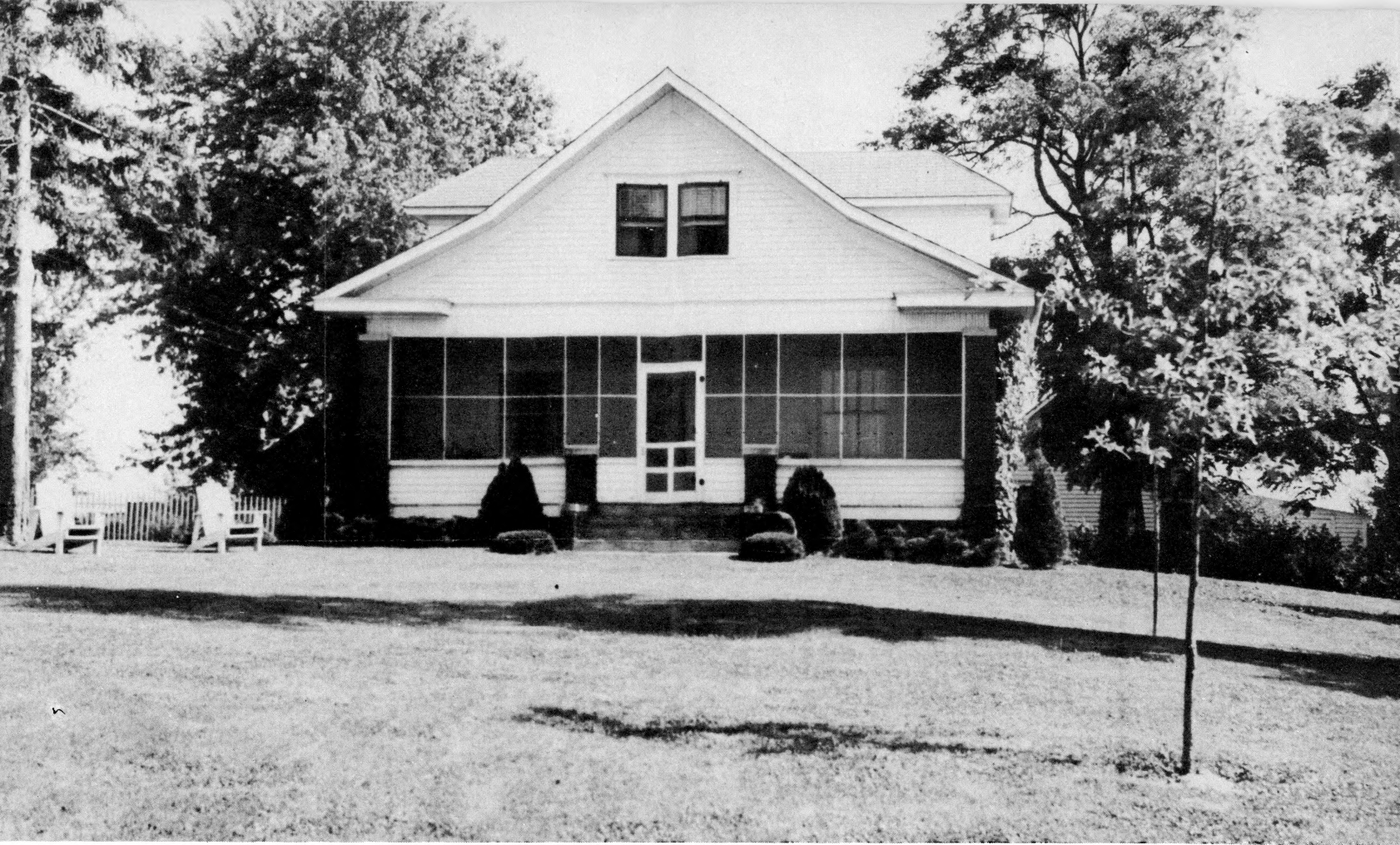


Farm and Home Builders



University of Missouri -- College of Agriculture
Agricultural Extension Service



Definite improvements were made on 16,192 yards. Many of these yards were developed according to specific design as part of a balanced farming plan.

Deep fenced ponds, now numbering 40,767 in the state provided water for livestock. They also served as recreational areas, wild-life havens, and added to the beauty of Missouri landscape.



Farm and Home Builders

Annual Report, 1948

University of Missouri College of Agriculture - - Agricultural Extension Service

J. W. Burch, *Director*

Missouri farmers had a good year in 1948. With a favorable growing season, they also made greater use of improved crops and efficient practices. Local support of Extension work was stronger than ever before. Meetings sponsored by the Agricultural Extension Service drew record attendance.

Under these conditions it is not surprising that Missouri farmers set some new production records. The state average corn yield mounted to 45 bushels an acre, making a state total of 200,700,000 bushels. The average wheat yield was 22 bushels. Missouri cotton planters, by producing higher acre yields and better quality lint, lifted the value of the year's crop to \$100,000,000. Production of meat animals, milk and poultry reflected the more abundant feed supplies.

Farm families schooled in the values of farm and home planning re-invested much of their larger income in built-in safeguards of soil fertility and gracious living. Terrace systems, water storage ponds and vegetative insulation were built into the land. Comfort, convenience and safety were built into the farm homes. Farmers continued their substantial purchases of U. S. Savings Bonds.

More than 40,000 Missouri farm homemakers in home economics extension clubs coordinated their year-round

activities closely with the overall Extension program. Besides helping demonstrate better practices in foods, clothing and home management, these groups led all in cultural projects. They sponsored 4-H clubs, health clinics, civic betterment, bookmobiles, policy discussion, and community recreation. They worked for international peace and shared their food and clothing with distressed peoples everywhere.

Some 34,000 rural youth in Extension-sponsored 4-H clubs became a gallant and aggressive statewide front for the spread of better farm and home practices, wholesome personality development, and happier country life.

Balanced farming advanced to nearly 4000 additional farms. Farmers the state over used 2½ million tons of limestone, one-third of a million tons of fertilizer, and a new record acreage of green manure. They grew 13 million acres of legumes, including three-fourths of a million acres of sweet clover for two-fold service as pasture and green manure.

To help farmers fit these treatments to each field and crop, the Extension Service and local cooperators established 31 additional county soil testing laboratories. With those set up the preceding year this made a total of 46 such laboratories in the state.

At Balanced Farming and Grow Grass Days, 70,000 persons turned out to see the latest in agricultural progress, and to hear speakers.



Revised County Programs

One-fifth of the counties of the state revised their county programs of Extension work during the year. This is in line with Extension policy continuously to note changing needs and revise programs accordingly.

Statewide assistance in the planning of both state and county programs was again supplied by the State Advisory Committee. The committee consists of 20 rural men and women (including four from each of the five Extension supervisory districts). Representing the thought and experience of the people of their districts, these advisors met with the Extension administrators twice during the year. Their counsel was used in reshaping and strengthening Extension's broad, overall programs on rural youth, balanced farming, rural policy, and health and recreation.

Cooperation on a state level with other groups serving agriculture was continued. The state continued its close working relationship with the Memphis (Tenn.) Commercial Appeal in its Plant-to-Prosper program and its Negro Live-at-Home program.

In Southeast Missouri a regional Extension program was carried on for Negro families. Four Negro home agents and one district 4-H agent were employed in this area, working with people of their own race in eight counties. Under their care were 48 Negro home economics extension clubs with 678 members, also 94 4-H clubs with 2957 members.

A regional program for negro families in Southeast Missouri resulted in the enrollment of 2957 4-H club members and 678 extension club members.

Personnel and Leadership

Only the close accord with which large numbers of rural men and women work with the county extension agents, could possibly explain the amazing progress made in Extension education and its practical results. During the year, 53,354 local leaders worked with the 287 county extension agents and assistants. How important these trained, voluntary leaders were in the year's work is indicated by the fact that they conducted more than 50,000 extension meetings with 945,755 total attendance.

With this local help from men and women chosen for leadership by their neighbors, the Extension Service maintained an aggressive and continuous program of education throughout the year in all of Missouri's 114 counties.

Membership in the farm groups sponsoring county programs of Extension work increased about 3 per cent to reach a total of 77,000. These county groups included 58 Farm Bureaus, 23 Missouri Farmer Association units, 31 Extension associations, 1 Grange, 1 soil group.

Support of the Extension program by county courts, farm groups and business organizations was greater than in the preceding year. County courts appropriated 10 per cent more, increasing the county average from \$2820 to \$3119. Aid given the balanced farming program by businessmen reached a new high mark, while the number of farm families paying \$50 or more for membership in balanced farming associations increased 90 per cent.

Livestock judging supervised by well-trained leaders made youth work attractive to many boys and girls. Practicing in small groups on local farms they learned what constitutes a first class animal.



RURAL YOUTH PROGRAM

Boys and girls in 4-H clubs last year produced more than \$2,000,000 worth of food for use in this country and among less fortunate peoples. They also produced or processed one-half million dollars worth of clothing, household furnishings and other useful materials.

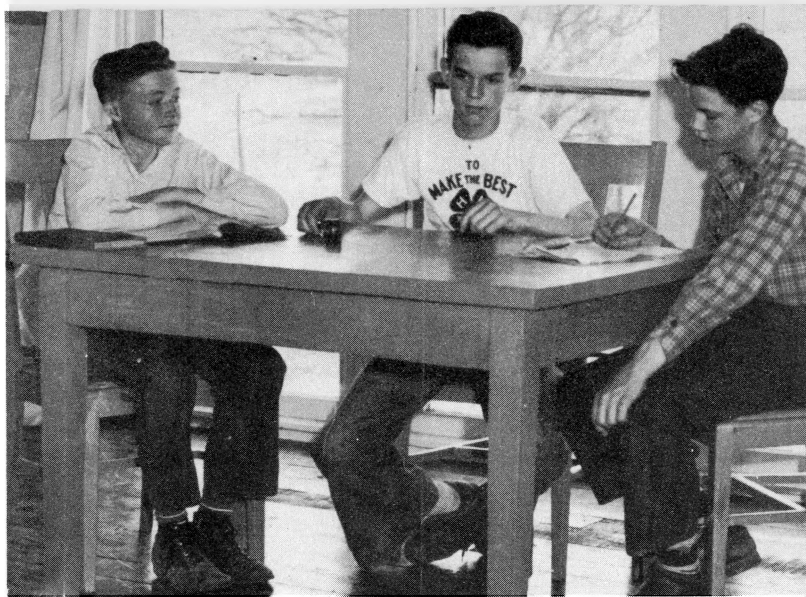
This record was made by 34,418 boys and girls representing nearly 2000 clubs. They elected their own officers and developed well rounded programs of work, including business meetings, recreation, study groups, and health activities. They were assisted by 8849 voluntary leaders. They attended 1860 demonstration meetings and 1233 leader training meetings held for them by county extension agents.

Club members received intensive training in judging, demonstrating and leadership with a total attendance of more than 25,000 boys and girls in these phases of club work. A total attendance of 57,838 was recorded at meetings giving instruction on conservation, safety, grooming, everyday courtesies, health and community service.

Clubs in 110 counties observed annual 4-H Sunday in church programs attended by 51,528 persons. County recognition programs, marketing days and achievement shows were attended by 31,146 club members. From these county events, 8693 local winners moved up to compete in district round-ups.

State winners, in their turn, numbering 223, represented Missouri creditably in regional and national competitions.

Girl 4-H club members learned modern improved methods of sewing and many other home skills. A total of 11,182 girls enrolled in clothing projects.



Confronted with a lack of meeting places in communities, 4-H club members and leaders pitched in and remodeled abandoned schoolhouses and other places to fit their needs.

These events included the American Royal 4-H Conference, the National 4-H Congress, American Youth Foundation Camp, National 4-H Camp, International Livestock Exposition, Waterloo Dairy Cattle Congress, and the National Junior Vegetable Growers Association.

Scholarships, educational trips and cash prizes—all amounting to \$13,000 during the year—rewarded two-score or more boys and girls for outstanding 4-H club work. These awards opened the way for college training, travel, widening vision and many other factors in training for future leadership.

Community service highlighted many of the individual 4-H club programs this year. Here 4-H'ers are making an effort through wildlife conservation activity to cooperate with hunter and farmer.



HEALTH AND RECREATION

Several extension projects worked together to improve rural health and promote recreation. Especially effective was the work done in 4-H clubs, home economics extension clubs, nutrition, home management, agricultural engineering, animal production and disease control.

Work for both health and recreation was encouraged as part of the year's program for all 4-H clubs. Health work was completed by 16,018 boys and girls. Nearly one-fourth that number had physical examinations. Members who did best in health work were sent as delegates to the state health camp in September.

The Bunceton community 4-H club in Cooper County tested and treated all the wells in the community. Later they retested these sources to make sure the water was safe. Chemicals and equipment for testing were supplied by the Boonville Water Department. Club members also kept personal health score cards, improved their food habits, helped fly control, improved home sanitation, and gave first aid to children injured at school.

Immunization clinics for children were sponsored by home economics extension clubs in 14 counties. Local physicians, dentists, and nurses gave the examinations and counsel on correction of defects.

Statewide programs for control of flies, mosquitoes,

household insects and rats were carried on with aid from the State Division of Health and the federal government.

Widespread remodeling of farm homes with the help of Extension workers did much to improve home sanitation by screening, protection of water supplies, and modern sewage disposal. More than 28,700 families worked on fly control.

Counties reported 23,665 families in better health because they learned positive measures against ailments due to inadequate or unbalanced diets. And 9926 families were helped to prevent colds and other common diseases.

The Extension Service and the State Home Economics Club Council became members of the newly organized State Health Council. They also accepted heavy responsibilities in the new statewide drive to stamp out brucellosis and undulant fever.

Recreation was promoted through county Extension workers and cooperating local groups. Friends and members of 4-H clubs gave \$10,000 to build a permanent camp.

In district centers throughout the state, the Extension Service conducted 10 two-day training schools for recreation leaders. Back home, these leaders are making organized recreation a source of community entertainment and a means of social development for rural youth.

SOUND RURAL POLICY

Outside the farm gate yet deeply affecting farm life are many matters in the field of rural policy demanding study and discussion. To promote education in citizenship, the Extension Service last year sponsored a year-round program of leader training and group discussion.

Topics most widely discussed were the world food situation, organization for peace, farm parity, agricultural price policy, international trade, and long-range agricultural programs. And many others.

To encourage orderly discussion of live issues related to farm business and country life, 2196 locally elected leaders accepted special training from Extension workers. They organized study groups and led discussion meetings.

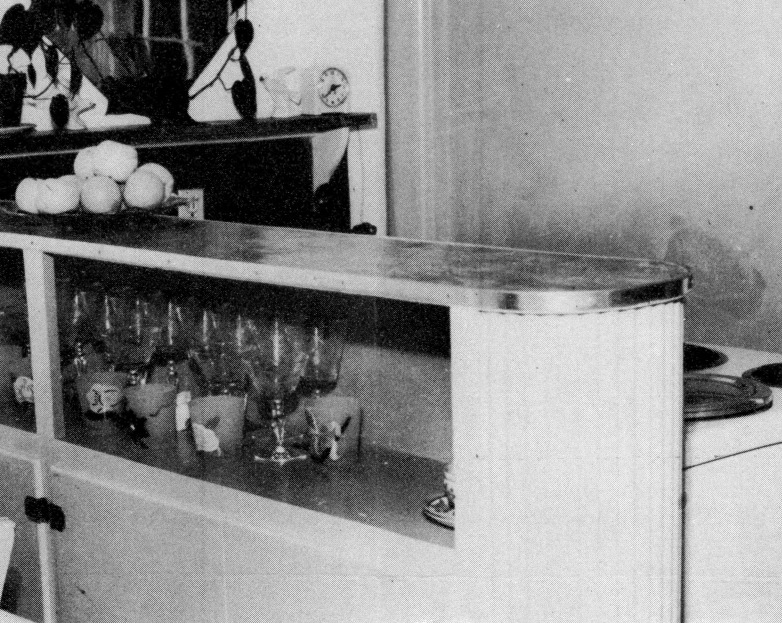
The total number of meetings held by Extension workers and local leaders was 1600. The attendance was 61,599.

The home economics extension clubs were strong supporters of this work. Typical was the action of the Platte County clubs. Each of the 18 clubs in the county elected a policy chairman, who arranged programs and selected leaders for rural policy discussion. The same plan was used in many other counties.

Linked closely with the work on rural policy was the year-round flow of Extension information on agricultural outlook. County agents and voluntary local leaders gave outlook information at 39,661 meetings with a total attendance of 1,051,231 persons.

A year-round program of group discussion and leader training was carried on.





Built-in conveniences saved much time and many a step for the homemaker.

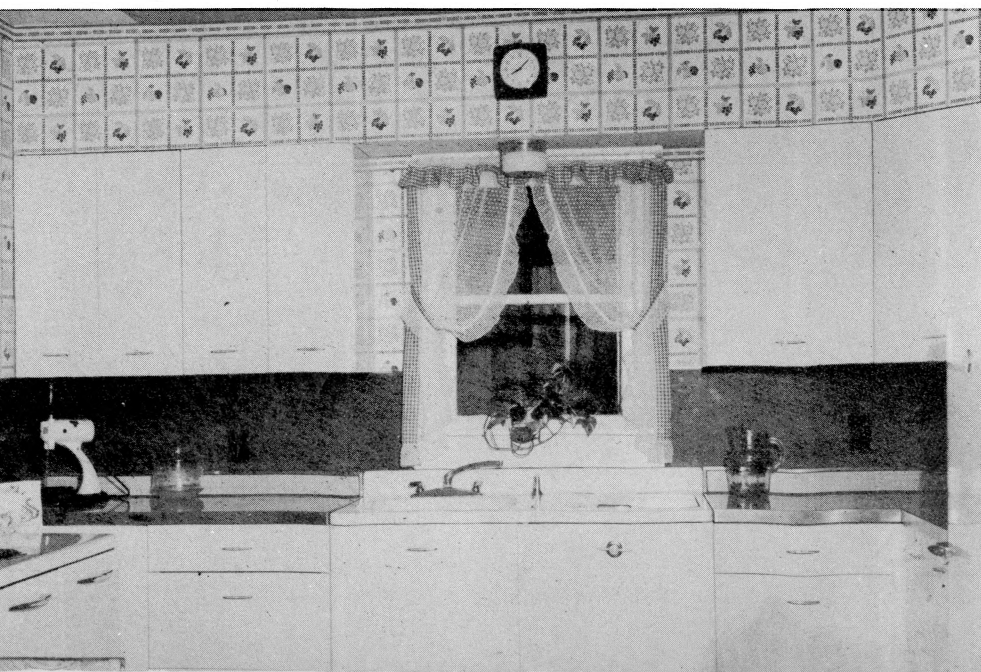
IMPROVED FAMILY LIVING

Careful planning for wise buying prepared more than 14,000 farm families for making the best choice among much new equipment now on the market. These families accepted the help of extension workers on buying problems.

Long-time written plans for home improvement were made by 1046 families. And 2239 more families started definite plans during the year. Some 2754 homes were remodeled. Other improvements included 1237 sewage systems, 1745 complete water systems, 749 heating plants installed, and 6000 kitchens completely remodeled.

In addition to measurable results, there were many intangible ones which enriched farm and family living. Among these were added comforts and pleasures brought about from well planned changes, new construction and better working conditions. Furthermore, families made wise use of time gained from labor-saving devices and equipment by participating in family and community good

Nearly 6000 kitchens were remodeled by adding cabinets, sinks, better lighting, labor-saving devices. 1745 complete water systems were installed.



times. Neighborhood gatherings and recreation nights were stimulated by improvements in community parks, picnic grounds and recreation centers.

And families did not overlook the joy of attractive settings for the home sites. Yard improvements were made by 16,192 families and 903 community yards were improved. During the year 2558 more families obtained electricity. Throughout the state 50.8 per cent of the farm homes now have electricity.

As a direct result of extensive remodeling and repairing, recommended methods of fly control were used by 28,717 families.

Closely related to kitchen improvement is the problem of improved housekeeping methods. More than 9000 families improved housekeeping methods to save labor and increase efficiency, 865 families improved laundry facilities, and 3922 families improved storage space.

With materials again available renewed interest developed in refinishing, upholstering and slip covering. More than 23,000 articles of furniture were reclaimed.

During the year improvements in the Louis Koechner home in Cooper County included bath, utility room, kitchen with asbestos shingles, well and pump. The cost was \$4500. Said Mr. Koechner: "If it hadn't been for the Balanced Farming ring, we would have spent the money and probably have done it wrong and been sorry the rest of our lives. This is where we will retire. We're proud of it."

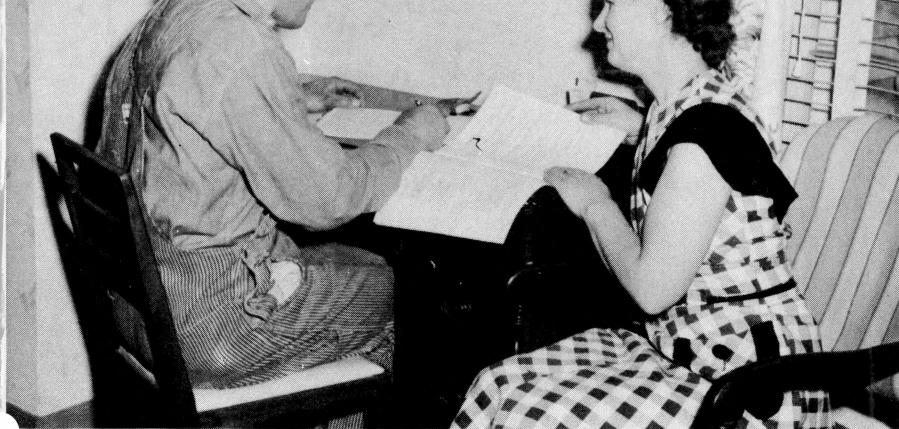
In Callaway County Mr. and Mrs. Willard Hunter used the U-shaped kitchen plan recommended by the Bureau of Human Nutrition and Home Economics as part of their new home. Said Mrs. Hunter: "We like it! There's only one disadvantage to the kitchen that we can see so far; we just want to stay there."

NUTRITION AND HEALTH

Better health through better diets continued to be the goal of Missouri farm families. During the year some 52,000 families accepted help in improving their diets

Modern cold storage was used by more than 105,000 farm families. One of every three farm families froze food.





More farmers than ever before, 20,000, found farm records handy and valuable. A big improvement was addition of a supplemental home accounts section for use in connection with the farm record.



Hog producers know the value of good breeding, clean pasture, movable equipment. Ear marking pigs and weighing litters at 56 days helped breeders determine the breeding stock to keep.

BALANCED FARMING PROGRAM

Balanced farm plans were made by 3930 additional Missouri families in 1948. Earlier plans on thousands of other farms became more nearly complete and more profitable. Results showed consistent gains in crop yields and livestock carrying capacity. At the same time the use of better methods saved soil and labor. Home improvements made housekeeping easier and home life more satisfying.

Balanced farming families made substantial investments in limestone, fertilizer, erosion control systems, and improvements in home and farmstead. They had seen on farms already under the balanced system that returns from such investments begin almost immediately and continue long after the original outlay has been repaid. Returns from fertilizer continue two or three years, gains from green manure may last five or more years, and those from lime ten years. Well kept terrace systems should last a generation. Home and farmstead improvements may well benefit several generations.

Detailed results gained from the balanced farming system are reported in the following pages—under the various phases of farming and homemaking.

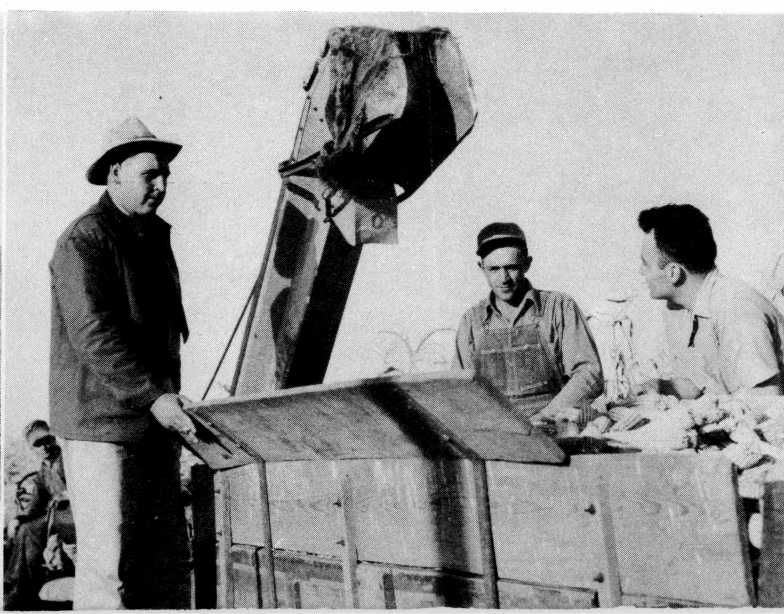
This self-propelled grader was but one of many pieces of equipment demonstrated during the year. Farmers built 3355 miles of new terraces.

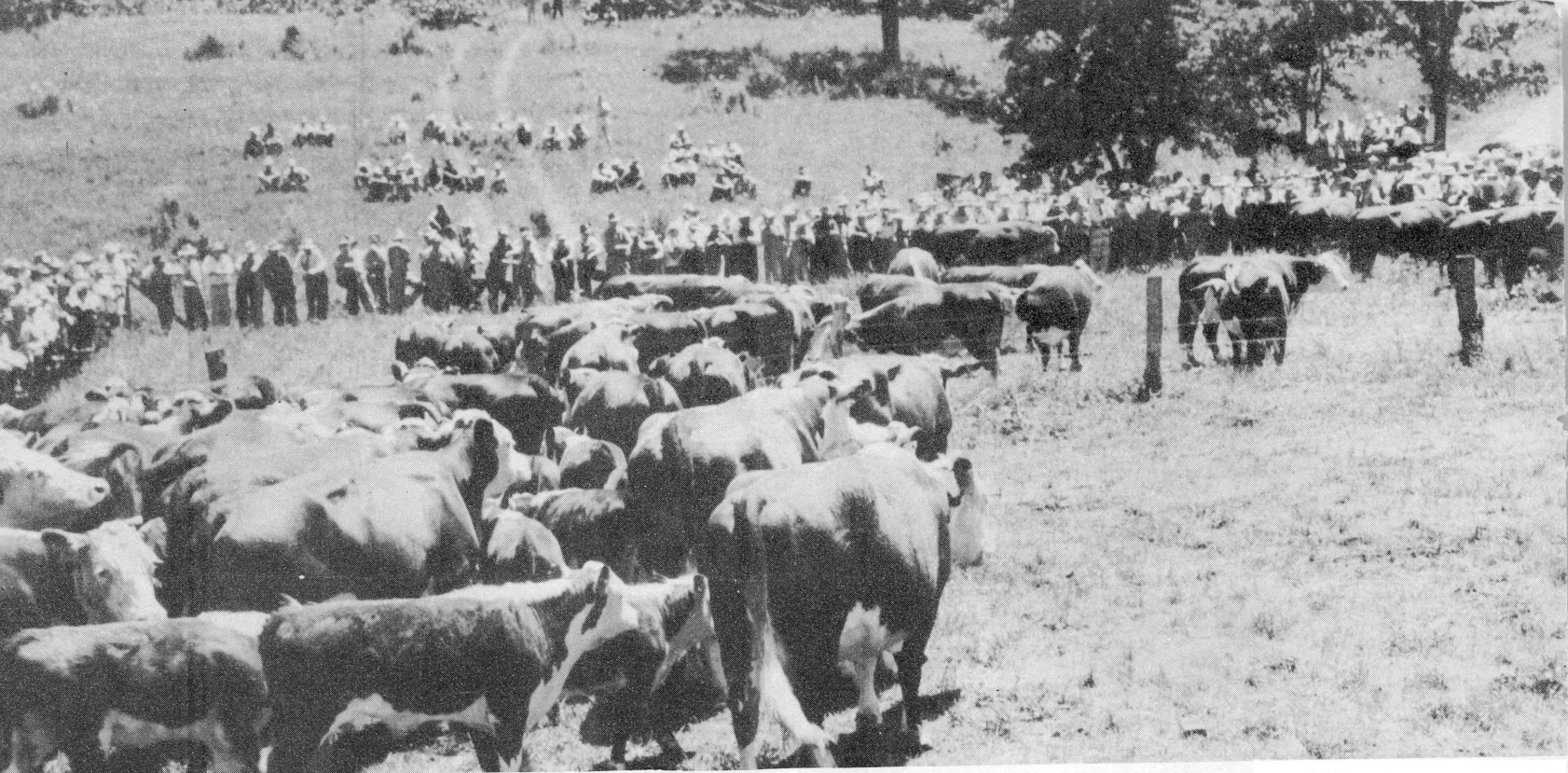
Ninety-three counties held balanced farming field days during the year, and some 23,000 persons inspected the methods and the results of this system on the farms and within the homes of their neighbors. Another 70,000 attended district "Grow Grass Days" and "Balanced Farming Action Days". Farm families from all parts of the state shared the balanced farming awards provided by the chambers of commerce of St. Louis, Kansas City and Springfield.

Thirty-six Balanced Farming Associations were in full operation by the end of the year. These get new plans made and into operation rapidly. Three-fourths of the cost of additional county agent help comes from membership fees and from investments by local businessmen.

Counties having balanced farming associations are: Adair, Andrew, Atchison, Audrain, Bates, Carroll, Cass, Cedar, Cole, Cooper, Douglas, Dunklin, Gasconade, Greene, Grundy, Howard, Jackson, Jasper, Lafayette (2), Lawrence, Lewis, Lincoln, Macon, Monroe, New Madrid, Newton, Montgomery, Osage, Pettis, Ralls, Randolph, Saline, Scott, Stoddard, and one association with members in Barry, Lawrence and Newton.

Corn pickers proved popular and more were available on the machinery market as Missouri farmers started harvesting the all-time record corn crop, averaging 45 bushels per acre for the state.





Beef cow herd management drew crowds to many demonstration meetings held on farms.

IMPROVED LIVESTOCK

Good livestock farming is almost synonymous with the Missouri Balanced Farming program in operation on many farms. Putting into use the best information on breeding, feeding, parasite and disease control, marketing and management has done much in raising the income of progressive farmers.

A small corn crop in 1947 combined with high feed prices caused the average Missouri farmer to decrease livestock feeding during 1948. A big grain crop this year then changed the thinking of many but in general the livestock farmer remained cautious.

Cattle raisers attacked their biggest single problem, that of improving the type and quality of calves. They bought 7081 registered beef bulls. Since superior type and quality means an added value of \$3 or \$4 per hundredweight, this will mean almost 1½ million dollars more income for these farmers.

Educational sales held in cooperation with extension workers also helped promote better breeding in grade herds. Five bull exhibits and sales were held. Also 900 producers sold 8410 calves through 13 feeder calf sales. The value of good pasture was also stressed with 30 farmers keeping records to show it means 100 pounds more per head at weaning time.

Better breeding boars for use with commercial herds is a major goal. County agents report that 10,824 producers bought purebred boars this year. This was a 25 per cent increase over last year. Seven district and county meetings over the state helped bring out the need for the correct type breeding stock through carcass demonstrations. Balanced farming plans proved valuable in

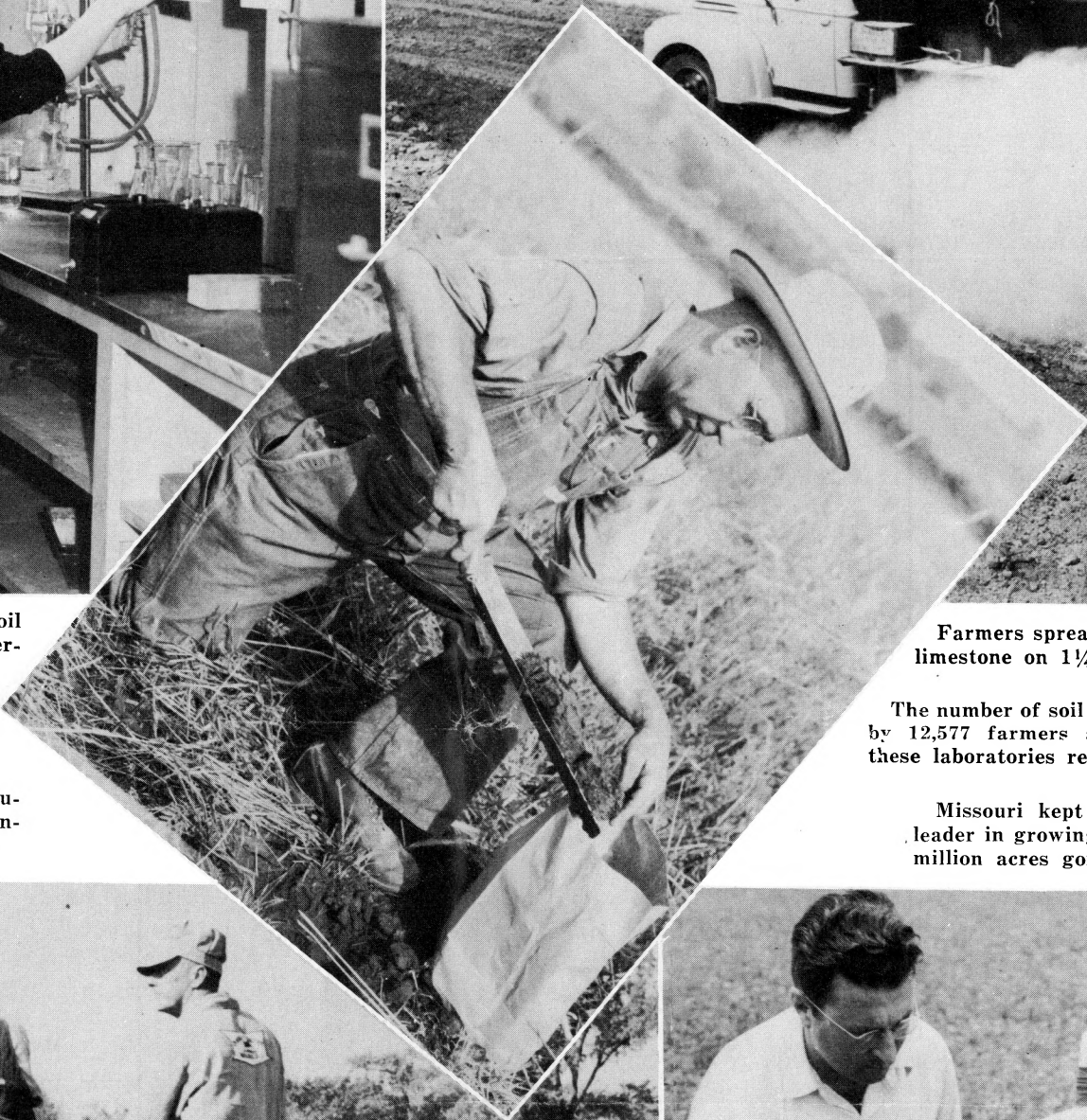
getting more pigs raised on clean ground. Forty per cent of the balanced farming cooperators used clean ground as compared with 10 per cent for other producers. Forty-eight farmers cooperated by keeping production records. Those following recommended practices weaned 78.7 per cent of their pigs as compared to 60 per cent raised by the remainder. Average litter weight at eight weeks age was 338 pounds for the high one-third of the litters and 168 pounds for the low one-third. Sows on the high one-third of the farms weaned 9.2 pigs per litter compared with 6.8 pigs on the low one-third of the farms.

The value of earmarking litters was shown by reports from counties. Typical is this one from Daviess County, "W. J. Cameron earmarked his litters and recorded weaning weights. He, too, has profited by selecting breeding stock. A uniform litter size is well established in his herd. Each of six of his sows farrowed 9 pigs and each of the remaining three farrowed 10. He weaned an average of 9.1 pigs per sow."

That a Balanced Farming program cheapens hog gains was reported from Knox County. "Hogs raised on clean ground not only stay healthier but also make cheaper gains." From DeKalb County came this report, "Regular hog areas are being set up on all of our balanced farming plans to provide clean ground and legume pasture."

Sheep numbers were the lowest in a score of years. However, the number of registered flocks increased. A total of 136 registered rams were sold in four extension sponsored sales.

Cattle grub control went ahead with double the 1947 number of herd owners, 8327, treating 129,032 head.



Thirty-one additional county soil testing laboratories went into operation.

Farmers spread 2,564,807 tons of limestone on 1/4 million acres.

The number of soil samples taken by 12,577 farmers and tested in these laboratories reached 31,000.

Fertilizer drills became more numerous, 3000 being bought to handle the record fertilizer tonnage.

Missouri kept its position as leader in growing legume crops, 1.5 million acres going to these.



BETTER FARMING, BETTER CROPS

Record crop production in 1948 resulted from a favorable growing season and from rapidly widening use of better farming practices. In the last three years Missouri farmers have used more than 900,000 tons of fertilizer and 7,000,000 tons of limestone to improve the productive capacity of their land.

The effects of these soil treatments outlive by several years the cropping season in which they are applied. As a result, Missouri farmers last year were able to increase their acreages of alfalfa and sweet clover. Of the latter crop they grew three-fourths of a million acres for nitrogen-rich pasture and green manure. On 65,000 acres they grew winter legumes providing winter cover for the land and nitrogen for the next crop.

Total acreage of legumes in Missouri last year was 13 million. As a matter of record, 41 per cent of the state's cropland was in legumes. More than three-fourths of this was lespedeza providing pasture for livestock in mid-summer, hay for winter feeding, and seed for a cash crop.

More than 400,000 acres of old permanent pasture were renewed by soil treatments and additional seeding of grass and legumes.

Improved crop varieties came into wider use. Fully 95 per cent of the state's corn crop grew from hybrid seed. Missouri corn made the highest acre yield on record, 45 bushels an acre. The state average wheat yield was 22 bushels. The state's cotton crop grown almost entirely from certified seed of two adapted varieties reached a record value of \$100,000,000.

With tobacco, a record yield and top quality seemed assured, although final figures were not available.

About half of all the hay harvested in the state was lespedeza. Missouri now leads the country in lespedeza seed, harvesting 43 per cent of the nation's total production.

War on weeds took a new turn—toward the hopeful side—in 1948, with widespread use of chemical weed control. Thousands of farmers used 2, 4-D.

Increases also occurred in the acreage of such legumes as sweet clover, alfalfa, red clover, and Ladino clover. Winter legumes, mostly vetch, moved ahead, particularly in Southeast Missouri. County Agents estimated that nearly 65,000 acres of such legumes were planted in 1948.

Restoring plant food to worn soil does bring bigger and better crops. That was shown on the J. Ed. Rutter farm near Shelbina. About 6 years ago on a depleted gray prairie soil, Mr. Rutter began plowing under liberal applications of fertilizer ahead of row crops in a corn, small grain, clover rotation. In 1946 his corn yield was near 90 bushels an acre, in the less favorable season of 1947 it was about 60 bushels, and in 1948 it was 131 bushels per acre. Mr. Rutter's wheat yields ranged between 30 and 40 bushels an acre.

REBUILDING THE SOIL

Holding and improving the soil went forward on a widening front.

County agents reported that 136,789 farmers used 290,000 tons of fertilizer and 2,564,000 tons of limestone.

In tonnage alone, these soil treatments set no new records; but much progress was made in better selection and use of plant food materials. Returns from each dollar invested were increased by soil testing and better methods of application.

Establishment of 31 additional county soil testing laboratories within the year brought the state's total to 46. More than 12,500 farmers submitted soil samples and learned the kind and amount of fertilizer needed for each field and crop.

Educational drives for saving soil and rebuilding its basic fertility covered the state. These included 114 county soils and crops conferences, 101 soil fertility demonstrations, 43 TVA fertilizer demonstrations, 9 district Grow Grass Days, 7 district Balanced Farming Action Days, and several county tours to the state soils and crops experimental fields. Attendance at these events exceeded 108,000 persons.

Better ways to apply fertilizer were widely accepted. More than 21,600 farm operators plowed under their fertilizers for corn—to fertilize the soil rather than the crop. Farmers bought 3000 more grain drills equipped with fertilizer attachments.

Valuable help in extending the use of effective soil treatments was given by the Production and Marketing Administration, 235 operators of limestone pulverizers, and more than 1000 fertilizer dealers.

A unique event was the distribution of a trainload (32 cars) of rock phosphate in one day at Lebanon. Governor Phil. M. Donnelly spoke, commending soil conservation work, at a program arranged by the Extension Service. In the state at large, 3864 farmers used 34,036 tons of rock phosphate.

Soil enrichment by use of green manure increased from 786,000 acres in 1947 to 911,000 thus improved in 1948. Plowing sweet clover under for this purpose increased in the same time from 676,000 to 723,000 acres.

The value of soil testing was illustrated on a bottom-land field owned by J. L. Beatty in Bates County. Samples taken from this field to the testing laboratory showed the soil was high in phosphate and potash but low in organic matter and therefore low also in nitrogen. On the basis of this test, the county agent recommended 300 pounds of ammonium nitrate per acre. Mr. Beatty followed the recommendation as far as the available ammonium nitrate would go at that rate. At harvest time the treated land yielded 106 bushels of corn per acre, while that part of the field without the nitrate yielded only 49 bushels an acre.

by better use of cereals, milk, and fresh and canned fruits and vegetables.

Gardening, canning and freezing on a planned food budget, 40,877 women preserved enough dark green and deep yellow vegetables for their families the year round. And 37,355 homemakers canned at least 30 quarts of tomatoes for each family member.

Preserved for winter use were more than 18 million quarts of canned and 8 million pounds of frozen fruits, vegetables and meats. Freezing as a means of preserving maximum food value has grown phenomenally. This year more than 2½ times as much food was preserved by this method than in any previous year. Throughout the state one farm family in every 3 used a freezer locker. Last year the ratio was one in 4; ten years ago it was one in 300.

Extension workers helped organize 119 nutrition and health clinics where 23,665 families received positive preventive measures to improve health.

During the year some 21,000 families received economic information which helped them in food buying.

More than 30,000 homemakers improved the quality of their meals through the use of pressure sauce pans and broilers, and saved time by using homemade mixes. The advantages of homemade mixes are apparent to those who use them. A Clinton County homemaker said: "Since I have been using biscuit mix, I prepare breakfast in one-third less time."

Marion County women recognize the importance of the seven basic foods. In 12 of the 15 home economics extension clubs reporting, 50 per cent of the members use the basic seven as a guide for meal planning.

In McDonald County, 92 women now pasteurize their home produced milk. The Bunker Hill extension club sponsored a clinic where not only club member families had all cows tested, but every family in the community had their herds tested and calves protected against tuberculosis and Bang's disease.

Many homemakers now recognize overweight as a health hazard. Using recommended methods a Jefferson County homemaker reduced her weight 28 pounds in less than a year. To accomplish this she included the basic foods in her diet, avoided high calorie foods, refused second helpings and did not eat between meals. Better health was the reward.

FAMILIES WELL CLOTHED

By constructing and restyling clothing rural women managed to clothe themselves and their families attractively and well despite high clothing prices and extreme style changes. Applying tailoring techniques taught by extension workers they turned out more than 10,000 tailored garments.

Clothing plans were made by 456 families with an eye to making the best of the clothing dollar by following a recommended budget for each family member.

Working in groups under skilled leaders 6775 house



Meeting the challenge of extreme style changes, Missouri farm women tailored and restyled 16,572 garments. They also kept themselves well-dressed at home by making 54,055 house dresses.

dresses were made using USDA styles. And 47,280 more were made following other designs.

Popular with homemakers throughout the state were demonstrations in remodeling and dry cleaning. A total of 50,000 garments were restyled and 37,000 garments dry cleaned. Clinics were held and 3452 sewing machines were cleaned and adjusted. The average cost of cleaning a machine was 14 cents. Nearly two-thirds of the machines cleaned were more than 20 years old.

More than 6000 women received and used information on foot care, selection and care of shoes.

Skillful use of sewing machine attachments helped 6734 women make garments with such well made tucks, gathers, and ruffles as to give them that ready-made look.

A new unit of work "How To Read Labels" was a popular demonstration this year. With many new materials on the market homemakers recognize the importance of knowing certain characteristics about a garment which labels often tell.

Mrs. Thomas Owen of Ozark County brought to the sewing machine clinic a machine that long had been thought useless. After cleaning, oiling and adjusting it she replaced two small parts and found it sewed perfectly. Mrs. Owen said she saved \$25 that day for she had planned to buy a used machine for that amount.

Grub control is expected to become more common with the increased use of spraying equipment on farms. Many farmers reported no grubs on cows sprayed with DDT for flies. Unsprayed cattle on the same farms had numerous grubs in their backs. Some 36,726 farmers vaccinated calves to prevent blackleg.

County reports showed that 253,793 cattle were sprayed for lice and ticks. Sheep owners dipped 114,809 head.

County agents reported that vaccinating for hog cholera spread following meetings where hog diseases were discussed. Also, calls about sick hogs dropped where more vaccination was practiced. Some 55,241 farmers vaccinated their hog herds this year.

INCREASED MILK FLOW

Milk production during the year showed an increase sufficient to provide a city of 220,000 persons each with a quart of milk per day for a year. In terms of per cow production, the increase was 175 pounds. In the past decade, the state's annual milk total has moved up 24 per cent due to the better production per cow.

That quality of herds is definitely on the upgrade was indicated by the fact that the number of cows bred artificially increased 38% to reach a 68,534 total. Most of the cows so bred were in small herds that have used relatively poor quality bulls in the past. The results of matings with excellent bulls through artificial insemination will be fully realized when their daughters begin milk production.

More dairy herd improvement associations operated at the close of the year than at any previous time. Forty-four associations provided testing service to 853 herds including 16,637 cows. The average production of herds on test exceeded by 74% the estimated average of all dairy herds in the state while the income over feed costs more than doubled the figure for all cows. The farms enrolled in the associations served as demonstration herds, and thus had far reaching influence.

Dairy schools in 20 counties attracted 1,240 farmers. These schools took up such matters as feed production, feeding and management, breeding, production of high quality dairy products, and control of disease.

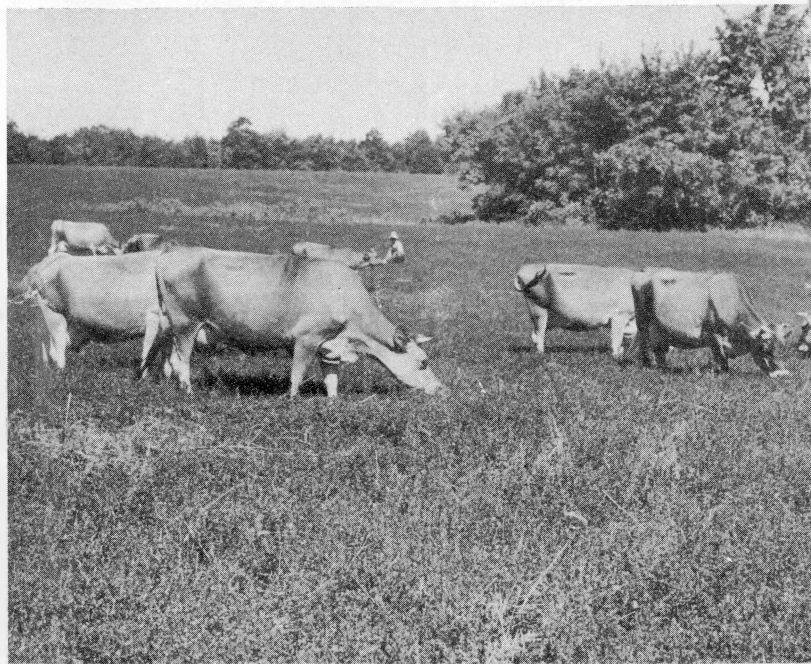
More dairy herd improvement associations operated in the state than ever before. Forty-four associations served 853 herds including 16,637 cows. These herds also served as local demonstrations.

Increasing numbers of herd owners are using calfhood vaccination to help control Bang's disease in their herds. Calves were vaccinated in 10,570 dairy herds and 8,007 beef herds this year.

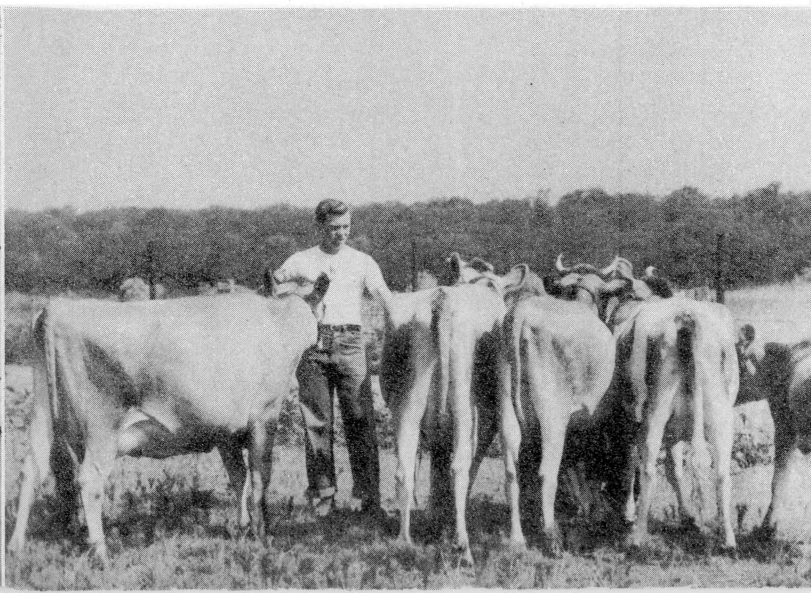
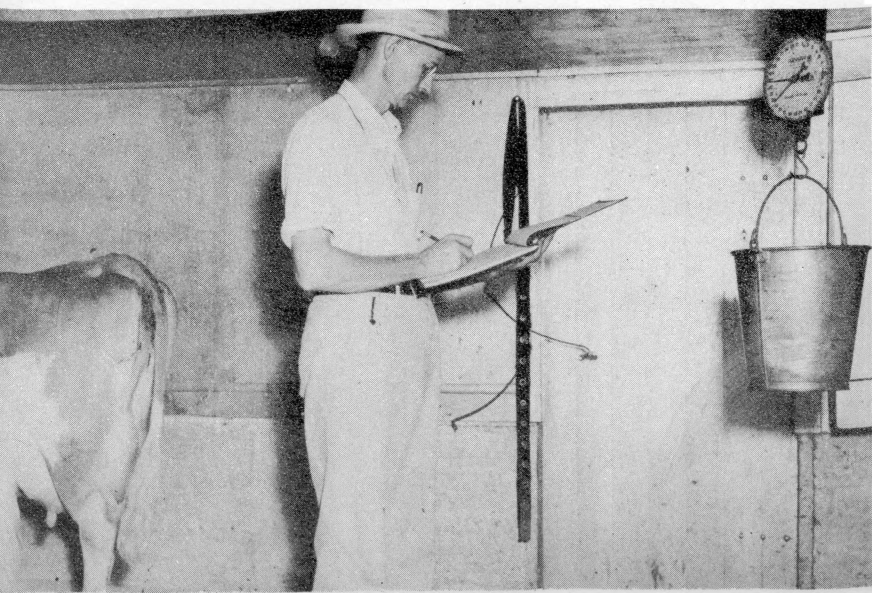
Farm improvements such as concrete floors, milking parlors, milk rooms, good pasture systems and other sanitation methods have done much in keeping down such dairy cattle diseases as milk fever, mastitis, cow pox, sterility, nutritional troubles and diseases of newly born animals.

In Douglas County, dairy farmers, milk and cheese plants, chambers of commerce and banks cooperated with the Extension Service in a campaign to build more silos, so as to provide more and better roughage to dairy cows. Well over a hundred silos were built, many of them being of native lumber, a material readily available at low cost in that part of the state.

Milk production per cow moved up 175 pounds during the year reflecting the use of better pasture systems, culling, feeding, and breeding. Total annual milk production surpassed 4 billion pounds.



"To make the best better" applied also to dairy and livestock projects of 4-H club members. Taking a calf as a starter, many boys and girls have built up young and profitable herds.



CONTROLLED INSECT PESTS

Insect pest control reached new heights during 1948. Extension workers kept control recommendations well ahead of pest outbreaks. As a result, farm people became interested early in the season and kept insect damage to a minimum in the state.

The new insecticides were used in some 220,000 homes during the year, and that was about twice as many as in the best former year. Farmers sprayed more than a million head of livestock for fly control. The newer and more effective chemicals brought better control of fruit and garden insects.

County reports showed that 253,793 cattle were sprayed for lice and ticks. Sheep owners dipped 114,809 head of sheep, and 26 new dipping vats were built. More farmers drenched their flocks with bluestone treatment for control of internal parasites.

Cutworms, army worms and grasshoppers required quick action and effective materials to save field crops. Farmers used about 500 tons of poison bait, and these drives were so well planned and carried out that crops worth more than \$5,000,000 were saved, according to reports from county agents in 103 counties.

Fifteen counties carried on rat killing campaigns in the state-wide effort to save feed and food. People in towns and villages joined with the farmers in county-wide distribution of poison bait for rats and mice.

No serious damage was done by the European corn borer, even though this pest has continued to spread southward through the state. Surveys indicated that numbers of this pest will continue very low in 1949.

Several farmers were interested in bees for pollination of clover seed production. One farmer near Lexington reported that bees kept along two sides of his clover field increased seed production by one bushel per acre. Such interest in the use of bees for clover pollination led to rental of bees by a few farmers in the Missouri River Valley section.

BUILT-IN SECURITY

"Farm Builders At Work" would have been an appropriate traffic sign on many thousands of Missouri farms in 1948. Extension engineers and soil conservation technicians led a year-long crusade for soil saving structures and more convenient homes and service buildings.

Terrace construction exceeded that of the preceding year. More than 58,600 additional acres were tucked-in under the protection of complete terrace systems. The state now has 713,323 acres terraced, equipped with safe terrace outlets, and farmed on the contour.

Repeated experiments have shown that this type of protection against erosion losses of soil, moisture and fertilizer adds an average of \$5.59 an acre to the yearly production of crops. That's a yearly dividend of almost \$4,000,000.

To train local leaders for this work, the Extension Service last year held 48 field training schools. Each leader was trained to help his neighbors build terraces, outlets and check dams, also to lay out contour lines. Missouri

Missouri Contracting and Terracing Association members, and commercial firms helped in demonstrations before record crowds at Balanced Farming Action Days and Grow Grass Days.



farmers last season farmed more than 1,060,000 acres on the contour.

Other land improvements in the year were 3540 deep farm ponds, four-fifths of which were fenced and piped, while 816 were also planted for wildlife conservation. Missouri farmers in the last 12 years have built a total of 59,633 ponds.

Most of the terraces and ponds were custom-built by accredited members of the Missouri Terracing and Conservation Contractors Association, though many farmers having the necessary machinery and help built their own.

Much time was given to building, remodeling and repairing farm buildings. Farmers accepted this assistance on 3790 new buildings and 3853 remodeling jobs. Help was given 2792 farmers on building movable equipment and furnishings.

Many farm families installed running water, bathrooms and modern sewage disposal. The re-usable forms for building septic tanks became more common over the state. Forms are now available on a rental basis in 40 counties.

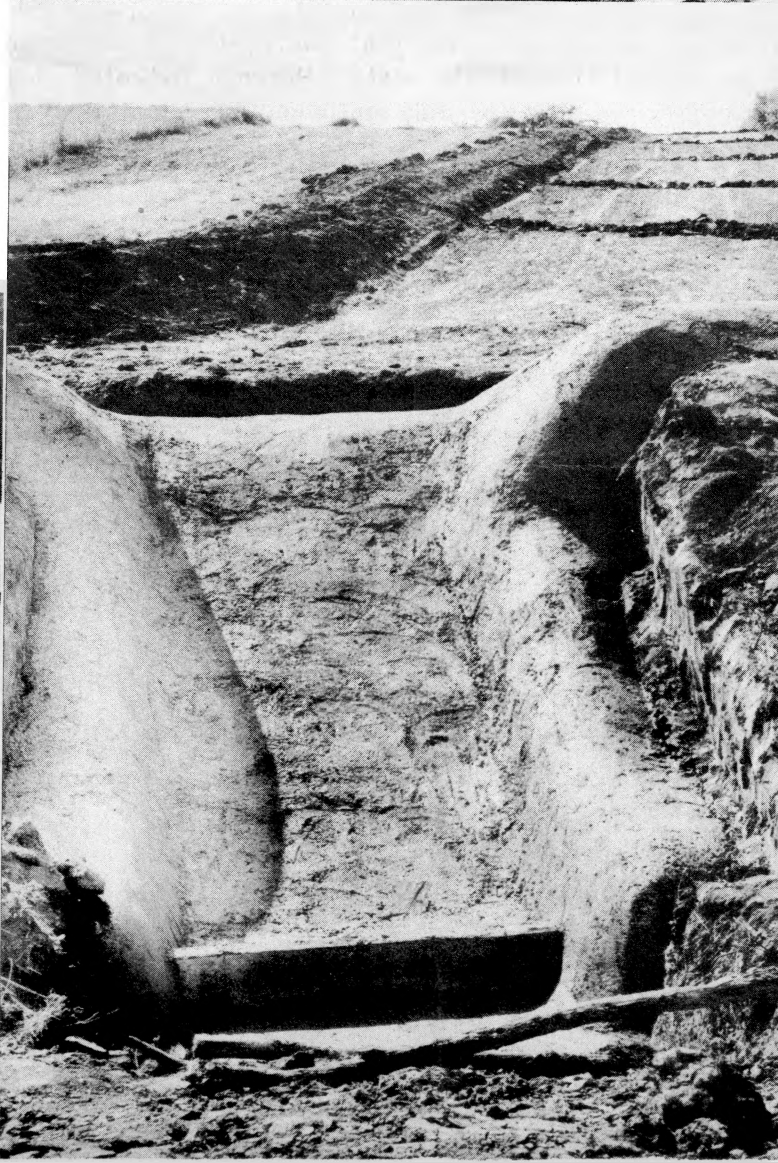
Among service buildings most new construction was for feed storage, including 5332 temporary silos. Poultry house remodeling was prevalent.

Fifty-nine leader training schools were given in machinery care and repair, with later reports showing that instructions were followed by at least 8872 farmers.

Newly built Missouri type concrete dam and waterway. Cross-berms in freshly worked waterway keep water from pouring down new waterway and carrying away seed and fertilizer.

Action day demonstrations included farm improvements. On this farm the first section of paved lot from milking room to loafing shed was laid to keep the cows from wading through mud.

Home improvement was of major interest, with 2754 dwellings being remodeled. As a direct result of remodeling and repairing, screening and other recommended methods of fly control were used by 28,717.





Acreege of farm woodlands rose with the planting of 1,200,000 seedlings. Both the use of native lumber on the farm and cash sales have made the farm woodland a regular enterprise on many farms.

BETTER CARE OF WOODLAND

Farm woodland management has become a paying cash enterprise on many Missouri farms. The extension forestry program aided farmers in making selective cuttings and planting 1,200,000 forestry seedlings during 1948. Such assistance was given in 24 tree planting demonstrations over the state.

The 4-H club members took part in the forestry program largely on a wildlife and farmstead windbreak planting basis. Many ponds now have their border areas

growing trees and shrubs useful to wildlife, thanks to some local 4-H club.

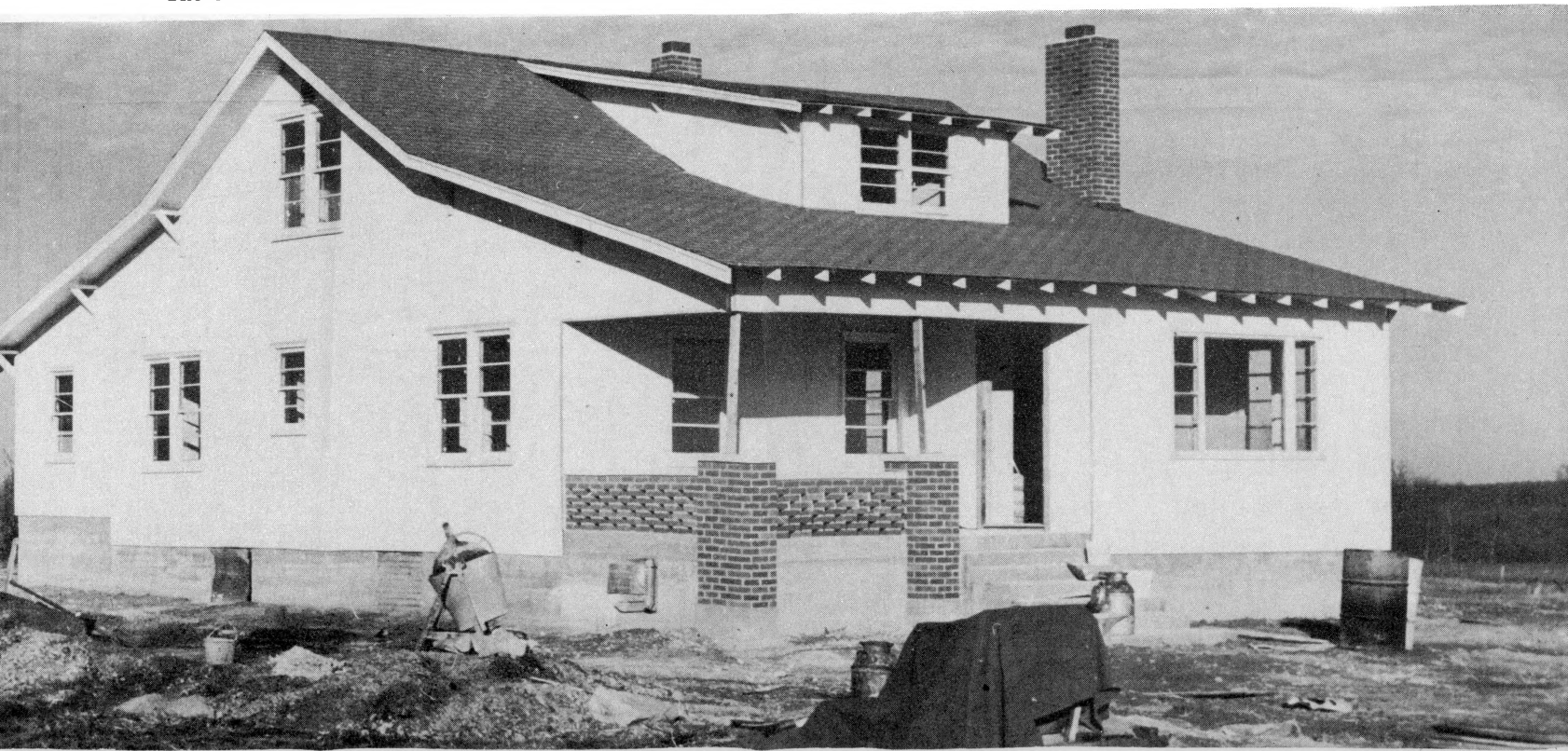
All of the forestry programs in the state are relatively new, although abundant forests greeted the pioneers as they crossed the Mississippi River. The University extension forestry program is keyed closely to that of other groups such as the Missouri Conservation Commission, U. S. Forestry Service, and others.

Farmers of the state are being assisted in working out problems of better management for their woodlands. In addition, they are aided in learning the value of their timber, and how to harvest it most efficiently. Thus farm woodland owners find that their timber usually should be harvested on a selective basis—picking out the trees that are ready—rather than clear cutting the entire land. In a number of cases during the year, farmers were amazed to learn that their woodland had greater cash value than they had been bid, even when harvest was done selectively.

One of the biggest improvements in forestry management during recent years has been in control of fires. Various groups have aided in this, but in any event the results have been progressively better. Not only has tree loss been held down, but burning of organic matter has been cut, as the farm owners have come to realize that fires can do nothing but harm to woodlands.

On the Max Mauss farm in Camden County, 18,000 feet of lumber sufficient for a new barn and machine shed was first harvested. Then, this past year an 8-room house was nearly completed with 18,000 board feet of lumber used in it. Even the laths in this house were cut from timber on the land. Several years ago, Mr. Mauss planted a pine windbreak around the site of his present new house, and this now is tall enough to give protection to the home. The home is heated by a modern wood-burning furnace which gets full heat value from fuel cut on the farm.

The owners of this farm included a new home in their balanced farming plan, using lumber grown on the farm.



POULTRY MADE MONEY

Larger flock dividends in 1948 resulted when poultrymen used better methods to boost average egg production 5 to 6 eggs above that of last year.

Breeding, feeding, management and housing methods were stressed by poultry extension workers. This was done through flock demonstrations, selling on a graded basis and getting more recommended practices used through working with industry.

Missouri records show the need for increasing flock size to 300 to 400 birds, or of keeping just enough to handle family needs. Getting such economically sized units was stressed in 1948.

Despite material and labor problems, poultry raisers built 1177 new brooder houses, 1152 sun porches, 1388 range shelters and much new feeding equipment. A total of 1613 new laying houses were constructed, 884 poultry houses remodeled and 803 thin-section concrete floors put in. Such labor saving ideas as built up litter used by 10,888 producers and droppings pits used by 12,795 helped economize poultry raising.

Broiler production increased with capacity for a half million broilers being built. This may boost production to 1½ million broilers annually in the state. Missouri turkey growers maintained their production by raising 1,310,000 birds. This was in the face of a downward trend in many states. County agents helped individual growers with their problems.

Selling quality eggs on a graded basis meant an average premium of \$1.90 per case for growers. Poultry Improvement Day meetings in 51 counties helped extension workers interest both industry and farmers in making poultry a leading cash enterprise on many farms. The Farm Flock Improvement Contest in which 227 growers in

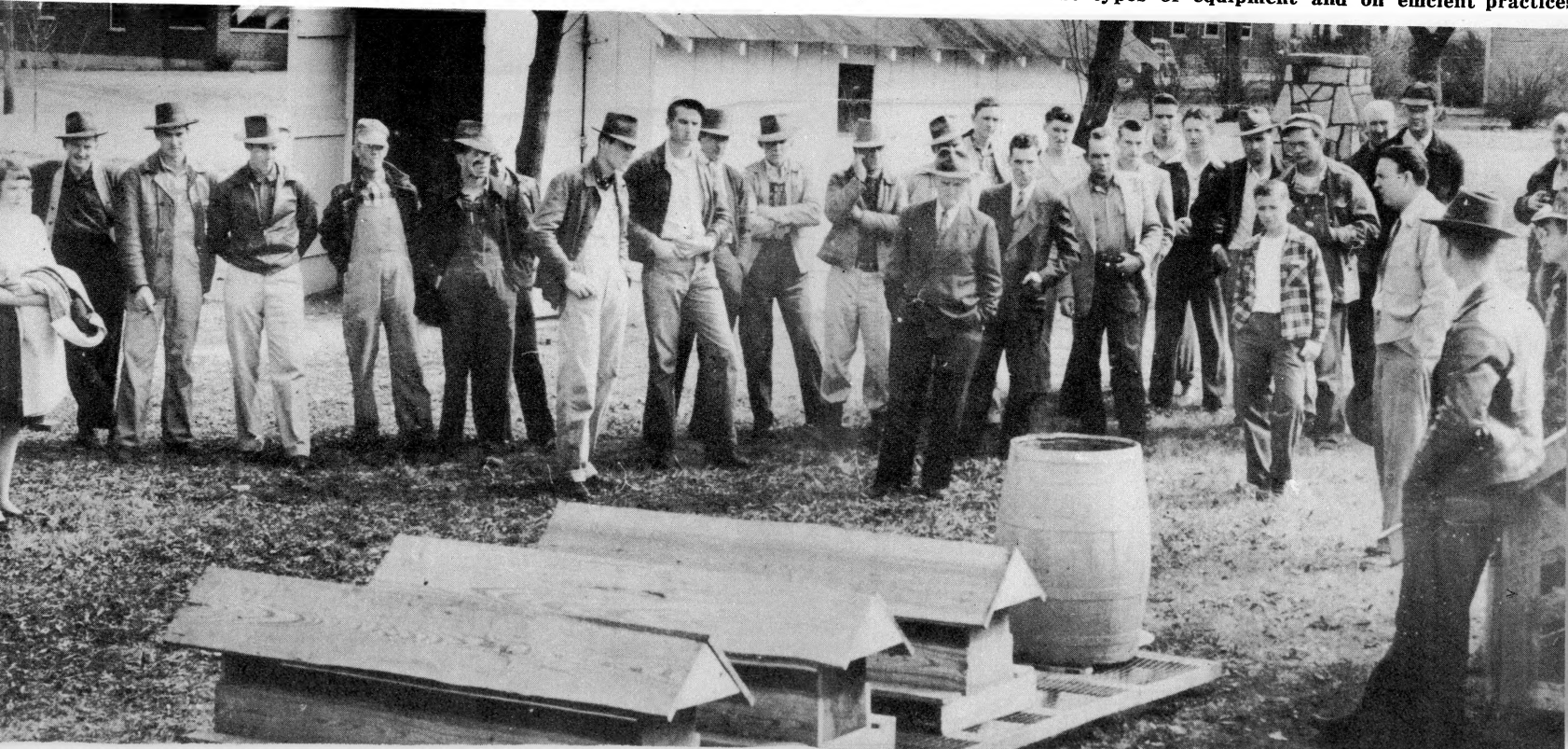


Many poultry raisers boosted flock numbers and remodeled laying houses in making poultry a paying enterprise. Note community nests, droppings pits, straw loft and automatic waterer.

57 counties participated also brought much publicity on improved poultry practices.

Examples of these practices may be found on the Otis West farm in DeKalb County. He received an average of 231 eggs, 67 more than the state average, by using a profitable size flock and starting with quality chicks. And in Douglas County, Mrs. Leo Horner says, "My range shelters have already paid for themselves. This was the first year that we haven't had sick chickens sometime during the summer. This year our pullets are even in size and appear worm free."

Poultry improvement days in 51 counties focused the attention of farm families on the latest types of equipment and on efficient practices





Grape production continued to offer promise to Ozark farmers.

IMPROVED GARDENS, ORCHARDS

Productive home gardens was the major goal in the 1948 Missouri extension horticultural program. Ninety-eight counties responded by participating in soil testing.

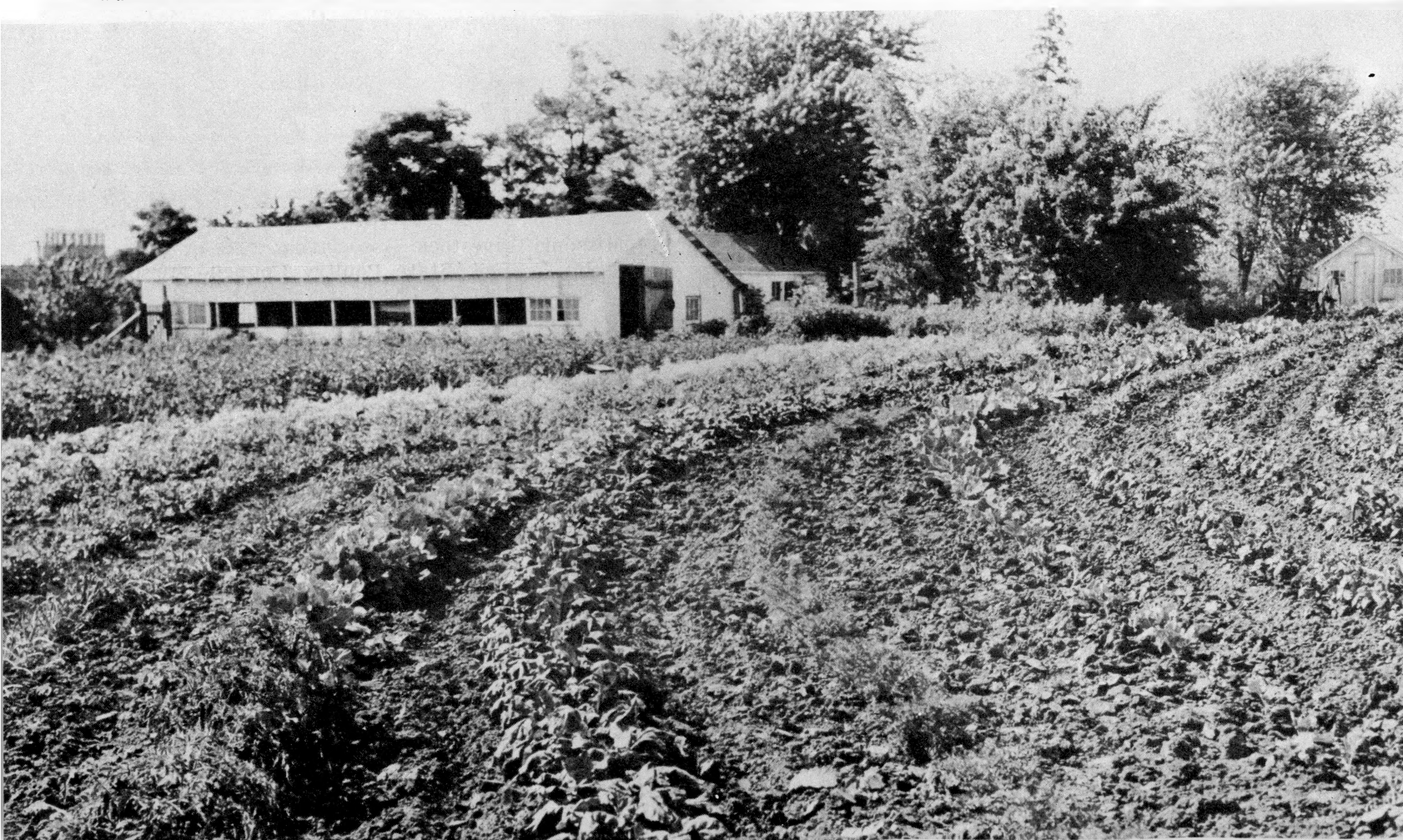
Despite such progress less than 30 per cent of Missouri gardens are properly fertilized. Volunteer leaders numbering 848 helped the home garden program along in 44 counties. A total of 34,770 families were assisted with their home gardens and 10,336 with home fruit production.

Home Economics Extension Clubs were active in garden work. More than half the membership in 963 clubs used the Missouri vegetable planting calendar. Horticultural projects were also a part of the 4-H youth program with boys and girls in 95 counties completing home garden and commercial fruit and vegetable projects.

On the fruit side, Missouri production was less than last year, chiefly because the 1948 apple crop was only half the bumper production of 1947. Other fruits were stable or had slight increases. There were 55 district spray and season management meetings held in the 22 commercial producing areas of Missouri. Three apple marketing clinics brought grower and retailer together, resulting in a better understanding of the problems of each.

Septoria leaf spot held down tomato production to an average of only 2½ tons per acre. The disease was caused by the excessive rainfall during late June and early July. Even with a smaller potato acreage than that of the preceding year, potato growers took advantage of favorable weather and nearly doubled their gross income.

Farm families moved toward better gardens with the use of two-area rotations, added fertility, wide rows, and contouring.



New sprays, while doing a good job, brought new problems. For example, the use of DDT controlled codling moth but this meant serious increases in mites and red-banded leaf rollers and probably Forbes scale.

Some farms specializing in horticultural crops adopted formal balanced farm plans. The extension specialists are teaching horticultural practices in accord with the balanced farm program and every effort is being made to prepare vegetable and fruit farms for a formal long-time production plan.

The Sears Grape Project was continued as planned in 1943, with the first commercial crop producing over \$4000 in returns to the cooperators. M. Mitcham, Mountain Grove, received \$1000.56 for his 2½ acres of Catawba grapes. Paul Poppitz, Willow Springs, grossed \$800 from 2½ acres of Catawba and Herbert grapes. Herbert grapes were placed on the Kansas City retail markets for the first time. Packed in 2-quart containers, they sold readily at prices equal to California table grapes. A survey indicated almost unanimous approval by the consumer. The Catawba grapes were pressed at Mountain Grove and the fresh juice sold to a St. Louis firm. They sold for \$125 per ton and pressed out 149 gallons of juice per ton. M. Mitcham harvested 16,025 pounds from 2½ acres, the best record made.

EXTENSION INFORMATION

More than a million copies of Extension publications were printed during the year. These included 38 general circulars and leaflets, 17 leaders' guides and circulars for 4-H clubs, 6 manuals and handbooks, 18 miscellaneous publications, and 74 issues of Extension periodicals.

The state office of the Extension Service supplied 474 news articles of statewide interest to the newspapers and farm journals of Missouri. County agricultural and home agents prepared 30,739 local items of timely information for the papers in their counties. Many newspapers carried this news in special farm and home departments.

In radio information, county Extension workers made 1843 personal broadcasts from local stations. This was double the number made the preceding year. The state office sent out daily scripts to 32 radio stations serving Missouri listeners. A new transcription service was started so that stations throughout the state may broadcast talks by members of the College of Agriculture research and teaching staff.

Missouri-made motion picture films increased in number and popularity. Two new pictures, "Greener Pastures" and "4-H in Action", were completed. More than 120,000 persons saw one or more of the motion picture films supplied by the Extension Service.

Illustrations were supplied to newspapers, farm journals and general magazines by distribution of 2300 stereotype mats and about 2000 photographic prints.



The number of radio broadcasts doubled that of the preceding year. All phases of extension work were represented on transcriptions and personal broadcasts.

MANY AGENCIES ASSISTED

Grateful acknowledgment is made by the Extension Service to many groups and agencies for their valuable cooperation. These include the Press and Radio, State and City Chambers of Commerce, Missouri Farmers Association, Missouri Farm Bureau Federation, State Grange, Missouri Bankers Association, State Home Economics Council, and Federated Garden Clubs of Missouri.

Missouri Livestock Association, the State Dairy Industries Council, State Poultry Council, Missouri State Horticultural Society, Missouri Seed Improvement Association, State Breed Associations, and County Courts.

Vocational Agriculture and Vocational Home Economics Divisions of the State Department of Education, the State Department of Agriculture, State Board of Health, State Conservation Commission, State Division of Resources and Development, the Missouri State Fair Board, and St. Joseph Inter-State Stock Shows.

Soil Conservation Service, Production and Marketing Administration, Farmers Home Administration, Farm Credit Administration, Rural Electrification Administration, and U. S. Forest Service.



Balanced farming improved the Missouri landscape as terracing, fertilizing, seeding, and contour tillage went into effect.

New varieties of oats resistant to certain diseases are replacing susceptible varieties. Small grains fit well into annual rotations.



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