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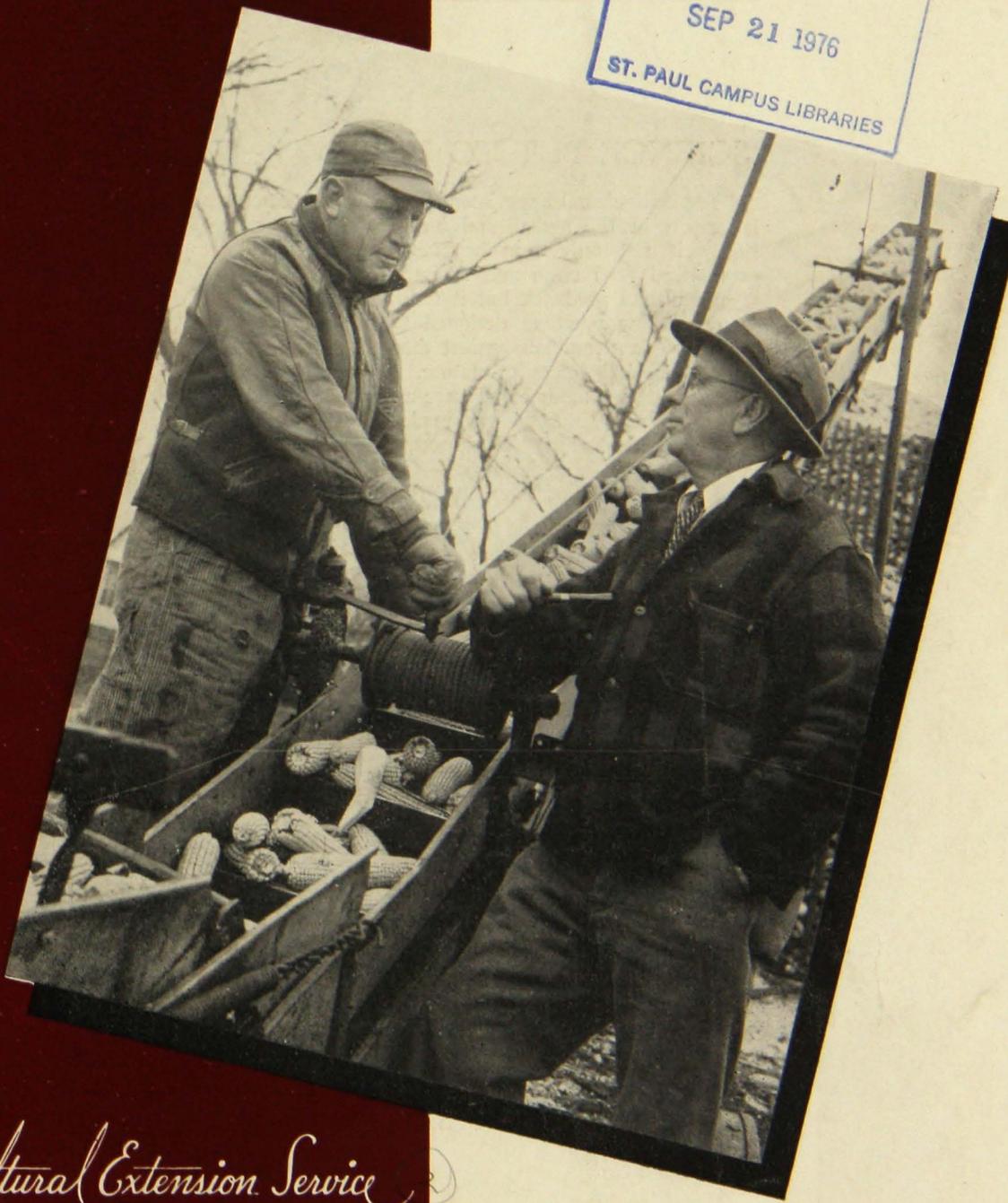
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Extension Work

IN
MINNESOTA

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Agricultural Extension Service
UNIVERSITY OF MINNESOTA
U. S. DEPARTMENT OF AGRICULTURE

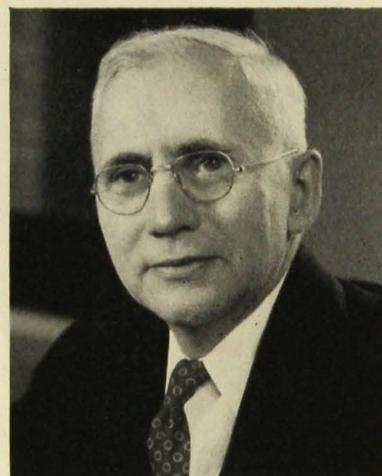


INTO EVERY COMMUNITY . . .

"The University of Minnesota is fully aware of the eagerness with which people seek more education to improve their working efficiency and broaden their cultural interests. It feels itself committed to serve them. Today the university's educational responsibility reaches beyond the campus classroom into every community. Indeed, in every town hall or rural home where men and women assemble to work with a county extension agent, there the university and the people are together to further the cause of education."—J. L. Morrill, President, University of Minnesota.

SCIENCE PUT TO WORK . . .

"The Agricultural Experiment Station is a research laboratory of the agricultural industry. In this capacity it not only contributes to increased and economical production and to improved marketing of agricultural products, but it stabilizes production by developing practices designed to protect staple crops and farm animals against diseases, pests, and certain physical forces of nature. Agriculture, like other industries, tends to advance and prosper when its research institutions are made most effective through adequate financial support, and the prompt application of their findings."—Clyde H. Bailey, Dean and Director, Department of Agriculture, University of Minnesota.



THE COVER—Pictured on the cover is Elmer Bendixen, farmer living near Morgan, Minnesota, swapping farm talk with J. I. Swedberg who has served the people of Redwood County as county agent for the past 10 years. These two men typify the cooperation that exists between farmers and county extension agents.

For many years extension agents have worked with farm people to build a rural Minnesota of productive farms, good homes, and outstanding citizenship. The amazing production record of the war years is the best evidence that farmers and homemakers have kept abreast of new scientific methods and can translate such information into efficient farm production.

Extension work is a cooperative effort of county, state, and federal governments working through county extension committees. These committees of local farm people lay out county programs based on important problems and employ county extension agents to carry them through. At the same time, agents are members of the University of Minnesota instructional staff and have at their right hand the educational resources of the university as well as those of the U. S. Department of Agriculture.



BY AND FOR FARM PEOPLE

BY PAUL E. MILLER

AMERICAN FARMERS today are producing a third more products for market than they did five years ago. They are doing this with 10 per cent fewer workers and with almost no increase in land used for crops and pasture.

If we measure present production against output per farm worker during World War I, the comparison is even more startling. On that basis output has much more than doubled, and the trend is still sharply upward.

These figures for the United States are given by the Bureau of Agricultural Economics in a recent publication, "The Revolution in Farming." In Minnesota the increase has been even more striking. Using as a base the total farm production in this state for 1935-39, production rose to a record high of 156 per cent in 1943.

These comparisons are challenging and thought-provoking. Do they set forth a world-wide trend, or is the increase largely confined to the United States? With this in mind I talked to returning soldiers, Minnesota farm boys who had had a chance to observe farming in the farthest corners of the world. From a few countries they bring back stories of a progressive agriculture, but from other great areas their reports are of backward, tradition-bound farming with crude implements and little or no application of modern scientific methods. Output per worker is extremely small and levels of living pitifully low.

As I talked to these boys I tried to get at the real reasons for the great differences they observed. Is it wholly a matter of resources? Is our rapid advance in the United States due solely to good soil and favorable climate? The answer seems to be, rather, a combination of resources and climate, people and institutions, and application of scientific method.

I am convinced that the key to our success is the fact that our lands were



Paul E. Miller has been director of the University of Minnesota Agricultural Extension Service since 1938. He has been a member of the university staff since 1911.

settled by people seeking freedom and opportunity, determined to reach these ends through hard work. These settlers were the children of varied cultures, but the idea of freedom and democracy dominated their thinking and guided their leaders as they framed their institutions. Outstanding among the forces responsible for the rapid development in this country is free schooling for all citizens. Our educational system started with the public schools established 185 years ago. Agriculture traces its educational advance to the founding of the land-grant college system, with its provision for research and teaching, not only in the classroom, but wherever farm people assemble.

First task was to build a body of scientific information about soils, crop and livestock production, and marketing—available to youth attending school. Almost simultaneously there developed a movement in the field of adult education known as farmers' institutes. The first county agricultural agent was employed in Smith County, Texas, in 1906, and by 1914 at least 40 states had established extension work in some form.

The Minnesota Agricultural Extension Service was established by the State Legislature through an act authorizing the University Department of Agriculture to set up a division of Agricultural Extension and Home Education. In 1914 Congress passed a law giving federal recognition to this new type of education, setting up a plan whereby federal, state, and county governments might cooperate

with local people in planning, financing, and carrying out a broad program of rural education. Since that time various state and federal laws have been enacted to further the work, but the basic idea of local, state, and federal cooperation remains the core of the extension system which is unique in the field of governmental relationships.

In the United States our educational system has not been given to the people, but is rather something they have created to meet their needs. This is especially true of the extension system, built around programs of work set up by local people.

Established in Minnesota in 1909, the extension system has been tested and refined through periods of war and peace, through booms and depressions. Today it touches in one way or another almost every home and farm in rural Minnesota. The large production per farmer and per farm is not accidental. It is the result of the labor of free people working through the institutions they have built.

Down through the years the Minnesota Extension Service has devoted itself to acquainting farmers with scientific knowledge gained through research, and with practices used by the most successful farmers. The interest in efficient production has gone hand in hand with contributions in cooperative marketing and cooperative buying. At the request of farm people the work was expanded to include training of youth through 4-H and enriching home life through home demonstration work. As a result 50,000 Minnesota boys and girls are now 4-H members. More than 70,000 farm women enrolled in home demonstration groups this past year.

When drouth seared the crops of the state, extension workers stressed emergency feed crops and adjustment of livestock to feed supplies. When depression unbalanced markets, county agents worked with farmers and other agencies to shift production and restore balance. When war made all-out production the need of the hour, emphasis turned to those practices that would bring the greatest quantity of needed foods. With the passing years increasing emphasis is being put on soil fertility and maintenance.

At all times the objectives of the extension program have been the development of rural people and the enrichment of life on the farm and in the rural community.

Since cooperative extension work is flexible and responsive to the needs of the people, the work of extension agents can be expected to change its emphasis in the years ahead. We shall, of course, always have problems of production. New diseases of both plants and animals will demand new cures. There will be new weeds to eradicate, new crops to sow, and perhaps new breeds of livestock. All of these and many more will parade across the scene of agricultural production.

We can expect, furthermore, that there will be other problems, perhaps more difficult. Farmers are now thinking seriously about suitable markets for their large output. They want to know how to get farm products to the consumer most efficiently. They see a need for thorough study of our marketing and distributing processes to the end that the consumer can purchase more farm products with his food dollar. They want to see progress in improved marketing to match the progress in improved production.

They are interested in better rural living conditions. Already there is a trend toward the modernization of the farm home and the farm plant that will change rural living in a most profound manner. Rural institutions, rural schools, hospitals, and recreation will all receive increasing attention.

Farm people will want county extension agents qualified to give professional assistance in carrying out these changes. The leaders of the Extension Service, both nationally and in the states, are looking for people with special training to lead these programs and to retrain county extension workers for the responsibilities of tomorrow.

The report which follows is intended to give a picture of the University of Minnesota Agricultural Extension Service in 1946 and show how the people of Minnesota are shaping it to meet the newer educational needs of the rural community.





Scientists at University Farm and branch experiment stations develop new crop varieties, more productive livestock, sounder methods. Farmers are quick to accept the new ideas.

FROM LABORATORY TO THE FARM

THE UNIVERSITY OF MINNESOTA Agricultural Experiment Station was created out of the desire of pioneer farmers for an institution to help them with their production problems. Requests during territorial days became so urgent that the first state legislature, meeting in 1858, passed a law authorizing an experiment station and college of agriculture. The Civil War and the uncertain years following delayed action until 1885 when a research station began operation. The interest which had brought the station into being did not wane with its establishment. A partnership was born between the farmers of Minnesota and the staff of the college which has continued through many fruitful years.

The beginnings of extension work quickly followed the organization of the Experiment Station, first as farmers' meetings in rural areas and then as organized institutes. Today the extension system is assigned the task of bringing

farmers' problems promptly to the attention of the station. Similarly the findings of research are being transmitted as rapidly as possible to farmers for their use. The present extension plan includes a corps of specialists, working out from University Farm, and county extension agents, agricultural, home demonstration, and 4-H, who are appointed locally and live in the counties. Both groups are members of the university instructional staff. Both keep in touch with the research work of the Minnesota station and through the station with the research of other land-grant colleges and the U. S. Department of Agriculture. The entire plan is intended to eliminate any unnecessary lag between discovery in the laboratories and experimental plots and application on the farm.

As now organized, the University Department of Agriculture includes all university activities in the field of agriculture, Experiment Station, Extension

Service, college, schools, and short courses. The faculty of the college and schools supervise and conduct research work. Thus college instruction as well as on-the-job teaching in the counties by extension specialists and county agents is rooted in station research.

Today it would be difficult to find a farm in Minnesota which has not been influenced in one way or another by scientific discovery at the experiment station. Look at any field of grain and the odds are that the variety used will have been bred and developed by the Minnesota station or a neighboring station. The sudden increase in oat production in recent years resulted from new varieties, and even better oats more resistant to disease are now ready. Minnesota's two greatest feed crops, alfalfa and corn, owe their leading place to breeding work and cultural practices developed largely at University Farm and its branch stations.

The Minnesota station was one of the pioneers in the development of northern-

adapted hybrid corn, and is still pushing the corn zone northward. Farmers worked shoulder to shoulder with plant breeders in proving these new hybrids and putting them to work. Hybrids now in use produce at least 20 per cent greater yields than the open-pollinated varieties. Thanks to close cooperation between growers and scientists, more than 90 per cent of corn grown in Minnesota now is from hybrid seed. The increase in production is variously estimated at from 35 to 50 million bushels a year. This revolution has taken place in the period of approximately 10 years.

Feeding standards for livestock have been changed and modernized by continuous research with the result that production per animal has increased steadily. Cows are milked differently and with better results because more is known about the cow's udder. Artificial insemination has made it possible to get 10 times as many offspring from a good bull. Inbreeding and crossbreeding are producing meat animals which grow faster and use feed more efficiently. Everywhere modern practices follow closely the findings and teachings of research workers.

Research is not for production alone. The cooperative creamery movement in Minnesota largely grew out of findings of the experiment station. More recently research in cheese, ice cream, and dried milk has brought about another revolution in marketing of dairy products. The number of pounds of whole milk delivered to market by farmers increased from around a billion pounds in 1940 to just under four billion pounds in 1946. In the same period cream deliveries fell from just over 800 million pounds to about 450 million pounds. Research in the field of by-products utilization blazed the trail for this change-over.

Minnesota farmers are now eager to put into effect the new ideas that come out of the laboratory. However, putting these ideas into practice frequently calls for drastic and costly changes. The Extension Service has proved itself not only helpful in introducing onto the farm the findings of science, but also in cushioning the shock and avoiding mistakes that often come with change.

The farmer and the specialist work as a team in testing new crops and crop combinations under local conditions.



PRODUCTION IS THE KEY

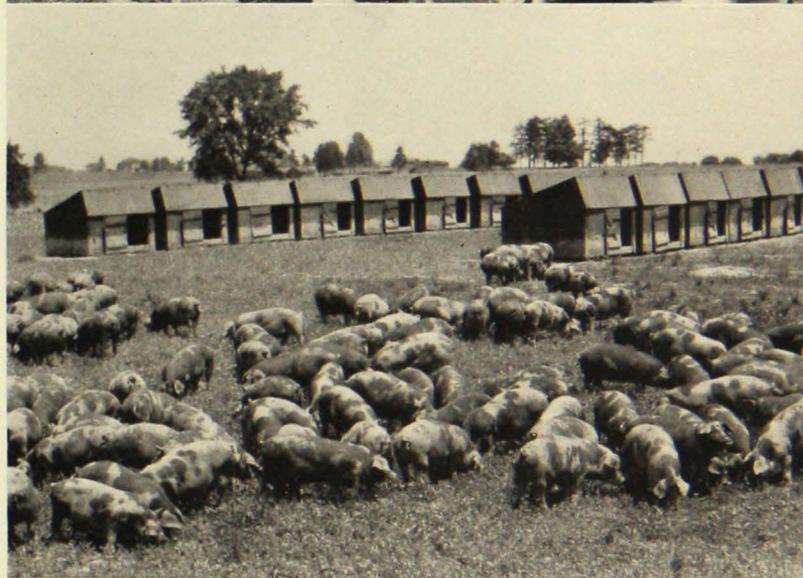
PRODUCTION on each farm must provide or pay for everything the farm family consumes. That is why county extension programs set up by farm people always stress production. That is why county agricultural agents, like farmers, are production-minded. Out of the farmer's constant demand for information and the continuing application of research has come the great advance in productivity of our farms and particularly in the output per farm worker. This advance has been made through wide use of new crop varieties, better control of insects and diseases, improved livestock breeding and feeding, and rapid advances in the use of mechanical power on farm jobs. The Extension Service's part in bringing this about has been to work with farmers in setting up organizations to spread the new ideas and to put them into use.

One example is the Minnesota plan of seed distribution set up in 1929. Under this plan the Experiment Station, the Minnesota Crop Improvement Association, and the Extension Service cooperate in distributing seed of new varieties to farmers as quickly and efficiently as possible. They work through local crop improvement committees who supervise seed increase within each county.

In 1946 committees in 75 counties allocated 4,000 bushels of Bonda and Mindo oats to 377 growers. Of the acreage seeded, 1,019 acres of Bonda and 1,206 acres of Mindo passed field inspection with the result that there will be approximately 56,000 bushels of Bonda and 60,000 bushels of Mindo available for planting in 1947.

County agent reports show that variety tests of one kind or another are made in almost every county. Many of these tests are supervised by experiment station people; others are local plots intended to be neighborhood demonstrations.

For both production and conservation reasons, interest in better pastures has





grown steadily in recent years. Extension workers have rated this program very high, with the result that Minnesota now has a pasture plan attracting nation-wide attention. Again success is being attained through cooperation of several groups. At University Farm a technical committee of crops, soils, and livestock people decides on the best practices. A state-wide sponsoring committee of farmers, agricultural business leaders, and extension men carry on a program of promotion and recognition. Local farmer committees work with the county agricultural agent in securing enrollments in the project and conducting demonstrations. During 1946 no less than 45 such county committees enrolled a total of 425 co-operators who kept records of their pasture work and made their farms available for demonstration use.

One of the more significant farming developments of the past few years has been change in haying methods, brought on largely by high cost of proteins and labor. Early-cut hay has been urged by county agents as a partial answer to the protein shortage. Since early-cut hay presents curing difficulties, various systems of barn curing hay are now being tried in an effort to develop methods practical on the average farm. Not only barn drying but various systems of mechanized haying are being studied by extension and sta-

tion workers. Station results and farm experience are being brought together to develop a system that will produce quality hay at a cost farmers can carry.

In Minnesota, livestock farming provides most of the farm income. Crops are fed to livestock and sold as dairy products, beef, pork, lamb, or poultry. The recent work toward better pasture and hay is part of a long-time extension program to improve dairy feeding and thereby boost dairy income. Along with this continuing work in feeding, the Extension Service has tackled many other dairy problems as the need arose.

During the war years there was great need for dairy products, but price disadvantages and rising labor costs tended to discourage production. Farmers turned to mechanical milking to save labor. This was the ideal time for dairy specialists and agents to spread the fast milking technique developed by dairy scientists at University Farm. The result is a revolution in milking methods that saves time and brings more milk per cow.

In less than 10 years artificial breeding has graduated from the laboratory to an organized program. Last year more than 25,000 cows were bred in this state through artificial insemination associations, most of them to proved sires.

When the first cow-testing group was organized in Minnesota in 1910, the asso-



Touring neighborhood farms is a method much favored by extension workers. Farmers can swap experiences and have their questions answered on the spot.

ciation average was 189 pounds of butterfat. By 1946 production in DHIA herds was up to 315 pounds. In spite of a wartime decline due to lack of testers, there are 60 associations in the state today, representing 1,600 herds, 27,000 cows.

The health of the dairy herd has always received the close attention of the dairyman and the Extension Service because eradication of disease often calls for community organization. Tuberculosis, once a menace to herds and people alike, has been virtually eliminated. Slow but steady progress is being made in combating Bang's disease. In 1947 the Extension Service at the request of farmers will organize a full-scale attack on mastitis, one of the costliest dairy ailments. The plan is to muster all the latest information on treatment and management and put it to work on every dairy farm.

In 1942 and 1943 hogs became the largest single source of agricultural income in Minnesota. Extension effort down through the years has been directed toward saving as many pigs per sow as possible and then pushing the pigs to market in the shortest time. During the past 20 years the number of pigs saved per sow has increased about 20 per cent for the state, being estimated at 6.3 in 1946. Hogs now reach market weight weeks earlier than they did 15 years ago.

The system of raising hogs on clean pasture has been demonstrated widely with good success. However, the rigid requirements of this plan have prevented its adoption by many hog raisers. Instead they are turning to a laborsaving centralized plan advocated by extension specialists. This plan features a modern hog house with concrete walks to clean rotation pasture. During the war much attention was also given to promoting use of feeders, waterers, and other laborsaving devices. Today the labor input per 100 pounds of pork is the lowest in history.

Research workers, applying the same principle of genetics plant breeders used in developing hybrid corn, have found that crossbreeding results in pigs of greater vigor that produce pork at lower costs. This system is now widely used throughout the heavy pork-producing counties. The Minnesota No. 1, a new

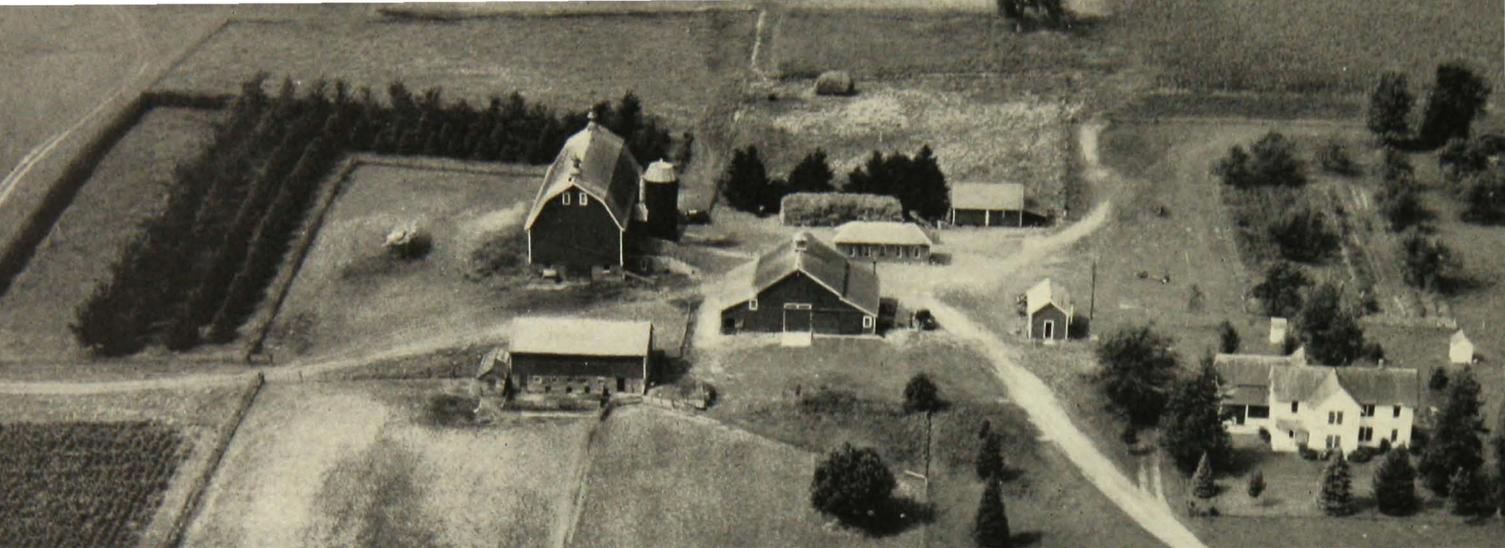


breed developed at the Minnesota station and suited especially to crossing, is being adopted by Minnesota farmers as fast as stock becomes available.

"Minnesota Miracle" is the term used by a national poultry magazine to describe the increase in egg and poultry production during the war years. Poultry raisers were helped in achieving this "miracle" by a broad-gauged educational program carried on in the state for 20 years. Several groups had a part, the State Poultry Improvement Board, progressive hatcherymen, and feed manufacturers, as well as university research and extension specialists.

Here's the record: increase in laying hens 70 per cent, national average 29 per cent; increase in eggs 136 per cent, national average 49 per cent; eggs per hen 130, national average 116. By 1943 poultry products had become the third most important source of income in the state. Wartime needs stimulated the sudden increase, but it would have been impossible without years of study by farm women under the extension local leader plan and a growing knowledge by poultry raisers, both men and women, of what makes flocks produce. Tradespeople





helped greatly by distributing more than a million copies of extension bulletins.

Turkey growing in Minnesota is an outstanding example of an industry built on research. Twenty years ago turkeys were a very small farm sideline. Death losses ran as high as 50 to 90 per cent. Production declined steadily until it was freely predicted in the early twenties that turkeys would disappear from the farm.

However, research workers had discovered that most turkeys died of a disease called blackhead, picked up from ground contaminated by other poultry. Although this information had been published, little use was made of it until extension workers organized demonstrations of growing turkeys confined on clean ground away from chickens. The plan involved increasing the size of the enterprise, hatching by incubator, artificial brooding, and then growing the young flock on clean ground, with the yard changed every week or two. Instead of ranging for their living the turkeys were to be fed a full-balanced ration.

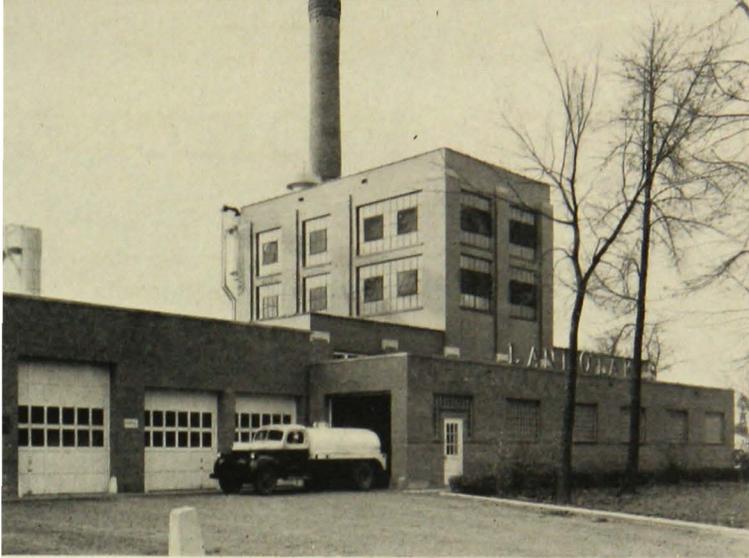
At the end of the first year most growers who had volunteered to try the plan reported losses of less than 15 per cent. These demonstrators quickly increased the size of their operations and neighbors adopted their methods. Soon Minnesota had flocks of thousands and the idea was spreading over the nation. In 1946 Minnesota raised more than four million turkeys with a value of close to 30 million dollars. Research laid the foundation, Extension presented the findings, and farmers resurrected a dying industry.



FROM THE LAND

THE GAINS of efficient production can easily be lost if not paralleled by gains in the machinery of marketing farm products. One of the first jobs tackled by the county agent and the farmer working as a team was to improve unsatisfactory marketing conditions. In the earlier days county agents played a significant part in the meetings and discussions which led to organization of cooperative creameries, livestock shipping associations, and similar groups. Extension workers also had a part in setting up larger units which have made important contributions in efficiency of marketing all along the line. Today county agents are constantly in touch with farmers and the organizations which they have created to improve quality and reduce costs of marketing. The role of the extension worker is to help with the analysis of the problem, to point out the possibilities of organization, and to carry on activities designed to increase the farmer's understanding of the whole marketing process.

Extension specialists trained in marketing are in great demand as advisers to boards of directors of cooperatives. During the past year no less than 58 organized groups asked assistance of specialists. They wanted advice on legal and organizational changes, on methods of financing new enterprises, on keeping accounts, and on preparing reports. They



TO THE MARKET

sought help on consolidating, improving efficiency, and dealing with competitive situations. Assistance was given to creameries, livestock marketing groups, elevators, county agricultural societies, telephone companies, and purchasing associations.

Each year the Extension Service assembles and presents outlook information to farmers and farm groups. The object is to place the best available economic information in the hands of the farmer to guide him in his farm operations. If the farmer has this information, he can more intelligently adjust his production to meet changing situations. Since well over 75 per cent of Minnesota's farm products must be sold outside the state, it is all the more important that he be kept abreast of consumer demand and the factors that make up consumer purchasing power.

Outlook information is assembled at the beginning of each year and presented first by specialists to county extension agents. Agents and specialists then hold meetings, conduct discussions, and distribute bulletins to spread the information as widely as possible. During the past year more than a hundred such meetings were held, some on special topics such as livestock, dairy, poultry and eggs, and potatoes, others on general outlook for agriculture.

Farmers face many uncertainties in the months and years immediately ahead. They are asking for more information on which to base their decisions. Likewise, the American consumer today is demanding better quality in the products coming to market. Since high quality commands higher price, there has been much interest in improving quality.

The revolution in milk marketing, which increased whole-milk deliveries threefold in six years, has raised new quality problems. Marketing and dairy production specialists have teamed with the State Department of Agriculture, Dairy and Food, and with marketing organizations, private and cooperative, in adjusting farm production methods to this new situation. The change-over was made on the basis of war demands. New outlets now will need to be developed and high quality will be a key factor in opening and holding these new markets.

The wide spread between what the consumer pays for farm products and what the farmer gets continues to be a challenge to agriculture. Many feel that this spread is needlessly wide and can be reduced. This will be particularly important if farm prices should decline when world demands for food are reduced. Pressure will be for lower costs and improved marketing to match the gains in production. With this in mind the Extension Service is preparing to increase its activities in marketing, not only in connection with the principal farm products, but also with fruits, vegetables, and other crops of smaller volume.



SAVING THE SOIL WILL PROTECT T

DURING the war years the tempo of agricultural production was greatly increased and the removal of fertility from Minnesota soils was the greatest of any time in the history of the state.

In 1945 the equivalent of at least 750,000 tons of commercial fertilizer was sent to market in the form of crops, livestock, and livestock products. Even the strictly cash crops, such as wheat, flax, and potatoes, on the basis of the 1945 acreage and yields would remove the equivalent of 324,900 tons of commercial fertilizer. In addition to these fertility losses from cropping, tremendous amounts are lost from erosion in the more rolling areas of the state.

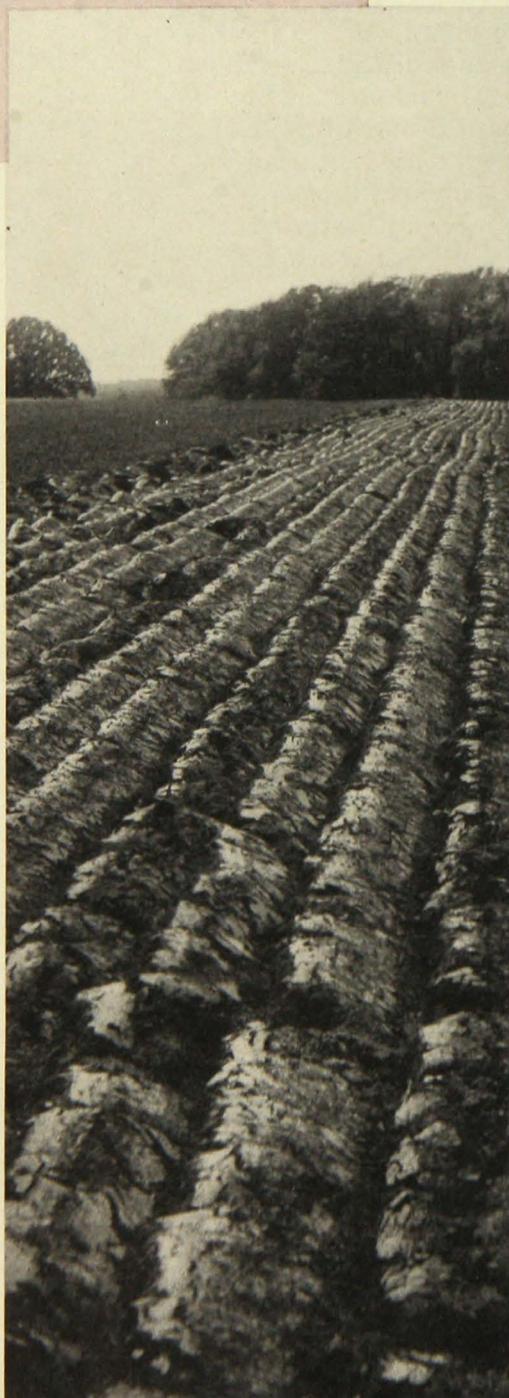
Minnesota is one of the three leading agricultural states. Of the total land in this state, 47 per cent might be rated as "good land," 14 per cent as "fair land," and 39 per cent as "poor land." Although it rates second among the states in area of good land, Minnesota has a great range of soil problems. The fertility of even the good land can be exhausted. Higher-producing crop varieties make it the more urgent to establish a well-balanced system for conserving soil fertility. The fact that farmers are getting responses to commercial fertilizers in all parts of Minnesota shows that soil fertility changes are taking place. Nutrient deficiencies are so acute in some areas that forage does not carry sufficient minerals, such as phosphorus, to supply the needs of livestock.

To keep soil permanently productive there must be proper land use and conservation of plant foods. As a rallying point for conservation activities the Extension Service and Experiment Station developed the Minnesota Soil Fertility and Conservation Program. Through this program of "good farming" extension agents and specialists are working with farmers on their soil problems, laying a practical foundation for a permanent agriculture. The six principles are as follows:

1. Drainage, land clearing, and cultivation
2. Liming acid soils
3. Using an adaptable crop rotation
4. Maintaining organic matter
5. Adding commercial fertilizer
6. Establishing erosion control practices

Coupled with this six-point program of soil management is the Minnesota pasture improvement program which furthers conservation by increasing the acreage of good grass crops. These two programs have unified the soil fertility and conservation activities of the Extension Service, Soil Conservation Service, the Production and Marketing Administration, and other groups interested in good land use.

For the past seven years, the Extension Service has cooperated with the Tennessee Valley Authority in demonstrating the principles of these two programs with the use



THE PEOPLE'S FUTURE

of phosphate to fertilize the entire crop rotation at one application. These demonstrations were conducted on 174 farms in 21 counties during the first five years and then reduced to 125 farms for the second five years. Summaries from these demonstration farms show the following five-year average annual yield increases: corn 6.5 bushels per acre, oats 6.4 bushels, barley 4.7 bushels, wheat 2.6 bushels, flax 1.3 bushels, red clover 0.56 ton, and alfalfa 0.83 ton. In 1939 only 33 per cent of the tillable land on these farms was in legumes. By 1946, after the program was well underway, the legume acreage had increased to 52 per cent, a proportion much better for soil conservation. Chemical analysis of hay and pasture crops on the phosphate test-demonstration farms has shown that the phosphorus content has been increased 25 per cent.

Fertility and conservation demonstrations other than the TVA series were established in 43 counties, virtually blanketing the state with evidence that application of fertilizer pays.

The use of commercial fertilizers in Minnesota has risen from 11,400 tons in 1927 to more than 100,000 tons in 1946. Experiments in the use of limestone were started by the Division of Soils in southeastern Minnesota as early as 1915. Since that time limestone application has increased from 18,000 tons in 1929 to over 300,000 tons in 1946, with 12,000 farmers making regular applications. These increases in the use of fertilizer and limestone have resulted from extension work, federal agency programs, and efforts of commercial organizations. The PMA program has encouraged a wide application of the principles of good soil fertility and conservation.

To further facilitate these soil practices, 31 soil conservation districts are now operating in Minnesota. These districts include all or part of 25 counties.

Farmers are each year taking greater interest in soil building. More than 4,000 samples of soil were sent to the Division of Soils at University Farm this past year to determine the need for lime, phosphate fertilizers, or potash.

To direct the work in soils into the most productive channels, the Extension Service during 1946 called joint meetings of county agricultural agents, soil conservation district supervisors, and SCS personnel. The purpose of these meetings was to discuss the present status of soil fertility and conservation work and to insure the incorporation of a unified plan in the extension program for each county.

If the Minnesota soil fertility and conservation program is put to work on every farm, the land will continue to be productive and capable of providing a high level of living. If, on the other hand, today's farming continues to deplete soil fertility and permit soil loss, then production in the future will be difficult and costly. Thus, the man on the land is the custodian of the nation's future welfare.



Soil conservation depends in large part on the widest possible understanding by farm people and others of the nature and importance of the problem. This essentially educational responsibility is recognized by the Extension Service as one of its most important assignments.



MEN AND WOMEN till the soil and develop productive farms mainly so that they can build happy homes and rear families under favorable conditions.

It was logical for the Extension Service early in its history to interest itself in training young people and improving rural homes. Farm people wanted it that way. A productive agriculture meant opportunity for the whole family. Furthermore, farming as a way of life could not prosper unless boys and girls were taught to love and respect that way of life and to make their own contribution, first as children and then as men and women.

Of all the trusts that have been placed with the Extension Service by the American people, none is greater than the responsibility for guiding youth through 4-H club work. Almost without exception, every plan of work drawn by county extension committees places 4-H at the top. Every extension worker, county agent or specialist, accepts the 4-H program as a major responsibility.

Minnesota was one of the first states to recognize the promise of 4-H and to develop it to fit the needs of farm youth. In 1912 a handful of 200 boys and girls in this state were laying the groundwork for what was to be the 4-H movement. By 1940 enrollment had reached a peak of 49,258 4-H members. In 1947 it is expected to push toward 60,000 for an

4-H WAY BUILDS

all-time high. Since the beginning of 4-H work in Minnesota a grand total of 500,000 boys and girls between the ages of 10 and 21 have benefited by the 4-H "learn-by-doing" program. Already this accumulated training in work methods and citizenship is making itself felt both in the country and in the city.

No movement in modern education has captured the imagination and heart of the American people as 4-H has. In this state alone, more than 4,000 men and women each year volunteer as local leaders to work with extension agents in directing the activities of 2,100 clubs. These leaders serve without pay except for the satisfaction of teaching young people good farming, good homemaking, and good citizenship. Without their service the few scattered extension agents could not hope to reach all the boys and girls who want to be 4-H members.

Not only in the local community but on a state and national scale, civic groups, farm organizations, and business interests have been generous with promotion and money to assure 4-H members of a chance to show their handiwork and to receive prizes for unusual skill and de-

These state champions in 4-H health activity take great pleasure in telling the world about 4-H club work. Health, conservation, safety, and recreation are all included in the broad program of citizenship.



GOOD CITIZENS

votion to duty. Press and radio have helped 4-H with the very best they had to give. This support has been forthcoming because America has unbounded confidence in this movement born of the cooperation of farm people and extension workers, and receiving guidance in each state from the land-grant college and the U. S. Department of Agriculture.

4-H offers training unique in the history of American education. It supplements in-school work with a project and citizenship training that makes the most of country life in developing the boy and the girl. It is the aim of the Extension Service to expand enrollment and leadership to the point where every farm youth may benefit by this training.

When the Minnesota youth joins 4-H, he or she adopts this pledge:

I PLEDGE

My head to clearer thinking
My heart to greater loyalty
My hands to larger service
My health to better living
for my Home, my Club, my
Community, and my Country.

This pledge opens a new world of opportunity to learn by doing interesting

"America has found something new in education through 4-H club work. It is not yet fully conscious of this great find, nor does it sense its full significance. In the final analysis, America will be remade and its destiny determined by its rural people. As we train rural youth, so will we set the ideals and standards of the Nation."

—C. B. Smith.

and worth-while things right at home on the farm and in the club. When he enrolls, the member chooses one or more projects and activities. A girl is encouraged to work at food preparation, baking, canning, sewing, helping in the home, or home furnishing. A boy or girl may raise a garden, a plot of potatoes or corn, a calf, a pig, a lamb, or a flock of chickens. There are additional projects such as junior leadership, farm records, home beautification, and soil conservation. Among the activities open to all are conservation, health, and safety.

Every project is a real job—to be finished, to be done well. The boys and girls get help from extension agents, local leaders, and parents. They are encouraged to own their own projects and to profit by them. For older members there are advanced projects which have the purpose of increasing ownership of livestock and giving the member a start in farming when he reaches the proper age.

Along with the project work goes a citizenship and self-development program which is one of the finest contributions of 4-H. Every boy and girl is encouraged to take part in club activity, to learn parliamentary law, and to accept the responsibility of working for and with others. Every member is encouraged to prepare one or more demonstrations to develop his ability to think clearly and speak freely before others. The demonstration may consist of explaining how to make a loaf of bread, plant a tree, or any of a score of useful tasks. If the member does well before his own club, he will be asked to present his demonstration before adults at a farmers' club meeting or at an achievement day. He may earn a chance to give the demonstration at





the state fair or a national event. All the way he has guidance and encouragement and a chance to win both recognition and awards for excellence.

4-H club work is largely doing the very farm and home jobs that are desirable for the training of the youth and the welfare of the family. But 4-H puts something extra into these jobs. It puts a premium on doing them well.

The past achievements of 4-H work have resulted in the offer by individuals and organizations of hundreds of incentives that help make the program successful. Minnesota's county fairs are now largely 4-H fairs. The state fair considers 4-H work its top agricultural exhibit. There are achievement days, camps, banquets, livestock shows and sales—all part of the pattern of 4-H work. Each year a score or more of boys and girls who have excelled earn trips to the National 4-H Congress. At the congress they vie with youth from other states for national honors in the form of scholarships offered by friends of the movement. It speaks well for the quality of 4-H work in Minnesota that members from this state have been at or near the top in national honors for several consecutive years.

The 4-H movement is great because the things that win state and national honors are the things most useful at home on the farm. Boys, and girls too, learn to care for crops and livestock, to earn and save money, and to acquire capital. Girls learn skills that will make them better homemakers and partners in the farm enterprise. 4-H is now old enough so that many farmers and their wives can testify to the value of 4-H training in later life on the farm. Many 4-H-trained adults who went on to city life are better citizens and have a better appreciation of country life because they were 4-H members in their youth.

During the war when thousands of city youths volunteered to help on farms, 4-H members played host to their city cousins and invited them to join their clubs. At the close of the war the Extension Service recognized the value of this farm training for city boys and continued the placement and advisory program. City parents have expressed satisfaction

with the effect of the farm experience and the contact with 4-H.

While the 4-H program includes more advanced projects for the older boy and girl, it has been recognized in recent years that special effort should be made to bring the extension type of education to older youth who are considering farming and homemaking on their own. With this need in mind the Extension Service began a few years ago to extend the 4-H program to include Rural Youth activity.

As a result there are now Rural Youth groups in 48 counties giving attention to the needs of the transitional period between 4-H and full adult responsibilities. With the aid of county extension agents and specialists these Rural Youth members have drawn up educational and social programs which have the full support of the Extension Service.

Their educational work has included study of farm accounting, farm mechanics, new crop varieties, farm partnerships and partnership agreements, methods of financing farms, farm planning, home budgeting, home furnishing, home beautification, newer methods of food preparation, new trends in textiles, and such discussion topics as country versus urban life.

Rural Youth groups are tied together in a State Rural Youth Federation which through its executive committee works with extension people in planning educational programs, camps, and short courses.

It is the nature of the youth programs that the responsibility for directing and stimulating the work and keeping up enrollment rests with the county agricultural agent and those working with him in the county extension office. Home demonstration agents share this responsibility, especially with respect to the home economics work in 4-H. Many counties have also made arrangements for a 4-H agent who can spend all his time with 4-H clubs, thereby releasing the agricultural and home agent for more intensive work with the production, marketing, and home programs. The three-agent set-up is generally considered necessary if all programs are to receive the attention they deserve and 4-H is to be extended to reach every boy and girl.



4-H work stresses the training most valuable to the boy or girl as a member of the farm family. Many rewards for good work help to make "learning by doing" lots of fun.

RURAL HOMES MOLD THE NATION

FARMING is essentially a family enterprise. Even as the farmer's wife is a partner in planning and achieving production and land conservation, so is the husband keenly interested in building a better home life for his family. On the farm where all members of the family live and work together, a good home can exert its greatest influence and make far-reaching contributions to society as a whole. This is especially significant because two out of every five boys and girls reared on the farm move to the city.

Rural people insisted from the first that home demonstration work be included in extension programs. Farm women have been eager cooperators and faithful leaders in projects stressing the family welfare.

During the war years the nutrition and health of the family were a chief aim of this educational activity. Because of the help shortage much of the home demonstration work was aimed at saving the

time and lightening the work of the homemaker. At the present time interest is strong in home modernization, home furnishings, and landscaping.

That the program has been practical and of interest to farm women is attested by the fact that enrollment over the years now can be counted in hundreds of thousands. This growth has occurred in spite of a scarcity of home demonstration agents. In order to reach the maximum number of homes with this small number of professional workers, a plan was developed in which the farm homemaker herself serves as teacher. Under this local leader plan, women in the various neighborhoods organize into groups and select their own leaders. These leaders meet at convenient points with the home demonstration agent or specialist to study some phase of the chosen project. The leaders then return to their neighborhood groups to present the lessons brought to them by specialists.

Through this type of organization the findings of research in many fields relating to the home and family have been brought to thousands of Minnesota women. Since home demonstration work



Even while they carried the heavy responsibility of feeding a nation at war, farm people expanded their gardening and canning. Improving nutrition of the farm family is a favorite home demonstration project.



was established in Minnesota, there has been a gradual increase in the number of county workers. Today 51 counties have the service of a home demonstration agent and 10 more have applied for such service.

The home agent's job is to bring to neighborhood or community groups the information they need to meet the constantly changing problems of rural life. Meetings may be held in a private home, town hall, or church basement. Information is also given by means of newspapers, radio, telephone calls, and home visits. Topics of discussion may be individual and personal, or community-wide, but always they are close to people.

The program in each county is based as far as possible on the requests of the women themselves.

During 1946 the following projects were offered in counties through the local leader plan: food preparation for health, farm home remodeling, home furnishings, selection of equipment, and sewing at home. Usually only one or two such projects can be carried in any single county during the year. In addition general meetings were held at trade centers on such topics as selection of a home freezer, preparation of fruits and vegetables and poultry for the freezer locker, and installation of septic tanks, running water, and the bathroom in the farm home. In some counties pressure cooker clinics and clothing make-over clinics were also held.

Low farm income in the years preceding the war and lack of material or time to deal with housing needs on the farm have resulted in an accumulated need for housing improvement on the farms of Minnesota. With this need in mind, the Extension Service began in 1945 to make ready a project that would lead off what promises to be the greatest home modernization activity in the history of this state. Limitation of help made it possible to offer the project in only 39 counties, but 70,000 farm families participated. County enrollments ran from 300 to as many as 900.

Four phases of housing were stressed in this program. The first lesson was devoted to arranging the entire farm house

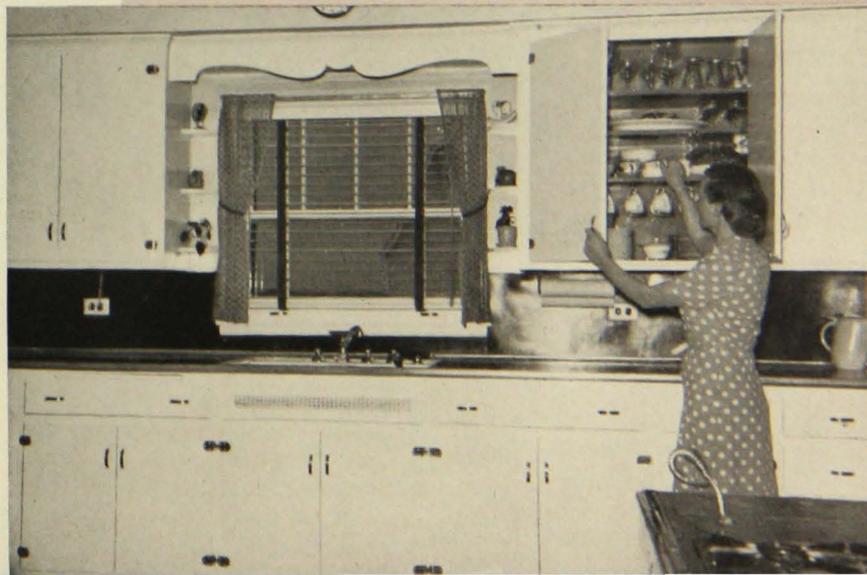


to best serve the family, the second to kitchen planning, the third to kitchen cupboards and storage, and the fourth to bathrooms and farm sewage systems.

Interest in the project was stimulated by the fact that most of those enrolled were planning specific improvements at home. Shortages of material prevented many from carrying through their plans immediately; yet of those enrolled 5,500 families reported 11,869 improvements varying from the 1,494 rearranged kitchens to 671 remodeled and 172 new houses. Those enrolled in the work reported that the discussions with the leaders and with neighbors had been of great help in deciding on the most economical and practical ways of remodeling their houses. Demand for help in this field is sure to increase as material and equipment become more readily available.



70,000 homemakers enrolled in home remodeling projects.



Improvements in the farm house lead inevitably to the question of home furnishings. Again scarcity and high cost have turned the attention of farm homemakers to the possibilities for use of the material already at hand. Twenty-one counties carried the home furnishing program in 1946 with more than 600 groups and 1,354 leaders participating. In all 6,527 homemakers were enrolled. The project was built around better home furnishings and the refinishing and reupholstering of furniture. Meetings are conducted as workshops with everyone bringing a piece of furniture to work on.

In recent years farm women have been eager to learn how to sew at home because of the scarcity of clothing and the low quality of materials. During the past two years 41 counties carried a project dealing with cleaning and adjustment of sewing machines. A total of 13,516 women enrolled. Final reports indicated that 7,376 machines were completely cleaned and adjusted.

Another clothing project, "Time Savers in Home Sewing," enrolled 10,712 members in 35 counties. The project was particularly popular with young homemakers who had the problem of clothing little children during the war. In addition 146 clinics in making over clothing were held with an attendance of 622 persons. Reports show that 662 coats, suits, and dresses of excellent quality were made from older garments. The make-over clothing clinics proved a most interesting



The home furnishing project given during 1946 enrolled 6,527 women in 600 groups.

venture. At such clinics appeared wedding dresses, suits, and coats from all countries of the world, each with its own interesting story. The comparison of materials in such garments with recently purchased cloth made an excellent lesson in fabric selection.

The distinguished record made during the war by Minnesota women in growing, storing, and conserving food was not thrown into discard with the end of hostilities. More than 50 counties carried food and nutrition projects during 1946. All counties took to heart the world-wide need for food and continued gardening and canning at near wartime levels.

Feeding the family is still well up in front among the interests of homemakers. They realize that family diets lag far behind what is known to be good nutrition. However, Minnesota farm people are better fed and healthier for the new information which has come to homemakers through the nutrition projects under the extension plan. Specialists and home demonstration agents have also served as advisers in community effort to improve health through school lunches and other means.

Two phases of the foods work have had an especially strong play during the past year. Since farm women are rapidly taking advantage of freezer lockers and home freezers, they want instructions on how to prepare foods for freezing successfully and economically. To meet this demand extension workers conducted 102 demonstrations on the preparation and

Cleaning and adjusting sewing machines is a popular project.





Working with the home agent, farm women plan program to be carried during the year.

handling of frozen foods with an attendance of more than 5,000 people, many of them locker plant operators, dealers in freezing equipment, and persons now using lockers and home freezers. Topics discussed included selection of foods for freezing, preparation, choice of containers, packaging, and proper temperatures for freezing and holding.

Another foods project especially popular was the cleaning and adjustment of the pressure cookers that have been added to household equipment in great numbers as a result of recent teaching in the best methods of canning. No less than 297 pressure cooker clinics were held with an attendance of 2,479 persons. Of 2,232 pressure cookers tested, 632 were found defective and in need of repairs.

The wartime interest in home food production which was shared by the entire family promises to continue with new emphasis on growing things that add to the attractiveness of the family table and the pleasantness of farm life.

People want to know what fruits can be grown in Minnesota, what varieties are best suited for each particular part of the state, and how a fruit program can be set up which will insure both orchard fruits and small fruits in abundance. Since the planting of fruit trees to replace old worn-out orchards is likely to reach an all-time high in the next few years, the Extension Service is assembling and distributing the information needed for wise choice of varieties and a sound management plan.

Along with the interest in fruits has come an interest in beautification of the farmstead which during the past year developed into a major extension activity. The mother and the father have now joined the 4-H boy and girl in the desire to landscape the farm home, plant trees and shrubs both for shelter and beauty, and give thought to lawns and flowers. A new extension bulletin, "Landscaping the Farmstead," has been distributed in large numbers. Colored lantern slides illustrating landscaping and fruit programs have been distributed to every county and have been shown at thousands of meetings.

These programs, aimed at making home life on the farm more attractive, have had the effect of cementing family relationships and encouraging men, women, and young people to take part in extension work.

All of these activities make for better homes and more satisfying rural living. There are, moreover, a number of larger problems of individual and community interest that will command increasing attention of farm women as they meet in their neighborhood extension groups. Health facilities, better educational opportunities, recreation, library facilities, and the cultural side of rural living all present challenging problems that rural women have a large interest in. Through their effort many of the answers will be found. The home demonstration agent is ready to give all possible assistance.

Electricity on the farm increases interest in new equipment.



FOR THE COMMON WELFARE

GROUP ACTION is a tradition among Minnesota farmers. Extension work is a product of this tradition. In turn, the Extension Service has greatly increased its usefulness by working with and through all forms of farmers' groups.

Rural organization usually begins with the families of a neighborhood. Their local groups may go by any of several names. They may be affiliated with a state or national farm organization, or have no connection outside of the immediate neighborhood. These groups provide a forum for the discussion of local or national problems, and are the training ground for rural leadership. When the Extension Service was organized, the farmers' clubs, as they were then called, became cooperating agencies to shape this new system of adult education. As the work progressed, many other groups were formed to further one or another extension-sponsored activity. So was born the 4-H club, the home project group, and the livestock improvement association. Each month county extension agents in Minnesota attend hundreds of such neighborhood meetings.

Perhaps the most common expression of organized effort on the part of Min-

nesota farmers has been through their marketing groups. These developed first as local cooperatives. Many later federated to extend their operations. Through the years the Extension Service has fostered sound cooperative organization. The early history of many such groups is a story of the work of farsighted county agents who saw the need for action and assumed the necessary leadership until farmers were ready to take over.

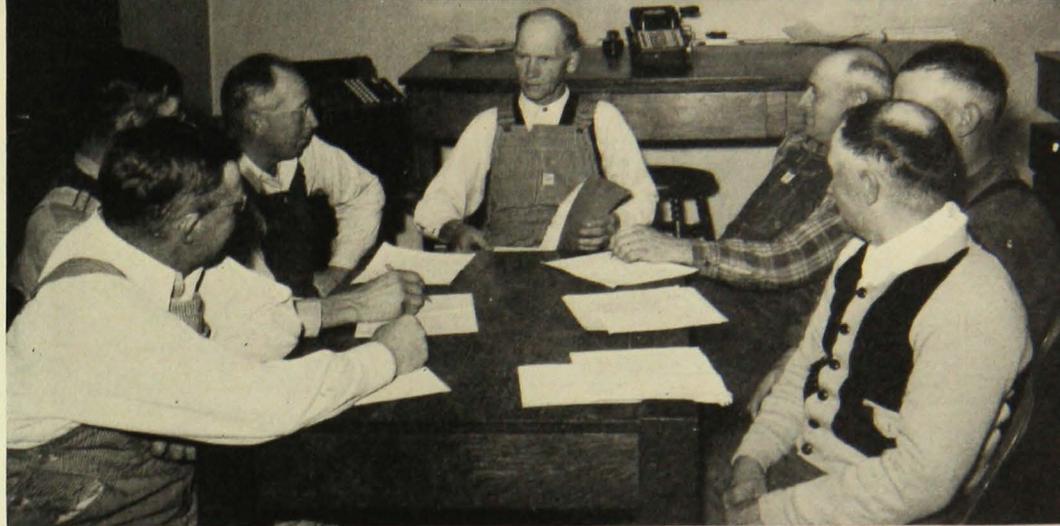
While marketing groups are formed primarily for a specific service to the members, it becomes almost inevitable that they develop an educational program in order to reach their objectives. A creamery is naturally interested in a program for better milk-cooling facilities or a cow-testing plan to increase production per cow. A livestock shipping association is concerned with losses on the way to market. County agents make their first contribution in setting up the marketing functions, but soon find themselves even more concerned with the educational opportunities offered by the new group.

The farm leadership developed in these activities has played a big part in organized effort to solve specific problems facing Minnesota farm people. In a larger way this leadership is making a valuable contribution to the general welfare. A striking example is the land-use work carried through in northeastern Minnesota. For many years a serious land problem had been in the making. It grew out of the depletion of forest resources and overly optimistic expectations of farm settlement. By the middle thirties more than two thirds of the land was tax delinquent, and local governments were breaking down under the combined cost of public services and relief.

At this stage the Extension Service and the Bureau of Agricultural Economics set out to bring the facts before the people with the idea that sufficient understanding would result in community action. Studies in each county were started on invitation of the county commissioners. County and community land-use com-

Community cooperation was responsible for the success of placement centers that met the wartime farm help crisis.





Thousands of Minnesota farmers serve on committees and boards which promote and direct community programs to improve farming as a way of life.

mittees were set up. Hundreds of meetings were held and the facts presented to the thousands in attendance. After close study of local conditions the various community committees made recommendations to their county committee, which in turn passed on recommendations to the county board. This group action in hundreds of townships resulted in the passage of a state zoning enabling act and in the adoption of zoning ordinances in eight counties, covering 12 million acres.

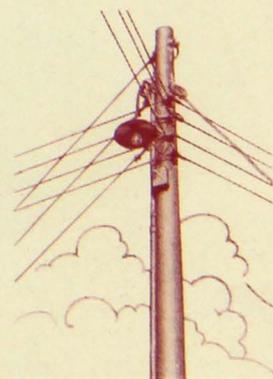
Still another example of community action came out of the war when Congress gave the Extension Service major responsibility for mobilizing farm labor. The armed forces and war industries had cut manpower on farms to a dangerously low point. Since no pool of unemployed labor existed, a way had to be found to use every possible labor resource in every community. County agents asked farmers and businessmen to serve on county committees, which in turn organized committees in every trade center where any help might be mustered. Farmers organized to exchange help and townspeople volunteered their services both as placement officers and as emergency workers. In 1943, the first year of the program, whole towns practically shut down in order to save crops. At its height the program was responsible for 103,000 placements in a single year.

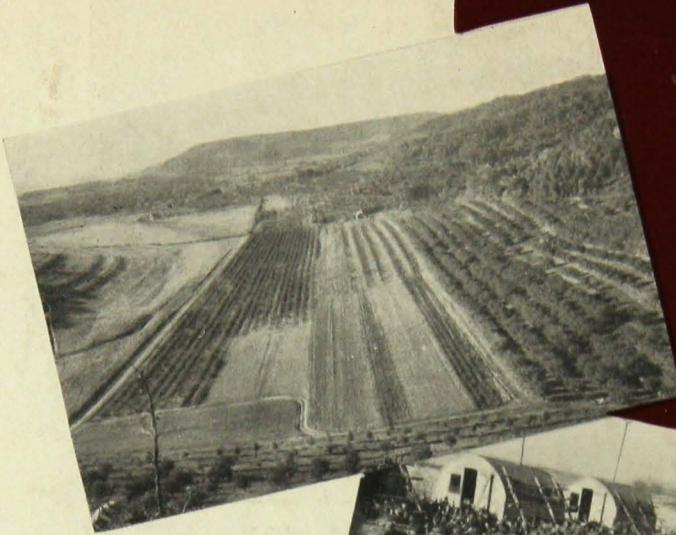
Long active in promoting the community welfare, Minnesota farm people

are becoming increasingly interested in the national welfare and the relationship of their farm business to interstate and international trade. The depression of the thirties greatly intensified farmers' demand for more information on marketing and on economic policy.

Early in the thirties groups were set up in the state to encourage discussion of policy questions. A specialist from University Farm met leaders from the various counties on an area basis, spending a full day in discussion. These leaders in turn developed discussions among their own neighbors. Among the topics have been world trade, postwar agricultural policy, United Nations organization, and the world food situation.

That there is interest in this type of educational activity is attested by the fact that discussion meetings have been going on for more than 10 years with hundreds of leaders taking part. Farmers still expect and want educational programs directed toward improving farming and homemaking, but they are also asking that a part of the program be built around the larger problems of human relationships. While the aim of extension education is a better life for Minnesota farm families, there is a growing feeling that this better life can come only as we are able to resolve the conflicting interests of large groups within our own country and the interests and conflicts between nations. The answer must be found in group action and cooperation.





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