. To win a medal the groups had to make the following weights at the age of 180 days.

Herds of 15 or more sows, 1400 pounds per litter.

Herds of 10 to 14 sows, 1500 pounds per litter.

Herds of 6 to 9 sows, 1600 pounds per litter.

Herds of 3 to 5 sows, 1800 pounds per litter.

The medal winners and their records follow: George Tatman, Harrisonville, with 21 sows, raised 197 pigs which at six months averaged 1675 pounds per litter. His cost per 100 pounds gain was \$6.41. J. A. Sillers, Lathrop, with 25 sows, raised 207 pigs averaging 1498 per litter and costing \$7.26. Troy Williams, Harrisonville, with 10 sows, raised 88 pigs averaging 1522 a litter and costing \$7.11. George Graham, Magnolia, with 12 sows, raised 91 pigs

averaging 1508 a litter and costing \$7.05. R. A. Kinnaird, Maryville, with 8 sows, raised 52 pigs averaging 1632 a litter and costing \$6.20. John Sam Williamson, Columbia, with three sows, raised 33 pigs averaging 2514 a litter and costing \$6.03 per hundred pounds of gain.

A net return of \$125 per sow was the record of Jno. Sam Williamson in this contest. Williamson used three purebred Poland sows bred to a purebred Duroc boar. Thirty-three pigs were saved and marketed. They averaged 228 pounds per head when six months old, making an average daily gain of 1.27 pounds per head for every day of their lives. The feed used for each 100 pounds gain included 3.81 bushels of corn, 69.3 pounds of shorts, 22.6 pounds of oil meal and tankage, and pasture charged at 30c. These pigs sold in St. Louis on Sept. 6 at \$11.70 per hundredweight, netting \$829.73 at home. The total cost of feed and pasture given sows and pigs was \$454.83, leaving a return above feed cost of \$374.88 or \$124.96 per sow.

The medals for the contest were furnished by the St. Louis, Kansas City, and St. Joseph Stock Yards Companies. The Kansas City Chamber of Commerce awards were \$200 in cash prizes and a state championship trophy that went to Mr. Tatman.

**Beef Herd Demonstrations.**—Annual profits of \$16.97 to \$21.27 a head on the beef cow herd, maintained as a means of marketing the rough feeds produced in a general farming system, were made on eight demonstration herds in 1926 and on ten herds in 1927. This small number of herds, on which complete records including the sale of the calves are available, formed but a portion of the beef herd demonstration work of the last two years.

A total of 65 demonstrations were completed on 39 farms with 866 cows. The creep feeding of grain to the calves while running with their mothers more than doubled the profit per head in the 1926 demonstrations.

In 76 meetings, with a total attendance of 10,823, emphasis was placed on the need of keeping at least the present number of beef cows on the farms of the state, as a means of marketing the rough feeds, and on the value of feeding the calves and marketing them as grain-fat calves or as fat yearlings.

Beef herd demonstration work has become more popular during the past two years. It offers a solution for some of the problems facing many Missouri farmers; namely, a market for rough feeds and a cheaper source of choice feeder cattle. The man selling

grain-fat calves at weaning time is producing them at a cost of about \$7.00 a hundredweight.

Conditions in the beef cattle business changed greatly during 1927. At the beginning of the year heavy fat cattle were a drug on the market, but the price reacted sharply to bring both feeder and fat steer prices to the highest level ever paid during peace time. This change in conditions has resulted in an attempt to increase the number of beef cows on Missouri farms. Fortunately the Missouri College of Agriculture had been working on this long-time beef cattle program and had experimental and demonstration results to furnish to men who wanted information on how to raise calves.



Fig. 9.—Nineteen spring calves, fed by T. H. DeWitt of Sullivan county. They were started on grain June 15 when 60 days old. On December 9 the calves weighed 543 pounds each, having made their gains at a cost of \$10.95 a head.

**Cattle Feeding Demonstrations.**—The economy of gains made by young cattle and their popularity on the markets were effectively shown in 49 feeding demonstrations in 1926. Calves showed the lowest cost for gains in both summer and winter feeding. Yearlings were the most profitable, but a part of their advantage may be credited to the fact that they showed market finish superior to that of the calves.

These demonstrations were utilized also to show the proper methods of feeding cattle of different ages and grades, the amount of protein supplement to feed with different rations, the value of silage and legume hay, and the use of limited grain rations.

Very little cattle feeding work was done in 1927, because of the unfavorable market conditions at the beginning of the year.



**Sheep Management.**—The Missouri Plan of Sheep Improvement was carried out in Monroe County in 1926 and was extended to include six Missouri counties the following year. These counties were Monroe, Boone, Callaway, Shelby, Crawford, and Macon. This plan included the use of purebred sires, breeding by Oct. 1 for early lambs, docking and castrating the lambs, creep feeding grain to suckling lambs, control of stomach worms by drenching with bluestone, and marketing the lambs by July 1.

In the early development of this campaign in Monroe county in 1926 a mailing list of 900 sheep growers was obtained through the rural school teachers. From this list a good farmer and sheep raiser was selected as local leader in each school district. A training school was then held and 49 of these local leaders were instructed in the details of the campaign and the practices to be taught.

Resulting from that campaign 70 local leaders were appointed, 125 sheep raisers adopted the recommended practices, 3526 lambs were docked and castrated, and the sheep raisers cooperating realized a saving of \$5,289. A fat lamb show was held at Paris, and the 160 lambs exhibited were shipped cooperatively to St. Louis, selling as prime lambs. A purebred ram sale was held and 33 good rams were sold in 45 minutes at an average price of \$42.50. After the sale 16 additional purebred rams were placed, bringing the total to 49 for this one county.

The work in sheep improvement that year, including territory outside of the one county where the most intensive campaign centered, resulted in the adoption of the better practices on 349 farms, the sale of 158 purebred rams, the treating of 15,434 sheep for disease, the docking and castrating of 8,197 lambs, and the creep feeding of 4,475.

The wider development of the plan in 1927 included 24 sheep management demonstrations and the adoption of the improved practices on 490 farms. A total of 82 meetings had an attendance of 5294. As a result 304 purebred rams were placed, 28,500 sheep were treated for disease, 21,380 lambs were docked and castrated, and 8,300 were creep-fed.

The records of all cooperators in 1927 show that the ewes kept in demonstration flocks returned \$7.00 to \$10.00 a head above cost of feed. This return included the sale of wool and fat lambs.

**Fat Lamb Shows.**—Six fat lamb shows were held in 1927 to teach sheep men to keep back the thin lambs and feed them until

they would sell as tops instead of culls. At four of these lamb shows the lambs were graded, the thin ones sent home and the good ones sold on their merit.

At Paris 304 lambs were shown, 26 were sent home, and the others divided into a top load and a second load. The top load brought \$16.50 a hundredweight, 75c above the top of the market. The second load brought \$15.75, the top on the St. Louis market. Both loads sold straight without a cull.

At Columbia, 275 lambs were shown. The top load brought \$17.00 a hundredweight on June 15, \$1.00 above the top on the St. Louis market. This load of lambs dressed 54 per cent when the run of so-called top lambs coming to the St. Louis market were dressing 49 and 50 per cent.

The lambs from Fulton brought \$18.00 a hundredweight straight in St. Louis. This was \$1.00 above the top for that day. The thin lambs were sent home from the show. The Macon lambs topped the market by 50c a hundredweight and the Bourbon lambs by 75c. The 170 lambs shown at Monroe City sold straight at \$17.00, this being 50c above the top.

The grading work was an outgrowth of the fat lamb shows. On June 20 the first receiving and grading day was held at Paris. Five



Fig. 10.—Winners in the Boone county fat lamb show, 1927. The top load of lambs from this show sold at \$1.00 above the market top and dressed 54 per cent.

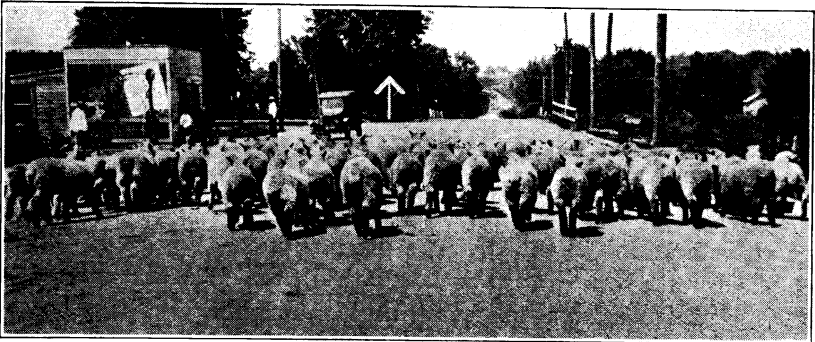


Fig. 11.—Load of fat lambs from the Monroe county show. This load sold at \$16.50 a hundredweight, or 75 cents above the top of the market.

hundred eleven lambs were brought in by 42 farmers. Of these 382 were graded as top lambs. In addition to these there were 22 top buck lambs, 6 cull buck lambs, and 6 docked and castrated seconds. The other docked and castrated thin lambs were sent home. The lambs sold in St. Louis according to the home grade. The 382 tops brought \$14.75, 25c above the top of the market for that day. The culls and buck lambs brought \$10.00 per hundredweight.

**Big Team Hitches.**—Five method demonstrations with a total attendance of 464 men were given to show how to use the multiple hitch. The time was spent on four, five and six-horse hitches. A great deal of interest was shown in the demonstrations in every instance. Farmers at each demonstration took the dimensions for double-trees, cleavices, lead chains and bucking-back ropes, indicating that they intended to make and use the hitches as demonstrated.

At each demonstration time was taken to talk on horse production, pointing out the possible horse shortage in the future and the advisability of a plan of raising at least enough colts to replenish the work stock on each individual farm.

**Baby Beef Clubs.**—Baby beef 4-H clubs were organized in 29 counties in 1926 and in 31 counties in 1927, with a total membership of 814 for the two years. The economical gains made by these young cattle not only enabled the club members to earn a satisfactory profit while learning how to handle beef cattle and finish them for market, but also caused many adult feeders to turn their attention to the fattening of young cattle.

At the Baby Beef Show at St. Joseph in 1926 a total of 279 Missouri calves averaging 994 pounds per head sold for an average of

\$12.50 a hundredweight. At the same event the following year 176 Missouri calves averaged 971 pounds and sold for \$16.42 a hundredweight.

At the American Royal Livestock Show at Kansas City baby beef club members exhibited and sold 50 calves in 1926 and 53 in 1927. At the State Fair at Sedalia 50 calves were shown in 1926 and 44 in 1927. At the National Stock Yards Round-Up at East St. Louis 25 calves were shown in 1926 and 30 in 1927.

**Sow and Litter Clubs.**—The production of market hogs was emphasized in sow and litter club work in 1927. A substantial increase was made in this work in the northwestern part of the State, 272 pigs being exhibited at the St. Joseph Interstate Baby Beef and Pig Club Show. These pigs averaged 224 each and sold for about \$11.40 a hundredweight.

Among the entries were eight ton litters. Although the Ton Litter Contest has been discontinued, the ton litter idea is still retained for club members in the St. Joseph show. The eight litters ranged in weight at 180 days from 2090 to 2740 pounds. The sale prices of these litters ranged from \$279.16 to \$343.36 each.

**Ewe and Lamb Clubs.**—Nine ewe and lamb clubs were organized in 1926. In Chariton, Jackson, Linn, Lincoln, and Macon counties the 71 members of these clubs owned 234 ewes. Complete reports were received from six of these clubs, showing that 38 members with 140 ewes raised 166 lambs. Their total investment in ewes and feed was \$1,434.41 and their gross income amounted to \$2,746.35, leaving a 91 per cent profit of \$1,311.94.

### DAIRY HUSBANDRY EXTENSION

Steady increase in the number of cow testing associations, bull block associations, and 4-H dairy clubs is but one dimension of the good accomplished by the extension work in dairy husbandry. Consistent gains in economy of production also have been made, though each year found many new herds included in the records from which the averages were calculated.

There were 26 cow testing associations at work by the end of this two-year period as compared to 18 at its beginning, and as compared to only 2 in 1919. The number of cows handled under association methods has increased in eight years from 951 to 8971. The average annual production of butterfat per cow has been increased from 229.7 to 284.4 pounds, and the milk production from 5184 to 6786 pounds.

Bull block associations were increased in number during the two-year period from 12 to 29. By the end of this period Missouri bull associations were operating 100 blocks, using bulls that cost an average of \$218.00 each and whose dams had production records averaging nearly 600 pounds of butterfat a year. Cooperative ownership and rotation of these bulls under the association plan has made it possible for 502 dairy herd owners, with an average investment of only \$40.36 each, to have the use of these high-type bulls in their herds for six to eight years.

The number of 4-H dairy clubs at work under the supervision of the Extension Service was 20 in 1926 and 26 in 1927. The membership of these clubs rose to 210 the latter year and their annual profits exceeded \$32 a member.

Dairy feeding practices have been widely improved throughout the state during the two-year period; specifically, 3457 men adopted the practice of growing legumes for dairy feed, 45 started using silos, and 2462 corrected their dairy rations. To improve the quality of their output 786 men adopted more sanitary methods of handling and caring for their dairy products.

The story of dairy improvement in Missouri during these two years reveals many other results as well as the methods by which all were accomplished.

**Cow Testing Associations.**—In two years the cow testing associations have been increased in number from 18 to 26, the number of counties served has increased from 27 to 41, the number of members from 452 to 598, the number of cows from 7046 to 8971. This rapid spread of the benefits of extension teaching and super-

vision to new counties, new associations, and new herd owners has made more difficult the maintenance of a continually rising rate of milk and fat production per cow and a steady lowering of the cost of production per unit; yet these results, too, have been accomplished.

Annual production of milk per cow was increased in these two years from 6672 pounds to 6786 pounds. The average production of butterfat rose from 273.6 to 284.4 pounds per cow.

The cost of producing 100 pounds of milk was lowered from \$1.29 to \$1.10, even with five new associations and nearly 200 additional cows. The cost of producing a pound of butterfat was lowered from 30.8 cents to 26 cents. The yearly profit per cow above feed cost was \$110.99 in 1926 and \$139.33 in 1927.

There are 825,000 dairy cows in Missouri and the average profit realized by their owners above cost of feed in 1927 was estimated at \$37.67, or \$101.86 less than the average for the 8971 cows owned by members of the cow testing associations. In other words, one good cow bred, fed, and cared for like those in the cow testing associations yields nearly as much profit as four average Missouri cows.

Ridding their herds of the unprofitable cows is one of the methods used by members of the cow testing associations to cut down their cost of production. In the two-year period covered by this report 2222 boarder cows were sent to the block from association herds. In guarding the health of the cows and the quality of the product in these herds 5386 cows were tested for tuberculosis.

Besides culling out the least profitable cows the members of cow testing associations have steadily built up their herds by the addition of 383 purebred females and by the use of purebred bulls of high producing ancestry. In the two-year period 227 high-type purebred dairy bulls were placed in association herds in addition to the hundreds already in use.

The extent to which cow testing association work influences all dairy practices is indicated by the following record of improvements on farms of members during the last two years: 2006 cream separators checked and adjusted, 45 tank heaters installed, 47 bull pens built, 36 silos built, 27 barns remodeled, 22 Missouri type milk houses built, and 12 manure pits and sheds built.

All the foregoing results of extension influence as exerted through the cow testing associations have been reported solely from the records of the association testers and the extension agents.

They do not take into consideration the secondary effects which the increased profit of the association member has on the dairy practices of this neighbor. Even for the association members the foregoing record of improvement is incomplete, since it does not include the increase in the value of the association cows due to their records of production as certified by the testers.

The chief limiting factor in cow testing association work is the difficulty in finding men qualified in every way to serve as testers. New associations can be organized as fast as good men can be found to take charge of them.

The cow testing associations have received special attention during the last two years. This is due largely to the fact that through these associations and their testers the College of Agriculture can best carry on extension work and secure the adoption of approved practices. The cow testing association members, as a rule, are open minded and ready to adopt the practices that are recommended. This is shown by the fact that more than 80 per cent of the association members in Missouri are using the standard Missouri ration, while 95 per cent are using purebred bulls, more than 70 per cent are growing legumes for feed, and about 30 per cent have silos. With the records which they keep they prove splendid demonstrators in their communities.

**Bull Associations.**—A growth of more than 100 per cent was made in the work of bull block associations in Missouri during the last two years. The number of associations increased from 12 to 29, and the number of blocks or communities included in these increased from 48 to 100. The number of members increased from 320 to 502, and the number of cows owned by members grew from 2100 to 3661.

By the end of the two-year period 100 purebred bulls were in use in 100 communities. The production records of the dams of these 100 bulls average nearly 600 pounds of butterfat a year. These bulls have replaced 353 inferior bulls on the farms of members and their neighbors who are now using the association bulls.

The average purchase price of these high-type dairy bulls was \$218 a head, yet the 502 members of Missouri bull block associations will be enabled to use these bulls for six to eight years at an average investment of only \$40.36 per member, or \$5.79 per cow.

Bull associations are proving the best and most practical means of establishing community breeding centers in Missouri. In counties where they are operating the surplus purebred bull calves are

rapidly taking the place of scrubs. In fact, 409 purebred bulls were placed through the influence of the associations during the last two years, and of this number 224 replaced scrubs.

**Four-H Clubs.**—Dairy calves or heifers were owned, fed and cared for by 4-H club members in 16 Missouri counties during the last two years. In 1926 in 20 clubs 174 members owned animals that attained a value of \$8,998.17 and yielded an average profit of \$36.65 each. In 1927 in 26 clubs 192 members owned animals that reached a value of \$5,616.17 and made a profit of \$32.38 each.

The work of the dairy club was not confined to the feeding and care of the animals, but included also the exhibition and judging of dairy cattle and the giving of feeding and judging demonstrations. In the first year of the biennium 62 members learned to judge, 46 exhibited their cattle, and 97 participated in demonstrations. In the second year 61 learned to judge, 46 exhibited, and 35 demonstrated.

As a direct result of the work done by boys and girls in these 4-H clubs, dairy practices were changed on 32 farms in their communities. At the regular meetings of the clubs there were 366 visitors who heard the instruction given club members and the reports of the work done.

Judging and demonstration teams were sent by these clubs to state and district fairs and to the national dairy show.

**General Dairy Improvement.**—Through feeding demonstrations, cow testing association work, and similar methods 3457 men were induced within the last two years to adopt the practice of growing legume hay for their dairy cows, 2462 men corrected the rations fed their herds, 786 adopted more sanitary methods of handling their milk and cream, and 45 men used silos for the first time.

**The Dairy Outlook in Missouri.**—Dairy development work in Missouri is moving rapidly along all lines, and the responsibility of the Extension Service includes the duty to keep it moving in the right channels. It is important to keep this movement going slow enough that there will be no reaction to check a good steady growth of the industry in any locality where it is started. This means that representatives of the College have been almost ultra conservative. However, this conservative policy is fast gaining favor with the farmers and with most of the business men. By adhering strictly to an educational program in dairy husbandry the Extension Service is in a position to hold the confidence of the dairy industry of the state and to continue to exert a helpful influence upon it.



## FARM MANAGEMENT

Extension work in farm management involves a service so complex that it does not readily lend itself to the ordinary methods of teaching through local leaders; consequently its results are not revealed in the number of persons reached nor by attendance at meetings. Profitable farm management in any particular locality must be based on accurate detailed knowledge of local conditions and practices. Changes cannot be recommended until records have been laboriously accumulated and analyzed. Surveys, farm accounts, summaries, and analyses must precede general recommendations.

The chief objectives, therefore, of the farm management extension work for the last two years have been: (1) To make intensive surveys and analyses of the farm business in restricted areas, and (2) to render state-wide service by supplying assistance in farm accounting to farmers anywhere in the State.

The procedure in areas selected for intensive work included the accumulation of farm account records by mail and by personal visits, an inquiry into the problems uppermost in the minds of local farmers, a statistical analysis of all problems lending themselves to this method, the utilization of collective data and analyses in the solution of both individual and mass problems, the training of men to keep their own farm accounts and to collect records in their neighborhoods, the training of extension agents to check up farm records, as well as to discuss them and apply their disclosures to the farm management practices on individual farms in their counties, tabulation and analysis of all records by the subject matter department at the College, return of individual record and analysis to each cooperator, and the return of area studies and the lessons taught by them to groups assembled in farm management schools.

The work during the last two years has included farm business surveys, orchard enterprise accounting, farm accounting, and outlook conferences.

**Farm Business Surveys.**—A survey of farm business in five counties was undertaken by mail in 1926 and continued on a somewhat larger scale in eight counties in 1927. The results included partial reports from 138 farmers in 1926 and from 212 in 1927. Complete reports were obtained from 60 farmers the former year and from 135 the latter. Of the larger number obtained during the latter year 22 per cent were discarded, yet 105 complete farm records were subjected to a complete uniform analysis while 57 were analyzed by enterprises only.

The mail survey, though still in a crude form in the latter year of the biennium, has yielded a large amount of workable data and has shown itself capable of expansion to the extent that the analysis of farm records may eventually cover the entire state. The essential ideas of the mail survey are that one specialist employed in this work can thus handle more territory, that nucleus groups of record-keeping cooperators can be established and gradually expanded in all parts of the state, and that the county extension agents, working with these groups of trained cooperators, may eventually carry on this work and extend its benefits to a vastly larger number of farmers than the specialist could possibly serve in person.

The mail survey is made by means of the standard farm business questionnaire broken up into thirteen individual questionnaire sheets and revised so as to present a series of direct questions relative to the previous year's farm business. These are mailed to a selected list of cooperators within a community at the rate of one sheet a week and are returned by the cooperator to the county agent's office. Computations are made by the specialist, who also summarizes, classifies, and tabulates the answers returned on these questionnaire sheets.

For use during the last two years, in addition to the results obtained by the mail survey, analyses were made during 1926 of 273 records of farm business from the year 1924, also 41 records of farm business, 38 simple farm records, and 18 farm cost accounts from the year 1925. These various records were obtained from Buchanan, St. Charles, Linn, Jackson, Boone, Cooper, Platte, Johnson, Marion, New Madrid, Mississippi, and Scott counties. The work of obtaining these records and returning the analyses to the cooperators meant the giving of personal assistance to 1058 persons.

The mail survey itself, during the last two years, established 350 personal contacts and resulted in the analysis of 165 farm business records in the following counties: Buchanan, St. Charles, New Madrid, Jackson, Linn, Lawrence, Ralls, Nodaway, Cass, Cole, Pettis, Howard, and Boone.

The ultimate goal of this work is to bring about general adoption of the changes in farm management that are indicated by the records and analyses as essential to more profitable farming, and to accomplish this through nucleus groups of farm cooperators keeping standardized farm business records in each extension county in the state. To this purpose the Extension Service is systematically

leading farmers in making their own farm business records, and is showing them how these records may be summarized to indicate the enterprises that are contributing toward a net profit as well as the practices in each enterprise that are factors of profit. Farmers are also taught to compare their own farm records with a composite record of the most profitable groups of farms covered by the survey, and to use this comparison to point out the weaknesses in their own systems of management. There is returned to each cooperator a step-by-step calculation of his record into a summary of factors favorable and unfavorable to profit, enabling him to compare his own system with that of the most successful group and to make the corrections necessary.

By these methods the Extension Service is teaching the co-operators and the extension agents to keep records, to summarize them, to work out the factors of profit, to disclose and recognize weaknesses in management, to list such weaknesses, and to assign definite causes. Thus cooperators are led to enroll in specific corrective work under the leadership of the county extension agent.

**Farm Accounting.**—One of the results of the farm business survey has been its effective influence in leading groups of farmers to undertake the keeping of farm records under a standardized system. How far this influence has become effective is indicated by the fact that 650 farm record books were supplied by the Extension Service during the last two years to persons voluntarily agreeing to make definite use of them.

**Orchard Enterprise Accounting.**—In this work the system of group cooperation in record keeping within certain selected communities was applied particularly to the orchard enterprise in Jackson county, where 12 orchardists kept standardized cost records from February, 1927 to January, 1928, inclusive. This work will be completed in 1928, culminating in an orchard record school at which the twelve local orchard records will be summarized to indicate the factors responsible for profit and loss respectively. The cooperators are to reach decisions with the assistance of the county extension agent, the orchard specialist, and the farm management specialist as to the rate of appreciation and depreciation of trees, rate of depreciation on orchard equipment, standards for labor and spray material requirements, etc. The records are to be studied for these purposes as well as to make comparisons between different methods and practices.

**Outlook Conferences.**—Farm management information was presented at 35 agricultural economics outlook conferences which were attended by 2004 persons. This work included a demonstration of how prices are determined. Supply and demand curves on a number of farm products were charted and discussed. The instruction presented at these conferences was designed to show also that production and prices move in cycles and to train farmers to use the current price situation as an indication of trends in supply and demand, and to apply this information to their current farm operations.

**Special Activities.**—During the two-year period, in addition to the activities covered in the foregoing paragraphs, the specialist in farm management prepared 46 articles for publication in farm journals and metropolitan newspapers, made five radio addresses, spoke before 20 general meetings, assisted in planning systems of farm management for 21 farms, and gave personal assistance to 73 farmers in drawing up leases, partnership contracts, and systems of farm accounting.

## HORTICULTURE

Eighty million dollars worth of horticultural crops were grown in Missouri in the last two years. The fact that this figure is three million dollars greater than the production of the preceding two years is not nearly so significant as the progress that was made during 1926 and 1927 in helping Missouri's horticulturists increase their acre yields, reduce their costs of production, and improve the quality of their products. The extent to which these purposes were accomplished with the aid of the Missouri College of Agriculture in the last two years is shown by the fact that the recommended methods of spraying, pruning, fertilizing, thinning, picking, and



Fig. 12.—Tomato field near St. Joseph. In this field the Marglobe variety was tested on a commercial scale.

packing have been adopted for the first time on 1779 orchard farms, in 398 vineyards, by 1031 strawberry growers, by 5453 potato growers, by 318 sweet potato growers, by 527 watermelon growers, and 186 home gardeners.

The activities by which the Extension Service has thus beneficially changed by the practices of so many Missouri horticulturists are numerous and varied, including in a single year (1926) a total of 292 method demonstration meetings, 198 other meetings, lectures, and tours, and 237 completed result demonstrations covering 1153 acres. A total of 13,370 fruit and truck crop producers were reached by the extension specialists working in 59 counties.

Problems confronting Missouri fruit and truck growers are numerous, but the answers to many of them are now a matter of established fact, and it is the aim of extension work in horticulture to present the best known methods in such a way that experienced growers will adopt them and new growers will follow them as standard. Progress in this direction is actually resulting in increased acre yields, reduced production costs per unit, and improved quality of the product. It is by these results that the profit to commercial growers and satisfaction to home producers are being increased.

Fruits and vegetables of various kinds are grown in Missouri for home use and local markets, while the commercial production of horticultural crops is largely confined to a series of highly specialized districts, each of which enjoys natural advantages of climate, soil, or location, which favor the production of certain crops. Examples of these specialized districts may be found in the tomato canning district and strawberry and grape shipping districts of South Missouri, the apple districts of Southwest Missouri and on the loess hill soils along the Missouri and Mississippi Rivers, the watermelon, peach, and sweet potato district of Southeast Missouri, the market gardening sections around the principal cities, and the potato growing industry of the Missouri Valley.

To make the work effective it has been confined largely to the principal crops, which include orchards, strawberries, potatoes, tomatoes, sweet potatoes, and melons.

**Orchard Management.**—Improved practices in orchard management were adopted for the first time on 1779 Missouri farms in the last two years as a direct result of extension teaching in horticulture. A total of 150,784 trees on 615 farms were pruned for the first time, and 9465 acres of fruit trees on 1066 farms were sprayed for the first time. To get these results the Extension Service conducted 294 demonstrations of improved orchard practices, and 144 demonstrations showing the results of these practices in year-round use in orchards throughout the state.

The increasing number of young orchards being planted and the increasing difficulty in controlling pests and maintaining quality production in bearing orchards both tend to increase the importance of orchard management work. Result demonstrations have been the most important feature of this work, for it is by such a demonstration that the value and necessity of correct pruning, spraying, and soil treatment can best be shown. These demonstra-

tions are carefully established with growers who are willing and able to follow recommendations.

In the new orchard districts these take the form of demonstrations in the setting, care and management of young orchards, with most attention to varieties, spacing, borer and rodent control, pruning, and soil management. In the older districts the demonstrations are in the management of bearing orchards with most attention to spraying, pruning, soil management, and thinning. Demonstrations in the handling of special problems such as blotch control and alternate bearing have been used where special attention to one problem was necessary because of local conditions.

Winter meetings or horticultural schools have been held in the principal fruit districts throughout the state. At these meetings lectures and demonstrations were given by specialists, followed by open discussions by the growers. These horticultural schools are usually of one or two days duration and include both indoor meetings and orchard demonstrations in pruning and in mixing and applying sprays.

**Strawberry Production.**—An unusual increase in the strawberry acreage of Missouri in 1926 centered around 55 new shipping points and brought with it the problem of quickly supplying these new growers with information on procuring plants, preparation of land, planting, cultivation, and other care. There also arose the necessity of encouraging the concentration of this new acreage around certain shipping points in order to make possible carlot shipment and the benefits of organized grading and marketing. Increased strawberry acreage at large in 1926 was the result of the high acre yields and profitable prices obtained by Missouri berry growers in 1925.

To meet the problems growing out of this situation in 1926 the Extension Service of the Missouri College of Agriculture held both spring and fall meetings with strawberry growers in the new berry growing districts. By the end of the year 40 of these 55 groups had perfected organizations for the cooperative handling and marketing of their prospective crop, 7294 acres had been set and cared for according to College recommendations, 1031 growers had adopted recommended practices, and 385 acres of newly set berries had been fertilized.

At the beginning of the year in districts where large plantings of strawberries were contemplated the meetings supplied an opportunity for the discussion of the situation, prices, costs, and possi-

bilities by representatives of the College, the railroads, the marketing associations, the local business men, and the prospective growers themselves.

Result demonstrations were established in the communities as demonstration patches. Method demonstration meetings on planting were held. A tour of the older sections at harvest time was arranged by the Agricultural Extension Service, and 350 representatives of berry growers associations studied methods of harvesting, picking-crew organization, results of cultivation and good care, grading and packing berries, and other practices that are essential to successful berry growing.

Fifty-five general meetings were scheduled in the new berry districts at the close of the season to discuss again the recommended cultural methods and practices and to point out means of correcting mistakes made the previous season. The business set-up of the growers' organization was also discussed at these meetings and means to effect sounder and more permanent organization were suggested to the growers. All agencies (railroads, growers, marketing associations, and the Agricultural Extension Service) were represented in the fall series of meetings.

The work was continued on a similar scale in 1927 with attention centering more on the problems of picking, handling, and sale in the new berry growing districts and extending also to any of the older districts where definite need of help was apparent. By the end of 1927 permanent organizations of strawberry growers were operating in 73 of the 82 districts growing berries on a scale adapted to car-lot shipping.

From a production of 1435 carloads of strawberries on 15,170 acres in 1926, Missouri moved up the following year to a total of 1986 cars shipped from 27,335 acres. It was not at any time the purpose of the Extension Service to advocate increased acreage in general; but rather to assist the communities actually engaged in setting new acreage to employ proper cultural methods and to insure sufficient acreage around new shipping points for carlot shipping. During 1927 fifteen Missouri points shipped strawberries by carload for the first time.

**Grape Production.**—In the past six years the grape industry in Missouri has made a remarkable growth, due, no doubt, to the geographic advantages of the state in both markets and quality production (as indicated in the larger sugar content of the fruit). In this development the problems have been (1) those of the young



vineyard, particularly with reference to location, setting, pruning, and training, (2) grading and packing the product for market, (3) insect and disease control.

To meet these problems the Extension Service in the last two years has conducted 36 result demonstrations and 96 method demonstrations, with the result that 398 grape growers for the first time adopted the recommended cultural practices, 244 growers for the first time pruned their grapes in accordance with the 4-cane Kniffin system, 222 growers began the practice of spraying on 2228 acres, and 76 growers used the recommended fertilizers for the first time.

For the owners of young vineyards the Extension Service conducted method demonstrations in pruning and training, as well as meetings for discussion of planting distances, selection of plants, variety standardization, and other essentials in developing the young vineyard. Result demonstrations featuring spraying and pruning were used in the work among owners of bearing vineyards.

A heavy grape crop in 1926 left the vines in a somewhat weakened condition, so that the pruning problem was forced into greater prominence in 1927 with the necessity of stressing heavier cuttings.

Solutions for these special problems in 1927 were offered the growers through pruning demonstrations, and meetings for the discussion of vineyard care under the conditions presented by the current season.



Fig. 13.—Potato fertilizer demonstration on Marshall silt loam in Jackson county. Rows at left had 250 lbs. of superphosphate per acre; those at right had none.

**Potato Production.**—Better practices in potato production were newly adopted as a result of extension work in the last two years on 5453 farms. On 4656 farms, where the practice had not previously been used, certified northern grown seed potatoes were planted, and on 1273 farms seed treatment for disease prevention was practiced for the first time.

The use of northern grown certified seed was greatly increased during the two-year period, with 95 carloads used in 1926 and 120 carloads the following year, or 129,080 bushels in the two years combined. The average increase in yield in demonstration fields from the use of certified seed was 53.2 bushels per acre.

Seed treatment was used on 169,996 bushels of potatoes during the two years. The average increase in yield in demonstration fields due to this practice was 31.7 bushels per acre.

Similar work on the use of fertilizer in potato production resulted in the adoption of this practice on 737 farms. The average increase in yield in demonstration fields from the use of fertilizer was 36.6 bushels per acre.

In obtaining these results 103 result demonstrations and 77 method demonstrations were conducted. Preliminary to this field work winter conferences were held in the commercial producing centers to discuss recent developments and to plan each year's work in this project and to appoint demonstrators and committees to carry out certain phases of the work such as arranging a central seed treating plant, bringing in a supply of certified seed and carloads of fertilizer, and arranging for shipping point inspection. These conferences have been a valuable part of the program. In the non-commercial districts general meetings have been employed for the same purposes.

Placing of certified seed is an important part of the work as it insures the adoption of the practice. The methods used were (1) compiling and sending out information on available sources of certified seed, and (2) insuring the placing of orders, by appointment of committees to pool or place orders or interview dealers, or by direct conference with dealers or purchasing agencies.

An attempt has been made throughout this work to direct the distribution of certified seed potatoes through the regular channels of trade in order that the permanency of the work may be insured. The occasional pooling of orders has been necessary in order to secure car lots, but in most cases the pooled orders have been handled by local dealers.

Other methods for the advancement of potato production have included the establishment of central seed treating plants through the assistance of growers' committees, community organizations, associations, and dealers. Tours and field meetings have been used to bring growers together to see the result demonstrations, to study their production problems, and to carry out the grading and inspection work.



Fig. 14.—Seed potato treating outfit owned and operated by the potato growers of Jackson county. This plant has a capacity of three to four carloads a day. (Inset) General view of plant.

One special trainload (40 cars) of U. S. No. 1 graded and inspected potatoes was shipped from Missouri to Chicago in 1926 to demonstrate progress in improvement of quality and grade.

Four-H club work was also used to improve the practices in potato production, with 131 members enrolled in 15 clubs. Their total production was 1441 bushels of potatoes.

**Sweet Potato Production.**—The chief problems in sweet potato production in Missouri are due to the diseases black rot and stem rot, lack of adequate and proper storage facilities, the need of better harvesting, handling, grading, and packing, and the need of a

development of the industry as a permanent part of the agriculture on the sandy soils of Southeast Missouri, with larger and well concentrated acreage coupled with proper storage facilities.

How well these objects have been kept in mind by extension workers may be judged from the fact that in the sand-land section of Southeast Missouri in 1926 alone there were 113 new growers with 528 new acres, and 21 storage houses were built with a capacity of 54,400 bushels.

A total of 318 growers adopted improved practices with sweet potatoes during the two-year period, 94 began the use of seed treatment to prevent disease, 194 planted approved seed for the first time, and 29 practiced hill selection of seed for the first time.

The publication of an approved seed list based on the field inspection and bin inspection of the preceding fall and winter was conducted by the Extension Service in 1926, as in the three years immediately preceding, but was turned over to the Missouri Plant Board in 1927. When turned over to this board, the certification work covered the inspection of 400 acres of sweet potatoes with all certification fees paid for the 1927 list. During the last season (1926) in which this list was published by the Extension Service 6746 bushels of seed were included in the approved list.

In two 4-H sweet potato clubs in the first year of the biennium 19 members produced 823 bushels of sweet potatoes that sold for \$778.00 and yielded a profit of \$590.72.

**Tomato Production.**—As an important truck crop in Missouri tomatoes rank second only to potatoes. They are grown extensively as a market crop both for local and shipping markets and for home use, and in the southern part of the state there are more than 300 canning factories whose principal product is canned tomatoes. The acreage for canning purposes varies somewhat with the market outlook, but averages about 25,000 per year. The principal problems in tomato production are disease control, soil fertility, better cultural practices, and the use of improved varieties. In the canning districts, where tomatoes are grown principally on the thin gravelly soils, soil fertility has become the outstanding problem.

The success attending the efforts of the Extension Service to strike at the chief problem in tomato growing is shown by the fact that 5130 tons of commercial fertilizer were used by Missouri tomato growers in 1926. Of this amount 5025 tons were high grade, 73 tons medium grade, and only 32 tons low grade.

To extend the use of better varieties of tomatoes the Extension Service has used result demonstrations, and these have been the means of introducing the new Marglobe wilt resistant variety into the market gardening section. This procedure rather than introduction by mere recommendation was used for two reasons. The first is that the tomatoes must be demonstrated to be resistant to this disease. The second is that even though resistant enough to produce a crop, if they are to become popular they must meet the market requirements, and a result demonstration is the only way in which this can be shown.

Fifteen result demonstrations using the new wilt resistant varieties of tomatoes have been carried on in the three most important market gardening sections, that is, St. Louis county, Jackson county and Buchanan county. Field meetings and tours were held to observe the results, and all comments of growers point to the early adoption of the Marglobe variety.

In disease control much attention has been given to septoria leaf-spot, which has become a serious disease in the canning districts during seasons of wet weather. To prevent this with the smallest possible expense thorough spraying of tomato plant beds has been urged and a circular prepared on the method of making bordeaux mixture and applying it. The canners have cooperated in extending this practice by arranging meetings for plant bed spray demonstrations, by sending out instructions for spraying and by providing the spray materials and machinery in many cases.

**Melon Production.**—Southeast Missouri grows annually from 12,000 to 15,000 acres of watermelons for shipment. The chief problem of the melon growers of this section is to produce larger and earlier melons in order to reach the most satisfactory market. There are the additional problems of insect control, mouse control, disease control, and soil fertility, but previous demonstration work has greatly assisted in overcoming these. To extend the adoption of practices which tend to produce larger and earlier melons a "larger and earlier watermelon" campaign was undertaken in the three principal melon producing counties, Scott, Mississippi and Dunklin, in 1926.

In this campaign the Extension Service gave wide publicity to the results of previous demonstrations in the seven essential practices in watermelon production. A few additional demonstrations were conducted in the three practices emphasized in the campaign, that is, fertilizing, thinning, and pruning, and timely publicity was

given to each one of the seven practices at the time appropriate. These adhered to the following schedule: January, poisoning mice; February, crop rotation to prevent wilt disease; March, good seed; April, fertilizer and materials for insect control; May, thinning, and June, pruning.

In this campaign in 1926 the recommended practices in dusting to control insects were used by 473 growers on 3400 acres, and the methods of poisoning mice were adopted by 527 growers on 4068 acres. In Scott county more than 1000 pounds of nicotine dust was distributed for emergency control of melon aphid and striped beetles.

In 1927 the melon crop was ruined and all melon work was temporarily stopped by the disastrous floods that covered much of the melon growing section of Southeast Missouri. In the market gardening sections near St. Joseph, Kansas City, and St. Louis effective work was done in 1927 in the distribution, through dealers, of material for insect control. The 4 per cent nicotine dust is used quite extensively in these districts, as well as the new sodium fluosilicate dusting materials for the control of the striped and spotted cucumber beetles.

**Home Gardening.**—The problem of improving farm gardens and broadening the variety of vegetables grown was made the basis of some special work in 1926. As a result 186 families adopted improved practices.

### POULTRY HUSBANDRY EXTENSION

Favorably situated with reference to climate, home-grown feeds, and proximity to markets, the poultry raisers of Missouri turn out nearly \$70,000,000 worth of poultry products annually, a record surpassed in only one state of the Union; yet their methods could be greatly improved and their costs of production reduced by millions of dollars a year. The annual production of the average Missouri hen is only 90 eggs; yet flock owners who followed the directions of the College of Agriculture and kept accurate records on their flocks last year got 142 eggs per hen.

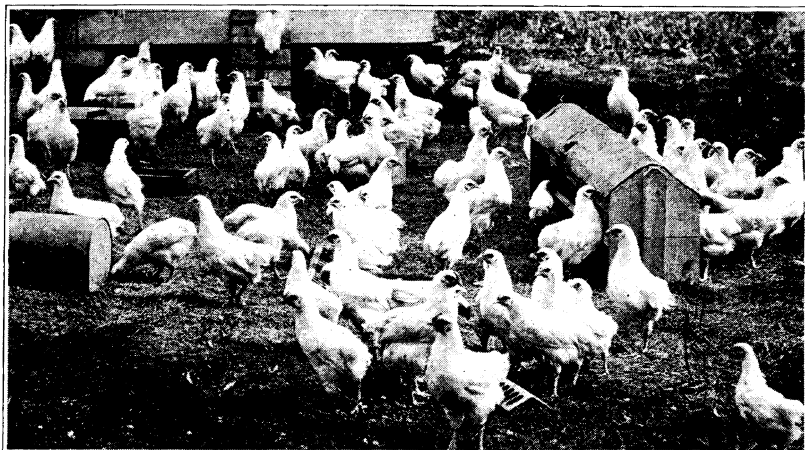


Fig. 15.—Flock of thrifty chicks raised in accordance with College recommendations.

This increase in the production of eggs per hen in the correctly managed flocks is a direct result of scientific methods. This is proved by the records of Missouri demonstration farm flock cooperators during the last ten years. Beginning with 24 farm flock owners in 1918 the Extension Service of the Missouri College of Agriculture has steadily added to the number of flock owners definitely following every recommended practice, keeping accurate daily records, and reporting each month on the production of their flocks.

In 1918 the records of the 24 demonstration flocks under scientific care showed a production of 100 eggs per hen. In 1919 there were 65 demonstration flocks that finished the year with a record of 106 eggs per hen. In 1920 the average Missouri hen was credited

with a yearly production of 56 eggs; yet 138 demonstration flocks that year produced 114 eggs per hen. In 1921 with 168 flocks the mark was 125. In 1922 there were 289 farm flock owners following directions and keeping records and their reward was a production of 129 eggs per hen. This record was duplicated the following year in 296 flocks. In 1924 there were 279 demonstration flocks and their record was 133 eggs per hen. In 1925 there were 330 flocks producing 134 eggs per hen. Then came the last two-year period, as covered by this report, and the record in 318 flocks has mounted to 142 eggs per hen.

The use of better breeding stock, persistent culling out of the low producers, proper housing, feeding and care of the laying flock, brooding of chicks in movable brooder houses on fresh range, and the proper feeding and care of the growing chicks are some of the methods which the Extension Service is demonstrating year after year in all parts of Missouri. In the last two-year period these practices were taught through demonstration farm flocks, local extension agents, and state extension specialists in all but 7 of Missouri's 114 counties.

An indication of the long-time effect of these and other influences for the improvement of poultry practices in this state is found in the census reports of 1920 and 1925. At the earlier enumeration the average egg production on all Missouri farms was 56 eggs per hen; the later census places the figure close to 90 eggs per hen.

The calendar of extension work in poultry husbandry during each of the last two years has been divided between five sub-projects approximately as follows: (1) Grow healthy chicks, February, March, April, and May; (2) Summer feeding and culling, June, July and August; (3) Housing the farm flock, August and September; (4) Feeding for fall and winter egg production, September and October; (5) Feeding for fall and winter egg production, certified breeding, selection of the breeding pens, November, December, and January.

**Grow Healthy Chicks.**—Poultry raisers who cooperated closely with the College of Agriculture in brooding chicks in modern movable brooder houses on fresh range reduced their losses of young chicks to less than 12 per cent during the last two years. A total of 159,530 chicks were fed a growing ration in modern brooder houses that had been newly moved to clean ground. Under this management 140,558 of these chicks were raised. The loss was slightly less than 12 per cent as compared to an average loss of 40



per cent throughout the state in flocks where ordinary methods were used.

An effective comparison of results under the College plan and under ordinary methods of brooding was made in Lafayette county in 1927 when records were kept on 62 farms equally divided between the two methods. On 31 farms under the "grow healthy chicks" plan 20,784 chicks were started and 18,222 were raised. On 31 farms under ordinary methods 13,463 chicks were started and 8,694 were raised. The loss under the College plan was 12.4 per cent, while the loss under ordinary methods was 35.4 per cent.

The "grow healthy chick" plan is not only effective in raising a higher percentage of the chicks, but it produces larger, healthier birds that are more uniform in size. This plan is workable, easy to understand, and inexpensive. It saves much unnecessary loss of chicks and waste of feed, thereby greatly increasing the profits of those who follow it.

This money saving plan was demonstrated or explained at 77 meetings in 1926 and as a result 368 farmers were reported at the end of the season as having followed the plan and profited by it. In the following year 135 meetings were held and the plan was explained to 2906 persons. During this latter year 914 Missouri type brooder houses were built, 88 old brooder houses were remodeled to meet the requirements of the plan, and 1216 brooder houses were moved to fresh ground.

To further spread the influence of the five essentials for growing healthy chicks a two-color poster was issued early in 1927 and widely distributed throughout the state. The essentials as stated in this poster, are as follow: (1) Hatch before the first of May; (2) Raise on clean, fresh range; (3) Feed a growing ration; (4) Brood each hatch separately; and (5) Separate pullets and cockerels.

**Demonstration Farm Flocks.**—The last two years of poultry extension work have been especially marked by the wide distribution of demonstration or record keeping farm flocks throughout the state. Only 12 of Missouri's 114 counties did not have poultry raisers thus cooperating with the College of Agriculture during the two-year period just ended. These counties were Gentry, Daviess, Putnam, Sullivan, Scotland, Cedar, Taney, Osage, Maries, Warren, New Madrid, and Pemiscot. All the other 102 counties had from 1 to 46 demonstration flocks each. There were 532 farmers who cooperated thus in 1926, and 420 in 1927. Of these numbers 327

completed the entire year's record in the former year, and 318 in the latter. The following table is a summary of the demonstration farm flock records in Missouri for the last ten years, including only the flocks on which complete yearly records were reported to the College.

TABLE 9.—SUMMARY OF MISSOURI FARM FLOCK RECORDS; 1918 TO 1927 INCLUSIVE

Year	Flocks	Hens per farm	Eggs per hen	Income per hen	Feed cost per hen	Profit* per hen
1918	24	114	100	\$4.78	\$2.29	\$2.49
1919	65	134	106	4.30	1.92	2.38
1920	138	125	114	5.50	2.14	3.42
1921	168	144	125	4.35	1.41	2.94
1922	289	154	129	3.80	1.30	2.50
1923	296	156	129	4.08	1.61	2.47
1924	279	172	133	4.05	1.75	2.30
1925	330	180	134	4.51	2.02	2.49
1926	327	184	130	4.24	1.70	2.54
1927	318	187	142	4.15	1.96	2.19

**Certified Breeding.**—The promotion of certified breeding and selection of breeding flocks is handled jointly by the Extension Service and the Missouri Certified Poultry Breeders Association, the extension specialists handling about one-third of all the birds that were examined for this purpose in 1926, and a considerably smaller portion in 1927.

In this work a total of 59,072 birds were certified during the last two years. Of this number 53,173 were hens and pullets, 4,575 were cockerels, and 1324 were cocks. These certified breeding fowls were located on 290 farms representing all parts of the state. Selected flocks, not fully up to the difficult standards of certification, but of high producing type and excellent quality were located on 473 farms.

**Summer Feeding and Culling.**—Summer feeding conferences were held in June in many Missouri counties during the last two years in order to impress on local leaders the importance of correct feeding during the summer months as a necessary step preliminary to intelligent culling later on. Only in flocks fed a laying ration throughout the summer months is the early fall condition of the hens a true index of their egg production. County culling schools were held in August and the same leaders were given an all-day course of instruction in culling.

By this system of instruction 541 leaders in summer feeding and culling were trained in 1927 alone. They in turn held meetings in their respective communities and gave their neighbors instruc-

tion on both feeding and culling. As a result of their work on feeding 658 farmers that year adopted proper feeding methods before culling. The leaders at their later meetings culled these flocks, handling 116,220 hens, of which 25,102 were discarded as unprofitable. An even larger number of hens were culled by leaders and extension workers in 1926, the total number examined that year being 230,608, while 69,216 hens or 30 per cent were discarded and sent to market, resulting in an enormous saving of feed.

**Accredited Hatcheries.**—During the first year of the biennium, 1926, the Extension Service sponsored and encouraged the forming of an organization of commercial hatcheries using eggs from accredited flocks only. Forty hatcheries joined the Accredited Hatchery Association. This means that all the flocks from which these hatcheries secure eggs will be inspected and culled for vigor, color, type, and egg production. The effects of this work will be far reaching in future years, since a high standard is set and maintained. The good which will be done will be very great, though it depends primarily upon the integrity of each individual hatcheryman.

**Housing the Flock.**—As a result of extension work on proper housing of the farm flock 1311 Missouri poultry houses were built on Missouri farms during the two-year period, and 606 old houses were remodeled to meet the requirements of correct housing. More new poultry houses of the Missouri type (729) were built in the state in 1927 than in any previous year. In Lafayette county alone 97 of these houses were built in 1927.

**Feeding for Fall and Winter Egg Production.**—Comparatively few meetings were held on feeding for fall and winter egg production, yet feeding practices were explained at most of the meetings on housing. Time was taken at these meetings to emphasize the importance of proper feeding and to give the ration that is recommended.

**General Statistics.**—During the two-year period 535 poultry meetings were held by the Extension specialists, with a total attendance of 12,488. A total of 1011 local leaders were trained in poultry work. By the end of the two-year period 150 poultry keepers were using trap nests, 200 were using electric lights in their laying houses during the fall and winter, and 439 communities were participating in organized poultry improvement work.

### RURAL COMMUNITY ORGANIZATION

By the end of 1927 community organization according to the standard plan demonstrated by the Extension Service of the Missouri College of Agriculture was successfully working in 49 Missouri communities. The full significance of this statement is revealed by the additional facts that 880 officers were actively carrying forward the work of these organizations and that the scope of each community is much larger than the ordinary conception of the term.

A rural community has been defined as an area approximating a township but with boundary lines conforming to natural social divisions rather than to arbitrary township lines. It is a social unit large enough to maintain community enterprises which represent the major interests of the people and meet their outstanding needs, and yet small enough so that a feeling of kinship exists between all parts. The people living within such an area must have or must develop common educational, civic, social, religious, or occupational interests. It is greatly to be desired that as many of these interests as possible center at some common point which will serve as a logical and convenient center.

Prior to 1927 the natural community boundaries in 73 Missouri counties had been determined and mapped by the Extension Service. This work was completed during the first year (1926) of the biennium covered by this report, when the last 20 counties of the 73 were mapped, adding 294 definitely bounded communities to the 634 that had been previously mapped. In each of these 73 counties committees had been gathered and assigned to definite work in agricultural and home economics extension projects for the benefit of their respective communities.

The plan of organization offered to these communities, a few at a time so that follow-up may be given, provides for every person living within the community being urged to take part. Anyone over 14 years of age who is sufficiently interested to come and express an opinion has a vote in the proceedings.

A president, vice-president, and secretary-treasurer are elected and five standing committees are provided. The three officers with the chairman of each of the five standing committees form an executive and program committee of eight. The five standing committees are on agriculture, home making, education, civics, and social affairs. Community associations of this kind have been called Missouri Standard Community Associations.

According to this plan, then, 49 standard community organizations were carrying on under their own power by the end of the two-year period here considered. County and district extension agents were instructed to extend the plan of organization to a multiplied number of definitely mapped communities in their counties and districts.

A total of 45 agents were reached personally in this work in 1927 by the state specialist. Of this number 33 made use of the instruction given and worked out one or more community programs as suggested. Twenty-seven of the 33 reported results at the end of the year showing that 118 community extension committees had been organized. The extent to which a committee functions and contributes to the extension program is determined very largely by the tactics used by the agent in working with them.

The past year has to a certain extent been a test year for standard community work. Before this work can develop in the state on a large scale extension workers generally need to know more about working with community groups and through committee action. The results as regards the ability of the standard community work to "stand on its own feet" are most gratifying. Not only has there not been a loss but there has been a definite gain in practically every phase of the more complete type of community work. Ten more communities were reported as actively developing their work according to the standard plan and a slightly higher percentage of their committees were reported as active than were reported for 1926. There was a very definite gain in the number of regular monthly meetings held per community and a gain in the average attendance at all regular community meetings held in the state. There was also a very definite gain in the number of 4-H clubs sponsored with the enrollment per club remaining practically the same.

Near the close of each calendar year, in the work of the Extension Service with the standard community associations, three months have been devoted to the development of simple agricultural and home economics programs with community groups that were otherwise unorganized. This work in 1926 extended into 40 different counties having district or county agent service. Training in this work was given in 1926 to 28 different agents. In 1927 this special training was given to 45 agents.

For the further training of agents and leaders, district and county agent conferences and county community leaders' training

schools have been held each year, besides several district music leaders training schools, and special instruction to women leaders at women's summer vacation camps.

TABLE 10.—SUMMARY OF STANDARD COMMUNITY WORK FOR ONE YEAR ONLY (1927)

Community associations active.....	49
Committees active.....	210
Officers active.....	880
Agricultural projects successfully sponsored.....	136
Home economics projects successfully sponsored.....	77
Regular community meetings reported.....	448
Attendance at community meetings.....	42,510
Community fairs.....	20
Attendance at fairs.....	12,150
Other community events as listed below.....	156
Picture shows.....	62
Community picnics.....	17
Young people's parties.....	41
Community Christmas trees.....	6
Special community events.....	30
Total attendance at 156 events.....	25,162
Miles of road dragged.....	195
Mud holes filled.....	25
Culverts fixed.....	27
Days labor contributed.....	120
Cemeteries improved.....	9
Men helping improve cemeteries.....	216
Special community musical organizations.....	9
Communities developing community singing.....	18
Four-H clubs sponsored.....	62
Membership of 4-H clubs.....	647
Home talent plays given.....	25
Persons taking part in plays.....	223
Circulating libraries used.....	12
Pieces of playground equipment secured.....	13

## EXTENSION IN SOILS AND FIELD CROPS

The best available information on soil maintenance and on the economical production of field crops was carried to 160,392 persons in Missouri in the last two years by the Extension Service of the Missouri College of Agriculture. This was accomplished through 1477 personal and group conferences, 317 field meetings, and 320 general meetings.

Specialists working on this project personally carried the service to farmers in every county of the state except Worth. The information which they conveyed, thus, to every section of Missouri covered the growing of legumes, corn, wheat, cotton, and grain sorghum, soil and crops management, and the control of soil erosion.

Since only about one-half of the counties in the state have extension agents, it has been necessary for specialists in this project, which is organized to serve the entire state, to locate and develop county leaders in many counties. Teachers of vocational agriculture, county secretaries of the Missouri Farmers' Association, county judges, bankers, business men, and leading farmers are now serving as local leaders. In South Missouri this work has progressed to the point where specialists have contact with some local leader in practically every non-agent county.

The service of vocational agriculture teachers has been especially effective at 34 towns in the following counties: Adair, Audrain, Caldwell, Cedar, Christian, Clark, Cooper, Dade, Daviess, Franklin, Grundy, Harrison, Henry, Lewis, Macon, Moniteau, Osage, Pulaski, Putnam, Shannon, Shelby, Sullivan, Texas, and Webster.

Officials of chambers of commerce, city clubs, bankers' Associations, and other civic organizations have given definite assistance to the soils and crops extension work at the following points: Marshfield, California, Versailles, Jefferson City, DeSoto, Kansas City, Independence, Lee's Summit, Harrisonville, Pleasant Hill, Anderson, Cassville, Monett, Mt. Vernon, Aurora, Greenfield, Lockwood, El Dorado Springs, Osceola, Warrensburg, Moberly, Linneus, Troy, St. Charles, Clayton, Center, Palmyra, Carrollton, Richmond, Liberty, Butler, Nevada, Lamar, Carthage, Neosho, Joplin, Granby, Wheaton, Fairview, Brookfield, New London, Shelbina, Kirksville, Higginsville, Marshall, Sedalia, Bolivar, Humansville, Dunnegan, Springfield, Fulton, Fayette, Shelbyville, Noel, Webb City, Golden City, Platte City, St. Joseph, Mound

City, Tarkio, Maysville, Maryville, Kingston, Chillicothe, Mexico, Kahoka, Paris, Bowling Green, and Garden City.

Officials and members of the Missouri Farmers Association have aided the extension work in the following counties: Benton, Polk, St. Clair, Henry, Greene, Barry, Lewis, Franklin, Lawrence, Shelby, Dent, Cedar, Morgan, Cooper, Moniteau, Osage, Texas, St. Genevieve, Maries, Gasconade, Dallas, Wright, Taney, Webster, Audrain, Dade, and Johnson.

An example of the application of soils and crops extension work to the needs of a single county is found in the fact that Ira Drymon, county extension agent of Jackson county submitted a report of his work in 1927 on soil and crop improvement in a national contest and won second in a section consisting of Iowa, Kansas, Nebraska, Oklahoma, Minnesota, and Wisconsin. This program was second to the one that won sweepstakes for the United States. In 1926, A. W. Klemme, county extension agent of Lawrence county, submitted a like program and won not only first in the section but sweepstakes for the United States. In 1925, J. A. Muster of Vernon county won first place on the same sort of program presented from his county. These contests were conducted under the auspices of the American Society of Agronomy and the National Fertilizer Association.

High type field demonstrations in which the demonstrators are supplied with written instructions suited to their particular conditions and in which they closely follow the recommended soil treatments, seed requirements, and cultural methods, have constituted the basis on which all the activities of a long-time program are carried forward.

Results of the work done in soils and field crops extension during the years 1926 and 1927 are summarized briefly in the following pages.

**Legumes.**—The growing of legumes in a cropping system that includes a legume as often as once in four years has been definitely undertaken by 13,253 Missouri farmers in this two-year period as the direct result of the extension work in soils and field crops. This has been accomplished through the use of 931 high-type demonstrations of the soil treatments and cultural practices necessary, on the various soil types and conditions of the entire state, for the successful growing of alfalfa, sweet clover, red clover, alsike clover, clover mixtures, and soybeans.

Striking directly at one of the chief obstacles to successful legume growing—soil acidity—this work has involved the establish-



ment of convenient sources of ground limestone in all parts of the state. In the two-year period 127 lime storage bins have been established, 63 community limestone crushers installed (bringing the total number in the state up to 124), and 66,293 tons of limestone have been crushed on the farms. This latter work showed a growth of more than 100 per cent in 1927 as compared to 1926.

Due to demonstration teaching and the establishment of convenient sources of lime, 3374 farmers, in county agent counties alone, used lime on their sour land in 1927. This was an increase of nearly 15 per cent above the number of men (2682) who used lime in 1926.

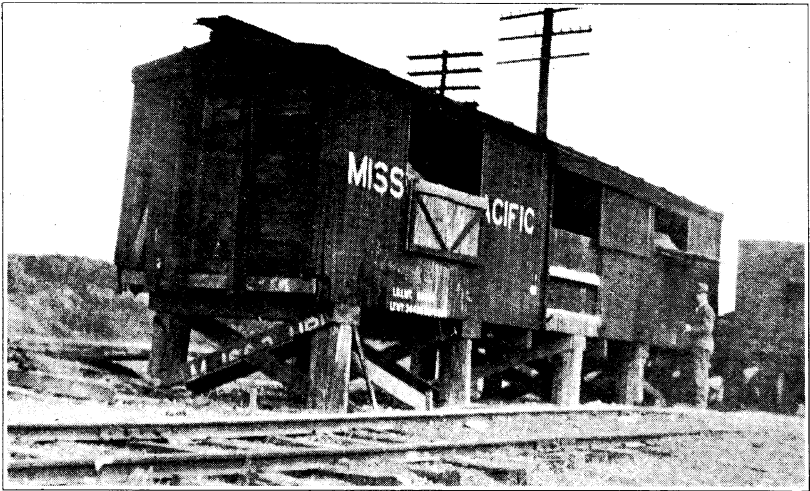


Fig. 16.—Wornout box car used as lime storage bin along line of the Missouri Pacific in South Missouri.

Inoculation of legumes to insure thrifty growth of the crop, as well as maximum production of protein feed for livestock and nitrogen for the soil, was practiced for the first time by 9627 men in county agent counties alone.

The intensive educational work known as the Clover and Prosperity Campaign was continued throughout the two-year period, with 37 Central and Southwest Missouri counties holding their second school-district delegate conferences in the winter of 1926 and their third conferences in 1927. Sixteen Northwest Missouri coun-

ties held their first Clover and Prosperity conferences in 1926 and their second in 1927. The summer phase of the campaign, involving the use of a truck loaded with exhibits and traveling from county to county, was resumed in 1927 with all-day stops in 20 central Missouri counties. At these all-day meetings the soils and field crops specialists personally presented their message and their exhibits to 24,174 persons.

As a part of the same campaign the Extension Service supplied speakers and three carloads of exhibits for a Clover and Prosperity Special train which was operated by the Chicago, Burlington and Quincy Railroad system over their lines in Northeast Missouri. This special train made 22 half-day stops where the specialists from the Missouri College of Agriculture addressed 7130 persons, tested 797 soil samples from 413 farms. These samples represented 13,464 acres of land—mostly sour. At these half-day stops the soils and field crops specialists established 87 high-type demonstrations, all of which were later followed up and supervised by the sectional specialist for Northeast Missouri. Eight months after the tour of this special train 84 of the 87 demonstrators cooperating in this work had faithfully followed up to date all the practices involved in the work which they had agreed to do.

In the six months immediately following the tour of this special train in Northeast Missouri 125 cars of limestone and 40 cars of fertilizer were shipped into this territory.

**Corn Production.**—The corn production sub-project is built around a five-acre yield contest in the counties where it is selected by the local extension committees as a major activity. This plan has been used successfully in Saline county for eleven years and in Buchanan county for six. It started well in the other eight counties where it was attempted (Platte, Clinton, Nodaway, Holt, Atchison, Caldwell, Carroll, and Ray), but the number of entries has failed to come up to expectations. There have been some important accomplishments, however; for the higher yields made in these contests have frequently resulted from turning under clover sod or from the use of acid phosphate.

As a result of the extension work in corn production in county agent counties alone in the last two years 3659 farmers have adopted the improved practices, 2258 used improved seed corn for the first time, and 1089 for the first time practiced seed corn selection.

The value of the five-acre yield contest as a means of establishing demonstrations of the most efficient practices in corn produc-

tion is shown by the following paragraphs from the report of work done in Carroll county in 1926:

“The ten highest yields were as follows: Herman Engelking, Norborne, 117.3 bushels; Harry L. Miller, Carrollton, 107.1; C. W. Butler, Miami Station, 100.1; Martin Plackemeier, Carrollton, 99.1; M. H. Taylor, Carrollton, 95.1; Gus Eschenbach, Norborne, 88; Wm. Hansel, Carrollton, 87.7; Wm. Godley, Miami Station, 87.6; J. D. Hogan, Norborne, 87.4; and L. E. Lyman, Hale, 87.1.

“Out of the ten five-acre plots of corn that made the highest yield, five of the plots were grown on sweet clover, three on red clover, and two on bluegrass and timothy sod. The value of sweet

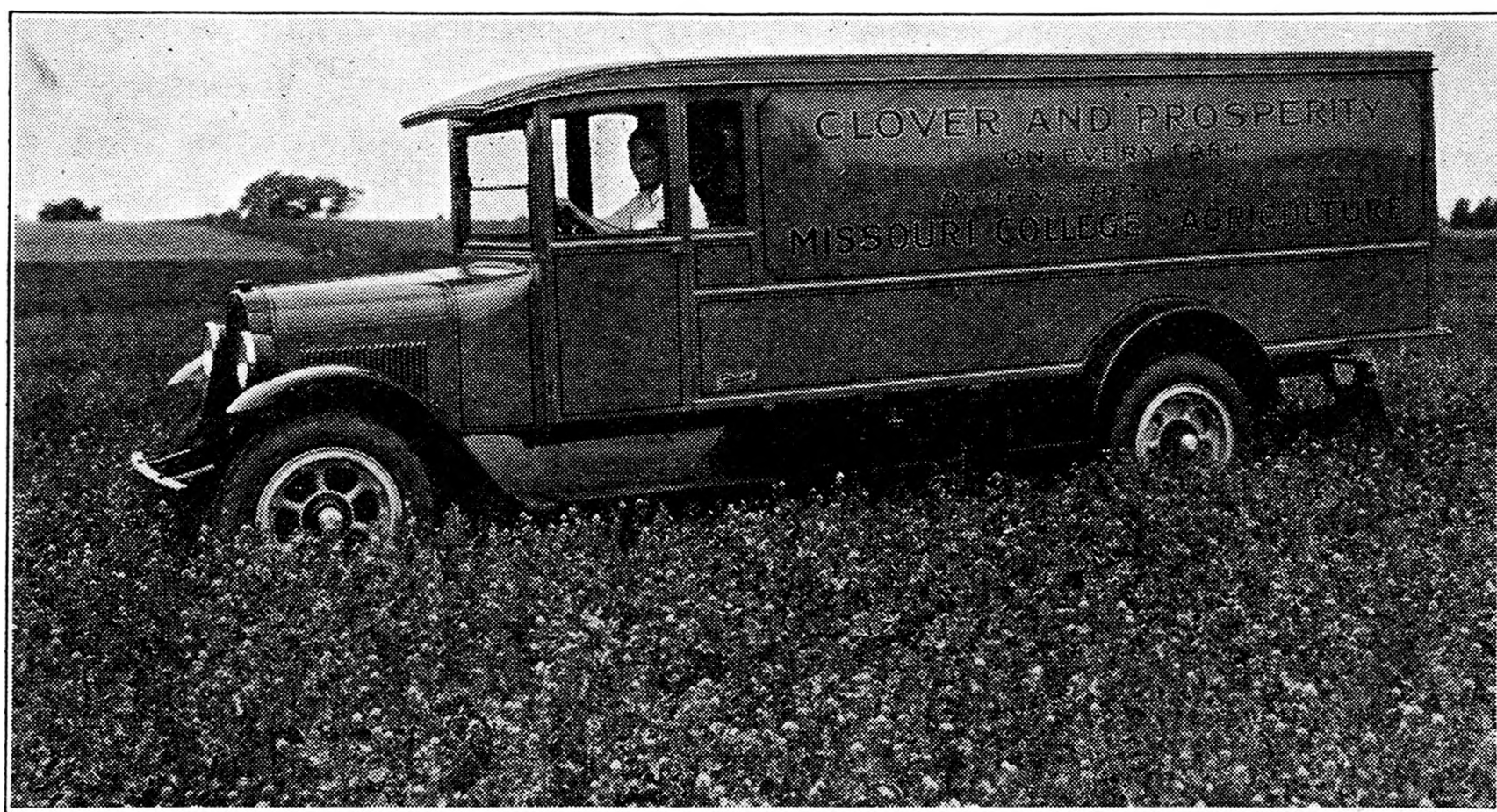


Fig. 17.—The demonstration truck used by the Extension Service of the Missouri College of Agriculture in the Clover and Prosperity Campaign.

clover and other legume crops in making profitable yields of corn was demonstrated in the contest.”

**Wheat Production.**—The activities of county extension agents and specialists in encouraging the pooling of orders for phosphate have continued effectively during the last two years. This work is gradually changing the fertilizer practices of Missouri.

In 1918 medium and low grade goods constituted 54.8% of the fertilizer sales. In 1927 this amount was reduced to 1.4%. Acid phosphate, which has been particularly recommended, has increased from 7.6% in 1918 to 52.8% of the total sales in 1927. All recommended grades combined have increased from 45.2% in 1918 to 98.44% of the total sales in 1927.

Improved practices in wheat production are reported by county extension agents to have been adopted on 2622 farms during the two-year period, with improved seed used for the first time on 938 of these farms.

The use of the varieties of wheat recommended by the Experiment Station has come to be a generally adopted practice.

**Cotton Production.**—Extension work in cotton production in 1927 was greatly hindered by the floods and continued rains during the first half of the season. A great deal of emergency work was necessary in the section where the cotton is grown in this state. For that reason the time of the county extension agents was taken up by relief work. The specialist for that section also spent much of his time on the problem of growing emergency food and feed crops. The cotton crop was largely planted when the floods came, and the good seed previously secured was lost. When conditions finally became such that cotton could be planted the season was so late that demonstration work was almost impossible.

During 1926 seven cotton demonstrations were conducted. These were all in counties having county extension agents and were conducted according to definite plans. The most successful work done on cotton growing has been that on close spacing. M. D. Amburgey, county extension agent of Pemiscot county, reports: "The most headway in any of the extension projects on cotton production has been made on close spacing. Before this work was started here, there was scarcely a man who did not think that this fertile soil made it necessary to give cotton plants plenty of room to expand and put on a large number of bolls per plant. It was no easy matter to get the rank and file to discard this old idea. Now it seems that we have more than 95% of the farmers using the method that we are recommending." This statement is typical of the sentiment among the agents of the cotton growing section.

The planting seed problem required considerable attention in 1926. The weather of the preceding fall rendered unfit for planting a vast amount of the seed saved in Southeast Missouri; consequently, a campaign was conducted throughout the cotton growing section to get samples of seed intended for planting and test them for germination. Several unique and effective ideas were worked out by the county extension agents; such as securing the cooperation of the school teachers in getting a sample of cotton seed from each pupil. The agents furnished the sacks and other necessary materials. In a non-agent county one of the newspapers printed

large placards impressing the need of testing seed for germination, and furnished envelopes to send the seed to the seed testing laboratory.

The result was that the seed testing laboratory maintained jointly by the College of Agriculture and the U. S. Department of Agriculture at Columbia received a total of 1885 samples of cotton seed and found that 47.8% of them tested below 30% germination. When this condition was generally understood throughout the section, large amounts of this worthless seed were sent to the oil mills and better planting seed was bought. W. H. Tanner of Sikeston said that this was one of the best pieces of work ever done by the Extension Service. Many others expressed similar approval.

The plight of those who refused to get good seed and planted ordinary gin-run seed was shown by a demonstration conducted by Judge T. A. Penman near Portageville. He planted two acres with ordinary gin-run seed and two acres beside it with good seed of the Mississippi Station Trice variety. The gin-run seed failed to produce a stand of plants and was planted over ten days later. At picking time, Judge Penman reported a yield of 400 pounds more seed cotton per acre from the Trice than from the area beside it where the gin-run seed was planted.

The quarantine on imported cotton seed was continued in 1926 by the State Plant Board and the requirement that no seed be brought in without a permit served as a check on unscrupulous dealers and furnished valuable information as to the source of the seed being used in the district.

Sixteen 4-H cotton clubs were conducted during this year, 125 boys and 35 girls being enrolled. These clubs produced a total of 327,822 pounds of seed cotton or about 218 bales. This gives an average of only slightly less than 1½ bales of cotton per acre, or about three times as much as the average Missouri acre yield in 1926. These cotton club boys and girls reported a net profit of \$5,759.46. This is an average of \$66.20 per member or \$37.89 per acre. In addition, the winning club members received \$153.00 in prizes.

**Erosion Control.**—County extension agents reported 32 Mangum terracing demonstrations conducted in the state during the last two years. In all these demonstrations emphasis has been placed on making the terraces broader and higher so that the problem of upkeep will not be so difficult.

An example of the work done in 1926 is found on the farm of

Isom J. Martin at Kahoka. Three terraces were laid out for him August 16, 1926, on land either already in alfalfa or prepared to be seeded to this crop. Shortly after the terraces were completed some exceptionally heavy rains fell in that locality. Mr. Martin wrote as follows concerning the performance of the terraces: "I have already caught more dirt back of my terraces than I would ever have believed was washing off my field."

**Grain Sorghum Production.**—The growing of grain sorghum is adapted only to a part of the state, but is of very great importance on certain drouthy Ozark uplands. Sunrise kafir grown in a demonstration by Chas. Hollman of Iron county gave an excellent illustration of the benefits derived from this work. Mr. Hollman stated at the demonstration meeting that the field had previously been in corn year after year with yields as low as 6 bushels an acre, and that, in his opinion, the Sunrise kafir made seven times as much feed as corn would have made that season.

**Soil and Crop Management.**—To teach the more advanced farmers of the state the practices involved in a complete system of soil and crop management the Extension Service of the Missouri College of Agriculture has maintained during the last two years twelve community demonstrations. Some of these have been in progress six years. From these older demonstrations farmers are learning to work out complete soil and crop management systems adapted to the conditions found on their own farms.

The plan of each of these demonstrations, carefully worked out in advance and later supervised by the specialist, includes the use of adapted varieties of approved seed, crop rotation, lime, manure, commercial fertilizer, and the best available methods of erosion control.

Typical results were seen in the third year of one of these demonstrations, on the farm of C. E. Argenbright in Morgan county. That year, 1926, was the year that the field in question was planted to corn following a rotation which included a legume treated with lime and phosphate. Despite dry weather in the growing season of 1926 this field produced 28.3 bushels of corn to the acre, while the check strip, which had not received the treatment of lime and phosphate and had therefore failed to produce a legume crop in the rotation, gave a yield of only 9.2 bushels of corn. In addition to the former very satisfactory returns which this field had given for the money invested in lime and phosphate, the increase in the yield of corn alone in 1926 was worth \$15 an acre.

## Home Economics Extension

### HOME ECONOMICS AGENTS

Attractive, convenient and well arranged homes, a properly varied and balanced supply of well prepared food, comfortable and becoming clothes, good health, and the time and inclination for a reasonable amount of recreation; these are the benefits that the farm families of Missouri receive from the home economics branch of the Extension Service. This work, during the last two years has been conducted by eleven state workers and ten county home economics agents. It has been offered to adults and 4-H club members under five main subjects; clothing, food and nutrition, home management, more attractive homes, and health. In addition to these lines of work, a creditable start has been made in conducting summer vacation camps for farm women.

A summary of the items constituting the greater portion of home economics service thus rendered to the women and girls of Missouri in 1926 and 1927 follows:

TABLE 11.—WORK DONE IN HOME ECONOMICS EXTENSION IN 1926 AND 1927

Measure of Service	1926	1927	Total
vvv-----			
Counties with home economics agents.....	10	9	-----
Counties conducting home economics work.....	81	88	-----
Women trained as local leaders.....	1,218	2,066	3,284
Women reached by home economics work.....	23,975	18,046	42,021
Homes visited by home economics agents.....	1,389	1,881	3,270
Clothing: Homes adopting better practices.....	5,146	3,975	9,121
Hats made.....	6,300	2,152	8,452
Dresses made.....	2,065	3,661	5,726
Undergarments made.....	3,258	1,628	4,886
Accessories made.....	-----	1,354	1,354
Pairs of gloves made.....	63	170	233
Home management: Homes adopting better practices.....	2,536	2,551	5,087
Rooms improved.....	2,519	2,378	4,897
Homes beautifying grounds.....	2,296	1,736	4,032
Demonstration kitchens.....	127	131	258
Sinks installed.....	54	221	275
Power washing machines installed.....	16	140	156
Homes improving arrangement.....	685	367	1,052
Working heights improved.....	319	137	456
Health: Homes adopting better practices.....	2,283	936	3,219
Women trained in home care of sick.....	1,453	700	2,153
Nutrition: Homes adopting better practices.....	668	870	1,438
Children induced to improve food habits.....	402	687	1,089
Attendance at women's camps.....	70	433	503
Four-H Clubs: Members completing home economics club work.....	3,292	3,897	7,189
Articles of clothing made by members of 4-H home economics clubs.....	11,319	10,346	21,665
Quarts of fruit canned by members of 4-H home economics clubs.....	2,886	2,627	5,513

Ten Missouri counties maintained home economics agents during 1926. These were Buchanan, Callaway, Cass, Dunklin, Holt, Jackson, Lafayette, Lincoln, Saline, and St. Louis. Suspension of the work in Dunklin and Holt reduced the number of home economics agents to eight in 1927. Late in the last year of the biennium the necessary local support for home economics agent work was secured in Greene and Carroll counties, but no agent was placed in either of these counties prior to the end of the period covered by this report.

In addition to the service rendered through home economics agents in the ten counties thus equipped in 1926, home economics extension work was carried on in 50 counties having county or district agents and 21 non-agent counties. The following year the work was expanded to include seven additional counties.

The steps used in conducting home economics extension work, especially in counties served through home economics agents, are shown in the following summary of methods for the years 1926 and 1927:

TABLE 12.—COMPARISON OF METHODS OF CONDUCTING WORK IN HOME ECONOMICS PROJECTS

Average per Home Economics Agent County	1926	1927
Home visits made.....	113.9	174.
Training meetings for local leaders of adult work.....	19.8	19.4
Leaders trained at these meetings.....	163.	218.4
Local leaders assisting adult work.....	158.	159.
Days home economics specialists helped.....	18.4	19.7
Days agent devoted to project.....	220.	244.
Method demonstrations given.....	79.3	88.7
Result demonstrations started.....	95.3	137.
Result demonstrations completed.....	79.8	118.5
Homes adopting practices.....	788.8	937.7

**Women's Clubs.**—The organization of neighborhood women's clubs was actively resumed in 1927, after a lapse of several years. This work was undertaken especially in counties where the farm women were not already receiving the fullest possible benefits from the Extension Service due to the lack of a home economics agent, and in counties served by agents but not sufficiently well organized to make the work available in all localities. The main purpose of all such organization, of course, is to foster home economics agent work in an ever increasing number of Missouri counties as a means to rendering the fullest possible service to the farm women of the state.



As a result of 14 meetings held late in 1927 there came into existence 57 farm women's clubs actively cooperating with the College of Agriculture to carry extension work in home economics to as many as possible of the homes in their counties. A continuous line of assistance, including information, loan material, plans, patterns, directions, outlines, programs, and personal visitation is maintained by the College for these clubs from the time they are organized.

**Farm Women's Camps.**—Farm women's camps were first conducted as a part of the home economics extension work in Missouri in 1926. The first camp was shared by women from Callaway and Lincoln counties. It was held the first week in August at Mineola and was attended by 30 women. This was followed by a similar camp for St. Louis county women during the last week of August at a summer resort not far from St. Louis. This camp was attended by 40 women.

Three camps serving the women of five counties were conducted the following year with a total attendance of 433 women. One of the camps was held at Mineola for the women of Callaway and Lincoln counties, one at Lake Venita near Odessa for Lafayette and Saline counties, and one at Times Beach on the Meramec River for St. Louis county. One farm woman 73 years of age had the first vacation of her life at one of these camps.

The chief purposes of these women's camps were (1) to provide a real vacation for farm women, (2) to give inspiration for successful handling of home making problems, and (3) to provide trained local leadership for home and community recreation. The daily routine included a morning and an evening program, an hour's rest, two hours of handwork, and a swimming period. The Missouri Library Commission supplied a number of books for reading at these camps, and appropriate instruction was given by authorities on nature study, swimming, care of the feet in hiking, and similarly appropriate subjects.

The more standard phases of home economics extension work, as carried on during the last two years, are reported under their appropriate classifications in the following pages.

## BETTER HEALTH FOR THE FARM FAMILY

Mere figures are not adequate to tell the story of extension work in better health for the farm home. Though 674 adult leaders were thoroughly trained by the health specialist in the last two years, though 1747 adult meetings were held with a total attendance of 26,423, and though definite changes were made in the health and sanitation practices of more than 3,000 homes, even these statements give scarcely a glimpse of the far-reaching benefits of work that so closely touches human life and happiness. There were also 223 Four-H health clubs with a total membership of 2660 boys and girls who held regular meetings to learn from adult leaders the practices essential to good health. These adults and juniors acquired knowledge, skill, and habits which will continue for many years to safeguard the health in thousands of farm homes.

Possibly the significance of this work is best revealed by a statement of the outstanding problems in relation to rural health in Missouri. A lack of knowledge of personal, home, school, and community hygiene and sanitation is found co-existent with inadequate provision of health educational agencies such as public health doctors, nurses, full-time county health units, hospitals, and practicing physicians. Missouri has 114 counties, but only 12 full-time county health units. There are but three county hospitals. There is a general reluctance to adopt the preventative practices of vaccination and immunization, as well as indifference toward observance of quarantine. There is widespread indifference toward changing habits and conditions though they are known to be unhealthful. Missouri farm homes have poor and inadequate arrangements for the disposal of human organic wastes. More than 78 per cent of private rural water supplies in the state are heavily contaminated with *Bacilli coli*, and this condition is accompanied by a prevalence of intestinal diseases, including typhoid.

These and similar conditions have created a great need for the extension of helpful knowledge and the training of local leaders to carry to thousands of families the benefits of better health.

**Home Care of the Sick.**—More than two thousand persons were personally reached by the extension teaching in home care of the sick during the last two years; to be exact, 2071. To spread the benefits of this work 1015 meetings were held, with a total attendance of 12,509. This work was carried on in 14 counties in 1926 and in 12 counties in 1927.

The full significance of these figures grows out of the thoroughness of the training that was given the persons reached. In each of the 41 communities cooperating in this work the specialist held five meetings; one a month for five successive months. The first meeting was a community meeting of men and women. A general health talk was given by the specialist and the general plan of home care of the sick was explained. Frequently the signatures of volunteer local leaders were secured at this meeting.

The second, third, and fourth meetings were all-day meetings for the training of the leaders. Six or more local leaders from three or more neighborhoods were brought together at a convenient center and trained in the work of the project. These meetings were usually held in a farm home in normal surroundings and utilizing the equipment to which the farm women of the neighborhoods represented were accustomed. Each leader was required to practice the demonstrated methods in the presence of the specialist.

Following each successive step in her training each local leader held meetings in her own neighborhood and passed her new found knowledge and skill on to her neighbors. They, in turn, were required to practice the approved methods in the presence of the leaders. A circular explaining the practices and principles covered at each meeting was given each leader at the end of the day's work, and a copy of the same circular was later given to each woman receiving the same training in a leader's meeting.

The fifth meeting was an all-day achievement meeting with a program including demonstrations of care of the sick, health talks, plays, songs, and moving pictures.

Thorough training on this basis was given in the last two years to 219 local leaders in the home care of the sick. To do this the specialist held 119 meetings which had a total attendance of 2653. The leaders in turn held 865 meetings with a total attendance of 9753. At these leaders' meetings 1213 women were given the entire course of training and 721 received a part of the course.

**Home Health and Sanitation.**—With a total attendance of 8184 at 510 adult meetings in this work the help of 357 leaders was used and better health and sanitation practices were established in 3099 homes. Groups were organized and instructed for definite and continuous work in 61 communities. There were 27 adult groups and 40 junior groups thus organized, with 1680 adults and 1497 juniors enrolled. The teaching plan included 528 method demonstrations and 209 result demonstrations.

The results accomplished were evident in the lives of 10,665 individuals who adopted, during this two-year period, one or more improved health practices each. The following are the numbers of persons who were led to make such changes in their health practices or physical condition: 416 kept a health score, 203 attained good posture, 849 practiced prevention of colds, 377 overcame constipation, 1139 adopted good care of the teeth, 169 improved care of the skin and hair, 1902 studied home nursing, 1444 learned the principles of first aid, 6003 were vaccinated against typhoid, 35 had eye corrections made, 2165 had health examinations, 230 had physical defects corrected, 58 were immunized against diphtheria, and 587 practiced all health habits daily.

**Keeping the Family Well.**—The teaching in this subject was conducted over a period of five months with five monthly meetings in each of the neighborhoods where leaders were trained. The phases of the work handled at these respective meetings were general health principles, pure water supply, disposal of wastes, fly control, and summary of results. Training was given to 98 local leaders, and 222 meetings were held with a total attendance of 5730.

Results of this work are summed up in the following list of sanitary practices established: 248 families installed window and door screens for the first time, 506 families improved their screening, 171 built and operated fly traps, 1175 used poison and other means to control flies and other insects.

To safeguard the health of their members 273 families had their drinking water analyzed, 157 purified their water supply, 120 drained surface water away from their wells, 58 repaired wells, 38 made new wells, and 24 fenced stock away from wells.

In sanitation of the home and its surroundings 193 families provided facilities for draining away waste water, 37 made a general cleanup of their yards, 178 improved their outdoor toilets, 112 built new toilets, 36 installed improved bathing facilities, 35 built septic tanks for sewage disposal, and 28 put in improved lighting systems.

**Health and First Aid Clubs.**—In the health and first aid clubs each member was required to learn and practice the health habits and to keep a record of such practices during specified periods. Accident prevention and emergency care were taught and practiced.

This work was done in 25 counties in 1926 and in 36 counties in 1927. There were 52 clubs the former year and 171 the latter. The membership in these clubs reached a total of 2660 in the two years. Of this number 1273 members received training and experi-

ence in health and first aid judging, 1248 in demonstrating, and 1274 in exhibiting. There were 1580 demonstrations by individuals and 597 by teams. Meetings of these clubs were visited by 1589 persons and the work led to the adoption of health and first aid practices in 436 homes.

In one county in 1927 health and sanitation clubs were organized. In this work there were 3 clubs with 38 members. Experience in judging was gained by 32 members, in demonstration work by 12, and in exhibiting by 33. The work led to the adoption of better health and sanitation habits in 20 homes.

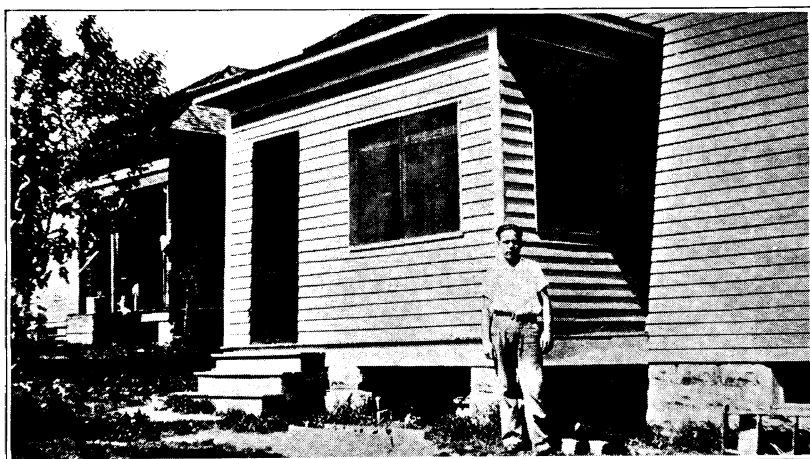


Fig. 18.—This 14-year-old member of a 4-H health club in Scott county screened his mother's porch as a part of his club activities.

**Miscellaneous and Emergency Work.**—Many talks on various health subjects have been given at general gatherings, community meetings, club meetings, local and county picnics, in schools, high schools, churches, meetings of business organizations, at state meetings of the Missouri Tuberculosis Association, the Missouri Public Health Association, parent-teacher associations, and federated clubs. The estimated attendance at such meetings was 4864.

Several weeks in 1927 were spent in assisting with the general program of medical and nursing supervision and care of refugees in the Mississippi Valley flood area.

**May-Day Child Health Day.**—The specialist served in 1927 as chairman of an Extension Service Committee for promoting the observance of May-Day as Child Health Day in Missouri.

### CLOTHING

More than twelve thousand Missouri women were personally assisted and trained in selection, making, and remodeling of clothing through extension work in the two-year period ending November 30, 1927. While receiving this instruction they made 20,651 articles of clothing for themselves or their families and saved more than \$22,400.

In order to render this service three clothing specialists from the Extension Service of the College of Agriculture held 264 clothing classes in which they personally trained 2,049 women to serve as local leaders. These women, returning to their own communities, in turn trained 10,554 other women to do the same things that they had learned to do.

The methods and principles thus taught to 12,603 Missouri women covered a wide range of clothing subjects; selection of clothing and materials, pattern making, care and remodeling of clothing, garment making, children's clothing, millinery, glove making, the making and use of dress forms, and short cuts in sewing.

The purpose of all this work has been to make it possible for the farm family to be so well and hygienically dressed that each member shall have a feeling of poise and satisfaction. This purpose has been served best by teaching women how to select and construct garments for comfort, for beauty, and for economy of time and money. Home sewing has been made easier in more than ten thousand homes by showing women how to alter and use commercial patterns, how to cut and fit garments, and how to use short cuts and good finishes in making undergarments and dresses.

**Millinery.**—In 142 millinery classes 1055 women were trained as leaders. These, in turn, taught 4002 others. This instruction was given in 330 school districts in 1926 and in 133 communities in 1927. As a direct and immediate result of this training 8452 hats were made at a saving of \$20,712.36.

Millinery work was organized in four, two, and one-day classes. A four-day class was given to a group of eight local leaders representing four communities which had received no previous training. A two-day class was given to groups of women who had had the work before. A one-day class was given to women who had had two seasons' work.

**Glove Making.**—In 13 classes 68 women were trained as local leaders in glove making, and these women taught 203 others. This work reached 20 school districts in 1926 and 18 communities in

1927. Thus instructed, the 271 women completed 233 pairs of gloves at a saving of \$389.50.

**Garment Making.**—In 42 classes 367 local leaders were trained in garment making during the two-year period. These leaders trained 1411 other women, and 1599 dresses were completed. In this work the women learned to alter commercial patterns to meet individual requirements and altered a total of 1567 patterns. On patterns alone this work saved \$550. This work reached 129 school districts in 1926 and 73 communities in 1927.



Fig. 19.—A class in short cuts in sewing in Dent county.

The instruction in garment making was organized with two leaders from each of four communities. These eight women came together in a central place for three days' training, the days being scheduled two to four weeks apart. In return for this training each woman pledged herself to help eight other women when she returned to her community. The first day was devoted to seams, hems, bindings, bound buttonholes, set-in pockets, etc., which would later be used in making a dress, planning the style and selecting material from samples for a wash dress. The second day a commercial pattern was altered for each woman and a simple dress was made to try out the pattern. On the third day decorative finishes for garments were made and a talk on color was given by the specialist.

**Advanced Garment Making.**—Classes in advanced garment making were organized in this same way in 1927, except that four days instead of three were devoted to this subject. The first day was devoted to finishes for wool garments, the second to designing individual patterns, the third to cutting and fitting a wool or silk dress, and the fourth to the making of accessories. In 11 of these four-day classes 161 leaders were trained. They taught 317 other women in their own communities, and the entire number made 2400 dresses, 1585 undergarments, and 1354 accessories. The saving of \$312 credited to this work is the saving in patterns only.

**Care and Renovation.**—Organized in much the same manner as the classes in millinery and garment making, 21 groups of local leaders, including 90 women, were taught the care and renovation of clothing. They in turn, taught 910 other women, so that 803 improved practices were adopted and 328 garments were remodeled.

**Additional Work.**—Short cuts in sewing were taught in 1927 to 382 women who adopted 1160 improved practices and used their new skill in making 374 dresses. A saving of \$438 in the two-year period was realized by 146 women who were taught to make and use dress forms. Construction of children's clothing was taught to 27 leaders and 213 other women with the result that 552 improved practices were adopted. Instruction in pattern making, given in 18 communities in 1926, enabled 75 women to make and use 62 guide patterns. Clothing selection was taught in 1926 in 115 communities to 3260 women with the result that 3119 improved practices were adopted. A clothing specialist accompanied the Clover and Prosperity tour in 1927 and spoke at 21 general meetings in 19 counties.

**The Dent County Survey.**—Prior to the beginning of a campaign to teach short cuts in sewing in Dent county in 1927, a survey of twelve rural communities was made.

The average size of the families in these 102 homes was 3.8 persons. Of the total number of farm wives who answered the questions of the survey only 65 had previously received help or instruction in sewing, 95 said they could attend the proposed sewing classes, 89 reported that they made clothes for themselves, 33 for their husbands, and 56 for their children.

**Four-H Clothing Clubs.**—Under the instruction of adult leaders trained by the Extension Service, members of 4-H garment making clubs in the last two years made 21,665 articles of clothing while learning sewing processes and organization methods.



## HOME MANAGEMENT

Extension work in home management during the two-year period ending November 30, 1927, resulted in the adoption of improved practices in 2207 Missouri homes. These results were accomplished through work with individuals, through general meetings, and through 61 organized groups whose members, enrolled for systematic work in home management, numbered 1117. In carrying on this work the specialists, extension agents, and local leaders completed 296 result demonstrations in addition to 81 method demonstrations.

Additional labor saving equipment was installed in 1446 farm homes as a result of extension work in home management in these two years. Kitchens were planned and rearranged for 331 families in addition to 258 demonstration kitchens. Improvement in general arrangement was made also in 367 homes, while improved storage arrangements were provided in 150 homes.

New farm homes were built in accordance with plans furnished by the Extension Service in 53 instances, and old homes were remodeled to meet modern home management standards in 81 instances. As a direct result of extension work during the two-year period heating systems were installed in 66 farm homes, lighting systems in 158, water systems in 181, and complete sewage disposal systems were installed on 99 farms.

Improvements were made in additional farm homes as follow: better floors in 510, better lighting in 378, better ventilation in 178, better working heights in 456, built-in cupboards or cabinets in 70, better table tops in 164, safer garbage disposal in 14, more convenient woodboxes in 104, and additional improved furniture in 402.

Other labor saving equipment added in Missouri farm homes as a result of home management extension work in the last two years included: 52 hand-power washing machines, 156 power-driven washing machines, 275 kitchen sinks, 15 fireless cookers, 256 power vacuum cleaners, 448 kitchen cabinets, 372 gasoline or electric irons, 22 pressure cookers, 3 iceless refrigerators, and 363 other articles such as high stools, dish drainers, wheel trays, etc.

These are the statistics only. The improvement in health, the saving of strength, the gain in leisure, the increase of pride in home, and the added joy of home-making for more than two thousand farm women—these results are still untold. A glimpse of this great service in these thousands of Missouri homes may be gained by a

brief inquiry into the home problems that this work is designed to solve, and the methods employed in their solution.

Some of the chief problems in home management work are: (1) The lack of plans for the progressive improvement of the home, (2) the uncertainty about the money that will be available for the purpose of home improvement, (3) the reluctance of farm women to change and their feeling that farm homes cannot have the same advantages as city homes, and (4) in some sections of the state the fact that incomes are so low that it is impossible for the standards of living to improve except through the adoption of agricultural practices that pay a larger return for labor.

**Kitchen Improvements.**—Much of the effort of the extension workers in home management has been directed toward the purpose of making the farm kitchen a more convenient workroom, a more attractive and healthful place, and a more modernly equipped plant, since in this room so much of the family's needs are cared for day after day throughout the year.

Kitchen improvement work in Missouri has been organized around the home demonstration kitchen since 1923. General meetings and result demonstration tours have been used to get a spread of influence. The demonstration kitchen has been selected by volunteer methods and community selection. One of the values of the demonstration kitchen has been the complete plan for the development of the improvements that the particular kitchen needs. If there is no water system in the home the installation of the bathroom and laundry room is considered as well as the location of the sink in the kitchen. The agricultural engineering department has developed a unit installation plan for home water systems so that the homes that do not have water under pressure can install the equipment by units, usually starting with the unit in the kitchen. Plans for the bathroom as well as the equipment for the kitchen unit have often resulted in complete water systems being installed. Plans are made so that improvements may either be completed in a short time or may be carried out step by step over a period of years. This method has resulted in an interest by a larger group of people than could otherwise be reached. Result meetings and result tours have included both types of demonstrations. In counties where result tours of home improvements are being made annual events the demonstration kitchens that are not completed the first year are visited on following tours.

In 1927 one of these tours visited a kitchen in Pettis county in which work was started five years ago. The improvements were

made as time and money permitted. The advantage of having a plan for the completed improvements before work started was clearly demonstrated as each step improved the kitchen without interfering with the work that still remained to be done.

In 1923 there were 127 demonstration kitchens started in thirteen counties. One hundred three started in fifteen counties in 1924. Seventy-nine different demonstrations were started in ten counties during 1926. In 1926 one hundred and twenty-seven were started in eleven counties, while eight counties had a total of 131 demonstration kitchens in 1927. These 576 demonstrations are located in 33 counties. Three consecutive years with new demonstrations added each year is the longest period that has been tried. In some of the home demonstration agent counties the home improvement work has developed to the point where community project leaders are making surveys to discover actual conditions on which to base their programs. Lincoln county leaders made a survey of "Water in the Home" in 1927. With 8.2% of the homes having water in the house, the interest was genuine in the Home Health and Help tour when four meetings were held in the county to demonstrate the installation of a concrete septic tank, the Missouri plan of unit installation of water systems, and the need and use of leisure that would come from the saving of time and energy that now too often go into non-essentials.

Because many families are going to live in houses already built, the individual plan for improvement will remain an important factor. The adoption of the practices demonstrated by the home demonstrators has solved the problem for some while for others it has created a desire in which the Extension Service has been of service in helping with plans. Requests for help on plans for new houses and the remodeling of old houses is growing. Reports show that over a period of five years through the establishment of demonstrations, general meetings, demonstration truck tours, leaders training meetings, publicity, surveys, etc., water has been piped into the 301 houses, 1,439 kitchens have been arranged more conveniently, 831 kitchen floors have been covered with linoleum, 367 floors have been oiled, while 294 have been painted and varnished, 2911 pieces of labor saving equipment have been added to the homes, 807 have improved natural and artificial light, 368 are more comfortable to work in because of windows added, transoms added and entire windows screened to allow ventilation from either top or bottom of the windows. Working surface heights of 740 cabinets have been

adjusted to the worker as well as 357 cook stoves raised, 156 sinks adjusted to the convenience of the workers, 320 storage cupboards have been built, and 374 shelves have been added to solve the storage problem.

**Water in the Home.**—Systems of water supply and sewage disposal have been urged as chief among the steps in kitchen improvement in the last two years. Home management and agricultural engineering specialists have worked together on this project. A demonstration truck was used in 1927 on a Home Help and Health tour to eighteen counties. The Portland Cement Association cooperated in furnishing a representative and a truck. At each stop



Fig. 20.—The demonstration truck used jointly by the extension specialists in agricultural engineering and home management in the Home Help and Health tour in 1927.

in the tour the agricultural engineering specialists gave a lecture demonstration on the installation of water systems in the home and assisted in the method demonstration of building a concrete septic tank. The home management specialists carried demonstration material to teach not only the saving of time and strength but also how best to utilize these so as to raise the standards and ideals of the home. Besides the importance of water in the homes as a means of saving time and labor for other uses, the possibilities in the use of other mechanical devices were explained. In this tour 26 demonstrations were given with 796 people attending.

**Kitchen Improvement Contests.**—Kitchen improvement contests were used very successfully in 1926. Since 1923 kitchen improvement contests have been used as a means of starting the work in fourteen counties. Two counties with home demonstration

agents have held contests each covering different sections of the county. The result demonstration tour, when all interested men and women are urged to visit the demonstrations, has been an effective means of spreading the influence of the demonstrations into other communities. There have been twenty result tours held in eighteen counties.

Thirty-three women, representing thirteen groups of women in Daviess county in 1926, successfully completed the first county kitchen contest to be planned and carried out entirely by Missouri farm women. The scoring was done by the specialist from the Missouri College of Agriculture. The county secretary of the W. P. F. A., Mrs. William Blackburn, made arrangements with the College for specialist help and was also responsible for all local arrangements. Women living in the communities where meetings were held cooperated with Mrs. Blackburn in planning local meetings and securing a place to hold them. The contest kitchens served as demonstration kitchens for the communities in which they were located. Each woman made a report to her club of the practices which she had tried and from her report the other women of the community were able to benefit by her experience and to adopt helpful practices.

**Home Improvement Hens and Chicks.**—Missouri farm women in their kitchen contests have also solved that most difficult problem—financing kitchen improvement—by means of “home convenience hens”. Several women adopted as their motto “Set a Hen and Raise a Water System”. If they were not able to install all of the system the first year, they put in what they could and planned to complete the work the following year. These home convenience hens have helped the women install everything from a water system to a dish drainer, and from a linoleum to a new paring knife.

This plan of budgeting the proceeds of a certain production enterprise for the purchase of home equipment has been used in the home management extension campaigns in several counties in the last two years. Besides the “home improvement hen” contests in Daviess, Linn, and other counties in 1926, an adaptation of the same plan was used the following year under the title of “home improvement chicks”. This work was especially useful in counties where farm incomes were very low and the needs for home improvement proportionately urgent.

Even in the more prosperous counties the home management campaigns received much added impetus from the use of “home im-

provement chicks" to finance the recommended changes. The plan was useful as a means to create interest in improvement in all the homes in the community by furnishing a definite amount of money for this specific purpose. Results were tabulated and the amount of money made not only enabled every family to make some improvements, but the results also opened up some interesting problems in poultry management. Method demonstrations and result demonstrations were used to teach subject matter.

Demonstration kitchens were used to demonstrate improved practices in all phases of home management. Model kitchens were set up in stores in towns where demonstrations were held, and store window displays, county fair exhibits, floats in parades, and slides of improvements made in the homes in the local community or elsewhere in the state were used to create interest and to arouse a desire for improvements.

**Laundering.**—Work on time and labor saving methods of laundering has been centered largely on the addition of power equipment for doing the family washing and the use of gasoline or electric irons. Progress in this was especially marked in 1927 when 140 power washing machines were installed in the homes of farm women who were reached and influenced by representatives of the Extension Service. In that year also 342 electric or gasoline irons were installed.

**Demonstration Train.**—During the summer of 1926 a farm and home special demonstration train was operated by the Wabash Railway Company over its North Missouri lines with the cooperation of the College of Agriculture, and this campaign included work on home management.

This demonstration train was the first one in this state to stress the improvement of the home as well as the farm. Three cars were used as demonstration cars. The home management and the agricultural engineering departments cooperated in the home improvement demonstration car. The exhibit material and demonstrations consisted of modern improvements for the farm home. Water, light, sewage disposal, and power laundry equipment were stressed. The exhibits were set up in units showing how a plan could be made and with a simple start installation by units could be added until complete modernization of the home could be realized. Each successive unit of installation could start at the point where the family felt able to finance it. The demonstration car appealed to the people because there was something of interest for the home

without improvements as well as the home more completely equipped. This train made 33 stops and was visited by 7800 persons.

A contest feature was conducted as a part of the demonstration. Equipment used in the demonstration was donated by different firms and was later used as prizes for the contest, which consisted of an argument for modern improvements in the farm home and a survey of the school districts in which the contestants lived. Ninety men and women entered the contest. The survey covered 79 different school districts in which there were a total of 2914 families, of which 946 were renters, while the remaining 1968 owned their farms.

The survey revealed that among these 2914 homes 367 had kitchen sinks, 112 had bathtubs equipped with hot and cold water, 85 had bathtubs with drains only, 114 had indoor toilets, 314 had electric lights, 79 had acetylene lights, 90 had electric washing machines, 249 had gasoline-driven washing machines, and 1211 had hand-driven washing machines.

### MORE ATTRACTIVE HOMES

During the last two years there were 4003 persons enrolled in definite year-round work for the improvement of the interiors and surroundings of their homes. Working in 280 organized groups and receiving systematic instruction and help from the Extension Service of the Missouri College of Agriculture, 2687 of these persons carried to completion the plans outlined and turned in reports of their work. Interior improvements were made in 3958 homes, while the outside and surroundings of 2760 were improved in various ways. Results of this work also included the building of 102 new homes and the remodeling of 286 homes. The construction work included also the building of 303 new walks and 139 new driveways.

**Exterior Improvements.**—Exterior improvements reported by cooperators, local leaders, and extension agents as resulting from the work for more attractive homes included: 881 homes painted, 478 new outbuildings erected, 631 outbuildings repaired, 1290 outbuildings painted or whitewashed, 693 new fences built, 627 fences repaired, 248 fences painted, 196 outbuildings moved to less conspicuous locations, 713 coops moved from yards, and 2099 yards cleared of rubbish.

In the way of grading, seeding, and planting, the following improvements were reported: 408 yards graded, 570 yards seeded,

and 1625 yards mowed. Scattered, poorly placed shrubs were removed from 472 yards, while plantings were made close up to the foundations of 1769 homes, along the borders of 639 yards, the corners of 656 yards, and as screens to conceal unsightly objects in 790 yards. Trees were planted in 707 yards. In planting flowers properly chosen and placed in order to beautify the home surroundings 1493 families planted perennials and 2016 planted annuals.

To get these results the Extension Service trained 843 local leaders at 120 training schools where systematic instruction was given. In a single year (1927) the leaders thus trained held 40 meetings and taught 2479 additional women. The total number of persons reached that year was 5299. During the two years 634 result demonstrations were carried to completion, besides 337 method demonstrations.

**Interior Improvements.**—As an economical means of improving the appearance of furnishings and interiors the teaching of handwork was made a part of the service in this field. This included instruction and supervised practice in rug making, basketry, refinishing furniture, reseating chairs, making lamp shades, making small articles of furniture, and the choosing, making and hanging of curtains. In this work 10,627 articles were made or refinished during the two-year period by women receiving extension teaching in handwork for home beautification.

The scope of this work may be judged by either of two tests: the number of articles made, or the number of women instructed. In 1927 this work included the making of 226 rugs, 61 lamp shades, 486 footstools, waste baskets, and hanging shelves, 1512 baskets, and 266 other pieces of small furniture. In 1927 instruction was given by extension workers to 4238 women including 490 local leaders, who in turn taught 1538 other women, bringing the total number of women instructed during a single year up to 5596.

**Howard County Survey.**—The need that exists for this work even in the more prosperous counties of the State was revealed by a survey conducted in Howard county in 1927. The county agent, after deciding to concentrate the work of this project on four types of home improvement, sent out questionnaires to families in 30 school districts. Replies received from 28 of these districts revealed the condition of 731 farm homes. Of this number 323 or 44% had houses that were well painted, 138 or only 19% had their chickens fenced out of the yards, 21 or fewer than 3% had permanent foundation plantings around their homes, and 319 or 43% had their yards



free of things not belonging there, such as boxes, barrels, machinery, etc.

The facts uncovered by the Howard county survey were used in newspaper articles to call the attention of farm folk to the need of having these things done. Articles on planting and arrangement of grounds went into newspapers along with others on painting. Even though the farmers were in a bad way financially there were reported 40 homes and 60 outbuildings painted, 84 grounds cleared of rubbish, 37 new fences built or repaired, and 42 families planting shrubbery at their house foundations.

**Problems to Be Overcome.**—Among the problems that are to be overcome in this statewide work of beautifying the farm homes are the following: (1) Lack of vision on the part of rural people as to the possibilities of making their homes attractive; (2) lack of standards of orderliness, comfort and beauty on the part of the average farm family; (3) indifference on the part of many farm families as to the appearance of homes that are often only temporary; and (4) worry over financial conditions that militate against any new undertaking.

In overcoming these problems teaching was done by giving method demonstrations, training local leaders to carry on the work, establishing result demonstrations, illustrated lectures, use of bal-opticon, newspaper articles, contests, surveys, tours, and achievement days. Along with these the teaching of handwork was done to arouse and hold interest in the work and to reach new groups. Leaders were used in practically every county for most of the work.

**Training Leaders.**—The leader training work included: (1) An illustrated talk on improving the grounds given by the specialists in four to six places in each county so as to be accessible to every individual of each group, and (2) four leaders' training schools held by the specialist at a certain place in each county and attended by two leaders from each group taking the work. The subjects taken up at these training schools were color and color schemes, furniture and curtains, floors and floor coverings, pictures and accessories. The leaders who were provided with demonstration material by the specialist, presented the work to their groups. In addition, there were secured three demonstrators in each section, one to demonstrate marked improvements in grounds, and the other two to use a room each, preferably a living room and a bedroom. At the close of the season a tour was made to see the outstanding pieces of work.

At tours and achievement day programs reports were made by local leaders on the work done in their neighborhoods, such as foundation, corner and border plantings made, houses and outbuildings painted, unsightly objects removed, shade trees planted, walls papered or tinted, floors refinished, furniture repaired or refinished, curtains selected, made and hung, etc. In addition there were displays of home-made rugs, baskets, lamp shades, and similar articles.

**Growth of the Work.**—The demand for instruction in handwork for home beautification has grown rapidly as a result of the work given in nine counties in 1926. The next year this work was extended to seventeen counties, and by the end of the two-year period the results had exceeded all expectations. Within the year 1927 the specialist held 47 training schools for leaders and instructed 490 leaders who later taught 1538 other women. These, added to the number of women instructed in handwork by the home demonstration agents brought the total number taught during the year up to 5796.

**Special Methods of Arousing Interest.**—Much interest in more attractive homes has been aroused through special contests, bulb and plant exchanges, mock trials, playlets, etc.

Bulb, seed, and shrub exchanges have been very popular. One woman in Jackson county reported that after moving into the community she attended her first meeting of the Hickman Mills Garden Club, made up of strictly rural women, that it was their exchange day, and she was given a number of things to plant. She and her husband live on a rented place, and she cannot work out in the sun, but her husband planted the things that were given her and was so delighted at hearing a passerby complimenting the appearance of the place, that the year following (1927) he increased his efforts and has entirely changed the appearance of their home.

Contests were staged in a number of counties to see in each case which local group could make the greatest improvement in their home grounds. These proved such an incentive in Cass county in 1926 that the two organized communities of Garden City and Freeman have continued their friendly rivalry through two years and have made outstanding progress in home beautification. In Ray county the contests were carried on a little differently. Instead of having one community competing with another, each of the three organized communities in 1926 selected two captains and these chose their helpers, taking in everybody in their respective communities. Of the 212 homes in the Ray county contests 198 of them

made marked improvements through the adoption of 812 practices advocated. The greatest gain was made by the wife of a farm laborer living in a tenant house. This achievement was due to clearing the yard of all rubbish, seeding and mowing it, removing unsightly buildings, making foundation, corner and border plantings, and whitewashing the entire place.

A mock trial was conducted in 1927 by the Hickman Mills Garden Club composed entirely of farm women. They tried a local farmer for having a grindstone in his front yard, something that was never there. The judge, jury, sheriff, and lawyers were all women. The public had been invited to attend, so as the trial proceeded many points were brought out and practices suggested that the group were trying to get the entire neighborhood to adopt. This resulted in the moving of many unsightly things from the farm yards near Hickman Mills.

In Saline county in 1927 the work was carried on with 23 groups in the form of a contest. Each group selected two captains, and these two chose their assistants, choosing everyone in the neighborhood. Then the home demonstration agent went with these two captains and showed them how to use the score card in scoring each home.

In Nodaway county in 1926 there were 18 women's clubs represented at a meeting called for the planning of the work for more attractive homes and all but two of these clubs did some work in this project. Eighty-two homes were represented in the 551 practices adopted.

The steady widening of this influence when once it has been established in a county or community is indicated in the following report from Jackson county: "This is the third year for the work for more attractive homes in this county, and the influence is spreading surely all along the highways and into places off the road. People are cleaning up their places, painting and whitewashing, are removing unsightly outbuildings, and are confining farm implements to their own special place. Not only private, but public interest has been aroused, and eight schools yards have been beautified."

**Community Improvement.**—Community pride, once aroused, adds its influence to that of pride in the home and brings about many improvements in public grounds as well as the beautification of the homes and lawns. In 1926 work of beautifying community property was carried to completion in 20 communities. The planting of the grounds of the Farmers High School in Johnson county

was done cooperatively by 25 families. At Ravenwood in Nodaway county plantings were made in a public park by the women's civic improvement club. The grounds of a new high school at Tarkio were planted by a similar organization of women.

The work for more attractive homes has won the approval and cooperation of many organizations throughout the state. Business men's clubs have encouraged and supported the work in many localities. The Kiwanis clubs at Richmond, Fayette, and Harrisonville have been especially active in this work.

Through the help of a steadily growing number of trained local leaders and active local organizations the extension work for more attractive farm homes is adding beauty to thousands of farm homes, inside and out. It is helping make farm life more interesting and alluring to the boys and girls as well as more satisfying to their parents. It is giving these farm families added respect for themselves and their calling.



Fig. 21.—A Missouri farm home surrounded by an appropriate setting of trees and shrubs.

## NUTRITION

The purpose of extension work in nutrition is to give all members of the farm family a working knowledge of the value of foods and their relation to health, and to have as many persons as possible put this knowledge into daily practice. This work, during the last two years, has included instruction in food selection, food preparation, child feeding, school lunches, food preservation, and milk campaigns.

**Food Preparation.**—Instruction in the preparation of the foods essential to proper nutrition was given to 2829 women in the two-year period covered by this report. The improved methods of food preparation were adopted in 1669 homes. Under the personal instruction of the specialist 604 women were trained as local leaders in this subject, and these leaders held 292 subsequent meetings in 77 communities. The recommended practices were demonstrated at 188 meetings. The total number of improved practices actually adopted was 9245.

The food preparation work has proved to be a good means of introducing nutrition work to new groups. It is popular and holds the interest of the women. The actual preparation of food so that they can see and taste it makes the work more realistic and convincing.

**Child Feeding.**—The child feeding work reaches the family through the children instead of dealing directly with the mother. It is very effective because the children respond readily to suggestions and by their physical condition quickly show the results of better food habits. In this work in the two-year period 882 children were definitely improved in health through changes in their habits of eating.

The scope of this work is shown by the fact that 1790 children received systematic instruction, and 1275 kept a food habit score throughout a period covering several months. Gains in weight needed to bring underweight children up to normal health were made in 756 cases. In four parochial schools in St. Charles county in 1927 instruction in the relation of food habits to health was given by the specialist to 346 children.

Child feeding serves as an entering wedge in communities where nutrition work is new, for the children's ready enthusiasm wins the favorable attention of the parents.

**Milk Campaigns.**—Two milk campaigns were completed during the two-year period ending November 30, 1927.

In the New Madrid county campaign, completed in 1926, the work was started in 19 schools with an attendance of 976 pupils. The follow-up survey was made in 14 of these schools with an attendance of 850. At the close of the campaign 670 children were drinking milk, 195 were carrying milk to school, 72 had stopped drinking coffee, 317 had increased in weight, and 105 were noticeably improved in health.

In the Mississippi county campaign, completed in 1927, the opening survey was made in 21 schools having an attendance of 831 pupils. At that time 430 pupils were drinking milk daily, 298 others were drinking milk occasionally, 133 drank coffee daily, 359 drank coffee occasionally, and 20 were bringing milk to school with their lunches. The follow-up survey, at the close of the campaign, was made in only six schools, but in these schools 142 children were carrying milk to school, 207 were drinking milk daily, 96 had stopped drinking coffee, and 115 had gained in weight.

**Food Selection.**—Instruction in food selection or meal planning was given to special groups of women who chose this phase of the nutrition work. As a result of this work during one year (1927) only, more milk was used in 104 homes, more tomatoes and oranges in 121, more green vegetables in 195, more fruit in 214, and more cereals in 141. In Lawrence county 90 women completed fruit and vegetable budgets, including both the planting in sufficient variety and amount at garden-making time and the canning or preservation of the surplus to last through the succeeding winter.

**Four-H Clubs.**—In the two-year period 61 supper clubs, 29 canning clubs, 1 baking club, and 73 hot lunch clubs were given systematic instruction. These clubs had 1298 members who completed their work, 1075 visitors at their meetings, and their work led to the adoption of 353 improved practices. There were 249 demonstrations by 4-H club teams, 620 members took part in demonstrations, and 738 made exhibits. Members of 4-H canning clubs canned 5513 quarts of fruit.

**Special Work with Schools.**—Ten schools in Platte county completed a special campaign in nutrition work in 1926, under the direction of the nutrition specialist, assisted by County Agent Huston and County Superintendent Ketteman. The specialist visited each of these schools five times, at intervals of about one month each, giving one-half day to the work at each visit. At the close of the campaign all the schools came together at Weston on March 26 for a dinner, program, exhibit and the awarding of prizes. This was

known as Health Day. The displays consisted of health scrap-books, posters, rhymes, songs, games, and plays, which had been prepared by the children during the campaign. After the program cash awards were given to the schools according to their scoring on increase in weight and improvement of food habits. This money, raised among the patrons of the schools, was to be used for the improvement of the winning schools. Besides these prizes, each school received special recognition from its own school board for the good work done during the campaign. From the report of the county agent, J. M. Huston, the following is quoted:

“Because of the good work done by their schools, the school boards of various districts awarded prizes at the meeting. Iatan School was given \$10 to buy equipment; Beverly School, a water fountain; Simmons, a dictionary; Hazlewood, \$25 to buy equipment; Hackberry, \$10 to buy equipment; Burriss, a set of reference books costing \$55; Block, \$10 to buy equipment and Swamp College, \$10 to buy pictures.”

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