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Our Changing Agriculture

A REPORT ON EXTENSION WORK IN SOUTH DAKOTA

EXTENSION SERVICE
SOUTH DAKOTA STATE COLLEGE
OF AGRICULTURE AND MECHANIC ARTS
BROOKINGS, S. D.
THIS CIRCULAR gives a brief record of important extension service activities as they are related to outstanding changes that have taken and are taking place in South Dakota's agriculture. Many of the results of past extension work are just beginning to be felt and many other developments are only starting. Therefore, this circular has to do with present activities of the extension service and with present conditions; as well as with changes. The last ten years have seen remarkable progress but the next ten should bring even greater results in efficient production, profitable marketing, and better living.
Our Changing Agriculture

A. E. ANDERSON, Director of Extension*

In South Dakota there has been a remarkable change in agriculture from pioneer days up to the present time. From a prairie we have developed into a land of productive crops and livestock, modern farms and ranches, and comfortable farm homes. This is part of an evolutionary change continually taking place. The Extension Service of the South Dakota State College has exerted its influence and support through County Agents, Home Agent, Boys’ and Girls’ Club workers, Extension Specialists, Farmers’ Short Courses and other means to promote changes tending towards better economic conditions and better living on the farms of South Dakota. The following pages are a record of the progressive changes that have taken place in more recent years.

We now have more efficient production of crops and livestock. Our marketing facilities have been improved and there is a demand for a great number of South Dakota farm products of superior quality. Our living conditions have been improved. Farm homes are better equipped with the comforts of life. Food needs for good health are better understood by farm women through their activities in Home Extension Clubs. The boys and girls of the farm are better acquainted with the opportunities existing in agriculture and homemaking in South Dakota. Altogether there is being built up a substantial citizenship for future progress.

Information and education are increasingly necessary in this competitive age in which the rate of progress is continually being accelerated. It is the object of the Extension Service to assist in every way to bring about continuous constructive changes that mean greater financial returns, better living conditions and modern opportunities for farm boys and girls. South Dakota’s agriculture must continue to change in this direction.

* Acknowledgement is due L. E. Childers, former assistant agricultural editor, who prepared most of the material in this circular.
Increasing the Livestock Income

Stopping Million Dollar Leaks

CONTROL of animal diseases is a big problem in South Dakota. Tuberculosis alone causes a three million dollar loss to the state each year. It is estimated that hog cholera has caused the death of between 400,000 to 500,000 hogs during 1928. Minor ailments of hogs such as round worms, mange and necrotic enteritis account for another million dollars loss. Poultry diseases are increasing just a little faster than the poultry industry is growing.

The work of the Extension Service in the animal disease project is purely educational, involving demonstrations on the prevention and control of these diseases. More time has been spent on education for tuberculosis control than on any other disease with the result that Miner, Codington, Clark and Brown have become accredited under the area plan for the control of the disease. Marshall County will test in 1929.

The dollars and cents value of tuberculosis testing and the area plan is well shown in the experience of Miner County. This county was accredited in 1926 and was re-tested last fall. In the first 13 months the premiums paid to hog growers of the county above the market price amounted to $6,510.42. This was $223.28 more than the county paid in taxes for testing cattle for tuberculosis and for its share of the indemnities on reactors. The tax in Miner County was $6,287.14.

The emergency phase of the animal disease project covers all contagious diseases. During the course of a year's time, extension agents give information to farmers on preventive and control measures for hundreds of diseases, among the most common of which are blackleg in cattle, hog mange, hemorrhagic septicemia, hog cholera, tuberculosis in chickens, necrotic enteritis, bull nose in pigs, worms in chickens, pneumonia in calves, anthrax, and common round worms in hogs.

Sanitation Profits Hog Raisers

A large number of the pigs that are matured on South Dakota farms are runty and unthrifty and gains in weight on the hogs sent to market are often too expensive to leave a profit. The average number of pigs weaned each year for each sow kept is only about five. This number should be increased. Runts and profitless pigs are being eliminated from South Dakota herds through use of the hog-lot-sanitation and pasture-rotation system introduced into the state by the Extension Service. Where the sanitation plan has been tried profits from the pork production enterprises on farms of individuals entering the project have been increased, the
number of pigs saved per litter has been increased, and the feed cost on each 100 pounds of pork has been materially lowered because this plan has enabled farmers to place their hogs on the market several weeks earlier than under the old system.

Four essential steps are being followed by South Dakota farmers who are using sanitation methods:

"Before farrowing the sow is washed with soap and water."

"Farrowing pens are thoroughly washed and scalded out with hot lye solution. The formula for this solution is 1 pound of lye to 25 pounds of water."

"Sow and pigs are left in the clean pen about 10 days and then are hauled out to clean pastures. Alfalfa pasture is preferred."

"The pigs are kept on the clean ground until they weigh 70 to 80 pounds."

Records of the Extension Service show many outstanding examples of increased profits from use of this system. In Marshall County, for example, farmers who followed the system were enabled to raise an average of 6.4 pigs per litter in comparison to 3.9 pigs to the litter, the average for farmers not using the system. The state average in South Dakota is around 4.7 pigs to the litter and the average of the Marshall county farmers who used the sanitation plan was 4.1 pigs to the litter before they entered the project.

Frank Moeckley, one of the largest swine growers in Marshall County was almost down and out in the hog business a few years ago. The year before he began the sanitation project he raised only 60 pigs from 20 sows and these pigs weighed less than 100 pounds when they were a year old. In 1927 Mr. Moeckley used the sanitation system and raised an average of 6.3 pigs per sow, all of them thrifty and uniform in size. He left one sow in the old hog lot. She farrowed 5 pigs and lost 3. The two pigs saved from this one sow were the only runts on the farm!

Similar examples can be found in every community where the sanitation system has been tried. Leading hog growers of the state declare the introduction of the hog lot sanitation pasture rotation system has been the greatest boon South Dakota swine growers have known in a half century.
More Work With Fewer Horses

South Dakota has 160,000 less horses than were on the farms of the state seven years ago. This decrease has resulted in an increasing demand for more definite information in regard to multiple hitches and how to make them.

During the last year—December 1, 1927 to December 1, 1928—eighty-seven demonstrations of the better team hitches have been given by representatives of the Extension Service. Demonstrations of the Talkington Hitch for 4, 5, 6, 8, 10 and 12 horse teams, using the tying-in and bucking-back principles, have been among the most popular farm demonstrations ever given in South Dakota. A total of 7,382 people saw them during 1928. In 24 demonstrations during the first few weeks of the project in 1927, 3,978 people attended.

The better team hitch work will be continued with even more emphasis, for as the problem of cost of production becomes more important the utilization of farm labor assumes greater importance. These systems of hitching horses make it possible for one man to do the work of two or three men. It has been proven that a team of five horses abreast can be removed from a plow, one of them tied in the barn, and the other four hitched according to methods shown in the better hitch demonstrations can pull the same plow more easily than the original five can.

Many farmers have adopted these systems of hitching. Within a month after two better hitch demonstrations had been held in Union county more than 20 teams on Union county farms were hitched according to the Talkington plan. Clarence Tucker, Union County farmer and possessor of a fine string of horses, said: "If I were to take my choice between $100.00 and what I learned at the hitch demonstration on my farm, if I couldn't get that knowledge again, I would take the demonstration in preference to the $100.00.

Getting Greater Profits From Poultry

That an ounce of prevention is worth many pounds of cure in cutting down losses from diseases of little chicks, has been demonstrated by South Dakota flock owners who have followed the Grow-Healthy-Chick
All Interested in Growing Healthy Chicks

project of the Extension Service during the last two years, 1927 and 1928.

Rapid increase in the number of chickens on farms in the eastern part of the state and a corresponding increase in the amount of trouble from disease have made prevention the greatest problem facing the poultry raiser. West of the river prevention of chick troubles has not become of such acute importance, but the use of Grow-Healthy-Chick practices has also shown good results there.

Five points are emphasized in the program: Clean ground, clean brooder house, clean chicks, clean feed, and early hatching. A summary of results obtained by flock owners in following these sanitary practices during 1928 indicates that each of the five practices proved profitable in dollars and cents, and that the more practices followed the greater the profits. Results involved 127,714 chicks.

Flock owners who followed none of the five practices, but who raised their chicks in brooder houses, reported 45.9 of chicks hatched alive on August 1, while those who followed all of the practices successfully raised 77.3 per cent of their chicks up to that date, a difference of 31.4 per cent. Where one practice was followed 45.4 per cent of the chicks lived to maturity; two practices, 61.2 per cent; three practices, 69.5 per cent; four practices, 75.1 per cent; and five practices 77.3 per cent.

Similar figures resulted from the first year's work in 1927. Flock owners who adopted the sanitation plans lost only 18.3 per cent of their chicks, as compared to 52.5 per cent lost by those not following the system.

Many poultry raisers in all parts of the state have succeeded in eliminating disease losses entirely from their flocks within a year's time by following the Grow-Healthy-Chicks program faithfully. One outstanding example during 1928 was that of a Marshall County woman, Mrs. Frank Planten of Langford. With her chicks on "old" ground last spring she lost approximately 150 out of 250. A newly hatched flock she decided to put on clean ground. All except three chicks, which were taken by rats and not by disease, grew to maturity and developed rapidly.

A similar case is that of Mrs. A. E. Nielsen of Bruce. Mrs. Nielsen hatched 170 early-hatched chicks on clean ground and not a sign of
disease disturbed her flock. A later hatch of 80 chicks she put in an old brooder house and did not move it to clean ground. Thirty of this hatch died from disease.

Only one main project has been cited here. Record keeping work is described on page 20. Many activities are shown on the records. Nearly 500 method demonstrations were conducted by 30 county agents and 232 result demonstrations were started during 1927. More than 600 farmers culled their flocks for the first time, involving 75,000 birds of which around 20,000 were discarded as culls. The number of farmers feeding better-balanced rations for the first time during 1927 was 358.

**Better Sires Bringing Improvement**

Better sires are needed on South Dakota farms for improvement in the quality of livestock raised. The Extension Service is conducting a long-time project looking toward the replacement of scrub sires with purebreds and also the selection of females on the basis of production. One of the big packing companies has helped to promote this work by sponsoring a three-year state-wide Better-Beef-Bulls contest which closed this year.

Reports from the field show that 334 farmers were assisted in obtaining purebred beef bulls during a single year, 429 farmers were aided in obtaining purebred boars, 189 farmers purebred rams. In the same year 69 farmers were assisted in obtaining purebred beef cows, 111 purebred sows, 64 purebred ewes and assistance was given in culling 11 herds of beef cattle involving 618 head, 94 herds of hogs involving 3,760 head, and 11 flocks of sheep involving 2,300 head.

Purebred dairy sires are also needed and this work is a long-time phase of dairy extension. In the year 1927, 191 farmers were aided in finding purebred dairy bulls to head their herds. Two additional cooperative bull associations with 27 members and 8 purebred sires with production backing were organized and one breeding circuit was established in Beadle County.

**Looking Ahead in Dairying**

During the last ten years many South Dakota farmers have changed from strictly crop farming to a system involving greater diversification.
A good portion of such farmers have turned to the dairy cow as one means of diversifying their operations because dairying provides a steady cash income, because the dairy cow condenses bulky crops into products having increased value and less weight, because dairy farming utilizes untillable land and crops for which there is no market, and because dairying facilitates the efficient employment of man and horse labor throughout the year.

That the dairy industry is expanding rapidly in the state is indicated by the fact that there are now 70,000 more dairy cows in the state than in 1919. During the past 10 years butter production has doubled in volume. Authorities predict that South Dakota will be one of the chief butter producing states in the Union in the near future.

The purpose of dairy extension work is the improvement of dairy farm management to the end that profits may be increased. Phases of the work that have been emphasized are testing of cows for production and profit, introduction of purebred dairy sires, economical feeding and management of dairy herds, and boys and girls dairy calf clubs. Results of dairy club work are discussed elsewhere in this circular.

The first permanent cow-testing association in South Dakota was organized by the Extension Service in 1923. Under the supervision of the extension dairy specialists the work has expanded and at present the production, income, feed cost and profit is determined by testers each month on 5,000 cows in 340 herds in 14 associations. Each month testers check the efficiency of 200 farm cream separators and assist members in preparing rations and in solving herd management problems. Quite a number of members of testing associations have been able to double annual production and profit per cow after four or five years of testing. From 1919 till 1924 average production in South Dakota for all cows milked increased less than 5 per cent. In one association, after four years of testing, average production per cow was increased 32 per cent and average income over feed cost was increased $31.54 per cow.

The importance of the widespread use of purebred dairy sires in dairy development can scarcely be over-stressed. According to the census of 1920 there were 1,544 purebred dairy sires in South Dakota. Since 1921 the Extension Service personnel has given assistance in
locating and placing 1,008 dairy sires and in the organizing of four cooperative bull associations. Through the four associations 51 members who own 400 cows have the service of 19 purebred sires of good breeding at a great reduction in cost.

Ten years ago the usual dairy ration was composed largely of prairie hay and corn fodder. The feeding value of alfalfa hay and of corn silage has been emphasized and demonstrated continuously since 1921. At present nearly every farmer who emphasizes dairying provides his herd with either legume hay or corn silage and many feed both feeds regularly. In order to supplement our native pastures, the dairyman’s attention has been focused on the value of sweet clover as a pasture. When the acreage of sweet clover is increased as much as 87 per cent in a year it is reasonable to expect that providing this pasture will soon become a universal practice.
Growing Quality Crops

King Corn Enlarges His Kingdom

PIONEERS who settled South Dakota have seen the corn acreage gradually expand and creep northward until now corn is grown everywhere in the state. South Dakota has been placed definitely in the cornbelt.

Corn production has doubled twice since 1910 but there is still room for greater expansion, especially in the northern and western parts of the state where more corn is needed to supply feed for the growing livestock population, and as a cultivated crop to replace some of the small grain. All over the state there is need for improving seed corn by selecting the proper type of ear and kernels from the best plants.

The work of the Extension Service with corn aims toward a wider use of more adapted varieties and also further expansion in the corn growing area. Ten-acre corn yield contests conducted in various counties have already done much to improve the corn grown within these counties. These contests have a four-fold objective; to stimulate interest in corn as a field crop, to demonstrate the variety and types of corn best adapted to a county or a community, to assist in the standardization of varieties within a county and to aid in the distribution of superior seed corn, and to assist growers in making a systematic study of their corn crop by comparing the different production methods, including costs.

Corn variety demonstration test plots are conducted under this phase of the work. These demonstrations are being expanded to include practically all sections of the state. This work affords one of the best ways of demonstrating to farmers the superiority of certain strains of corn for the different localities. One of these plots, conducted in Lincoln county for four years, has indicated that some strains of corn are consistent high yielders, and that some farmers are growing corn not adapted to the locality.

Seed corn selection demonstrations have brought about improvement in the corn crop in many sections. The Northern Corn Show at Mobridge is an outstanding example of what the work in seed corn selection has accomplished. From the beginning of this show in 1923, it has had the active support of the six or seven county agents in the Mobridge area. Previous to its beginning the Mobridge section was not considered in the corn growing region.

The increased interest in corn growing stimulated through this show has resulted in more acres of corn in the Mobridge section, the production and increasing use of a better type of seed, and higher yields of better quality corn.
For years increased acreage and increased feeding of alfalfa and sweet clover have been urged and promoted through the crops work of the Extension Service. Great increases have resulted. Crops figures for South Dakota show that between the years 1921 and 1926 the alfalfa acreage of the state gained more than 200,000 while the sweet clover acreage rose from a few thousand to over 175,000.

Need of a campaign for even more of these legumes was apparent in the fall of 1926 when the Extension Service opened a campaign covering the entire East-River section of South Dakota and several counties west of the river. A dry year in 1926 had resulted in a shortage of pasture and hay, except on nearly all of the farms which had sweet clover or alfalfa. These two crops gave returns even during the dry summer and enabled many farmers to feed their livestock over the winter. Farmers without these legumes on their farms in many cases had to sell off their livestock to the point where it broke up their regular farming systems, or at least was a serious handicap.

The campaign for more acres of alfalfa and sweet clover was started by means of a special agricultural train run throughout the eastern part of the state. In this feature many different organizations cooperated with the Extension Service. The train attracted widespread attention to the alfalfa-sweet clover campaign and was visited by almost 50,000 people who viewed the educational exhibit on the culture and growing of legumes. Farmers meetings held in connection with the special train stimulated many growers to plant alfalfa or sweet clover during the spring of 1927.

The main work of the campaign was carried on intensively by county agents and extension specialists throughout the late winter, spring and early summer months. The increase in acreage was tremendous. County surveys conducted by county agents to determine the success of the project indicated that in those counties where agents had conducted alfalfa-sweet clover campaigns the known increase in acreage averaged 56 percent for alfalfa and 87 per cent for sweet clover.

In these counties the 1926 acreage of sweet clover, which totaled 79,907, was increased to 149,385 acres in the growing season of 1927—
a phenomenal increase for a single year. The alfalfa acreage increase was fully as phenomenal as that for sweet clover, the acreage in these counties jumping from 131,337 in 1926 to 204,347 acres at the end of the 1927 planting season.

Making the Home Orchard Pay

Planting, pruning, spraying and grafting demonstrations are held by the Extension Service as a means of improving home orchards. Typical of the results of horticultural extension work are the following:

Mr. Everett Maxwell of Vermillion had never sprayed his orchard nor had it produced him any profit until he attended a pruning and spraying demonstration. He put into use the pruning and spraying practices advocated by the specialist and has since sold as much as $1,200.00 worth of fruit from his orchard in a single year.

From 35 apple trees which were once old and neglected Jim Boyd of Junius has sold as high as $600.00 worth of fruit in a single year. Pruning and spraying methods which he learned at an extension demonstration have made this possible.

Extension Service records show many cases of this kind. In a single demonstration on the home fruit and vegetable garden records show that 4,358 individuals out of 6,783 who attended meetings adopted at least some of the practices advocated.

Growing High Quality Seed Potatoes

Certified seed potato production has become an established industry in several South Dakota counties.

The growing of certified potatoes in this state was started through a few demonstrations conducted in Hamlin county by the Extension Service some 10 years ago. The business has grown slowly but is now firmly established. In 1927 two trainloads of certified, free-from-disease potatoes approximating over 40,000 bushels were shipped to eastern markets from South Dakota and this year the yield increased to approximately 56,000 bushels.

Quality of South Dakota certified seed potatoes has also been improving each year. As a result there has been an almost constant increase in the number of fields which pass the three inspections required before
Potato Growers Seek High Quality
certification. In 1926 342 acres out of approximately 400 passed the inspections, in 1927 300 out of 380 acres met the requirements, and in 1928 the certified acreage jumped to 488.

The worth of the improved practices advocated in certified seed production is well indicated in the experiences of Dave Sour of Hayti. Mr. Sour's field of 47 acres averaged 270 bushels of potatoes to the acre in 1927. His total crop was approximately 12,000 bushels which sold for an average of over $1.00 a bushel. One field on the Sour farm yielded exceptionally well. Mr. Sour had sweet clover on the field in 1926. Late in the summer he plowed under the sweet clover for a green manure crop. In 1927 this part of Mr. Sour's farm yielded 400 bushels of potatoes to the acre.

The Extension Service has worked with certified seed potato growers of the state from the beginning in spreading the best practices.

Battling Insect Enemies

If insect pests cause as much as a 5 per cent annual loss to South Dakota crops, the farmer's income is decreased at least $7,000,000.00. Such a loss is conservative and not unusual. Yet much of this damage can be prevented if the proper control measures are applied at the right time.

Principal offending insects in the state are grasshoppers, cutworms, army worms, web worms, crickets and blister beetles. The most serious pest has always been the grasshopper but during the last few seasons it has been pretty well under control. The Extension Service has found that the best work in aiding farmers to control insect outbreaks can be done by sending a trained specialist in person into the areas where outbreaks occur. Two outstanding examples of aid given in this way may be cited.

During the summer of 1926 the extension entomologist was called into Edmunds County for what was supposed to be an outbreak of army worms. The county commissioners had already voted to appropriate $1200.00 for use in fighting the pest. The worms were identified as web-worms which usually do little damage to growing crops. The specialist advised the commissioners to postpone buying poison bait materials for a few days. By that time the worms had entered another stage of
their life cycle and had disappeared and the $1200.00 expense was saved the county. Information on the web worm was broadcast over the state and when outbreaks occurred in about 20 other counties most farmers felt but little alarm.

The most serious outbreak of western army cutworms in South Dakota in eight years occurred in Jerauld county during the summer of 1927. In the early spring farmers observed that alfalfa fields in this area were practically bare while in other sections, the alfalfa was already from two to three inches high. When the crowns of the alfalfa plants were examined, hundreds of the cutworms were found. A call was sent immediately to the Extension Service for help.

Within 12 hours the extension entomologist was on the field, had identified the insect and determined that the infestation was confined to an area some 20 miles square within Jerauld county. When requested by local farmers the county commissioners agreed to make an appropriation for buying poison bait materials if the extension entomologist would supervise the work.

More than 25,000 pounds of poisoned bait were used in the ensuing battle against the worms. Farmers who used the poisoned bran estimated that within 15 hours after the bait was first scattered over their fields 80 per cent of the worms had been killed. Within a few weeks small grain which had been cut off entirely by the worms was again showing green and alfalfa fields which had been kept as bare as a floor by worms, showed a remarkable growth.

The European Corn Borer is still nearly 600 miles east of the South Dakota state line but United States authorities have said that eventually this pest will spread throughout the Cornbelt. The extension entomologist believes that Cornbelt farmers must learn to live with the borer and has already started an educational campaign. A total of 11,759 adult persons attended 55 meetings on the corn borer during 1927 and 1928.

An Old Crop Destroyer Vanquished

"The bark of the last prairie dog on the western ranges of South Dakota can be heard in the offing. Poisoned oats has tolled the knell of the retreating dog towns."
The Result of a Days Work

"Land in this county, once practically useless because of prairie dog infestation is again being grazed by well-fed flocks and herds. Flourishing fields of profitable, useful crops are to be found on lands where not many years ago the prairie dog had full control and was encamped in gigantic towns that were often 25 miles in length and half as wide." Thus Sam Sloan, extension agent in Fall River County, tells of the work done in the West-River country.

"When the campaign for eradication was started in Fall River county eight years ago," Mr. Sloan says, "a survey showed that at least 25 per cent of the land was infested with dogs. The infestation was so general that farmers and ranchers said the dogs could never be entirely driven out. A preliminary survey showed 100,000 acres infested with dogs and this land was on the flats where the better ranges were located and where the best quality hay was grown.

"Since the campaign was first started, the prairie dogs of the county have been practically eliminated. Only a few small scattered towns remain and these will be destroyed within a few more months."

Louis Knowles, leader of predatory animal and rodent control work in South Dakota, adds a word: "So far the attempt to put organized control measures into effect in counties without county agents has been a failure because there has been no responsible person to carry on the work. In some cases counties have entered into contracts with individuals who undertook the eradication work at a fixed price per acre. The cost in counties where this latter method has been used, has been about 15 cents an acre while in counties where county agents have handled the work the cost has been about 5½ cents an acre."

Though rodent control is only a minor project of the Extension Service, twenty-one counties did work along this line in 1927. A total of 2,635 farmers cooperated in the work and the acreage involved was 156,567.

Clearing Away Natural Obstructions

More than 800,000 acres of South Dakota land has been cleared of boulders, rocks and stumps during the last five years as a result of the land-clearing project of the Extension Service. Through the distribution of war-salvage agricultural explosive there are today 5,000 South Da-
kota farms well cleared of the boulders which once obstructed field operations.

More than one-half million pounds of the explosive have been obtained from the government for farmers of the state. This is the equivalent of a full train load of 24 standard freight cars. In small quantities this explosive would have cost farmers approximately 40 cents a pound. The material was obtained for about 10 cents a pound which included freight and handling charges. The saving to farmers was conservatively estimated around $150,000.00.

The last carload of this explosive was distributed to land owners of the state early this year. When the use of the government war-salvage explosive for land-clearing purposes in South Dakota was first suggested about five years ago, many agricultural leaders said the first carload would never be sold. But the Extension Service went out into the field and through field meetings showed farmers how to use the explosive. The result of these meetings has been an increasing demand for it. South Dakota has used practically the entire allotment allowed by the government for use in this state.

What has this explosive been used for? Reports indicate that 81 per cent of those ordering explosive for land clearing purposes have used the material for blasting rocks or boulders. Only 6 per cent have ordered the explosive for blasting stumps alone and 13 per cent reported they were using it for both rocks and stumps.
THE IMPORTANCE of good business methods as an important source of increased income for the farm is being realized more and more by farmers. Requests for information on which to base plans for production and marketing of farm products are constantly growing in number. Problems in these fields have been given special attention and still greater emphasis will be placed in the future on assisting farmers with their marketing and farm business.

Marketing of wheat so that the individual farmer may get the benefits of premiums paid for high protein content is the object of a new project in marketing started by the Extension Service this year. A plan was developed and it has been carried to growers, elevator operators and others interested through meetings, published information, and other means.

Results already secured from the plan, which is carried out in cooperation with farmers and grain marketing agencies, are illustrated in the following three examples:

Last August, Christ Widmeier of Pollock, South Dakota, sold 984 bushels of wheat testing 14 per cent protein to his local elevator and received 22 cents premium over the grade for the same kind of wheat paid at that station. Later during the season he sold another lot of about 1,000 bushels that tested 12.5 per cent protein and received 94 cents per bushel when the local value on a grade basis was 87 cents, making the premium 7 cents a bushel.

Another farmer at the same station received 8 cents premium over grade price on his crop of 1,700 bushels, or a total of $135.00.

The manager of the Farmers' Equity Elevator at McLaughlin reported that since his elevator has been buying wheat on the basis of protein content direct shipping has been greatly reduced and farmers in that territory are better satisfied. Previously there had been rapid development of direct shipping to terminal markets.

The plan was agreed upon by a committee composed of grain growers, rural grain buyers, a representative of the terminal grain trade, and representatives of the Extension Service. It was based on the findings of research conducted by the United States Department of Agriculture and the State College Experiment Station.

To acquaint farmers and elevator men with the proposed plan a series of 11 meetings were held last summer through the state's bread-wheat producing areas. In addition, more than 6,000 copies of a circular describing the plan have been distributed upon request.
The work in this project will be continued, with particular emphasis being placed on dissemination of information to growers on the method of marketing wheat on a protein basis.

Two other marketing projects of outstanding importance are those in marketing of wool and marketing of livestock.

Many wool growers made material extra profit during 1928 as a result of the weekly market reports furnished to daily and weekly newspapers of the state through the Extension Service and the South Dakota Cooperative Wool Growers. Frequent instances of from $40.00 to $80.00 increased returns for wool because of the information received through this service are reported by owners of farm flocks. Supplying of information on methods of organizing and conducting cooperative pools was another part of the wool marketing work conducted by the marketing specialist and the county agents. Demonstrations on grades and qualities of wool with relative prices have been made in many wool growing communities. These have been of assistance to wool growers by strengthening their bargaining ability. Numbers of local wool marketing associations have received from 4 to 8 cents per pound above the price offered to individuals in those localities before the development of such marketing agencies.

With the cooperation of producers in Lincoln, Clay, and Union counties, a livestock marketing project that promises to be of great value was put actively under way last fall. County committees, subdivided to work on a commodity basis, will study livestock marketing conditions and investigate their local marketing problems with a view to bringing about improvements and beneficial changes in methods and facilities. The extension marketing specialist is working with the committees.

Getting the Facts to Farmers

The South Dakota Monthly Farm Outlook report giving briefly the market situation with respect to the various farm products in the state, is prepared and issued monthly. This is now being sent to a list of about 2,000 citizens in the state upon request, and is of definite assistance to farmers in planning their production and marketing operations.
Meetings for the discussion of the general outlook on production of and demand for specific farm products are held annually in many communities of the state and the information is used by an increasing number of farmers in deciding upon their operations.

Substituting Facts for Guesses

Farmers are coming to look upon their farms as business enterprises which require accurate records in order to determine profits and losses.

Keeping of farm records has been stimulated as the basis for sound farm management teaching. In the last few years the Extension Service has printed and distributed over the state a total of 68,000 record books. Approximately 20,000 copies of the record book are distributed each year, of which 17,000 go to the eighth grade pupils in the rural schools. Farm record work is taught as a part of arithmetic in the rural schools. and in some instances teachers report that through their pupils the parents have become interested and are taking up farm record work on their own farms. Practically 3,000 of the record books go directly to farmers.

In communities where 25 or more farmers want to take up record keeping, the farm management specialist has given assistance through group meetings of these farmers. However, the record books are so arranged that any farmer can keep them without belonging to a cooperative group and many individuals are keeping books in this manner.

In Lincoln County a group of 30 farmers were keeping books on their farm business in a cooperative project during the year 1927. These records included a beginning and ending inventory and an account of all farm receipts and expenditures during the year. Summaries of these records enable farmers to determine returns on their investments, livestock and crops, and what their businesses have earned for them in wages.

A group of farmers in Clay, Union and Lincoln counties near Beresford have kept similar records during 1928. Data from the records will give valuable information concerning the farming systems best adapted to the southeastern corner of South Dakota—the corn, hog and feeder cattle region.
Application of business principles to the farm poultry enterprise is a problem that has received relatively little attention. For this reason poultry cost account work was started in 1927. During the last year it was again carried on, with 25 cooperators, in Lincoln, Lake, Fall River and Kingsbury counties.

This practice has proved invaluable in pointing out and teaching the best poultry practices, and some outstanding records have been obtained. Seven-month records kept by 25 flock owners in 1928 revealed three points conclusively: first, that low feed cost is not necessarily economical; second, that it is profitable to give protein feed to the laying flock; and third, that culling the flock pays.

The records of Mrs. Lee Remsburg of Carthage are indicative of what the record-keeping project is accomplishing. The average number of eggs per hen from this flock in 1927 was 134.6, which compares with the South Dakota state average of 48 eggs. Egg receipts for each 100 hens totaled $170.54 while meat receipts brought the total to $204.58. The return above feed costs for the year was $252.69 for each 100 hens.
South Dakota has offered an excellent opportunity for a valuable project in farm buildings. Many owners of Sunshine State farms are still putting complete sets of new buildings on raw quarter or half section farms and the Extension Service has received many thousands of letters of which the following quotation is typical:

"Kindly send us plans for barn, hog house and chicken house as we have a farm at Lane and are contemplating the erection of new buildings."

The purpose of this project has been to prevent such costly mistakes as have been made in the erection of farm buildings in many of the older states. Plans especially suited to South Dakota conditions have been drawn up. There are now a total of 88 different blue print plans and farm building circulars available for distribution and hundreds of these have been supplied farmers.

Conservatively estimated, more than 500 buildings have been erected according to the South Dakota poultry house plan in this state. In this project clay building blocks were introduced and their use has spread rapidly. Not less than 700 hog houses, both permanent and movable, have been reported built from Extension Service plans while barns in considerable numbers have been erected. Plans other than farm buildings have been made available to farmers for eveners, self feeders, feeding racks, stalls, fences, dipping vats, barn framing, septic tanks, cisterns and wells and farmstead entrances.

South Dakota Farms Need Trees

The windbreak is properly considered a real necessity on the farm in this area of vigorous winters where frequent high wind and drifting snow occur.

It has been proven that a house can be heated with less fuel when protected with a windbreak than can a similar house in the open. Livestock can be wintered in much better condition where the feed lot is protected. Drifting snow, a serious handicap on unplanted farms, can be largely overcome by correct planting of trees. Last, but by no means least, the windbreak adds to the farm's appearance to the extent that it actually increases its money value.

Despite these facts, however, and the encouragement and help given in planting of windbreaks and shelterbelts by the Extension Service, there are probably fewer good windbreaks in South Dakota today than
Farms Need Efficient but Cheap Buildings

there were 10 years ago. The dry years of 1924, 1925 and 1926 caused many hundreds of old windbreaks to die out.

It is believed, therefore, that now is the proper time to emphasize the planting of windbreaks. The Extension Service is formulating plans whereby it is hoped that tree-planting will progress rapidly in the next few years.

A Better Place to Live

Home modernization work of the Extension Service during recent years has dealt largely with such improvements as a water supply and septic tank in the farm homes. During the last year alone information and blue prints have been given in the installation of 27 septic tanks. In addition more than 10 times this number of blue prints and circulars have been supplied in answer to requests.

The septic tank plan designed to meet South Dakota conditions has given the best of satisfaction. Septic tanks designed according to the Extension Service plan have been in use in this state 10 to 12 years and are still giving 100 per cent service. A survey made of the farm homes that have installed the septic tanks indicated that 98 per cent had given perfect satisfaction while the other two per cent had been incorrectly built or incorrectly installed.

Hand in hand with the installation of a septic tank in a farm home must also go a water supply system. The educational work of the Extension Service in this phase of the project is especially important because of the many different types of water systems and the modifications that are often made, and the amount of money that can be saved farmers through efficient arrangement and proper installation of the system.
Creating Community Spirit

Clubs Work for Community Betterment

SPONSORING the organization of community clubs and assisting them with their meetings, activities and community-betterment projects has been an important function of the Extension Service in promoting community spirit and developing leadership. At present approximately 300 clubs are active in the state.

A monthly program service, giving suggestions for talks, discussion, entertainment, and other features of the community get-togethers is prepared by the Extension Service for use of the clubs. The club activities offer opportunity both for social good times and for constructive work. Some of the finest community service given in the state during the last few years has originated in these clubs.

A recent report from Clark county tells of two clubs that have been organized for 11 and 10 years respectively and are "stronger today than ever." One of them has met every single month during the 10 year period. They have filled a need in their communities.

Agricultural Short Course Popular

Each winter, when it is easiest for farm people to attend meetings, the Extension Service cooperates with community leaders and organizations in holding agricultural short courses. Short course programs include talks on timely agricultural and home economics subjects by farmers, farm women, and specialists; demonstrations and usually educational moving pictures, and entertainment features provided by local committees. They are planned to be of interest to everyone in the communities, but particularly to farmers and homemakers.

This winter more than 90 communities are holding short courses, for all of which the Extension Service is assisting with arrangements and furnishing speakers. The list of speakers includes four South Dakota farmers and five South Dakota homemakers as well as specialists from the State College.

Getting the Facts Through Debates

For five years the statewide farmers' debate series, sponsored by the Extension Service through community clubs, has been a factor in stimulating interest in and understanding of questions of direct concern to farmers. The series is conducted through elimination contests, first in communities then in counties and districts and finally the entire state. Subject-matter material, thoroughly presenting both sides of the question, is supplied by the Extension Service for use of the debaters.
Topics are chosen by popular vote so that the question debated is always one of timely interest. This year it is the much-discussed problem of direct marketing of hogs. The state championship for 1927-28 was won by two farm women, Mrs. Luther Chamberlain and Mrs. H. A. Brooking of Sully County.

Counts Plan Long-Time Programs

A very important extension service project which is just now getting well under way is the development of long-time county programs of farming and farm home development. Six counties have launched such a program during the last year and practically all of the counties having extension agents will inaugurate similar building-for-the-future work during 1929.

The programs are based on analysis of county needs and are countywide projects. Every community and every organization in each county interested in agricultural progress are invited to send delegates to the program-building meetings and to take a hand in working out a program. At these meetings county problems and needs are analyzed and discussed, major projects are selected for long-time emphasis, and specific work is outlined. Leaders are selected to take charge of various lines of activity.
Improving Home Conditions

Home Extension Makes for Better Living

HOME extension work has become firmly established as one of the most active influences contributing to the higher level of rural home life in South Dakota and to the development of happier and healthier boys and girls. Its growth has been steady since it was started on the present basis in 1922. A total of 4,869 women enrolled that year. This winter, beginning the 1929 year, 38 counties are taking advantage of home extension service and twelve to fourteen thousand women are expected to enroll.

Development of home economics work among girls of 4-H club age has been an important part of the program. This year many women's clubs are encouraging and sponsoring 4-H girls' clubs and are helping them with their work. Approximately 4,000 girls are now enrolled.

Among the subjects on which home extension service has been given are foods, nutrition, health, clothing, home management, kitchen improvement, and home beautification.

Foods and nutrition work is the major project this year. It represents a field in which comparatively little has been done and it is of primary importance, since it concerns the health of all members of the family. The program includes five demonstrations under the general title of "Food Needs for Health." A special demonstration on Christmas gifts is also included and next spring work in beautification of the home grounds is planned.

Subject matter material on each project is carried to the women by two demonstrators from each club who attend training schools conducted by home extension agents and extension service specialists. These women take the information to their clubs by demonstrating and by leading discussions at club meetings.

During the year ending December 1, 1927, summarized figures show that practices recommended by the Extension Service because of their advantages from a health, efficiency, labor-saving, or other standpoint, were adopted in 8,618 homes of South Dakota. A total of 32,957 better foods practices were adopted, 21,318 better clothing practices, 40,193 home management practices, and 10,120 health practices.

That the women enjoy and appreciate club work is indicated in the following comments selected from letters received by the Extension Service:

"It is the best thing that has ever been devised to keep up women's interest in their homes and the work they must do there."

"I find that most of the demonstrations are about things very useful"
Learning Amid Vacation Surroundings

to the average woman. Many of them are things we have always wanted to know about but had no opportunity to learn about before we took up club work."

"It is making real neighbors in the neighborhoods. It is drawing out the stay-at-homes and offering interesting and educational advantages for all. It makes meetings worthwhile as well as pleasurable socially."

The "Make-Kitchen-Work Easier" project has proved particularly popular and profitable with women in Brown county where it has been in progress for three years. Similar work is now being started in Butte county. From studies made and records kept by Brown county women it was found that the average home-maker spends three-fourths of her time in the kitchen; that the time and energy spent there can be reduced in most cases by a study of the kitchen from an efficiency standpoint, and by applying some of the same principles of arranging fixtures that are used in industry. Using a pedometer some of the women found that they walked 14 miles a day in doing their kitchen work. After making changes in arrangement and other changes not necessarily involving outlay of money, the women found that their "mileage" could be reduced by half, and in a number of cases, by two-thirds.
The story of boys' and girls' 4-H clubs in South Dakota is being written in a changing agriculture in many counties. Demonstrations, successes and enthusiasm of the farm youngsters are bringing about more profitable practices in many phases of agriculture.

Club work has been established in 65 of the 69 counties of the state and more than 9,000 club members are "learning to do by doing" the best practices for farm and home. Lines of work in which projects are carried on include baby beef production, beekeeping, canning, clothing, corn growing, dairying, foods, gardens, potatoes, poultry, room improvement, sheep production and swine growing.

Marshall county offers a concrete example of the influence 4-H clubs are having on the agriculture of their communities. Back in 1924 the first work toward organization of the Marshall County Dairy Calf Club was started by the Extension Service and a county agent who had vision. Today the dairy calf club is the largest organization of the kind in the state with 354 members enrolled in 40 different groups. Out of this great club has come the lesson that has induced many farmers of the county to turn to the dairy cow as a means of farm profits. The club has been the most important factor in inducing many farmers to attempt breeding up higher herds with the result that a purebred bull association has been formed. It has also been the direct reason for the formation of the Marshall County cow-testing association.

Only one example of the work of the 4-H clubs can be cited here. Every community affords similar convincing examples of their worth. Club work should be developed to include every farm boy and girl in South Dakota.

Effects of this piece of agricultural Extension Work in Marshall County are already apparent. Some of the dairy calf club heifers have freshened and cow testing association records are available on a few of them. Marshall county is in a position to become the Guernsey center of the entire Northwest.

The story of the Torkildson calves is typical of what the calf clubs have been doing for the betterment of dairying in the county. In 1924, two boys, Oliver and Irwin Torkildson, 10 and 12 years of age, respectively, sons of Gus Torkildson, joined the calf club. These boys developed a keen interest in their calves which they named Brindle Bell and Queen Beauty, two Guernsey heifers.

On November 11, 1925, Brindle Bell freshened. In the meantime Mr. Torkildson, a progressive farmer, joined the cow-testing association.
in order to learn the individual merits of his Red Polled herd. When Brindle Bell freshened she was exactly two years of age. She started out by giving 43 pounds of butter-fat the first month and produced consistently throughout the year. Her production for the year was 303 pounds of butterfat, topping Mr. Torkildson's herd.

On April 25, 1926, Queen Beauty, owned by Irwin, freshened and was not to be outdone by Brindle Bell. She produced the first month 50 pounds of butterfat and 59 pounds the following month. During the first six months of her production she produced 244 pounds of butterfat by actual test.

The records of these calves have convinced Mr. Torkildson of the value of good dairy breeding. There are many more heifers in Marshall County which have produced as well as the two owned by the Torkildson boys. The work in Marshall county is indicative that there is close allegiance between the dairy clubs and better dairying.
*The Agricultural Extension
Service Staff

Administrative
C. W. PUGSLEY, President, South Dakota State College
C. LARSEN, Dean of Agriculture
A. E. ANDERSON, Director of Extension

State Leaders and Subject Matter Specialists
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R. D. DAVIES, Assistant County Agent Leader
H. M. JONES, State Club Leader
W. R. HAUSER, Assistant State Club Leader
MAY KIETHLINE, Assistant State Club Leader
ALAN DAILEY, Agricultural Editor
W. F. SCHNAIDT, Marketing Specialist
G. HEEBINK, Dairy Specialist
R. L. PATTY, Agricultural Engineering Specialist
G. S. WEAVER, Animal Disease Specialist
R. E. JOHNSTON, Agronomy Specialist
A. L. FORD, Entomology and Horticulture Specialist
SUSAN Z. WILDER, Foods and Nutrition Specialist
MARY A. DOLVE, Foods and Nutrition Specialist

* As of December 1, 1928.
### County Extension Agents

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<tr>
<th>COUNTY</th>
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<td>Beadle</td>
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### Home Extension Agents

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