

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE
AGRICULTURAL EXTENSION SERVICE

Taking the College to the People

PROJECT ANNOUNCEMENT 20
COLUMBIA, MISSOURI
JULY, 1924

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.

FOREWORD

Annual reports of the activities of the Agricultural Extension Service are prepared each year in accordance with the requirements of the Smith-Lever Act of Congress. These reports have not been printed for two reasons. First there is little popular demand for such reports while there is a constant and necessarily unsatisfied demand for subject-matter publications. In the second place, funds for printing have been limited. From the standpoint of service to farmers, it has seemed to be the part of wisdom to spend less on the printing of reports and more on the printing of extension publications which farmers need and want.

The Agricultural Extension Service is not unmindful, however, of the fact that printed reports are not only desirable, but essential to a proper understanding of its functions by people generally. From time to time, therefore, such reports are prepared and distributed. The times of printing depend upon the availability of funds. The last printed report covered the calendar year 1920. The present report covers the calendar years 1921 to 1923 inclusive.

Should sufficient funds for printing be available in the future, it is hoped that each annual report may be printed in limited editions.

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Taking the College to the People

A. J. MEYER, *Director*

Missouri Agricultural Extension Service

Herewith is presented a combined report of the extension activities and accomplishments of the College of Agriculture for the years 1921, 1922 and 1923.

It has been the practice of the Extension Service of the College of Agriculture to require all of its project leaders to submit detailed annual reports of the activities conducted under their respective projects. From time to time these reports have been abstracted and published. The purpose of these published reports is to give the interested person a general conception of the character of work undertaken together with a general understanding of the more important accomplishments.

No system of reporting has ever been devised, which tells the whole story of Extension work during the year. Thousands of farmers, farm women and farm children are reached each year indirectly. The College naturally knows nothing about these people having been reached at all. Thousands of others are reached directly, but they do not report back and consequently there is no way of knowing the extent to which such persons have been actually helped. Such figures as are given, therefore, tell only a part of the story of accomplishment through the extension work of the College.

HOW THE AGRICULTURAL EXTENSION SERVICE OPERATES

The Extension activities of the College of Agriculture are carried on principally in counties having county agents. The report which appears on the following pages detailing activities and accomplishments in the various subject matter lines has been prepared by project leaders.

It must be remembered, however, that in the case of every project all county agents have been the active representatives of the College in the field in putting these projects into operation. The accomplishments represent the combined efforts of both state and county workers.

It is impossible to separate the activities of the subject matter specialist, the county agent and the supervisory or administrative official of the College. The work of one individual blends so completely into the work of every other individual that when a goal is obtained no one can say where the work and influence of the one stops and the other

begins. It is important to bear in mind, however, that the sum total of days spent in the field by county agents is approximately two times as great as the number of days spent in the field by state specialists and supervisors combined. These figures in themselves are an indication as to the place of the county agent in the Extension Service.

In the last analysis the county agent, located at the most strategic point in the whole extension service, is the determining factor in deciding the extension program. He is the point of contact between the college and the people. If his contact is bad the extension program will fail wholly or in part. If his contact is good the extension service will function in the highest degree of efficiency among the people.

In non-agent counties, the College has been able to conduct only a limited amount of Extension work because of its inability to form active permanent contacts. Extension work under such conditions is performed at the expense of relatively large amounts of time, effort and money.

STAFF OF THE AGRICULTURAL EXTENSION SERVICE

Stratton D. Brooks, President of the University.

F. B. Mumford, Dean of the College of Agriculture.

A. J. Meyer, Director of the Agricultural Extension Service.

I. SUPERVISORY OFFICERS

| Staff Member | Entered the Service | Left the Service |
|-------------------|---------------------|------------------|
| P. H. Ross | July 1, 1918 | Oct. 6, 1923 |
| W. H. Baker | Sept. 1, 1917 | Aug. 31, 1923 |
| C. C. Hearne | Aug. 1, 1923 | * |
| H. C. Hensley | Dec. 1, 1921 | July 1, 1923 |
| P. B. Naylor | March 1, 1917 | * |
| John F. Nicholson | August 1, 1922 | * |
| Addie D. Root | Sept. 1, 1918 | * |
| R. R. Thomasson | Jan. 1, 1921 | * |

II. BOYS' AND GIRLS' CLUB AGENTS

| | | |
|--------------------|-----------------|---------------|
| Theodore T. Martin | October 1, 1923 | * |
| Grace Dulaney | Sept. 1, 1920 | April 8, 1922 |
| R. H. Emberson | Sept. 18, 1914 | * |
| Florine Fate | Feb. 1, 1920 | Feb. 28, 1921 |
| Jane Hinote | June 1, 1923 | * |
| Rena Jenkins | Jan. 1, 1922 | July 31, 1922 |
| F. L. Wright | Dec. 3, 1917 | Feb. 14, 1921 |

*Member of staff at close of 1923

III. SUBJECT-MATTER SPECIALISTS

| | Entered the Service | Left the Service |
|-------------------------------|---------------------|------------------|
| Agricultural Economics | | |
| H. C. Hensley | July 1, 1923 | * |
| Ralph Loomis | July 7, 1919 | June 1, 1922 |
| John Sheay | Oct. 15, 1920 | May 26, 1923 |
| Animal Husbandry | | |
| R. L. Waddell | Sept. 1, 1920 | * |
| J. W. Burch | Dec. 1, 1923 | * |
| H. M. Garlock | July 1, 1920 | * |
| W. H. Rusk | Sept. 1, 1917 | Jan. 1, 1923 |
| Dairy Husbandry | | |
| E. M. Harmon | Dec. 1, 1918 | * |
| I. G. Gibson | Nov. 1, 1923 | * |
| M. J. Regan | May 1, 1920 | * |
| Entomology | | |
| Otis Wade | July 1, 1923 | * |
| A. C. Burrill | Aug. 1, 1920 | Oct. 31, 1922 |
| Farm Crops | | |
| C. E. Carter | Jan. 1, 1920 | * |
| D. W. Frear | Feb. 1, 1921 | * |
| K. G. Harman | Sept. 1, 1923 | * |
| R. T. Kirkpatrick | April 1, 1920 | Aug. 31, 1923 |
| I. P. Trotter | Dec. 10, 1923 | * |
| Farm Engineering | | |
| E. W. Lehmann | Feb. 1, 1921 | Aug. 31, 1921 |
| Patterson Bain, Jr. | Oct. 10, 1921 | Feb. 28, 1922 |
| Home Economics | | |
| Essie M. Heyle | March 4, 1918 | * |
| Mary Helen Briggs | Jan. 1, 1923 | * |
| Margaret Z. Cassell | May 1, 1921 | March 20, 1922 |
| Fra Clark | Aug. 10, 1921 | * |
| Marion E. Dunshee | Dec. 8, 1922 | * |
| Mrs. Saidee N. Hausmann | Feb. 1, 1921 | May 31, 1923 |
| Margaret C. Huston | July 1, 1923 | * |
| Anna C. Jensen | Sept. 1, 1918 | April 30, 1921 |
| Mary Woodward Krueger | June 1, 1922 | * |
| Lois Martin | Sept. 16, 1921 | * |
| Mary E. Robinson | Sept. 1, 1916 | * |
| Julia M. Rocheford | Sept. 1, 1917 | * |

*Member of staff at close of 1923; likewise on following pages.

(SUBJECT MATTER SPECIALISTS, Continued)

| | Entered the Service | Left the Service |
|--------------------------|---------------------|------------------|
| Mary E. Stebbins | June 11, 1923 | * |
| Mrs. Edith G. Van Deusen | Nov. 15, 1922 | * |
| Lillian G. Whaley | September 1, 1918 | May 31, 1921 |
| Horticulture | | |
| A. P. Boles | Jan. 15, 1923 | * |
| H. A. Cardinell | March 1, 1919 | Dec. 31, 1922 |
| E. M. Page | April 21, 1921 | * |
| Poultry Husbandry | | |
| H. L. Shrader | Aug. 3, 1921 | * |
| G. W. Hervey | July 1, 1920 | April 30, 1921 |
| T. S. Townsley | April 1, 1917 | Feb. 28, 1923 |
| Berley Winton | August 1, 1923 | * |
| Rural Sociology | | |
| B. L. Hummel | Oct. 1, 1923 | * |
| Soils | | |
| P. F. Schowengerdt | Feb. 1, 1920 | * |
| C. L. Dietz | Feb. 1, 1921 | * |

IV. COUNTY AND DISTRICT EXTENSION AGENTS

| Name | County | Entered the Service | Left the Service |
|--|-------------------|---------------------|------------------|
| A. M. Allen | Holt | Jan. 1, 1923 | * |
| M. D. Amburgey | Pemiscot | Dec. 1, 1919 | * |
| W. T. Angle | Pettis | July 1, 1921 | May 31, 1923 |
| Seth Babcock | Cape Girardeau | Mar. 1, 1918 | May 15, 1921 |
| Rex. R. Bailey | Grundy | May 1, 1922 | Sept. 15, 1922 |
| W. W. Baker | (Ass't Co. Agent) | Aug. 1, 1920 | July 15, 1921 |
| J. M. Britt | Howell | July 1, 1920 | Aug. 31, 1921 |
| T. H. Brock | Ripley | Sept. 1, 1920 | Apr. 30, 1922 |
| C. E. Brown | Carroll | Apr. 1, 1921 | * |
| R. Q. Brown | Mississippi | Apr. 1, 1921 | * |
| J. W. Burch | Montgomery | Nov. 16, 1921 | May 1, 1922 |
| J. W. Burch | Callaway | May 1, 1922 | Dec. 1, 1923 |
| J. W. Butler (Negro District Agent) | | Oct. 1, 1919 | * |
| F. W. Caldwell | Lafayette | July 16, 1918 | June 30, 1922 |
| C. W. Campbell | Pike | May 14, 1923 | * |
| H. H. Carrithers | Dent | May 1, 1921 | Mar. 13, 1922 |

(COUNTY AND DISTRICT EXTENSION AGENTS, Continued)

| Name | County | Entered the Service | Left the Service |
|-----------------|----------------|---------------------|------------------|
| C. S. Cardwell | Ralls | Feb. 1, 1922 | * |
| A. B. Chapman | Wayne | Feb. 1, 1922 | Aug. 14, 1922 |
| L. F. Childers | Howard | Apr. 1, 1918 | June 30, 1922 |
| G. L. Cleland | Montgomery | Nov. 1, 1920 | Oct. 31, 1921 |
| R. S. Clough | Johnson | Jan. 1, 1920 | June 1, 1923 |
| R. S. Clough | Pettis | June 1, 1923 | * |
| R. I. Coplen | St. Francois | Apr. 1, 1920 | Oct. 1, 1923 |
| R. I. Coplen | Johnson | Oct. 1, 1923 | Nov. 14, 1923 |
| R. I. Coplen | Jackson | Nov. 14, 1923 | * |
| C. W. Davis | Andrew | Sept. 7, 1922 | * |
| Joseph Davis | Shelby | Dec. 1, 1920 | * |
| W. F. Delp | Greene | July 1, 1920 | * |
| Oscar H. DeWolf | Mississippi | Aug. 1, 1919 | Feb. 28, 1921 |
| Ira Drymon | Bates | Aug. 1, 1921 | Oct. 15, 1923 |
| Ira Drymon | Cass | Oct. 15, 1923 | * |
| W. L. Flanery | Madison | June 1, 1918 | July 1, 1920 |
| W. L. Flanery | Dunklin | July 1, 1920 | Jan. 1, 1921 |
| W. L. Flanery | Perry | Jan. 1, 1921 | July 31, 1922 |
| W. E. Foard | Scott | June 1, 1920 | Mar. 20, 1923 |
| D. R. Forrester | Livingston | Mar. 1, 1921 | * |
| R. J. Friant | (Ass't Agent) | Sept. 1, 1920 | June 11, 1921 |
| O. C. Fuchs | Carroll | Sept. 1, 1919 | Jan. 15, 1921 |
| R. L. Furry | McDonald | July 1, 1921 | Oct. 1, 1923 |
| R. L. Furry | District Agent | Oct. 1, 1923 | * |
| E. L. Garrett | Lafayette | July 17, 1923 | * |
| J. Robt. Hall | Cass | Dec. 1, 1917 | Jan. 1, 1921 |
| J. Robt. Hall | Linn | Jan. 1, 1921 | * |
| J. R. Hansen | St. Louis | July 1, 1923 | * |
| C. C. Hearne | Cape Girardeau | July 1, 1921 | Aug. 1, 1923 |
| G. S. Hensley | St. Francois | May 1, 1918 | Apr. 1, 1920 |
| G. S. Hensley | Harrison | Apr. 1, 1920 | * |
| H. C. Hensley | New Madrid | Jan. 1, 1918 | Dec. 1, 1921 |
| J. Bland Hill | Webster | July 1, 1921 | Oct. 1, 1923 |
| W. A. Hook | Clark | Mar. 1, 1919 | June 1, 1921 |
| W. A. Hook | Phelps | June 1, 1921 | * |
| John Howat | Randolph | Mar. 25, 1918 | * |
| R. J. Howat | Harrison | Jan. 1, 1919 | Feb. 1, 1920 |

(COUNTY AND DISTRICT EXTENSION AGENTS, Continued)

| Name | County | Entered the Service | Left the Service |
|--------------------|------------------|---------------------|------------------|
| R. J. Howat | Jackson | Feb. 1, 1920 | Nov. 14, 1923 |
| C. R. Howell | Caldwell | Jan. 1, 1919 | Dec. 31, 1922 |
| L. L. Hunt | Lawrence | April 1, 1921 | * |
| J. M. Huston | Dekalb | Sept. 1, 1918 | Jan. 1, 1921 |
| J. M. Huston | Platte | Jan. 1, 1921 | * |
| E. E. Isaac | Clinton | July 3, 1920 | July 8, 1922 |
| E. T. Itschner | Jefferson | Nov. 1, 1921 | * |
| R. D. Jay | Chariton | Feb. 1, 1921 | * |
| Scott M. Julian | New Madrid | Dec. 1, 1923 | * |
| C. C. Keller | Pulaski | July 1, 1921 | Sept. 1, 1923 |
| C. C. Keller | (District Agent) | Sept. 1, 1923 | * |
| E. R. Keller | Pike | Sept. 1, 1920 | Apr. 25, 1923 |
| Paul Keller | Ripley | May 1, 1922 | * |
| V. H. Kern | Grundy | Sept. 6, 1920 | Apr. 10, 1922 |
| T. M. Keyser | Cape Girardeau | Sept. 1, 1923 | * |
| R. A. Kinnaid | Clinton | Apr. 1, 1918 | Apr. 1, 1920 |
| R. A. Kinnaid | Nodaway | Apr. 1, 1920 | * |
| F. G. Kraege | Marion | Nov. 1, 1918 | * |
| L. S. Kleinschmidt | Andrew | May 1, 1919 | Dec. 31, 1922 |
| R. A. Langenbacher | Bates | July 1, 1920 | Oct. 31, 1921 |
| R. A. Langenbacher | St. Charles | Aug. 1, 1922 | * |
| W. W. Langston | Butler | Apr. 6, 1917 | May 21, 1921 |
| Stewart Leaming | Ray | Dec. 1, 1920 | * |
| C. M. Long | Pettis | Sept. 1, 1915 | May 31, 1921 |
| T. F. Lueker | Cole | Apr. 1, 1920 | * |
| Guy Q. McDaniel | Buchanan | July 1, 1918 | * |
| Wm. G. McRuer | Vernon | July 1, 1910 | June 30, 1922 |
| E. T. Mallinckrodt | Madison | Sept. 15, 1922 | * |
| E. S. Matteson | Monroe | Sept. 1, 1923 | * |
| W. W. Merritt | Ralls | Sept. 1, 1919 | April 30, 1922 |
| J. M. Miles | New Madrid | Sept. 1, 1921 | July 31, 1923 |
| R. E. Miller | Cass | May 1, 1921 | Oct. 13, 1923 |
| J. H. H. Mote | Jasper | Apr. 1, 1918 | * |
| J. A. Muster | Vernon | Nov. 1, 1922 | * |
| C. E. Neff | Callaway | May 1, 1920 | Apr. 30, 1922 |
| Ross Nichols | Linn | Sept. 16, 1917 | Jan. 1, 1921 |
| Ross Nichols | Holt | Jan. 1, 1921 | Sept 1, 1922 |
| Ross Nichols | Clinton | Sept. 1, 1922 | * |
| J. F. Nicholson | St. Charles | Mar. 1, 1920 | Aug. 1, 1922 |

(COUNTY AND DISTRICT EXTENSION AGENTS, Continued)

| Name | County | Entered the Service | Left the Service |
|--|----------------|---------------------|------------------|
| H. T. Nielsen | Howard | Mar. 1, 1922 | * |
| E. L. Peter | Lincoln | Feb. 1, 1921 | Mar. 1, 1922 |
| D. L. Pippin | Saline | Jan. 1, 1923 | * |
| A. J. Renner | Scott | Mar. 1, 1923 | * |
| Asbury Roberts | Saline | Aug. 1, 1919 | Dec. 31, 1922 |
| S. F. Russell | Lincoln | Mar. 16, 1923 | * |
| L. A. Saunders | Gentry | Dec. 1, 1918 | * |
| R. F. Shaffer | Knox | Apr. 1, 1920 | Feb 9, 1923 |
| G. V. Sheets | Ripley | Sept. 1, 1919 | Aug. 1, 1920 |
| G. V. Sheets | Stoddard | Aug. 1, 1920 | May 26, 1923 |
| V. B. Sheldon | Lincoln | May 1, 1919 | Jan. 16, 1921 |
| V. B. Sheldon | Dekalb | Jan. 16, 1921 | * |
| G. R. Skinner | St. Louis | July 1, 1920 | Apr. 7, 1923 |
| C. I. Skouby | Wayne | June 3, 1922 | July 31, 1923 |
| I. S. Slaughter | Atchison | Jan. 1, 1923 | * |
| J. M. Slaughter | Atchison | Aug. 22, 1917 | July 31, 1922 |
| H. G. Stevens | Monroe | July 1, 1920 | June 15, 1923 |
| Frank Stonner | Cape Girardeau | June 1, 1922 | Sept. 15, 1922 |
| Frank Stonner | Webster | Sept. 15 1922 | Mar. 5, 1923 |
| Frank Stonner | Knox | Mar. 5, 1923 | Dec. 1, 1923 |
| Frank Stonner | Callaway | Dec. 1, 1923 | * |
| C. R. Talbert | Dunklin | Aug. 21, 1922 | * |
| R. A. Taylor (Negro District Agent) | | Dec. 15, 1923 | * |
| P. A. Tappmeyer | Madison | Sept. 1, 1920 | Dec. 31, 1921 |
| C. W. Vetter | Lewis | June 1, 1919 | Sept. 15, 1922 |
| C. W. Vetter | Perry | Sept. 15, 1922 | * |
| L. F. Wainscott | Caldwell | Jan. 4, 1923 | * |
| E. D. Walker | Butler | June 1, 1921 | * |
| L. J. Wormington | Newton | Dec. 1, 1919 | * |

V. COUNTY HOME ECONOMICS AGENTS

| | | | |
|-----------------|--------------|---------------|---------------|
| Elnora Baker | St. Francois | June 1, 1920 | Nov. 30, 1922 |
| Eva Boterf | Lafayette | Sept. 1, 1920 | May 31, 1921 |
| Katherine Brand | Dunklin | June 1, 1918 | * |
| Flora C. Carl | Dekalb | Sept. 1, 1920 | Aug. 31, 1921 |
| Florence Carvin | Jackson | Mar. 21, 1918 | * |
| Fra Clark | Clay | Oct. 1, 1919 | Aug. 1, 1921 |

(COUNTY HOME ECONOMICS AGENTS, Continued)

| Name | County | Entered the Service | Left the Service |
|---|----------------|---------------------|------------------|
| Jane Hinote | Cape Girardeau | Sept, 1, 1917 | May 31, 1921 |
| Jane Hinote | Johnson | May 31, 1921 | June 1, 1923 |
| Margaret Howard | Clay | July 1, 1921 | * |
| Rena Jenkins | Montgomery | Aug. 1, 1918 | Oct. 31, 1920 |
| M. May Long | Holt | Jan. 1, 1920 | Dec. 31, 1922 |
| Eva Luther | Saline | Jan. 10, 1921 | * |
| Mrs. Sarah E. McMullin | Jefferson | Feb. 1, 1921 | Jan 31, 1922 |
| Mrs. Claire Montgomery | Lincoln | Feb. 1, 1921 | * |
| Margaret Nelson | Linn | Sept. 1, 1918 | * |
| Olive G. Proctor | Callaway | June 3, 1921 | Aug. 31, 1922 |
| Kathryn Roderick | Bates | July 1, 1921 | Sept. 30, 1922 |
| A. Belle Shelton | Lincoln | Sept. 1. 1920 | Mar. 10, 1921 |
| Anne Sillers | Butler | Sept. 1, 1919 | May 1, 1922 |
| Anne Sillers | St. Louis | May 1, 1922 | Mar. 1, 1923 |
| Anne Sillers | Lafayette | Mar. 1, 1923 | * |
| Bina Slaughter | Callaway | Jan. 1, 1923 | * |
| Lola B. Thompson | Buchanan | June 16, 1922 | July 15, 1923 |
| Helene Wold | Lafayette | May 1, 1921 | Sept. 30, 1922 |
| Mrs. Henrietta K. Williams (Negro Dist. Agent) | | Sept. 1, 1918 | * |

VI. SECRETARIAL AND OFFICE STAFF

| | | |
|-------------------|--------------|----------------|
| B. J. Carl | July 1, 1920 | * |
| Mrs. Zuma Bloomer | Jan, 1, 1918 | * |
| R. V. Jordan | Jan. 1, 1921 | June 30, 1923 |
| J. R. Jordan | July 1, 1923 | * |
| Eliza Arnold | Apr. 1, 1923 | * |
| Berle Banks | Dec. 1, 1923 | * |
| Lucile Blaser | Nov. 1, 1918 | Sept. 30, 1923 |
| Eunice Boyd | June 1, 1920 | Aug. 15, 1922 |
| Anna Buck | Nov. 1, 1923 | * |
| Retta Crosswhite | June 1, 1920 | Oct. 31, 1921 |
| Ida Deaton | Aug. 1, 1919 | Sept. 30, 1923 |
| Ada Epperson | Nov. 1, 1923 | * |
| Margery Ford | Feb. 1, 1921 | June 15, 1923 |
| Challes Griffiths | June 1, 1920 | * |
| Ola Hall | Nov. 1, 1923 | * |
| Katherine Hogue | Oct. 1, 1920 | May 12, 1921 |

(SECRETARIAL OFFICE STAFF, Continued)

| | Entered the Service | Left the Service |
|-------------------|---------------------|------------------|
| Frances Hutsell | Mar. 1, 1923 | * |
| Tilburn Johnson | Aug. 1, 1919 | Aug. 31, 1921 |
| Tilburn Johnson | June 1, 1922 | Sept. 30, 1922 |
| Mildred Jones | Dec. 1, 1923 | * |
| Catherine O'Brien | Dec. 1, 1923 | * |
| Laura Pahmeier | Aug. 1, 1920 | * |
| Nance Pryor | Dec. 1, 1923 | * |
| Florence Puckett | Nov. 1, 1921 | Dec. 24, 1922 |
| Lucile Quinn | Jan. 1, 1921 | Aug. 31, 1922 |
| Mildred Waller | Aug. 1, 1922 | * |
| Mildred Wisdom | Aug. 1, 1920 | July 31, 1923 |
| Grace Wolf | Apr. 1, 1921 | Dec. 31, 1921 |
| Beulah Wright | Oct. 1, 1917 | Sept. 30, 1923 |

VII. SPECIAL TEMPORARY APPOINTMENTS

| | | |
|--|----------------|----------------|
| E. J. Alexander, Lecturer in Farm Practice | May 1, 1921 | June 30, 1921 |
| F. W. Atkeson, Lecturer in Farm Practice | May 1, 1921 | June 30, 1921 |
| Patterson Bain, Jr., Lecturer in Farm Practice | Apr. 1, 1922 | July 1, 1922 |
| W. C. Boney, Ext. Instr. in Farm Engineering | Sept. 26, 1923 | Oct. 19, 1923 |
| Mrs. Frances Bridges, Ass't Boys and Girls Club Agent | June 16, 1921 | Sept. 15, 1921 |
| Joseph Chambers, Ass't in Poultry Husbandry | Sept. 4, 1923 | Oct. 31, 1923 |
| Fred Crosby Ass't in Poultry Husbandry | Sept. 1, 1922 | Oct. 31, 1922 |
| E. L. Dakan Ass't in Poultry Husbandry | July 10, 1921 | Aug. 31, 1921 |
| C. W. Davis Ext. Ass't in Animal Husbandry | May 1, 1921 | June 30, 1921 |
| Mrs. Lillian W. Duncan Ass't in Home Economics | July 10, 1922 | Aug. 10, 1922 |
| James H. Fisher Ass't in Crops and Soils Extension | July 5, 1923 | Sept. 30, 1923 |

(SPECIAL TEMPORARY APPOINTMENTS, Continued)

| | Entered the Service | Left the Service |
|----------------------------|---------------------|------------------|
| Mrs. J. K. Fyfer | | |
| Ass't in Boys' and Girls' | | |
| Club Work | April 24, 1922 | June 17, 1922 |
| Club Work | Oct. 1, 1922 | Feb. 28, 1923 |
| J. T. Gibbs | | |
| Ass't in Farm Engineering, | May 1, 1921 | Aug. 1, 1921 |
| R. L. Hill | | |
| Lecturer in Farm Practice | May 1, 1921. | June 30, 1921. |
| E. A. Ikenberry | | |
| Ass't in Horticulture Ex- | | |
| tension | Feb. 1, 1923. | June 30, 1923. |
| S. J. Kleinschmidt | | |
| Lecturer in Farm Practice | July 1, 1921. | July 1, 1923. |
| A. H. Leonard | | |
| Ass't in Boys' and Girls' | | |
| Club Work | June 1, 1922. | Aug. 31, 1922. |
| L. B. Mann | | |
| Lecturer in Farm Practice | May 1, 1921. | June 30, 1921. |
| O. C. McBride | | |
| Ass't in Entomology | June 15, 1923. | July 1, 1923. |
| C. K. McClelland | | |
| Ass't in Cotton Culture | June 11, 1923. | June 24, 1923. |
| Ass't in Cotton Culture | Sept. 3, 1923. | Sept. 30, 1923. |
| John McDaniel | | |
| Wool Grader | May 10, 1923. | May 28, 1923. |
| J. H. Miller | | |
| Lecturer in Farm Practice | July 1, 1921. | July 1, 1923. |
| W. W. Moore | | |
| Ass't in Crops and Soils | | |
| Extension | June 26, 1922. | Aug. 11, 1922. |
| T. D. Morse | | |
| Ext. Ass't in Farm | | |
| Marketing | Oct. 1, 1921. | * |
| Kenneth B. Roy | | |
| Ass't in Farm Engineering | May 1, 1921. | July 31, 1921. |
| Neely Turner | | |
| Ass't in Entomology | June 15, 1923. | July 1, 1923. |
| B. B. Wade | | |
| Ass't in Boys' and Girls' | | |
| Club Work | June 21, 1921. | Sept. 1, 1921. |

EXTENSION PUBLICATIONS, 1921, 1922 and 1923

ORIGINAL

Circulars

| No. | Title | No. of pages | No. of copies |
|--------|---|--------------|---------------|
| (1921) | | | |
| 97 | Meal Planning | 4 | 25,000 |
| 98 | Organization of Corn Clubs and Corn Club Record Book | 8 | 2,000 |
| 99 | Condensed Information on Sprays and Spraying | 12 | 15,000 |
| 100 | Feeding and Care of Sow and Litter | 8 | 10,000 |
| 101 | The Missouri Poultry House | 8 | 25,000 |
| 102 | Making Light Bread | 16 | 10,000 |
| 103 | Community Dairy Development by the Pettis County Plan | 23 | 25,000 |
| 104 | Grain Judging for Boys' and Girls' Clubs | 16 | 5,000 |
| 105 | Missouri Plan of Flock Improvement | 20 | 5,000 |
| 106 | How to Grow Clover | 4 | 15,000 |
| 107 | Developing the Dairy Club Heifer | 15 | 5,000 |
| 108 | A Simple Method for Controlling Loose Smut in Wheat | 4 | 20,000 |
| (1922) | | | |
| 109 | Dress Fitting and Cutting | 16 | 10,000 |
| 110 | Melon Pest Control in Southeast Missouri | 20 | 6,000 |
| 111 | How to Cull Farm Hens | 16 | 15,000 |
| 112 | Missouri Plan of Flock Improvement | 20 | 10,000 |
| 113 | Liming Materials | 4 | 1,000 |
| 114 | Pickling Fruits and Vegetables | 8 | 10,000 |
| 115 | The Use and Preparation of Vegetables | 16 | 10,000 |
| (1923) | | | |
| 116 | Winter Chinch Bug Control | 4 | 10,000 |
| 117 | Renovation of Household Furnishings | 8 | 5,000 |
| 118 | Milk for Growth, Health, Strength | 4 | 10,000 |

| No. | Title | No. of pages | No. of copies |
|-----|---|--------------|---------------|
| 119 | Growing Rape for Forage | 4 | 5,000 |
| 120 | Sudan Grass | 4 | 5,000 |
| 121 | Sweet Clover in Missouri | 4 | 6,000 |
| 122 | Cotton Production in Missouri | 20 | 10,000 |
| 123 | Corn in Missouri | 40 | 10,000 |
| 124 | Better Concrete on the Farm | 16 | 7,500 |
| 125 | Cluster Bud Spray for Apples | 4 | 8,000 |
| 126 | Calyx Spray for Apples, Pears, etc. | 4 | 8,000 |
| 127 | Third Summer Spray for Apples | 4 | 8,000 |
| 128 | Spraying for Second Brood Codling Moth | 4 | 8,000 |
| 129 | Summer Chinch Bug Control | 4 | 10,000 |
| 130 | Missouri Cow Testing Associations | 12 | 7,500 |
| 131 | Liming Missouri Soils | 16 | 25,000 |
| 132 | Soil Improvement by the Missouri Plan | 4 | 10,000 |
| 133 | How to Choose a Commercial Fertilizer | 4 | 10,000 |
| 134 | Insect Pests of Garden Crops | 8 | 7,500 |
| 135 | Increasing the Farmer's Net Income by Reducing Costs | 16 | 25,000 |
| 136 | The Mid-West System of Marking Cooperative Live Stock Shipments | 8 | 25,000 |
| 137 | Strawberries in the Ozarks,—How to Get a Stand .. | 4 | 6,000 |

Boys' and Girls' Club Series

(1922)

| | | | |
|---|--|----|-------|
| 1 | Garment Making I | 52 | 7,500 |
| | Record Book for Garment Making I | 16 | 5,000 |

(1923)

| | | | |
|---|---|----|-------|
| 2 | Garment Making II | 40 | 7,500 |
| | Record Book for Garment Making II | 16 | 5,000 |
| 3 | Baby Beef Club | 32 | 5,000 |
| | Baby Beef Club Record Book | 16 | 3,000 |
| 4 | The Poultry Club | 36 | 5,000 |
| | Poultry Club Record Book | 16 | 5,000 |
| 5 | Potato Growing Club | 28 | 2,500 |
| | Potato Club Record Book | 16 | 2,500 |
| 6 | Corn Club | 24 | 6,000 |
| | Corn Club Record Book | 16 | 6,000 |
| 7 | Canning Club I | 24 | 7,500 |
| | Canning Club Record Book | 16 | 7,500 |
| 8 | Canning Club II | 28 | 7,500 |
| | Canning Club II Record Book | 16 | 7,500 |

| No. | Title | No. of pages | No. of copies |
|------------------------------|---|--------------|---------------|
| 9 | Tomato Growing Club | 24 | 15,000 |
| | Tomato Club Record Book..... | 16 | 15,000 |
| 10 | Garment Making III..... | 32 | 5,000 |
| | Record Book for Garment Making III..... | 20 | 4,000 |
| Project Announcements | | | |
| (1921) | | | |
| 13 | Annual Report of Agr. Ext. Service, 1920..... | 35 | 5,000 |
| (1922) | | | |
| 14 | Extension Projects in Agriculture and Home Economics, 1922..... | 24 | 2,500 |
| 15 | Demonstration Farm Flocks | 8 | 2,000 |
| (1923) | | | |
| 16 | Ten Years of Extension Work in Missouri..... | 112 | 30,000 |
| 17 | Boys' and Girls' Club Work..... | 16 | 5,000 |
| 18 | Extension Projects in Agriculture and Home Economics, 1923..... | 24 | 1,500 |
| Leaflets | | | |
| (1921) | | | |
| 14 | Simple Water System for the Farm Home..... | 2 | 25,000 |
| 15 | Hot and Cold Water in the Farm Home..... | 2 | 25,000 |
| 16 | Gravity System Water Supply for the Farm Home..... | 2 | 25,000 |
| 17 | Pneumatic Water System for the Farm Home..... | 2 | 25,000 |
| (1922) | | | |
| 18 | Separating Cracked and Whole Soybeans..... | 2 | 500 |
| (1923) | | | |
| 19 | Growing Field Beans..... | 2 | 4,000 |
| 20 | Broom Corn Production..... | 2 | 4,000 |
| 21 | Fourth Summer Spray for Apples..... | 2 | 8,000 |
| REPRINTS---Circulars | | | |
| (1921) | | | |
| 87 | Stomach Worms in Sheep..... | 7 | 6,000 |
| 90 | Garment Making Club..... | 7 | 3,000 |
| 12 | The Farm Kitchen..... | 39 | 10,000 |
| 77 | Raising Pigs..... | 11 | 2,500 |
| (1922) | | | |
| 108 | Simple Methods of Controlling Loose Smut in Wheat..... | 4 | 15,000 |
| (1923) | | | |
| 13 | Treatment of Common Parasites Affecting Farm Animals..... | 12 | 5,000 |
| 21 | Time of Planting Vegetables | 4 | 2,000 |

| No. | Title | No. of pages | No. of copies |
|--------|--|--------------|---------------|
| 37 | Hogging Down Corn | 4 | 3,000 |
| 39 | Farm Lighting Systems..... | 12 | 6,000 |
| 53 | Storing Vegetables..... | 8 | 2,000 |
| 63 | Pure Bred Livestock and the Average Farm | 4 | 1,000 |
| 71 | Sewage Disposal for Farm Home..... | 4 | 6,000 |
| 74 | Missouri Colony Brooder House | 4 | 6,000 |
| 80 | Hessian Fly and Its Control..... | 4 | 10,000 |
| (1923) | | | |
| 86 | Paralysis in Swine | 4 | 2,000 |
| 89 | Sewing Processes | 22 | 10,000 |
| 98 | Organization of Corn Clubs and Corn Club Record Book | 8 | 1,000 |
| 100 | Feeding and Care of Brood Sow and Litter..... | 8 | 7,500 |
| 109 | Dress Fitting and Cutting..... | 16 | 10,000 |
| 127 | Third Summer Spray for Apples | 4 | 8,000 |

Boys' and Girls' Club Series

(1923)

| | | | |
|---|-------------------------------------|----|--------|
| 1 | Garment Making I..... | 52 | 15,000 |
| | Record Book, Garment Making I | 16 | 15,000 |
| 3 | Baby Beef Club Record Book | 16 | 5,000 |

Leaflets

| | | | |
|----|--|---|--------|
| 7 | Milk Desserts (1923)..... | 2 | 10,000 |
| 18 | Separating Cracked and Whole Soybeans (1922).... | 2 | 2,500 |
| 9 | The Family Medicine Chest (1922)..... | 2 | 2,000 |
| 14 | Simple Water Systems for Farm Homes (1923).... | 2 | 5,000 |
| 15 | Hot and Cold Water in the Farm Home (1923).... | 2 | 5,000 |
| 1 | Gravity System of Water Supply (1923)..... | 2 | 5,000 |
| 17 | Pneumatic Water System for the Farm Home (1923) | 2 | 5,000 |

FINANCES

Herewith is presented a financial statement covering the three fiscal years: July 1, 1920 to June 30, 1921; July 1, 1921 to June 30, 1922; and July 1, 1922 to June 30, 1923.

During this period practically all monies expended by the Agricultural Extension Service are classified as Smith-Lever funds. Under this classification are included all funds received from Federal sources by the

terms of the Smith-Lever Act together with all funds derived from sources within the State and accepted by the U. S. Department of Agriculture as offset to Federal funds.

Expenditures of state-appropriated monies not classified as Smith-Lever funds are noted as follows:

| | |
|---------------------------|------------|
| Year ending June 30, 1921 | \$3,455.00 |
| Year ending June 30, 1922 | \$ 788.22 |
| Year ending June 30, 1923 | \$ 959.84 |
| Total | \$5,203.06 |

During this period funds of the U. S. Department of Agriculture were expended in support of activities of the Agricultural Extension Service in Missouri as follows:

| | |
|---------------------------|-------------|
| Year ending June 30, 1921 | \$17,880.00 |
| Year ending June 30, 1922 | \$11,149.00 |
| Year ending June 30, 1923 | \$13,542.00 |
| Total | \$42,571.00 |

| Sources of Smith-Lever Funds | Amount of Smith-Lever Funds | | |
|------------------------------|-----------------------------|--------------|--------------|
| | 1920-21 | 1921-22 | 1922-23 |
| Federal | \$186,595.37 | \$190,314.58 | \$200,921.32 |
| State Appropriation | 66,686.47 | 71,899.17 | 65,682.74 |
| County Funds | 109,908.90 | 108,415.41 | 125,238.58 |
| TOTAL | \$363,190.74 | \$370,629.16 | \$391,842.64 |

EXPENDITURES OF SMITH-LEVER FUNDS BY PROJECTS

| Project | 1920-21 | 1921-22 | 1922-23 |
|---|--------------|--------------|--------------|
| Administration | \$ 17,176.35 | \$ 14,235.21 | \$ 18,669.32 |
| Printing and distribution of publications | 5,814.63 | 4,072.78 | 10,889.20 |
| County Agent Work | 203,109.65 | 226,526.42 | 217,068.69 |
| Home Demonstration Work | 36,359.05 | 25,245.38 | 38,951.16 |
| Boys' and Girls' Club Work | 10,465.83 | 8,148.78 | 5,165.48 |
| General Home Economics | 19,924.23 | 24,067.04 | 15,564.27 |
| Clothing | | | 4,723.75 |
| Nutrition | | | 1,657.10 |
| Home Management | | | 3,461.30 |
| Home Nursing | | | 3,135.67 |
| Marketing | 7,885.44 | 6,629.47 | 7,091.18 |
| Soils | 6,049.55 | 7,567.14 | 10,879.08 |
| Field Crops | 7,856.07 | 10,175.12 | 11,654.13 |
| Animal Husbandry | 13,766.35 | 12,062.87 | 13,927.15 |
| Dairy Husbandry | 10,465.04 | 8,542.92 | 10,641.84 |
| Animal Diseases | 451.15 | | |
| Poultry Husbandry | 8,378.21 | 9,029.96 | 7,763.12 |
| Rural Engineering | 5,668.67 | 2,788.94 | |
| Horticulture | 6,017.93 | 7,491.64 | 8,971.25 |
| Farm Management | 58.48 | | |
| Entomology | 3,744.11 | 4,045.49 | 1,628.95 |
| TOTAL | \$363,190.74 | \$370,629.16 | \$391,842.64 |

EXTENSION IN AGRICULTURAL ECONOMICS

By H. C. HENSLEY, *Project Leader*

Livestock.—During the past three years there has been a slowing down of organization work in marketing activities. The farmer has had less money available for investment in marketing enterprises and to a certain extent the urgent need for improved marketing facilities has been met. During this period terminal cooperative livestock commission associations were set up on both the St. Louis and Kansas City markets. This has had the effect of federating the livestock shipping associations for the purpose of selling. The specialists in marketing were called in to counsel with leaders in this work, both within and without the State, and rendered assistance in the preparation of the plans upon which the associations are founded. A careful study of the saving per car over private shipping shows an average of \$85 per car, which for the 300 livestock shipping associations with their 45-car average would mean an annual saving of \$1,147,500, or a total for three years of \$3,442,500.

TABLE 1.—ORGANIZATIONS PERFECTED AND SCHOOLS HELD

| Work done | 1921 | 1922 | 1923 | Total |
|---|------|------|------|-------|
| Livestock shipping associations organized | 26 | 33 | 3 | 62 |
| Coop. elevators and warehouses organized | 20 | 10 | 5 | 35 |
| Livestock managers' schools held | 2 | 4 | 6 | 12 |
| Elevator managers' schools held | 1 | 5 | 1 | 7 |

Grain.—Although the farmers elevators were put to a severe test by the period of rapidly falling prices in 1920, practically all of the organizations came through in good shape and during the past three years have added to their reserves and paid dividends. The Farmers Grain Dealers' Association of Missouri was organized and has served to advance and protect the interests of its members—the farmers elevators of the State.

Insurance.—Two farmers' mutual fire insurance companies were organized with the assistance of the specialist in marketing, and these have written policies in excess of \$1,000,000 with a resulting decrease in cost of insurance of fully 50%.

Other Commodities.—The organization of the St. Joseph Milk Producers' Association, the Missouri Cotton Growers' Cooperative Association, and the extension of the Burley Tobacco Growers' Association into Missouri, all have required some time and attention from the extension specialists in marketing.

Much of the time of the specialists in marketing has been devoted to careful follow-up work to secure the adoption of adequate accounting systems and efficient business methods by the newly organized marketing associations. This has been brought about by the county or regional meetings of directors and managers, schools of instruction for managers, tours, publicity and other means. Assistance has been given in organizing marketing associations cooperating with locals of the Missouri Farmers' Association, the Farmers' Educational and Cooperative Union and with organizations of no affiliations. The marketing service has been available to all individuals, groups, and agencies within the State.



Fig. 1.—A Missouri cooperative marketing association inspecting and loading strawberries on refrigerator car.

EXTENSION IN ANIMAL HUSBANDRY

From December 1, 1920 to November 30, 1923, specialists R. L. Waddell and H. M. Garlock have served the entire time. W. H. Rusk resigned January 1, 1923.

Animal husbandry extension includes work on beef cattle, swine, and sheep, with adults, boys and girls. In the case of the boys and girls it is carried on through club organization.

Better Bulls.—During 1921 and 1922 a campaign was made to eliminate the greatest possible number of scrub bulls from the State. During these years the Kansas City Chamber of Commerce offered \$3,000 in

premiums to counties replacing the greatest number of scrub bulls with purebreds. To count as a replacement it was necessary that the scrub bull be eliminated from service in the county and at least a part interest be purchased in a purebred, registered bull.

Intensive work was done through demonstration meetings, lectures, and consignment bull sales fostered by the local breeders' associations. In addition, a demonstration train carrying cattle which showed the results of using purebred bulls, made a tour of 36 counties in the southern part of the State. The Wabash, Missouri Pacific, and Frisco railways cooperated in the latter.

TABLE 1.—SUMMARY OF WORK DONE AND RESULTS ACCOMPLISHED

| Year | Counties | Meetings | Attendance | Replacements |
|------|----------|----------|------------|--------------|
| 1921 | 41 | 99 | 9,069 | 745 |
| 1922 | 16 | 35 | 1,750 | 620 |
| 1923 | 5 | 10 | 150 | 254 |

The contest feature of this work was discontinued in 1923, but farm demonstrations on the results of the work started in the campaign will be carried on. The local consignment sales are being continued also.

Beef Calf Clubs.—In the Northern half of Missouri cattle feeding is a major industry, and Boys' and Girls' Baby Beef Clubs in this section have been of demonstrational value. Calves that are dropped between January 1 and September 1 of the year preceding the summer they are fed have been used and the object has been to economically produce the kind of beef the market desires. The work is done through community club organizations of boys and girls and the most beneficial demonstration is made at the local roundup or show. For the counties in Northwest Missouri a show is held in cooperation with the Stock Yards Company at St. Joseph. The value of good breeding is clearly shown, for an inferior calf will not make prime baby beef. The calves are fed for a period of at least six months, and tours for instruction are held.

TABLE 2.—A THREE-YEAR SUMMARY OF BEEF CALF CLUB PROJECT

| Year | Entire State | | St. Joseph Roundup | |
|------|--------------|-------------|--------------------|------------|
| | Counties | No. Members | No. Counties | No. Calves |
| 1921 | 4 | 42 | 4 | 42 |
| 1922 | 11 | 221 | 8 | 148 |
| 1923 | 25 | 617 | 16 | 300 |

Cattle Feeding.—In 1923 sixteen demonstrations including 1205 head of cattle were completed in five counties. The objects were to demonstrate the efficient use of feeds by young fattening cattle, and the practicability of silage and protein supplements in the ration. The farm results were demonstrated to 372 men by means of tours and meetings.

Sheep and Wool Production.—Good practices in farm sheep production are not common knowledge due in most cases to this class of livestock being incidental to the general farming scheme. Therefore, it is desirable to actually demonstrate those practices that will make this business more profitable.

In three years the value of sheep products has advanced from post-war deflation prices to the position where they return a very satisfactory

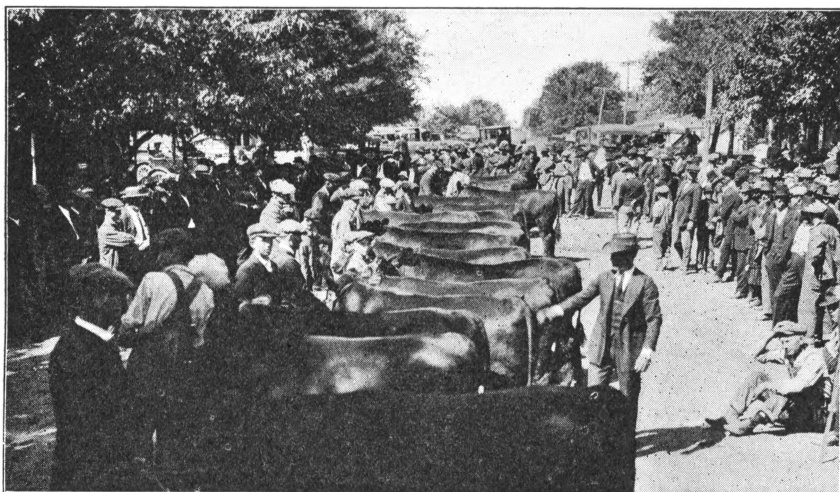


Fig. 2.—Judging Aberdeen-Angus calves at a Missouri community baby beef club show; Newtonia, September, 1923.

profit, but the production problem of improving the product remains the same. Our demonstrations include primarily the treatment for stomach worms, docking and castrating lambs, and grain feeding lambs during suckling. In 1921 considerable time was spent on wool marketing, due to the demand, and unquestionably a better understanding of wool grades has resulted, but from the marketing standpoint our system of small pools left much to be desired.

Each succeeding year sees more lambs dropped early enough to avoid the summer heat and parasites, and an increased number of altered and grain fed lambs go on the market from this State, which is the objective of this project.

Good breeding is essential to the production of "market topping" lambs and encouragement to the use of better rams is given by preparing a list of purebred rams for sale each season and by acting as superintendent of the sheep department at the State Fair.

TABLE 3.—SUMMARY OF SHEEP MEETINGS CONDUCTED BY THE SPECIALIST

| Year | No. of Counties | Total No. of meetings | Attendance | Meetings demonstrating a practice | Attendance | Sheep treated for parasites | Grain-fed lambs resulting from dem. |
|------|-----------------|-----------------------|------------|-----------------------------------|------------|-----------------------------|-------------------------------------|
| 1921 | 22 | 48 | 947 | 13 | 166 | | |
| 1922 | 9 | 33 | 372 | 28 | 240 | | |
| 1923 | 16 | 50 | 874 | 43 | 580 | 15,080 | 3,192 |

Pig Clubs.—Until 1922 this department did not have supervision of the pig club work and the time and effort spent on this project has been well worth while. The aim has been to make this work conform to the market production of pork and avoid sales and shows of breeding hogs produced by club members. This has met with success. The pig Clubs are of three kinds, (1) Sow and Litter, (2) Purebred Pig, where the pig is purchased at weaning and developed to breeding age, and (3) Market Pig. In this club one or more pigs are started at weaning time to fatten them to a marketable weight.

TABLE 4.—TWO-YEAR RESULTS OF PIG CLUB PROJECT

| Year | Sow and Litter Clubs | | Market and Purebred Pig Clubs | |
|------|----------------------|---------|-------------------------------|---------|
| | Clubs | Members | Clubs | Members |
| 1922 | 64 | 1,014 | 66 | 640 |
| 1923 | 72 | 713 | 61 | 515 |

TABLE 5.—SUMMARY OF WORK IN PORK PRODUCTION

| Year | Counties | Meetings | Attendance | Farms on which feeding methods modified | Self-feeders used | Hogs treated for round-worms | Acres corn hogged down |
|------|----------|----------|------------|---|-------------------|------------------------------|------------------------|
| 1921 | 30 | 71 | 3,167 | 890 | 1,041 | ---- | ----- |
| 1922 | 39 | 102 | 3,895 | 1,583 | 2,460 | ---- | ----- |
| 1923 | ---- | ---- | ----- | ---- | ---- | 39,840 | 81,780 |

Pork Production.—During 1921 and 1922 when a specialist was employed for this line of work the object was to promote better feeding and management methods in the production of pork. Farm demonstrations where accurate feed records were kept proved to be a valuable method of promoting this work and the results were shown by tours and field meetings. The results are difficult to measure, but the following table illustrates the value:

Miscellaneous Work.—This type of work has decreased materially during this period and though its value may not be measured, it is a worthwhile line of work and should not be given up entirely. In this department it has consisted of judging demonstrations, general talks on livestock, and general assistance in the promotion of better stock.

TABLE 6.—SUMMARY OF MISCELLANEOUS WORK

| Year | Counties | Meetings | Attendance |
|------|----------|----------|------------|
| 1921 | 17 | 36 | 6,149 |
| 1922 | 11 | 18 | 2,155 |
| 1923 | 3 | 4 | 776 |

EXTENSION IN DAIRY HUSBANDRY

BY E. M. HARMON, *Project Leader*

SUB-PROJECTS EMPHASIZED

Cow Testing Associations, Calf Clubs, Bull Associations, and the Better Bulls projects have been carried on throughout the entire period. Each of these, with the exception of Calf Club work has been emphasized during the entire time, while but little attention had been given to Calf Club work until the last year. A Demonstration Farm project was started in 1920, but was dropped because it was found that dairy extension work could be made much more effective by working through the more definitely organized dairy projects. The Dairy Feeding project was added in 1923 as a means of coping with the major dairy feeding problems in Missouri, particularly the lack of legume hays as an economical source of protein and mineral feeds. As fast as it is possible to do so, this project will be expanded to include work on silo campaigns, permanent pastures, and soiling crops. With the additional third

specialist at the close of the year 1923, two additional projects were added. The first of these includes demonstrations on methods of caring for the products on the farm and the second, the organization of Dairy Products Improvement Associations as a means of bringing up the quality of the entire product in any community and securing a market for the same.

COW TESTING ASSOCIATIONS

A number of methods are used to get cow testing association work before the public and to demonstrate its value. In organizing associations, meetings are held in each community interested to explain the plan and the advantages. During the association year, demonstration meetings are held in each community on the farm of some member, at which time the advantages that each member has secured from the association are shown.

These advantages include the culling out of some inferior cows; and increase in production and profit due to better housing conditions; the results of a good bull or to better feeding methods, such as the use of a legume hay, silage, a summer soiling crop, or a balanced ration; or a combination of more than one of these. For the most part, each of these associations hold at least one tour and picnic each year at which time these same points are demonstrated to the dairymen of the locality. In addition to this, the monthly report of the tester is published in most of the local papers and a state report which combines all the individual monthly reports is compiled each month by the dairy specialist and sent to each member in all the cow testing associations in the State and to each of the county agents and testers for publicity purposes.

The results of this work are best shown by the rapid increase in cow testing associations in Missouri during this time. The number of associations has increased from six to fifteen with the probability of a still further increase in the near future.

During this time the return per dollar feeding cost has increased from \$2.48 to \$2.77, which, on the basis of the average feed cost in Missouri last year would represent \$17.03 per cow and \$243.37 per farm. This would amount to a total of \$80,313.48 for the 330 cow testing association members in Missouri.

This of course does not include the increased value of the herds due to the records and improvement which have been made upon them, nor does it take into account the great improvement in dairying which has been brought about throughout the communities where cow testing association members live as a result of these demonstrations. It only includes the actual increase in profit from the production of the herds of the members themselves and this is of course only a very small part of

the actual value of cow testing associations in the State. The detailed results of cow testing association work during this time is best shown by the following table:

TABLE 1.—RESULTS OF COW TESTING ASSOCIATION WORK

| Measure of progress | 1921 | 1922 | 1923 |
|---|----------|----------|----------|
| Number of associations..... | 6 | 7 | 15 |
| Number of counties reached..... | 8 | 11 | 17 |
| Number of Members..... | 153 | 230 | 330 |
| Total cows tested..... | 1940 | 2556 | 4716 |
| Average milk per cow..... | 5633 | 5994 | 5842 |
| Average fat per cow..... | 216.7 | 267.2 | 279.9 |
| Average value of product..... | \$177.66 | \$135.89 | \$162.43 |
| Average feed cost per cow..... | 71.98 | 47.57 | 58.74 |
| Average profit above feed cost..... | 105.68 | 88.34 | 103.69 |
| Feed cost per cwt. milk..... | 1.28 | .79 | 1.01 |
| Feed cost per lb. butterfat..... | .275 | .78 | .210 |
| Number cows culled as unprofitable..... | --- | 296 | 287 |

BULL ASSOCIATIONS

The method ordinarily used in organizing bull associations is to hold a meeting in each community interested for the purpose of explaining a plan of organization and its advantages as a community breeding plan. Then as soon as three or more communities have signified their

TABLE 2.—PROGRESS OF BULL ASSOCIATION WORK

| Measure of progress | 1921 | 1922 | 1923 |
|--|---------|---------|---------|
| Number of associations..... | 7 | 9 | 9 |
| Number of counties reached..... | 5 | 8 | 8 |
| Number of communities or "Blocks"..... | 25 | 33 | 33 |
| Number of members..... | 155 | 231 | 231 |
| Number of cows owned by members..... | 1415 | 1735 | 1735 |
| Number of scrub bulls before organizing..... | 62 | 136 | 136 |
| Number of bulls in associations..... | 25 | 33 | 33 |
| Average value of scrub bulls replaced..... | \$75.27 | --- | --- |
| Average value of bulls purchased..... | 296.00 | --- | --- |
| Average investment per farmer now..... | 47.81 | \$43.51 | \$43.51 |
| Average investment per cow now..... | 5.23 | 5.78 | 5.78 |
| Average yearly butter records of 3 nearest dams of all bulls in Associations..... | 679 | 713 | 719 |
| Purebred females owned by members when asso- ciations were organized..... | 18 | 22 | 22 |
| Purebred females owned by members now..... | 275 | 400 | 600 |

In addition to the bull association work, there were in 1921, 293 scrub bulls replaced by pure bred; in 1922 there were 277; and in 1923, 247.

desire to form such an association, the organization is completed and bulls purchased. A demonstration meeting is held each year in each of these communities at which time the advantages of using a high class bull are shown. Also each association usually arranges a tour for the entire association once each year.

The bull association has been found to be by far the most practical means of establishing a definite community breeding center. The chief handicap which the average man confronts in trying to build up a good herd is the fact that he cannot afford each two years to invest in a high class bull. By dividing the expense among a number of men in each community and then arranging to exchange bulls each two years, the expense is reduced to even less in most cases than a man is compelled to have invested in scrubs. Also when these men find that they have the use of a real high class bull for a period of several years ahead of them with no additional cost, the most of them take advantage of the opportunity to start purebred herds. The result has been in each community in Missouri where bull association work has been started, that those interested are not only building up splendid herds of high producing cows but are also laying the foundation for what are rapidly becoming the strongest purebred centers in the State. The following table illustrates the progress of this work during the periods covered:

CALF CLUBS

Calf club work in Missouri under the standard three-year program of club work has made a slow but steady growth. This work is now arranged to cover three consecutive years of study and work in developing the dairy animal. The first of these is known as the Junior Calf Club and deals with the work of developing the heifer up to the breeding age. The second is known as the Bred Heifer Club and deals with the work of developing the heifer from breeding age through the first calving period. The third, which is known as the Cow Testing Club, includes the care of the heifer through the first lactation period. It involves the keeping of a record of all operations, including milk and butterfat produced and feed consumed. Each club holds from six to twelve meetings a year and at which the important phases of dairying which are related to the club members' project are discussed. Record books as well as programs for these meetings and lessons to be used as suggested discussions are furnished to all club members. Club members are also required to show their heifers at least once during the year and to attend a one-day tour and judging school.

In 1921, there were only two of these standard clubs in Missouri, while last year there were 22, with a total enrollment of 238. There were

68 members last year who finished the third year of club work and these members showed an average profit above feed costs of \$68.75 each. Dairy club work is being greatly stimulated by the fact that the breeders associations are offering educational trips to Junior Farmers' Week in Columbia, each year, to the champion club members in each county. In addition to that, a free trip to the National Dairy Show is offered each year to the champion club of the State.

DAIRY FEEDING

The dairy feeding project is conducted by means of field meetings at which the value of the practice recommended is explained and the names of those interested in adopting such practices are taken. Follow-up information is sent to each of those interested. This follow-up information covers both the value of the feeds recommended and methods of growing the needed feeds. At the present time, the limiting factor in profitable milk production in Missouri is probably the lack of sufficient protein and mineral feeds. These can be secured from home grown legumes. For that reason, this particular phase of feeding is being emphasized. When this problem is solved, it is planned to take up the other feeding problems in the order of their importance, including silos, permanent pastures, and summer soiling. While this project was just started last year, it resulted in the improvement of 1513 dairy rations.

DAIRY PRODUCTS

This project was started at the close of the year 1923. It contemplates first, the establishment of demonstrations in different communities on the value of the proper care of the product, and especially construction of the best type of milk houses and cooling tanks. By this means, it will be possible to demonstrate to the different communities, the increased profit which cooperators secure from the product by keeping it in first class condition and marketing a superior quality of product. Demonstration meetings, tours and newspaper publicity are used. The project also includes the organization of groups for the purpose of improving the quality of the product of entire communities and of marketing dairy products on a quality basis as soon as it is possible to build up sufficient volume of high quality product in any community.

EXTENSION IN ENTOMOLOGY

BY OTIS WADE, *Project Leader*

Work in this project was under the direction of A. C. Burrill during 1921 and 1922. There was no specialist in charge from January 1 to June 30, 1923. Since July 1, 1923, Otis Wade has been project leader. Some extension work in Entomology was done during the first half of 1923 by O. C. McBride and Neely Turner of the Department of Entomology.

The lines of work given especial emphasis during the three years covered by this report were: chinch bug control, Hessian fly control, control of fruit insects—especially San Jose scale—and beetles and plant lice injurious to melons.

In addition to these, attention was also devoted to out-breaks of grasshoppers, armyworms, the sorghum worm, the green bug, the alfalfa webworm, the cotton leaf worm, the red spider, the pickle worm and fleas. Some work was done in the promotion of better beekeeping in the State.

Work in some phase of the project was carried on in nearly all counties with agricultural agents and in some non-agent counties. Fifty-six counties were reached in 1921, fifty-three counties in 1922, and fifty-eight counties in 1923. Reports show adoption of pest control measures in 1923 on 3331 farms.

THE CHINCH BUG

This insect has been a problem of constant importance and has demanded the attention of the specialist and county agents in various parts of the state every year. Work has been conducted through organized burning campaigns and the use of barriers. Meetings and demonstrations were held to teach these methods and general information and instructions furnished through circulars and news articles. In 1923 the radio was used for publicity purposes and calcium cyanide was introduced in barrier construction.

TABLE 1.—CHINCH BUG WORK DONE IN 1921, 1922 AND 1923.

| Work Done | 1921 | 1922 | 1923 |
|--|--------|---------|---------|
| Miles of barriers constructed..... | 136¾ | 586½ | 562¼ |
| Acres burned over..... | 71,020 | 107,268 | 171,915 |
| Miles of roadside and fencerows burned.. | 1,620 | 3,890 | 3,329 |

THE HESSIAN FLY

The fly continues to be one of the chief insect problems in the state and strenuous efforts are made each year, through community meetings, to pledge the growers to observe the essentials in fly control. Campaigns

have been instituted each summer in infested regions by means of lectures, circular letters, news articles, and other publicity to keep the farmers attention centered on the necessity for cooperation in minimizing the damage by this pest.

TABLE 2.—HESSIAN FLY CONTROL WORK DONE IN 1921, 1922 AND 1923

| Work Done | 1921 | 1922 | 1923 |
|---|---------|---------|---------|
| Acres of stubble turned under in July and August..... | 309,717 | no data | 108,630 |
| Acres sowed to wheat on or after fly free date..... | 612,987 | no data | 226,285 |

GRASSHOPPER AND ARMYWORM

These insects occur each year in various parts of the state and some years in great enough numbers to do serious injury. Poison measures are used to combat them.

TABLE 3.—USE OF POISONED BAIT DURING THREE-YEAR PERIOD

| Work Done | 1921 | 1922 | 1923 |
|-------------------------------------|-------|-------|-------|
| Acres treated with poison bait..... | 3,821 | 1,824 | 8,487 |
| Pounds of poison bait used..... | 6,164 | 6,201 | 3,540 |

FRUIT INSECTS

Of these the San Jose scale has become the most important in Missouri and is probably the biggest problem the fruit grower has at present. During the past three years engine oil emulsions have been developed for scale control and they are now used extensively in some sections while lime-sulphur solution continues in favor with many of the successful growers. Scarcely less important are the insects which cause wormy fruit and which are considered in general spray methods. A schedule of sprays to cover the important insects and diseases has been developed in cooperation with the specialist in Horticulture. During the past year a series of spray circulars dealing with each spray, has been furnished each fruit grower in the State. Orchard schools have been

TABLE 4.—FRUIT INSECT CONTROL WORK DONE IN THREE YEARS

| Spraying Done | 1921 | 1922 | 1923 |
|--|-------|-------|---------|
| Farms on which fruit trees were sprayed..... | 711 | 677 | 4,363 |
| Acres in fruit that were sprayed..... | 4,212 | 7,169 | ----- |
| Number of trees sprayed..... | ----- | ----- | 130,246 |

held in the important fruit sections and demonstrations and lectures given in all phases of orchard management by the specialists in Entomology and Horticulture.

TRUCK CROP INSECTS

Heretofore most of the work in this field has been conducted by the specialist in truck crops. The extension entomologist gave some attention to these pests in the latter part of 1923 through lectures and news articles. A sub-project of work was established in cooperation with the truck crop specialist, to conduct demonstrations for the control of melon pests particularly, such as melon beetles, aphids and field mice.

LIVESTOCK INSECTS

A new sub-project was planned in the latter part of 1923 as a part of the extension program in Entomology with particular reference to the protection of domestic animals against the attacks of blood-sucking flies.

STORED GRAIN INSECTS

Weevil in stored grain, beans, peas, etc. are a serious menace not only in warehouses, elevators, and mills, but in the granaries and store-houses of the farmers. Information on treating stored products for such pests was made available in the fall of 1923 through lectures, circular letters and news articles. This work was made a sub-project and has been included in the program of practically every county in the State.

RODENTS

Some work has been done in the control of injurious rodents such as pocket gophers, which do serious injury to alfalfa and clover in the northern part of the State, and field mice in Southeast Missouri where they are especially destructive to planted melon seed. In 1923 pocket gopher infestations totaling 20,538 acres were treated with poison bait.

EXTENSION IN FIELD CROPS

By C. E. CARTER, *Project Leader*

PURE SEED

The first essential in a successful crop production program is an abundance of good seed of adapted varieties. For that reason the greater part of the work during the first two years of the period covered by this report was spent on a pure seed project. Tables 2 and 3 indicate a decided falling off in activity along the line of pure seed during 1923. This is explained in part by the adverse economic situation which prevailed during the past year, making the demand for pure seed considerably less. It is further explained by the fact that the standards for pure seed were considerably raised during 1923. Farmers who purchase purebred seed today are demanding a superior product. It is to be expected that as purebred seed becomes more widely disseminated throughout the State

the standard of perfection for those who produce purebred seed for sale will have to be constantly raised in order to meet the ideals of those who purchase such seed.

SOYBEAN PRODUCTION

This phase of the field crops project has reached its highest development in the better counties of Northwest Missouri. In most counties having organized extension work, soybeans have passed the demonstration stage. The greater part of the work at present is done in those counties with no organized extension work, largely on the poorer soils in Northeast Missouri and in the Ozark section. In these sections the Virginia variety gives best results. The introduction of this variety has been somewhat retarded due to lack of sufficient supplies of seed. This difficulty was largely overcome during the 1923 season when an unusually large crop of Virginia soybeans was produced.

WHEAT PRODUCTION

The work on this phase of the project has been of a general nature, except as to the development of sources of good seed, until 1923 when a definite long-time demonstration plan was undertaken. These demonstrations were called for convenience, "The Five Essentials of Wheat Production". These include, (1) early plowing and proper preparation of the seed bed, (2) use of pure seed of an adapted variety, (3) treatment of seed for loose and stinking smut, (4) use of fertilizer, (5) seeding after fly-free date.

An attempt was made in establishing these demonstrations to select cooperators more carefully than has been the custom, to furnish them more definite instructions as to what they should do and to give them closer supervision in carrying out all of the recommended practices. This work was started in sixteen counties with one to seven demonstrations in each county.

CORN PRODUCTION

With the exception of the work done on its pure seed phase, the corn work has been confined to getting a few counties to the point of development where they are ready to adopt the five-acre corn yield contest on their program of work. The work during this time in Saline County where this contest has been running for nine years is a splendid example of what can be done. Buchanan County started a similar contest in 1922 and continued during 1923. During the fall of 1923 eight new counties were enlisted in this work. A special feature added to the contest plan during the past two years is the Corn Production Program given at the annual seed show and sale which includes discussions of the best methods of corn production from both the soils and crops standpoint.

“CLOVER AND PROSPERITY CAMPAIGN”

During 1922 a so-called “Clover and Prosperity Campaign” was organized in cooperation with the soils project. This marks the first step in a long time program which takes into consideration all legume crops, each in its proper place in a system of farming. This campaign has three phases, the first of which is the propaganda or strictly campaign phase designed to reach large numbers of people and impress upon them the value and need of legume crops and how to grow them. “Clover and Prosperity Days” which make up a part of the first phase of this campaign were held during the summers of 1922 and 1923.



Fig. 3.—Part of the exhibit material used in the Clover and Prosperity campaign.

Exhibit material was carried on a two-ton truck, consisting of folding tables, with beaver board backs, upon which were displayed charts, diagrams, photographs and drawings and materials.

That these meetings successfully carried out the purpose for which they were designated is shown by the following table:

TABLE 1.—TWO YEARS WORK ON “CLOVER AND PROSPERITY” CAMPAIGN

| Year | Counties | Meetings | Attendance |
|------|----------|----------|------------|
| 1922 | 11 | 20 | 9,903 |
| 1923 | 26 | 41 | 31,298 |

TABLE 2. —LECTURES AND DEMONSTRATION MEETINGS, 1921, 1922 AND 1923

| Project | Year | Demonstrations | | Lectures | | Total | |
|-------------------|---------|----------------|------------|----------|------------|-------|------------|
| | | No. | Attendance | No. | Attendance | No. | Attendance |
| Pure Seed | 1921 | 1 | 50 | 83 | 2,557 | 84 | 2,607 |
| | 1922 | 5 | 25 | 13 | 589 | 16 | 614 |
| | 1923 | | | 3 | 600 | 3 | 600 |
| Soybeans | 1921 | 50 | 795 | 49 | 1,634 | 99 | 2,429 |
| | 1922 | 26 | 359 | 73 | 2,562 | 99 | 2,921 |
| | 1923 | 36 | 618 | 7 | 278 | 43 | 896 |
| Oats | 1921 | 1 | 12 | | | 1 | 12 |
| | 1922 | | | | | | |
| | 1923 | | | | | | |
| Wheat | 1921 | 6 | 172 | 1 | 15 | 7 | 187 |
| | 1922 | | | 6 | 380 | 6 | 380 |
| | 1923 | 6 | 80 | | | 6 | 80 |
| Red Clover | 1921 | | | | | | |
| | 1922 | 26 | 9,903 | | | 26 | 9,903 |
| | 1923 | 41 | 31,298 | | | 41 | 31,298 |
| Corn | 1921 | 23 | 846 | 1 | 150 | 24 | 996 |
| | 1922 | 8 | 107 | 37 | 673 | 45 | 780 |
| | 1923 | 19 | 1,903 | 5 | 1,630 | 24 | 3,533 |
| Alfalfa | 1921 | 14 | 207 | 3 | 53 | 17 | 260 |
| | 1922 | 8 | 242 | 5 | 220 | 13 | 462 |
| | 1923 | 1 | 39 | 1 | 100 | 2 | 139 |
| Grain Sorghum | 1921 | | | | | | |
| | 1922 | 10 | 160 | 21 | 937 | 31 | 1,097 |
| | 1923 | 11 | 287 | | | 11 | 287 |
| Extension Schools | 1921 | | | 17 | 1,286 | 17 | 1,286 |
| | 1922 | | | 14 | 752 | 14 | 752 |
| | 1923 | | | 31 | 3,588 | 31 | 3,588 |
| Totals | 1921 | 95 | 2,082 | 154 | 5,695 | 249 | 7,777 |
| | 1922 | 83 | 10,796 | 169 | 6,113 | 250 | 16,909 |
| | 1923 | 114 | 34,225 | 47 | 6,196 | 161 | 40,421 |
| Total | 3 years | 292 | 47,103 | 370 | 18,004 | 659 | 65,107 |

TABLE 3.—SUMMARY OF APPROVED SEED PROJECT 1921, 1922 AND 1923.

| | Corn* | Wheat | Soybeans | Cowpeas | Clover | Rye* | Total |
|--|-----------|-----------|-----------|---------|----------|--------|-----------|
| Counties in which seed was inspected and approved----- | 29 | 15 | 16 | 2 | 3 | 2 | 67 |
| | 18 | 23 | 17 | 1 | 1 | 1 | 61 |
| | 26 | 34 | 11 | 2 | 2 | | 75 |
| Bushels of seed inspected | 13,263 | 90,340 | 4,165 | 40 | 230 | 1755 | 109,793 |
| | 17,263 | 288,520 | 8,901 | 50 | 300 | 2055 | 317,089 |
| | 7,595 | 113,850 | 6,624 | 105 | 110 | | 128,284 |
| Fields or lots of seed approved----- | 55 | 26 | 28 | 2 | 3 | 4 | 118 |
| | 84 | 80 | 60 | 3 | 4 | 5 | 236 |
| | 49 | 54 | 31 | 2 | 2 | | 138 |
| Bushels of seed approved---- | 12,865 | 10,730 | 4,050 | 40 | 190 | 455 | 28,330 |
| | 16,742 | 44,582 | 8,647 | 50 | 240 | 580 | 70,841 |
| | 5,114 | 18,625 | 4,716 | 105 | 66 | | 28,626 |
| Value of approved seed sold-- | \$ 32,813 | \$ 14,458 | \$ 16,873 | \$ 175 | \$ 1,955 | \$ 420 | \$ 66,694 |
| | 40,533 | 48,900 | 29,515 | 225 | 2,655 | 545 | 122,373 |
| | 11,600 | 12,573 | 12,600 | 415 | 203 | | 37,391 |
| Commercial value of seed sold----- | \$ 22,475 | \$ 8,262 | \$ 10,437 | \$ 140 | \$ 1,530 | \$ 280 | \$ 43,124 |
| | 27,033 | 28,263 | 18,022 | 170 | 2,130 | 380 | 75,998 |
| | 2,800 | 9,313 | 9,000 | 310 | 150 | | 21,573 |

| | | | | | | | | | | | |
|--|------|-----------|----------|----------|----|-----|----|-----|----|-----|-----------|
| Gain in value due to approval | 1921 | \$ 10,338 | \$ 6,196 | \$ 6,436 | \$ | 35 | \$ | 435 | \$ | 140 | \$ 23,580 |
| | 1922 | 13,501 | 20,640 | 11,493 | | 55 | | 525 | | 165 | 46,379 |
| | 1923 | 8,800 | 3,260 | 3,600 | | 106 | | 53 | | | 15,819 |
| Bushels of approved seed reported sold | 1921 | 8,990 | 8,262 | 3,479 | | 35 | | 170 | | 350 | 21,286 |
| | 1922 | 12,029 | 20,482 | 8,076 | | 45 | | 220 | | 450 | 41,302 |
| | 1923 | 4,000 | 9,313 | 4,500 | | 105 | | 15 | | | 17,933 |

†Rye was not listed for approval in 1923.

*Corn was inspected on the farms in 1923 and the rules for approval made more rigid.

HOME ECONOMICS

By *ESSIE M. HEYLE, Project Leader*

Food and nutrition, Household Management, Clothing, and Health were the four sub-projects of Home Economics in which work was carried on from December 1, 1920 to November 30, 1923. The phases of these sub-projects that agents and specialists conducted with the women, varied somewhat from year to year.

TABLE 1.—ACTIVITIES OF HOME ECONOMICS WORKERS

| Manner in which home economics work was given | 1921 | 1922 | 1923 | Total |
|---|--------|--------|---------|---------|
| Counties with home economics agent..... | 16 | 16 | 10 | ----- |
| Counties with agricultural agent only ... | 40 | 41 | 48 | ----- |
| Counties with no agent..... | 22 | 14 | 26 | ----- |
| Total..... | 78 | 71 | 84 | ----- |
| Total number of meetings and demonstrations held..... | 2,652 | 2,280 | 3,140 | 8,072 |
| Total number of persons reached | 90,883 | 70,389 | 428,856 | 590,128 |
| Visits to homes | 1,462 | 1,420 | 1,460 | 4,342 |
| Local leaders who received training from extension agents or specialists and taught others..... | 380 | 302 | 1,411 | 2,093 |

CLOTHING

The clothing problem of the average rural woman of today is to get becoming, attractive clothes in which she will feel perfectly comfortable and happy, wherever she may go, but to get such clothing at a minimum expenditure of time and money. In helping to solve this problem most of the efforts of the home economics extension workers have been directed, in garment making, toward helping women with their fitting problems, by seeing that the women have good dress forms and fitted foundation patterns which they can use in making garments that will require little fitting. The dress forms that have been made have cost about a dollar and are made of gummed paper tape, two layers of which are pasted upon a gauze vest. Women can learn to make these in an afternoon. So many women who were originally taught by the home economics extension workers are now helping their neighbors to make them that the demand for this type of work has decreased rather than increased during the last three years.

In millinery, women have been taught to make becoming hats that have cost only a small amount. Short cuts in sewing, and in choosing becoming colors and lines for both garments and hats have been emphasized in connection with all of the clothing work.

In 1921, for the first time, definite plans were put into effect for using local leaders. These local leaders were used in all of the clothing projects. They were selected by their own communities to do a certain piece of work; they were trained by the specialist or county home economics agent, and they, in turn, taught the women in the communities what they had learned. In garment making and millinery two women from each of four communities were trained at one time in a four-day school, and each leader has been asked to show eight others what she has learned. This method of doing extension work has been very satisfactory. The women have been able to present the work so that on the whole good results were obtained, community leadership has been developed, and more work has been accomplished.

TABLE 2.—RESULTS OF THREE YEARS OF CLOTHING WORK

| Specific results | 1921 | 1922 | 1923 | Total |
|---|----------|----------|----------|-----------|
| Dress forms made | 4,000 | 5,035 | 2,518 | 11,555 |
| Hats made or remodeled | 738 | 4,916 | 6,504 | 12,158 |
| Women who learned to make hats | | | 3,263 | ----- |
| Patterns made..... | 1,247 | 3,678 | 1,884 | 6,809 |
| Garments made or remodeled | 9,304 | 4,330 | 2,375 | 16,009 |
| Women who learned easier, more attractive methods of making garments..... | | | 898 | ----- |
| Money saved as a result of dress form project* | \$40,000 | \$50,350 | \$25,180 | \$115,430 |
| Money saved as a result of other clothing projects* | \$27,076 | \$39,740 | \$37,932 | \$104,748 |

*Records not complete.

A two-day "carry-on school" for training leaders in clothing and garment making was planned in 1923 for those communities that wanted to continue these projects. For such schools, communities are required to send either the same leaders whom they sent to the previous four-day school or women whom these leaders had trained.

Results.—Following is a table which gives the results of the clothing work during the three-year period. The decrease in the number of dress forms in 1923 is explained by the fact that few demonstrations were given by the specialist and by the fact that the demand in the organized communities in which most of the extension work is done has been met in the previous two years. The decrease in number of patterns and garments in 1923 is due to the fact that the specialists devoted pro-

portionately more time to the millinery project and less to the garment making project:

Junior garment making club work has been the most popular junior home economics project.

In 1921 there were 346 garment making clubs.

In 1922 there were 465 garment making clubs.

In 1923 there were 442 garment making clubs.

Plans Made.—Among the noteworthy things accomplished was the carefully made plan for three years' work. The first year was as-



Fig. 4.—A garment making local leaders' school held at St. Joseph by home economics specialists of the Missouri Agricultural Extension Service.

signed to the making of household articles; the second year to the making of undergarments; the third year to the making of outer garments. Club circulars and record books, both attractively illustrated and specially written for girls, were prepared for each year's garment making club.

HOUSEHOLD MANAGEMENT

No specialist was employed for this project prior to 1921, although two specialists each gave a little time to demonstrations of household equipment. July 1, 1921 a specialist was employed to give half time to

“renovation of household furnishings” but she chose to give most of this time in the latter half of this year which came in 1922 so that during 1921 she spent only about six weeks on the project. August 16, 1921 a full-time household management specialist came into the service. During the three-year period the following projects have been worked on: Kitchen Improvement; Household Equipment; Methods of Doing Housework; Renovation of Household Furnishings; and Making the Home More Attractive.

In 1921, just preceding Mothers' Day, a home improvement week was observed in seven counties for the purpose of arousing interest in modern equipment. Suggestions were sent to merchants for window exhibits, special posters were distributed, circular letters sent out, and special news articles were supplied newspapers. “Save mother, not money” was the slogan used in all posters and publicity.

In the summer of 1921 the agricultural engineering specialist took equipment on a truck to a number of counties and gave demonstrations on the installation of running water. This proved quite a stimulus in interesting farm folks in making the work easier for the women. “Save mother, not money; install running water” was the slogan on this truck.

In 1922 and 1923 in connection with the tour of the Clover and Prosperity truck, demonstrations were given on house furnishing. Two large pieces of papered wall board, one of which was fitted with a window frame and the other used as a background for a mantel frame, rugs, linoleum, window curtains, shades, a few pictures, wall paper, and various wood finishes were used as demonstration materials. This truck visited 11 counties in 1922 and the demonstrations were seen by 3,787 women. In 1923 twenty-six counties were visited and 12,919 women were reached. In all of the work, methods of making the home more attractive with the expenditure of little or no money were emphasized.

In 1923 most of the kitchen improvement work was carried on through a kitchen improvement contest. County and state prizes were offered. The women's kitchens were entered in the contest and were scored before and after improvements were made. In deciding upon the winning kitchen consideration was given to improvements made, the efficiency of the finished kitchen, and the wise expenditure of money. In eight counties, 293 kitchens were entered in this contest. Five county-wide kitchen improvement tours were held at the close of the contest, and in each tour were combined a visit to the contest kitchens, a picnic dinner and the awarding of prizes.

In 1921 and 1922 household equipment work was carried as a separate project and women conducted demonstrations in the use of this equipment, but in 1923 this was dropped as a separate project and

women were interested in labor saving equipment in both the Kitchen Improvement and Methods of Doing Housework projects. The equipment that has been demonstrated has included gasoline irons, vacuum type carpet sweepers, pressure cookers, various kinds of cleaning equipment, dish drainers, wheel trays, and bread mixers.

In the Methods of Doing Housework project, dish washing, house cleaning, and laundering processes were studied. In 1921 this was not offered as a separate project and in 1923 little was done because most of the time of the specialist was used on the Kitchen Improvement Contest. With a few clubs, however, the plan of having women make a definite study of how they were already using their time by keeping a week's record, was started as a means of deciding which methods of doing housework should be studied.

TABLE 3.—RESULTS OF THREE YEARS' WORK IN HOME MANAGEMENT PROJECT

| Specific results | 1921 | 1922 | 1923 | Total |
|--|--------|----------|-------|--------|
| Kitchens made more convenient..... | 59 | 74 | 409 | 642 |
| Water, heat or light, or waste disposal systems installed..... | 43 | 171 | 62 | 276 |
| Other pieces labor saving equipment bought and used..... | 399 | 361 | 735 | 1,495 |
| Estimated hours saved by use of labor savers..... | 9,532 | 22,056 | ----- | 31,588 |
| Women using improved methods of doing housework..... | ----- | ----- | 51 | 51 |
| Women adopting suggestions to make homes more attractive..... | 61 | 76 | 1,212 | 1,349 |
| Homes built or remodeled..... | 17 | 47 | 8 | 72 |
| Single rooms remodeled..... | 28 | 23 | ----- | *----- |
| Money saved on renovation of household articles..... | *----- | \$655.50 | ----- | ----- |
| Women repairing or refinishing furnishings..... | 34 | 133 | 153 | 320 |
| Household articles renovated..... | *----- | 536 | ----- | ----- |

In the Renovation of Household Equipment project, demonstrations were given by the specialist. The local leaders, who later taught the women in their communities, were trained in methods of refinishing furniture. Mending, cleaning and sizing rugs, renovation of window shades, mending pots and pans, mending screens, putting in glass, and refinishing woodwork were some of the problems taken up in the Renovation of Household Furnishings project.

Making the Home More Attractive.—No organized project work was carried on in this phase of Home Economics work until 1923. Isolated lectures were given on this subject in connection with Better

Homes Demonstrations and many persons were reached through the Clover and Prosperity truck tours, but it was not until the fall of 1923 that a project was planned. It is the plan of this project to give four demonstrations in each community selecting this project and to get two to four women in each community to carry on demonstrations in improving rooms and in beautifying farmstead grounds and to have a "More Attractive Home Tour" at the close of the work.

A few counties have conducted "Chicks for Conveniences" campaigns. In 1923 in Linn County, 19 of the 20 communities adopted this plan of raising money for home conveniences. Each woman was asked to set two hens and to use the proceeds of the chickens raised and sold

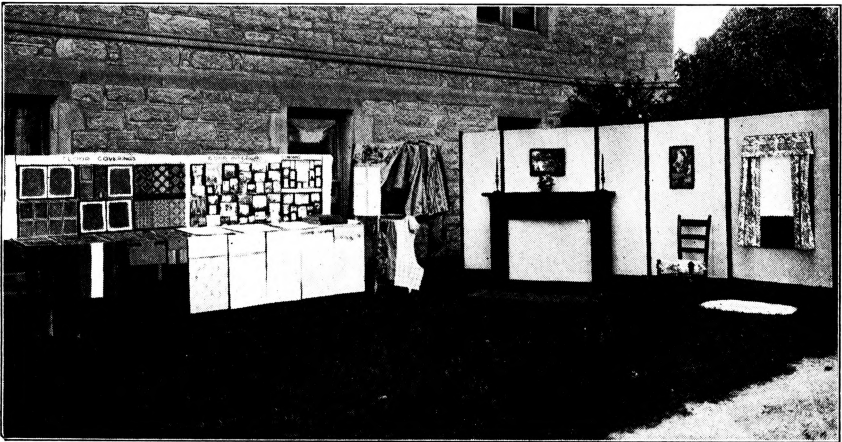


Fig. 5.—More-attractive-homes exhibit carried throughout the Clover and Prosperity campaign.

from these two hens to buy equipment for her home. Seventy women reported that they had made \$776.31 from their home convenience hens. By this means eight women installed water in their kitchens and there were installed three wheel trays, five oil stoves, three pressure cookers, and much other labor saving equipment.

FOOD AND NUTRITION

In the beginning of 1921 there were two nutrition specialists, one of whom served five months, the other six months, and during the year a new specialist was employed who served seven months. In 1922, the new specialist who had been employed the year previous was married and resigned after serving three and a half months and no other specialist was employed for this project until December, 1922. These changes

interfered considerably with the development of the nutrition project. The principal phases of the Food and Nutrition project which were worked on were: Child Feeding, Meal Planning or Food Selection, and Food Preservation.

Child Feeding.—Practically all of the child feeding work has been with school children and their mothers and has been accompanied by physical examinations by nurses or doctors.

In 1921 there were held 138 nutrition clinics or talks to groups where children had been previously weighed and measured, and these reached 3,820 women and 7,650 children. Some of this work was done in cooperation with the Missouri Tuberculosis Association, some with the Red Cross and some with the Parent-Teacher Associations, but most of it was done in cooperation with the county agents.

In 1922 an attempt was made to use local leaders on this project who would receive training from the specialist in a two-day school and would be responsible for assisting with two demonstrations in child feeding, for weighing and measuring the children monthly and for seeing that the children take time enough to eat their school lunch slowly, and either carry milk to school to drink or prepare a hot dish to eat, with the cold school lunch. Since there was no specialist most of this year these plans were not successfully carried out in many places.

In 1923 no attempt was made to use local leaders. The work was carried on through talks to school children and mothers, conferences with mothers of illy nourished children, and home demonstrations in child feeding. In all cases children were weighed and measured and their food habits scored several times a year and in most cases they were examined by a doctor or nurse. The value of carrying milk to school and that of the hot school lunch was emphasized as in the previous year and teachers were supplied with suggestions for the use of stories, rhymes, poster making, etc., to maintain the interest of the pupils in health and good food habits. A great deal of child feeding work, particularly with the pre-school children was done in connection with the food selection project.

Meal Planning or Food Selection.—Prior to 1923 little time was spent on this project. The work was usually given through lectures by specialists or agent and the work was not particularly well organized. Some home demonstrations in corrective diet or normal meal planning were conducted. In 1923 a food selection project which had been carefully planned was conducted in seven counties. A meeting was held in each community selecting the project at which time the relation of food to health, and physical defects which might interfere with health were discussed, food habits of those present scored, and two local leaders selected. These local leaders were trained in three subsequent meetings

and after each meeting the leaders met the women in their communities to discuss with them all they had learned in the leaders' training school. A result demonstration meeting was held at the close of the project. In addition to the use of local leaders, home demonstrators were secured for overweight, underweight, and prevention of constipation. Planning meals for attractiveness and health, foods to help one gain and lose weight and to prevent constipation, foods for children of various ages, hot school lunch, feeding threshers, and planning the winter vegetable budget were some of the problems discussed.

Food Preservation.—Canning.—Most of the women in communities in Missouri that are interested in extension work have had canning demonstrations, but there are still many women who do not do cold-pack canning. Each year a few demonstrations were given. Often these were in communities where canning clubs had been organized so the demonstration served both the women and the club girls.

TABLE 4.—SOME RESULTS OF THE MILK CAMPAIGN AS SHOWN BY THE PRELIMINARY AND FOLLOW-UP SURVEYS

| | Parochial Schools St. Joseph | | Rural Schools Buchanan Co. | | Rural School Andrew Co. | |
|--|------------------------------------|--------------|----------------------------------|--------------|-------------------------------|--------------|
| | <i>Before</i> | <i>After</i> | <i>Before</i> | <i>After</i> | <i>Before</i> | <i>After</i> |
| Per cent drinking whole milk daily..... | 66.7 | 76.3 | 28.0 | 33.5 | 29.1 | 47.5 |
| Per cent drinking milk at school .. | 0 | 3.2 | 10.8 | 35.8 | 6.6 | 24.0 |
| Per cent underweight..... | 58.1 | 29.3 | 40.9 | 24.8 | 29.1 | 27.5 |
| Per cent 10% underweight..... | 13.2 | 9.1 | 17.8 | 9.8 | 6.5 | 5.8 |
| Per cent improved in health..... | ---- | 66.2 | ---- | 38.9 | ---- | ---- |

In 1922 a Winter Vegetable Budget project was organized for the purpose of stimulating interest in growing and canning or otherwise storing enough vegetables so that the family could have in its diet each day during the winter two kinds of vegetables other than potatoes. A lecture was given on the subject, demonstrators secured, and results checked up at a subsequent meeting. This project was revised and offered again in 1923.

Milk Campaigns.—In 1923 one Milk Campaign was conducted simultaneously in St. Joseph, Buchanan and Andrew Counties by a representative from the Dairy Division of the United States Department of Agriculture, five home economics specialists and five home economics agents. Poster contests, window exhibits, menu reminders, bulletins, newspaper articles, talks to children in schools, and to adults in factories, at clubs and other organization meetings were used to put

across the "Milk for Health" message. The campaign was held the first part of February. A preliminary survey in January, a follow-up survey the last of April or first of May was made in most of the rural schools and in the parochial schools of St. Joseph, but only the preliminary survey was made in the St. Joseph schools. During the week's campaign 183 talks to 16,439 children were made and 24 talks before 2,458 adults. Records of the milk distribution show that the consumption of milk in St. Joseph was increased 10 per cent.

TABLE 5.—RESULTS IN THE FOOD AND NUTRITION PROJECTS

| | 1921 | 1922 | 1923 | Total |
|---|-------------|------------|------------|-------------|
| Homes influenced to serve better selected food..... | 1,112 | 475 | 1,472 | 3,059 |
| Women adopting suggestions as to improved methods of feeding children..... | 951 | 405 | 1,015 | 2,371 |
| Children showing improvement from child feeding project ... | 1,083 | 1,671 | *---- | *---- |
| Adults having physical defects corrected..... | *---- | *---- | 33 | *---- |
| Children having physical defects corrected..... | *---- | *---- | 76 | *---- |
| Children carrying milk to school | *---- | 587 | 2,260 | 2,847 |
| Children who are bringing more satisfactory lunch to school.. | *---- | *---- | 524 | *---- |
| Homes assisted in correcting undernourished children.... | *---- | *---- | 374 | *---- |
| Children involved..... | *---- | *---- | 725 | *---- |
| Homes using more dairy products..... | 717 | *---- | 2,818 | *---- |
| Homes using more green vegetables in diet..... | *---- | *---- | 1,616 | *---- |
| Homes using less tea and coffee.. | *---- | *---- | 599 | *---- |
| Homes using more fruit..... | *---- | *---- | 1,617 | *---- |
| Children examined by doctor in connection with Food Selection Project..... | *---- | *---- | 406 | *---- |
| Number homes influenced to adopt better practices relative to food preservation.... | 221 | 185 | 767 | 1,167 |
| Number homes which have dried, stored or canned enough vegetables so can be used twice a day..... | *---- | *---- | 2,200 | *---- |
| Value of food preserved..... | \$20,425.77 | \$7,635.77 | \$6,389.10 | \$34,450.64 |

*Records not available.

Boys' and Girls' Clubs.—Hot school lunch clubs, canning and baking clubs were conducted for boys and girls. Following is a list of the number of these clubs in the different years:

| | 1921 | 1922 | 1923 | Total |
|------------------|------|------|------|-------|
| Canning | 48 | 24 | 27 | 99 |
| Hot School Lunch | 83 | 48 | 40 | 171 |
| Baking | 23 | 14 | 13 | 50 |

HEALTH

In 1921 pre-school child health conferences were held, demonstrations given on home care of the sick and care of mother and baby, and health talks made on community sanitation, better sanitation for rural schools, constipation, and prevention of communicable diseases.

In the pre-school child health conferences, pre-school children were weighed, measured, and examined by local doctors for physical defects and advice given by the health worker on the care of the children. In some cases a nutrition specialist assisted by giving advice on the nutrition of these children. Of these conferences 22 were held in nine counties at which 1,189 children were examined and as a result of these conferences 191 women reported that they had adopted the suggestions given and 494 children had defects corrected.

Also 22 home demonstrations in feeding the baby from the weaning period through the second year were completed and reported to their communities.

The care of the mother before, during and after childbirth, and the care of the baby were discussed and demonstrated at single meetings and results were obtained at an additional meeting in each of the same communities.

In April, 1922 the Pre-School Child Health Clinics and Care of the Mother and Baby projects were both discontinued because the Child Hygiene Division of the State Board of Health was by that time so well organized that it was ready to take over this type of work for which it was receiving Federal funds.

In 1922 the project for the Home Care of the Sick was reorganized so that instead of community demonstrations by the specialist two leaders from each of three communities were trained in a one-day school. One hundred and thirteen leaders were trained in the home care of the sick. Health talks, most of them on the prevention of communicable diseases, were also given.

In 1923 the project for the Home Care of the Sick was conducted as planned the previous year, and talks on keeping the family well were

given. There were four of these talks planned and communities were allowed to choose one or more as they wished. The subjects offered were: Care of the Nervous System; Care of the Digestive System; Care of the Eyes, Ears, Nose, Mouth, and Throat; Women Physically Fit.

A few First Aid Clubs were organized for boys and girls in 1922 and in 1923 there were 20 of these clubs. The state champion club demonstration team in home economics was from a First Aid Club in Linn County.

TABLE 6.—RESULTS IN HEALTH PROJECT

| | 1921 | 1922 | 1923 | Total |
|---|-------|------|------|-------|
| Mothers improving care of baby or self | 216 | 214 | --- | 430 |
| Persons having physical defects corrected | 494 | 414 | --- | 908 |
| Persons helped to overcome constipation | 16 | 109 | --- | 125 |
| Persons helped to prevent colds | --- | --- | 139 | 139 |
| Persons taught to care for sick in home | 125 | 791 | 790 | 1,706 |
| Persons adopting improved health habits | 1,566 | 778 | 710 | 3,054 |
| First Aid Clubs | --- | --- | 20 | 20 |

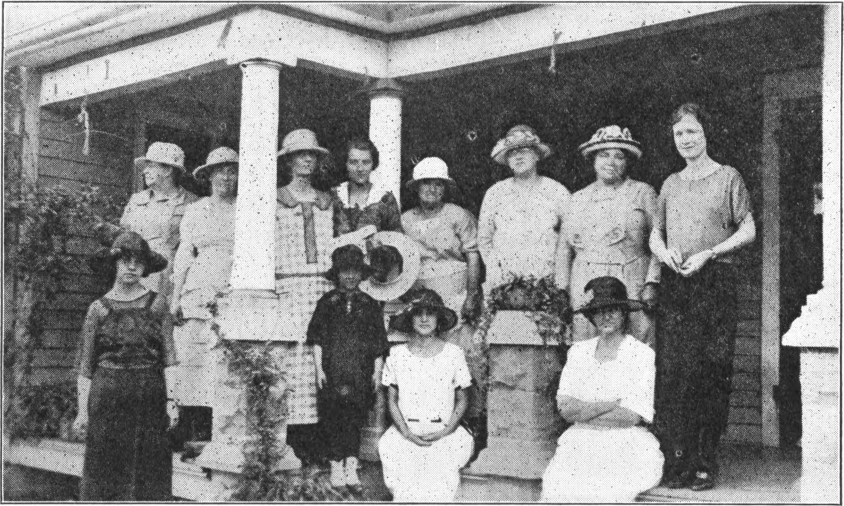


Fig. 6.—Local leaders wearing hats made in millinery training school; Cadwell County.

ASSISTANCE GIVEN WOMEN'S ORGANIZATIONS

Homemakers' Clubs, Parent-Teacher Associations and Federated Women's Clubs were furnished with suggestions for Home Economics subjects for their club meetings, with outlines and subject matter material to use in the discussion of these subjects, and occasionally with

speakers. Many Homemakers' Clubs carried on regular Home Economics project work. Sixty-three Women's Progressive Farmer's Associations were furnished specialists for one or more adult Home Economics projects and some assistance was given these organizations in Boys' and Girls' Club work.

HOME ECONOMICS WORK WITH NEGRO WOMEN

The work with negro women was done by one full-time worker who organized the women, in various parts of the state where she could find good leaders, into Homemakers' Clubs. These she visited several times a year, giving lectures or demonstrations, visiting in the homes of the members, and encouraging and assisting the leaders so the work would continue during her absence.

TABLE 7.—ACTIVITIES AND RESULTS WITH NEGRO WOMEN

| Activities and results | 1921 | 1922 | 1923 | Total |
|---|-------|--------|---------|---------|
| Counties in which work was done | 30 | 41 | 40 | ----- |
| Boys' and Girls' Clubs organized | 13 | * | 15 | 28 |
| Meetings held | 124 | 144 | 66 | 334 |
| Persons reached | 7,488 | 12,263 | 980 | 20,731 |
| Rural and town homes visits made | 472 | 276 | 167 | 915 |
| Leaders assisting | * | 253 | 62 | 315 |
| Local leaders who taught others | 52 | 96 | 37 | 185 |
| Quarts fruit, vegetables, meats canned | 3,445 | 29,062 | 752,735 | 785,242 |
| Homes storing or canning enough vegetables to be served twice a day | ----- | ----- | 197 | 197 |
| Hens handled in culling | 1,967 | * | 596 | 2,563 |
| Kitchens improved | ----- | ----- | 32 | 32 |
| Water systems installed | 10 | 10 | ----- | 20 |
| Labor saving equipment bought | 37 | 194 | 62 | 293 |
| Dress forms made | 74 | 63 | 97 | 234 |
| Garments made or renovated | 133 | 257 | 524 | 914 |
| Children weighed and measured in connection with child feeding | 2,538 | ----- | 300 | 2,838 |
| Children drinking more milk | 327 | 127 | 300 | 754 |
| Children carrying milk to school | 152 | 175 | 509 | 661 |
| Children showing improvement | 57 | 47 | ----- | 104 |
| Hot school lunch | 4 | 9 | 27 | 40 |
| Babies being cared for under direction of worker | 57 | ----- | ----- | 57 |
| Homes screened | ----- | 317 | 297 | 614 |
| Wells and cisterns cleaned | ----- | 118 | ----- | 118 |
| Privies built, cleaned or repaired | ----- | 138 | 19 | 157 |
| Persons having physical examinations | ----- | ----- | 334 | 334 |
| Children persuaded to stay in school | ----- | 104 | ----- | 104 |
| Persons having physical defects corrected | ----- | ----- | 57 | 57 |

*Figures not available.

EXTENSION IN HORTICULTURE

By A. P. BOLES, *Project Leader*

Extension work in Horticulture for the period December 1, 1920 to November 30, 1923 has been based primarily on demonstration orchards, gardens and truck crop fields, supplemented by method and result demonstration meetings in the field, by lectures and by timely literature such as bulletins, short circulars, letters and newspaper articles.

The work has been planned and carried out by the specialists in cooperation with the county extension agents and local community leaders.

The outstanding feature of this three-year period has been the gradual but gratifying increase of interest shown by the farmers of the State in the improved horticultural practices recommended and demonstrated in all of the extension work.

A study of the extension work in horticulture for the three-year period shows clearly that the fruit and truck growers of the State are looking more and more to the College of Agriculture for help and advice in all of the problems of fruit and truck production. The attendance and interest at meetings and demonstrations has been increasing from year to year with the result that it is now impossible for specialists to visit personally every county where horticultural assistance is requested of the College.

TABLE 1.—FIELD MEETINGS IN HORTICULTURE

| Meetings, days and attendance | 1921 | 1922 | 1923 |
|---|-------|-------|--------|
| Days spent in field by specialist..... | 190 | 237 | 286½ |
| Number of meetings on horticulture..... | 191 | 205 | 591 |
| Attendance at meetings | 4,548 | 7,012 | 10,088 |

An idea of the value of horticulture to the farmers of Missouri is indicated in a statement of the total value of the principal horticultural crops in Missouri authorized by E. A. Logan, agricultural statistician for Missouri in the United States Department of Agriculture, as follows:

| TOTAL PRINCIPAL ORCHARD, GARDEN AND TRUCK CROPS IN MISSOURI | | |
|---|--------------|--------------|
| 1921 | 1922 | 1923 |
| \$27,411,081 | \$38,146,880 | \$41,257,260 |

Practically all the farmers in the State (263,000 in number) make use of some horticultural crops each year.

The soil, climate and location geographically of the State of Missouri make it potentially one of the greatest fruit and truck growing states of the Union.

The present production of fruit and vegetables in Missouri is only a small per cent of the maximum possibilities of production.

The methods of marketing horticultural products are being improved to meet the needs of greater production.

A discussion of the details of each phase of the horticultural work for the above period is given under the different project and sub-project heads.

DECIDUOUS FRUIT CROPS

As the extension work in deciduous fruit crops has been based primarily on demonstration orchards and vineyards the following table will visualize the scope of the work.

TABLE 2.—ORCHARD DEMONSTRATION WORK REPORTED BY YEARS

| Number, extent and distribution | 1921 | 1922 | 1923 |
|---|------|------|------|
| Number of demonstrations commercial orchards, home orchards, and vineyards..... | 74 | 81 | 274 |
| Number of acres involved in these demonstrations | ---- | 1393 | 1824 |
| Number of counties participating..... | 26 | 22 | 46 |

The large increase in demonstrations for 1923 is partially due to the larger amount of home orchard improvement work begun in that year.

Orchard Management.—(a) *Commercial Orchards.*—There have been established and maintained one or more demonstration commercial orchards in each county where there is an interest in commercial fruit growing. Practically the same number of orchards are used each year as only a few orchards can be utilized for holding demonstration and result meetings, and the same orchards are carried as demonstration orchards from year to year.

The almost complete failure of the fruit crop in 1921 due to severe late spring freezes considerably lessened the need of extension work in fruit crops for that year. The fruit crop specialist therefore gave most of his time in 1921 to watermelon and cantaloupe extension work. A summary of this work is given under the truck crop section of this report.

The results of the 1922 and 1923 work in connection with commercial orchards is shown in the comparatively high percentage of profitable commercial crops of fruit.

(b) *Home Orchards.*—Most of the farmers of Missouri have fruit trees, vines or bushes in yard or garden, set out with the sole idea of supplying the family with its requirements of fresh fruit for eating fresh or canning.

Early in 1923 the fruit crop specialist began expanding the home orchard work of the Extension Service of the College.

Each county agent was urged to select and maintain one or more demonstration home orchards. This movement has already met with considerable success as is indicated in the large increase in demonstration orchards for the year and in the increased demand for information on spraying and other phases of orchard management.

During the late winter and early spring of 1923 more than 30,000 timely circulars on orchard problems were mailed out by the College.

At the beginning of the 1924 season there were more than eight thousand signed requests on file to receive each of the timely circulars.

For 1924 more than 75,000 circulars on fruit growing will be mailed out by the Extension Service of the College of Agriculture.

(c) *District Horticultural Schools.*—In the late winter and early spring of 1921 the fruit crop specialist planned several two and three-day horticultural schools for certain sections of the State. The county extension agents in each district together with local community or project leaders were invited to attend the first day's session which was given exclusively for their benefit. The second and third days were planned to accommodate the interested fruit growers of that district. These meetings were so successful that similar schools have been planned for each of the following years.

In 1923 the specialist in entomology has cooperated with the fruit crop specialist in holding these meetings.

Pruning and spraying have been fully discussed and demonstrated in these schools. In addition various other subjects of interest to the county agents and fruit growers were discussed.

TABLE 3.—DISTRICT HORTICULTURAL SCHOOLS—DAYS AND ATTENDANCE

| Days and Attendance | 1921 | 1922 | 1923 |
|---|------|------|------|
| Number of days used in horticultural schools..... | 4 | 4 | 11 |
| Attendance..... | 103 | 333 | 403 |

Grape Management.—A remarkable development of the grape industry in Missouri has taken place principally during the three-year period of 1921, 1922 and 1923. Between three and four thousand acres of grapes have been set in South Central and Southwest Missouri in this period. This development has been helped in many ways by the Extension Service of the College of Agriculture. Meetings and demonstrations have been held in the field and lectures given at gatherings of farmers interested in grape growing.

Most of these grapes have been set out with the view of selling the grapes for table dessert purposes but there is also a demand for grapes for grape juice and wine, and for jams and jellies. Demonstrations are

being established in some of the most interested sections of South Missouri and it is hoped to increase the number of these demonstrations from year to year.

Special Problems.—Special problems of fruit growers in different parts of the State have been handled as help was needed.

One of the outstanding problems solved in the period of 1921 to 1923 was the development of a method to handle a young orchard in Northwest Missouri that had been severely affected by winter injury and fungus infection in the heart wood.

The cause and remedy was finally worked out in the fall of 1921 and in March 1922 the injured trees to the number of 1243 four-year-old trees were cut off below the injury and regrafted. The success of the undertaking was very pleasing in that at the close of the season a count late in August showed a mortality of only 31 grafted trees, some of which were killed by cultivating tools. The detailed results have been published in Research Bulletin 56 of the Missouri Experiment Station.

VEGETABLE AND TRUCK CROPS

Extension work with the vegetable and truck crops in Missouri has been developed within the past three years to meet the problems confronting commercial growers of such crops; and to encourage and assist in home gardening. The work was undertaken by a full-time specialist in April 1921 and during the remainder of that year much of the time was devoted to the miscellaneous commercial crops and gardens but with emphasis on melons, tomatoes and sweet potatoes. Since that time efforts have been concentrated on improving production methods of the four principal truck crops; potatoes, tomatoes, sweet potatoes and melons, of which there is an aggregate annual crop of approximately 120,000 acres; and on home gardening and boys' and girls' clubs.

Field demonstrations to show the results of using recommended methods in truck crop production as compared with other methods have been most important as a means of securing the further adoption of such improved practices. The following table indicates the extent to which such demonstrations have been employed:

TABLE 4.—NUMBER AND EXTENT OF TRUCK CROP DEMONSTRATIONS

| Demonstrations, etc. | 1921 | 1922 | 1923 |
|---|------|------|------|
| Number demonstrations completed (Truck crop and home garden.) | 22 | 53 | 226 |
| Acres in completed demonstrations..... | 116 | 310 | 1423 |
| Number counties represented..... | 11 | 24 | 36 |
| Total number counties participating in truck crop project..... | 15 | 32 | 48 |

Potato Production.—Three practices, not in general use, have been demonstrated to materially increase yield and quality of potatoes in Missouri. They are (1) the use of vigorous, high quality northern grown seed potatoes, preferably certified, and of an adapted variety, (2) seed treatment for disease prevention and (3) the use of commercial fertilizers together with manure and green manure. To secure the adoption of these has been the aim and purpose of this project.

The work was started too late in 1921 to accomplish much that year. In the winter and spring months of 1922 and 1923 however, meetings were held to create interest in these practices, to get growers to order certified seed and fertilizer, to plan field demonstrations and hold seed treatment method demonstrations. The work of supervising demonstrations, conducting field meetings and tours and summarizing results has extended through the summer months also.

A summary of the results reported for this work follows: (More detailed account may be found in Extension Circular 138, Missouri College of Agriculture):

TABLE 5.—POTATO DEMONSTRATIONS AND THEIR RESULTS

| Measure of progress | 1921 | 1922 | 1923 |
|---|-------|--------|--------|
| Number of field demonstrations accurately reported..... | ----- | 12 | 64 |
| Average increase in yield on demonstration fields, from one or more improved practices, bushels per acre..... | ----- | 30.6 | 50.5 |
| Acres fertilized..... | ----- | 1441 | 2,196 |
| Bushels of certified seed used..... | ----- | 10,260 | 21,480 |
| Bushels of seed treated..... | ----- | ----- | 30,120 |

More thorough spraying and dusting for insect control have been encouraged and demonstrated. Better cultural practices, including early planting for the early crop, crop rotation, thorough cultivation, and, for the late crop, seed selection have been advocated and a definite improvement in most of these lines can be noted in many parts of the State.

Tomato Production.—General meetings of market gardeners and cannery growers have been held in important producing sections to discuss better methods of growing tomatoes. These have been followed up with carefully planned field demonstrations which have shown the value of (1) disease control by spraying, rotating crops and using wilt-resistant varieties, and (2) commercial fertilizers in increasing yields, quality and earliness. In 1921 demonstrations were established and maintained in two important market crop sections. They resulted in

greatly increased yields, which, together with hastened maturity and improved quality, returned an average net increase in value of the crop of \$79.25 per acre as reported by the growers. So conclusive were these results that the adoption of these practices in the two sections (St. Louis County and Jasper County) has become almost universal.

In 1922 and 1923 similar meetings were held and demonstrations conducted in other market crop sections and in the south part of the State where tomatoes are grown extensively for canning purposes. The results there have been convincing, as shown in the following table and by the fact that in 1923 reports show 351 farmers in Missouri using high grade fertilizer on 1,707 acres of tomatoes.

TABLE 6.—RESULTS OF TOMATO DEMONSTRATIONS

| Items reported | 1921 | 1922 | 1923 |
|--|-------|-------|-------|
| Number of demonstrations reported | 8 | 15 | 37 |
| Average increase reported, pounds per acre | 2,730 | 2,694 | 2,200 |

Melons and Cantaloupes.—The demonstrating of efficient and practical methods of insect control and securing their adoption by a large percentage of growers throughout the State has been the outstanding accomplishment in extension work with the cucurbits. The striped cucumber beetle is the most serious single enemy of these crops and in the commercial producing sections is so abundant as to frequently cause total crop losses, unless intelligently combated. Before 1921 the chief methods of control had been those of “driving” and dusting with ashes or other non-poisonous dusts which, at best, gave only temporary relief. In that year, however, the efforts of both horticultural specialists during the early summer months were given to demonstrating and advertising a simple and effective method of mixing and applying an arsenical dust, and for more severe attacks or where aphids were also present, the use of nicotine dust combined with arsenicals. These demonstrations included all the melon shipping counties and the principal market gardening sections of the State.

In Southeast Missouri it was estimated in 1921 that the average untreated watermelon fields produced a car of melons on each seven acres while the fields receiving three or more applications of the insecticide produced a car for each three acres.

In 1922 a circular was prepared and sent to 900 melon growers of the State giving complete directions for mixing and applying insecticide dusts. This was repeated in 1923. The demonstrations were also continued by the truck crop specialist and by many county agents.

It was estimated that, in 1922, 75% of the melon acreage was treated by one of the recommended dust insecticides and in 1923 fully 90%. The county extension agent of one of the principal melon producing counties writes that, "No other single recommended agricultural practice has been so universally adopted in the melon district as the dusting of melons for insect control."

Melon wilt control by long-time crop rotation has been demonstrated to be an effective and necessary practice. The use of commercial fertilizer in supplementing the diminishing and inadequate supply of stable manure has also been satisfactorily demonstrated for both water-melons and cantaloupes.

Sweet Potato Disease Control and Storage.—The two most important problems in sweet potato production in Missouri are those of controlling diseases and providing proper storage for the crop. In 1921 meetings and demonstrations on field seed selection for obtaining disease-free, unmixed seed were held in seven sweet potato growing districts. The proper storage conditions were discussed and plans for storage houses presented in the twelve largest producing counties. This resulted in the disinfection of a great many houses and the remodeling of nine storage houses ranging in capacity from 500 to 5,000 bushels. One 15,000-bushel house was built on government specifications.

Early in 1921 plans were developed for an approved seed list using the previously selected seed as a basis for starting. Seed treatment and sanitary bedding methods were demonstrated and instructions distributed to growers in circular form. Fields submitted for approval were inspected and, if passed, the crop again inspected in storage.

Sweet potato work for the period is visualized in the following table:

TABLE 7.—SWEET POTATO WORK, REPORTED BY YEARS

| Measure of progress | 1921 | 1922 | 1923 |
|---|-------|-------|-------|
| Storage houses built or remodeled | 10 | 5 | 3 |
| Storage houses disinfected | ----- | ----- | 38 |
| Seed treated for disease prevention, bushels..... | ----- | 4,131 | 3,300 |
| Number of fields inspected for approval | ----- | 148 | 107 |
| Number of fields approved | ----- | 54 | 58 |
| Bushels approved seed from 1922 crop only | ----- | ----- | 5,544 |

Note.—Owing to the unsatisfactory market outlook the sweet potato acreage in 1923 was greatly reduced.

Home Gardening.—Many lectures and news articles and a mimeographed circular giving a planting plan, recommended varieties, planting distances, and seed required for a desirable farm garden have been

used as the means of encouraging home gardening. Demonstration gardens have been planned and maintained in a few counties where special need has arisen and careful supervision could be given.

BOYS' AND GIRLS' CLUBS

Clubs have been organized and supervised with members growing one-tenth acre or more of an important truck crop. The three crops used in this work are potatoes, tomatoes and sweet potatoes.

In 1923 the subject matter material was reorganized and rewritten in booklet form with coordinated record books. This is expected to greatly facilitate future club work.



Fig. 7.—Local show of Oakville Boys' Sweet Potato Club; St. Louis County, 1923. These boys produced an average of more than 300 bushels of sweet potatoes per acre on their club fields.

EXTENSION IN POULTRY HUSBANDRY

By H. L. SHRADER, *Project Leader*

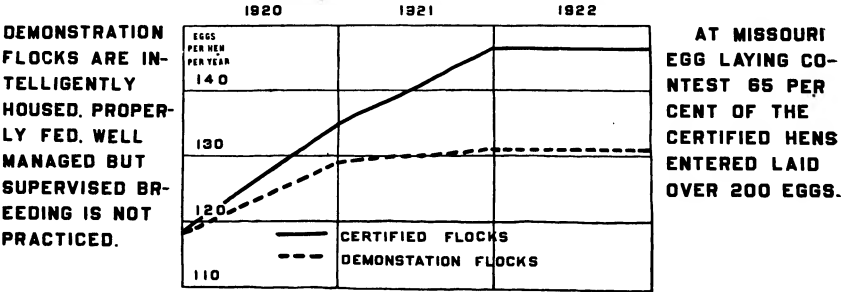
The Poultry Extension program is centered around the demonstration farm flock. The object is to establish at least one demonstration farm poultry flock in each agricultural community in the State. Flock owners are definitely enrolled and sign an agreement, stating that they will follow, as nearly as possible, recommendations of the Agricultural Extension Service. Seasonable campaigns on early hatching, proper care of growing stock, producing quality eggs, culling farm hens, proper housing conditions, improved winter feeding methods, and packing

eggs for shipment, are carried on through these demonstration farms by the county extension agent and poultry specialist. These campaigns are conducted with suitable publicity by means of field demonstrations, tours, poultry shows, and county-wide meetings.

CERTIFIED POULTRY BREEDING

The object of this project is to establish demonstrations on the proper methods of breeding for increased egg production and to make available breeding stock of high quality having official certification as to quality and breeding.

CERTIFIED BREEDING INCREASES EGGS



CERTIFIED BREEDING IS SUPERVISED BREEDING
FEMALES SELECTED FOR:
 1 VIGOR
 2 BREED CHARACTERISTICS
 3 HIGH EGG PRODUCTION

MALES SELECTED FOR:
 1 VIGOR
 2 BREED CHARACTERISTICS
 3 PEDIGREE FROM 200 EGG DAM

EXTENSION SERVICE UNIVERSITY OF MISSOURI

Fig. 8.—A chart showing the practical value of certified breeding.

Certified breeding is carried on with the demonstration farms that become eligible by making an average egg production of 25 eggs during the winter season. Hens especially selected by the poultry specialist are banded and mated to cockerels whose mothers have trapnest records of 200 eggs. These cockerels are known as pedigreed, certified cockerels. The offspring from this mating is handled and the outstanding males banded with a certified band, the object being to distribute such stock to the various communities in order to increase the average farm flock egg production in Missouri.

NEW PROJECTS

Since December 1, 1920, the following projects have been added:

Trapnesting and Pedigreed Breeding.—The object of this project is to encourage systematic trapnesting and pedigreed breeding to make available breeding stock with known records of production. This project is a direct outgrowth of the certified breeding project and great interest in trapnesting.

On farms where trapnesting is not practical, great interest has been shown in egg laying contests, the idea of the demonstration farm cooperators being to send five or ten pullets to some egg laying contest where they will be trapnested and the birds returned with official records.

Boys' and Girls' Poultry Club.—The poultry club work has been divided into three years. The first-year flock being to introduce pure-bred poultry from high producing strains and to demonstrate the proper method of hatching and raising the chicks through the year. This is called a rearing club.

The second-year club is a poultry management club, the object being to teach the boys and girls the proper management of laying stock, the value of record keeping, and the profit which can be secured from pure-bred hens properly cared for.

The third-year poultry club is a poultry breeding club showing the methods of breeding high producing fowls through the use of selected hens mated to certified or pedigreed cockerels.

After carrying on three years of poultry club work the Junior cooperator is ready to take up the certified breeding project with the adults.

Results.—The following table gives the results from the demonstration farm flocks for the past six years. These farms have proven that the farm flock, when kept as a side line, is profitable, the profit above feed cost per hen running well over two dollars each year.

TABLE 1.—DEMONSTRATION FARM FLOCKS.—COMPARISON OF ANNUAL SUMMARIES FOR SIX YEARS

| Year | Av. No. flocks | Av. No. hens per farm | Av. No. eggs per hen | Total income per farm | Feed cost per farm | Av. profit over feed cost per farm | Av. profit over feed cost per hen |
|------|----------------|-----------------------|----------------------|-----------------------|--------------------|------------------------------------|-----------------------------------|
| 1918 | 20 | 114 | 100.6 | \$545.37 | \$262.19 | \$283.18 | \$2.48 |
| 1919 | 65 | 134 | 106.3 | 577.40 | 257.74 | 319.66 | 2.39 |
| 1920 | 138 | 125 | 114.0 | 695.21 | 268.57 | 426.64 | 3.41 |
| 1921 | 168 | 144 | 125.1 | 628.48 | 213.61 | 414.67 | 2.88 |
| 1922 | 289 | 154 | 129.0 | 587.19 | 201.95 | 385.24 | 2.50 |
| 1923 | 296 | 156 | 128.6 | 637.67 | 251.98 | 385.69 | 2.47 |

In addition to securing the monthly record from each flock a community influence sheet in the form of a questionnaire is sent each year. The following are some of the answers secured from this questionnaire:

TABLE 2.—RESULTS FROM QUESTIONNAIRE ON COMMUNITY INFLUENCE OF DEMONSTRATION FARMS

| Year | Visitors to see poultry | Houses re-modeled in community | New houses constructed | Colony brooder houses constructed | Brooders purchased |
|------|-------------------------|--------------------------------|------------------------|-----------------------------------|--------------------|
| 1921 | 1934 | 120 | 199 | 118 | 149 |
| 1922 | 2599 | 97 | 225 | 118 | 210 |
| 1923 | 1469 | 217 | 272 | 181 | 190 |

Marketing Quality Eggs.—The object of this project is to stimulate the production of quality eggs through the development of marketing methods which will insure a premium on eggs of superior quality. Field demonstrations are given on grading and packing eggs for express shipments and all assistance possible given to get the producer of quality eggs in touch with a quality dealer.

CERTIFIED BREEDING

The certified breeding project has shown remarkable growth and has proven itself practical having been adopted by a large number of farms. It is impossible to estimate the number of farms that are following the certified breeding practice, yet do not enroll with the certified breeders so as to come under the following tabulation.

TABLE 3.—CERTIFIED BREEDING RESULTS

| Year | Farms cooperating | Hens banded | Cockerels banded | Flocks trap-nesting |
|------|-------------------|-------------|------------------|---------------------|
| 1920 | 86 | 2125 | ---- | -- |
| 1921 | 100 | 4140 | 822 | -- |
| 1922 | 151 | 6490 | 1242 | 25 |
| 1923 | 211 | 10966 | 1499 | 40 |

On record-keeping farms between November 1, 1921 and March 1, 1922, the average winter egg production in flocks containing certified pullets was 30 eggs. The average of all other demonstration farms was 24 eggs per hen. This six-egg difference coming at a time when egg prices are at their maximum means a large financial gain for each flock.

The Missouri Egg Laying Contest from November 1, 1922 to November 1, 1923 proved that certified breeding is fundamentally sound in principle and that hens that lay over 200 eggs are actually produced. In this contest thirteen different certified breeders entered

pens and each breeder secured from his pen of five hens at least, one 200-egg hen. Sixty-five per cent, of all certified hens, entered in this contest laid over 200 eggs, while in three of the pens all five of the birds laid over 200 eggs, the last pen showing an average production of 233 eggs per hen.

The accompanying illustration shows a chart which was prepared for the second World's Poultry Congress at Barcelona, Spain. Certified breeding flocks are compared to demonstration farm flocks, only flocks having a continuous record were used in this calculation. The increase of 18 eggs per hen can only be accounted for by improved breeding.

Although certified breeding has increased rapidly, it has been held back quite materially because of a lack of pedigreed birds from trap-nested hens. This condition has stimulated trapnesting in Missouri. The number of cooperators trapnesting has practically doubled each year.

CULLING

Culling has been a very popular phase of the poultry project, most of the work being carried on in the organized counties by the county extension agents and home economics agents. In order to keep the culling of these various agents standardized and to keep them informed on the latest methods used in culling, regional schools have been held, five of them in 1922 and four in 1923. At these regional schools all extension agents and county project leaders are invited and opportunity is given to handle trap-nested birds with known records.

Commercial concerns who purchase hens in carload lots report the effect of culling campaigns in the number of eggs they collect from their coops. Before culling was inaugurated they frequently secured many dozen eggs from a carload of hens. Now they practically never secure eggs from a shipment showing that the farmer is selling the non-producer and keeping the producer on the farm.

That the poultry in the State is improving as a result of the culling campaign is shown by the following table in that the per cent of culls discarded each year is growing smaller.

TABLE 4.—CULLING BY COUNTY EXTENSION AGENTS

| Year | Hens handled | Culls rejected | Percentage of culls in flock |
|------|--------------|----------------|------------------------------|
| 1921 | 297,373 | 99,071 | 35% |
| 1922 | 331,377 | 105,546 | 33% |
| 1923 | 311,075 | 85,255 | 27% |

POULTRY ASSOCIATIONS

During 1921 and 1922 emphasis was laid on the organization of Poultry Associations. In 1923 no especial effort was made along this line but specialists and county extension agents met with the organizations whenever possible and outlined programs for each meeting. The Associations fostered the following sub-projects, Boys' and Girls' Poultry Clubs, Poultry Shows, Record Keeping, Marketing Quality Eggs.

1921 twelve poultry associations were organized with 377 members.

In 1922 fourteen poultry associations were organized with 642 members.

MARKETING

With the development of better poultry and higher production came the demand of a higher price for quality eggs. Meetings were held in various counties, but in only one or two localities was the work pushed. In Johnson County in 1922 reports were tabulated from only three shippers, although many others adopted the practice. These shippers shipped 62 cases of eggs and received a net bonus over local prices of \$5.10 per case.

Similar work was carried on in 1923 by the same agent in Pettis County where the shipments averaged a bonus of \$4.38 per case. This has resulted in the formation of a cooperative shipping association for handling Quality Eggs.

HOUSING

A better housing campaign has been carried on each year by the use of small models, circulars, posters, publicity in the agricultural press and personal work by the county agents. Posters have been furnished to all retail lumber dealers in Missouri, most of whom have them on display.

TABLE 5.—RESULTS OF POULTRY HOUSING PROJECT IN COUNTY-AGENT COUNTIES

| Year | Modern houses built | Houses remodeled |
|--------|---------------------|------------------|
| 1921 | 347 | 520 |
| 1922 | 605 | 457 |
| 1923 | 520 | 750 |
| Totals | 1409 | 1652 |

An outstanding piece of work for better houses was carried on by R. L. Furry in McDonald County in 1922. A small model of the Missouri poultry house was constructed and fitted on the rear of his Ford roadster. This was carried with him to community meetings, culling

demonstrations, and school fairs. This plan has been adopted by other agents. The demand has been so great that detailed blue prints and instructions have been prepared by the poultry specialists.

TABLE 6.—ACTIVITIES OF POULTRY SPECIALISTS

| Year | Counties reached | Field dems. and lectures | Attendance |
|-------|------------------|--------------------------|------------|
| 1921 | 65 | 231 | 9,944 |
| 1922 | 66 | 258 | 9,714 |
| 1923 | 63 | 148 | 3,346 |
| Total | -- | --- | 23,004 |

TABLE 7.—ACTIVITIES OF COUNTY AGENTS ON POULTRY PROJECT

| Year | Demonstration and meetings | Attendance | Days spent by county agents on project |
|-------|----------------------------|------------|--|
| 1921 | ---- | ----- | ---- |
| 1922 | 1382 | 18,000 | ---- |
| 1923 | 1576 | 30,916 | 405 |
| Total | 2958 | 8,916 | ----- |

EXTENSION IN SOILS

By P. F. SCHOWENGERDT, *Project Leader*

Two soil specialists have been employed during the three years included in this report. P. F. Schowengerdt has been in the service during the entire period and C. L. Dietz has served since February 1, 1921. Both men have devoted full time to extension work.

The soil specialists have carried the soils program direct to a total of 62,379 people in 91 different counties; 13,558 attended 297 general meetings; 47,582 attended 155 field and demonstration meetings and 959 were reached at 80 special meetings and conferences.

The principal activities are included in 6 lines of work, viz; Liming, Fertilizers, Manures, General Soil Management, Erosion Control, and Clover and Prosperity Campaigns.

LIMING

During the year 1921 this phase of the work occupied the major portion of the specialists' time. In 1922 much of this work was taken up by the Clover and Prosperity Campaign, and in 1923, very little work was done directly on this project. The work has been promoted by means of general meetings to arouse interest; field and demonstration meetings to show the need for lime; by testing the soil, and meetings on

fields where lime had been used to show the results to be obtained. Limestone crushing and spreading demonstrations were conducted to show the means of producing and applying the ground limestone. The need for lime is well recognized by the farmers of the State. Economic conditions, however, have caused many to postpone the use of lime until their finances are in better shape. The distribution of specialists' activities and the results of the work on liming are shown in the following tables:

TABLE 1.—SPECIALISTS' ACTIVITIES IN LIMING

| Year | Counties reached | General meetings | | Field and dem. meetings | | Farm visits and personal conferences | |
|-------|------------------|------------------|------------|-------------------------|------------|--------------------------------------|------------|
| | | No. | Attendance | No. | Attendance | No. | Attendance |
| 1921 | 32 | 54 | 2087 | 10 | 3691 | 144 | 246 |
| 1922 | 29 | 66 | 2129 | 16 | 808 | 37 | 37 |
| 1923 | 5 | 7 | 212 | 0 | 0 | 15 | 64 |
| Total | | 127 | 4428 | 26 | 4499 | 196 | 347 |

TABLE 2.—RESULT OF WORK ON LIME AS SHOWN BY REPORTS OF COUNTY AGENTS

| Practices adopted | 1921 | 1922 | 1923 | Total |
|--|--------|--------|--------|---------|
| Number of farmers using lime as advised..... | 1,461 | 1,779 | 1,648 | 4,888 |
| Number of tons of lime used as advised..... | 41,253 | 28,953 | 32,588 | 102,794 |
| Limestone pulverizers introduced..... | 57 | 40 | 12 | 109 |
| Tons of limestone pulverized on farms..... | 30,662 | 20,210 | 14,500 | 65,372 |
| Liming demonstrations established..... | 494 | 414 | 358 | 1,266 |
| Farms on which soil was tested..... | 2,933 | 1,998 | ----- | 4,931 |

FERTILIZERS

Work on this project has been devoted largely to the promotion of recommended analyses, especially acid phosphate and to the elimination of low analysis. Low analysis fertilizers not only cost more in proportion to the amount of plant food contained but they also do not satisfy the requirements for the proper growth of crops. The best results in this work have been obtained by means of personal conferences with fertilizer dealers. Recommendations have been given these men regarding the kinds of fertilizer that are best adapted to their respective communities and the losses explained that occur from the use of low analyses fertilizers. General meetings have been successful in arousing interest and giving general information to the farmers. Field meetings have not been used extensively, because they must be held at a time when many

of the farmers who would be most interested are getting ready for harvest. Most of the fertilizer demonstrations have been established on wheat, but during the last two years there has been an increased use on other crops. The demonstrations have been largely for the purpose of determining the best methods of carrying out the work and preliminary to the seal demonstrations that will be established in the future. The activities of the specialists and results of the work on fertilizers are shown in the following tables.

TABLE 3.—ACTIVITIES OF SPECIALISTS ON FERTILIZERS

| Year | Counties reached | General meetings | | Field and dem. meetings | | Farm visits and Conferences | |
|--------|------------------|------------------|------------|-------------------------|------------|-----------------------------|------------|
| | | No. | Attendance | No. | Attendance | No. | Attendance |
| 1921 | 32 | 25 | 655 | --- | --- | 182 | 182 |
| 1922 | 41 | 7 | 118 | --- | --- | 176 | 176 |
| 1923 | 43 | 53 | 1,608 | 3 | 11 | 113 | 113 |
| Totals | | 84 | 2,381 | 3 | 11 | 471 | 471 |

TABLE 4.—RESULTS OF WORK ON FERTILIZERS

| | 1921 | 1922 | 1923 | Total |
|---|--------|-------|-------|--------|
| Farmers helped in selecting fertilizers | 11,812 | 3,422 | 4,081 | 19,315 |
| Tons of fertilizers used as recommended | 15,107 | 7,254 | 3,561 | 28,922 |
| Fertilizer demonstrations established..... | 266 | 351 | 510 | 1,127 |

Barnyard Manure.—The work on this project has been promoted largely through other lines of work particularly in the general soil management. The only direct work has been in relation to the reinforcing of manure with acid phosphate as a fertilizer for corn. In 1922 the specialist worked in 7 counties and held 13 field meetings with an attendance of 149. This work has proved successful and in the future will receive more attention.

GENERAL SOIL MANAGEMENT

This work includes all activities involving general meetings at which soil problems were discussed and also the general soil management

TABLE 5.—PROGRESS SHOWN BY FERTILIZER SALES IN THE STATE

| Measure of Progress | 1920 | 1921 | 1922 | 1923 |
|--|------|------|------|------|
| Decreased percentage of recommended acid phosphate | 26% | 29% | 42% | 44% |
| Decreased use of low analyses..... | 11% | 8.7% | 4.9% | 2.9% |

demonstrations. The general meetings were held for the purpose of bringing out the need for definite systems of farming. Such systems require a correlation of a suitable crop rotation with the proper use of lime, fertilizers, manure and the control of erosion. All of these factors are included in the soil management demonstration. These demonstrations represent one of the most important phases of the work in soils. Only a few demonstrations have been established because it is difficult to find the right conditions necessary to make this work a success. Definite results cannot be determined at this time. The meetings held have been of a general nature and the demonstrations have not been in progress long enough to determine the number of farmers who will adopt the practices demonstrated. The activities of the specialists in the work are shown in the following table.

TABLE 6.—SOIL MANAGEMENT MEETINGS AND CONFERENCES

| Year | Counties reached | General meetings | | Field and dem. meetings | | Farm visits and personal conferences | |
|-------|------------------|------------------|------------|-------------------------|------------|--------------------------------------|------------|
| | | No. | Attendance | No. | Attendance | No. | Attendance |
| 1921 | 10 | 24 | 1,004 | | | 3 | 3 |
| 1922 | 20 | 32 | 1,857 | 6 | 1,162 | 28 | 28 |
| 1923 | 31 | 4 | 365 | 5 | 97 | 53 | 60 |
| Total | | 60 | 3,626 | 11 | 1,259 | 84 | 91 |

EROSION CONTROL

The loss of soil by washing is one of the big problems that Missouri farmers have to contend with. The promotion of this project has been in the hands of this department since 1922. Various means of controlling erosion are recommended through other phases of soil work such as crop rotations, cover crops, pastures, etc. The construction of manguum terraces is the only direct means of controlling erosion that is being promoted by soil specialists at this time. During the years 1922 and 1923, specialists worked in 26 counties, establishing 39 terracing demonstrations and reaching a total of 678 people. Two days are required to establish a demonstration. The first day is devoted to laying out the terraces and instructing the workmen in the method of their construction. On the second day a general meeting is called for the purpose of discussing the demonstration. This project has met with general approval among the farmers. There is an increasing demand each year for work along this line.

CLOVER AND PROSPERITY CAMPAIGN

This is a long time project that was organized for the purpose of encouraging a greater acreage of legumes in Missouri. It was started in 1922, and is conducted in cooperation with the Field Crops department. Only the first step has been started so far. This step is for propaganda purposes with the object of reaching as many people as possible. That the desired results are being obtained is shown by the following table:

TABLE 7.—ACTIVITIES OF THE CLOVER AND PROSPERITY CAMPAIGN

| Year | Counties reached | General meetings | | Field and dem. meetings | | Conferences | |
|-------|------------------|------------------|------------|-------------------------|------------|-------------|------------|
| | | No. | Attendance | No. | Attendance | No. | Attendance |
| 1922 | 17 | 0 | 0 | 27 | 10,070 | 17 | 17 |
| 1923 | 67 | 26 | 3,423 | 46 | 30,925 | 18 | 18 |
| Total | ----- | 26 | 3,423 | 63 | 40,995 | 35 | 35 |

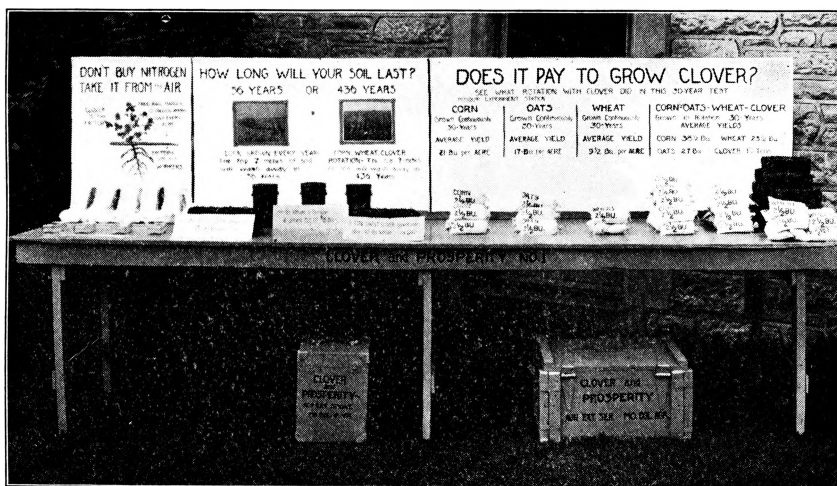


Fig. 9.—A part of the exhibit material used in the Clover and Prosperity campaign.

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Capture information

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| Date captured | October 10, 2023 |
| Scanner manufacturer | Plustek OpticBook |
| Scanner model | A300 Plus |
| Scanning system software | Book Pavilion |
| Optical resolution | 600 dpi |
| Color settings | 8 bit grayscale |
| File types | tiff |
| Notes | |

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| Compression | Tiff: LZW compression |
| Editing software | Adobe Photoshop 2023 |
| Resolution | 600 dpi |
| Color | grayscale |
| File types | tiff/pdf |
| Notes | Images cropped, straightened, brightened... |