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EXTENSION DIVISION.

SEND MARKED COPY.

The Extension Division is going to large expense to publish this sheet principally for the use of editors and is sending it free of expense. We will be pleased if the newspapers, whenever copying or in any manner using this matter, will send us a marked copy. The courtesy will be greatly appreciated.

MONEY IN TESTING SEED CORN.

Farmers having old corn should not fail to test it at once for germination. Many instances are reported of nearly 100 per cent germination, which is probably better than most of the corn raised in 1909 in states south of Minnesota will do, and somewhat better than Minnesota corn of last year will do, though very fair results have been obtained from germination tests made at University Farm of 1909 Minnesota corn. Good seed corn is sure to be scarce and every ear that will give a 90 per cent test or more should be laid away for seed, whether grown in 1909 or previous years. The only safe method is to TEST NOW.

CAMPAIGN OF EDUCATION.

The Extension Division of the Minnesota Department of Agriculture regards the testing of seed corn of such vital importance to the farmers of Minnesota that in a few days it will distribute large posters showing by photographs how to test seed corn and giving full instructions in regard to the work, so that each farmer may be enabled to test for himself. These posters will be sent to the banks throughout the state, to railroad stations, creameries, etc, to get the matter as far as possible before the people in abundant season for them to make early germination tests. The division regards the matter of testing seed as exceedingly important this year, and will give all the help it can to everybody who wishes it. Write for information, look for the posters, read the papers. The Division is availing itself of every possible channel of getting this information before the people.

TESTING SEEDS IN RURAL SCHOOLS.

Rural schools may demonstrate their practical utility in the community by showing pupils how and encouraging them to test the seeds, to be sown on the farm, for germination. A plate partly filled with sand covered with a cloth on which the seeds are scattered, then moistened and the seeds covered with another cloth and a second plate turned up side down, makes a very good germinator. If this is kept in a warm room as a school room good seeds will germinate in from 5 to 8 days. Teachers can do no better work than to show pupils how to make these tests and encourage them to test seeds at home and report results at school.

GIVE THE BOYS AND GIRLS A CHANCE.

Farmers should remember that their young folks "learn to do things by doing them." Soon a large class will graduate from the Minnesota school of agriculture and return to their farm homes with a better scientific knowledge of things than their parents have. They will be prepared to take up the practical side of farm life with a scientific knowledge of "how to do things" in a proper and systematic way. Give the boys and girls a chance now to "learn to do by doing." With their newly gained knowledge of agriculture they have an education which makes farm life attractive when put into active force, and are eager to begin operations from their new standpoint. Give the boys and girls a chance when they get home; encourage them by giving them an interest in affairs—something for themselves to take care of and do. If farmers wish to keep their boys and girls on the farm they must encourage them in things they like to do, and have learned to like to do skillfully and scientifically at the University Farm. Give them a little pe-

culiary interest as an added incentive to work out results.

OATS FOR SEED.

In selecting seed oats this spring the farmers are invited to try the oats distributed by the Minnesota Experiment Station at St. Anthony Park. These were selected and grown for their high yield and have been quite generally distributed throughout the state and are known as Minnesota No. 26. The No. 26 has averaged 66.6 bushels per acre during the past 15 years at University Farm. The Station Farm will sell these oats in lots of five bushels or less, for \$1.00 per bushel. Address Prof. A. Boss, Experiment Station, University Farm, St. Paul.

Minnesota newspapers should advise their farmer friends to test their seed corn at once and see what per cent germination test they can get. Remember that though much of the corn of last year's crop looks good the germ is dead and to plant it will be a waste of time and loss of money. Take no chances this year.

DOMESTIC SCIENCE.

WEEK'S COOKING COURSE.

The Domestic Science Division has prepared the following four days' course in cooking which will be offered under the Extension Division to a few communities first making application for same. The plan is to charge a small admission fee for the course, and limit the attendance at each place to from 12 to 20 members:

Suggested Course.

Tuesday Morning—Food Nutrients; talk on preparing cereals, their food value, reasons for serving and how to serve. Demonstration.

Tuesday Afternoon—Food Nutrients; talk on the value of corn and milk and the codfish. Reasons for scalding corn meal. Demonstration.

Wednesday Morning—Food Nutrients; talk on food value of potatoes, loss in preparation and loss in cooking; why potatoes should form part of diet. Demonstration.

Wednesday Afternoon—Food Nutrients; talk on nutritive value of vegetables, and why vegetables should be if sown on land plowed in the fall. Demonstration.

Thursday Morning—Food Nutrients; talk on nutritive and money value of eggs. Demonstration.

Thursday Afternoon—talk on eggs continued. Methods of cooking; methods of preserving; canned eggs and egg preparations. Demonstration.

Friday Morning—Food Nutrients; talk on broiling meats; meats best adapted to broiling; methods of broiling. Demonstration.

Friday Afternoon—Food Nutrients; talk on value of meats; waste in preparation; nutritive value of meats and money value compared. Demonstration.

DOMESTIC ART.

SEWING, CUTTING AND FITTING.

To too many people, and for quite too long a time, art has meant only music or painting or poetry or some similar expression of genius. It has remained for our own generation to discover, as Fra Elbertus has it, that "Art is the expression of man's joy in his work." So, in the term domestic art there is embodied the joy and beauty and self-expression which any woman may evolve in the pursuit of her domestic duties.

The student in domestic art at the College and School of Agriculture are given careful instruction not only in the actual work of sewing, including drafting, cutting and fitting, but are taught also to recognize value and beauty, and, conversely, cheapness and ugliness in textiles. They are taught that the keynote of beauty, both in dress and in house furnishing, is first suitability and next simplicity.

They are taught to make garments which are beautiful in line and color, and useful in design, and to care for the garments after they are made.

Mrs. Blair, who heads this division, endeavors continually to impress upon them that an artistic gown, or an artistically furnished home, is less a matter of expense than of knowledge and thought, and that to produce either is an activity worthy the effort of any woman.

FAIRS AND INSTITUTES.

OLMSTED COUNTY SCHOOL FAIR.

Olmsted county is awake to the interests of agriculture in her schools. She is now out with programs for the fall exhibition of her young people's efforts, with an engraving showing J. J. Hill speaking to the fair last fall. The fair will be held in September, and substantially under the auspices of the young people, though of course it is managed by the older heads. All the entries are to be made by the boys and girls. They can exhibit everything grown on the farm to the exclusion of their parents, except where there are no young folks in the family. There are to be addresses by men of national prominence. Olmsted County is doing nothing not open to every county in the state.

KASSON INSTITUTE.

One of the best institutes for farmers in the state this year was held at Kasson recently, when one of the chief features was a corn contest. A large number of prizes were offered by the business men of Dodge Center. At the close of the institute the entire exhibit was sold at auction and was purchased to put on exhibition in one of the local banks. A fund of \$100.00 was pledged by business men to be used as premiums for corn and other products of the farm at a session of the Farmers' Institute next year.

THE DAIRY.

IMPROVEMENT OF THE DAIRY HERD.

The only way to be sure of the value of any dairy cow is to give her good care and feed, and weigh and test her milk. There is considerable work connected with weighing and testing milk, but usually less than is required to milk and care for unprofitable cows.

To simplify the work of testing the Dairy Division recommends the organization of cow testing associations. The association hires a competent person (usually some young man in the community) to visit one farm each day, and weigh the milk from each cow night and morning and test it for butter fat. He then makes a report to the farmer and suggests a proper ration for each cow. At the end of the year each farmer has a record of the work done by each cow and knows which cows to breed and keep, and which ones to sell. Information regarding cow testing associations will be sent on application.

A PROFITABLE DAIRY.

Mr. Charles Nelson, of Atwater, says that his twelve grade Guernsey cows and heifers yielded 348 pounds of butter fat during December, giving him an income of \$11.40 per cow for the month, at a cost of \$4.16 per cow for feed. Rations given the herd were all farm-grown, consisting of clover, ensilage, barley and oats.

EXPERIMENT STATION.

TRACTION ENGINEERING.

The Department of Agriculture of the University of Minnesota will open a short course of four weeks in traction engineering, commencing on the 24th of May next and continuing until the 17th of June. Any citizen of Minnesota is entitled to attend, and all the facilities of the Department will be at the disposal of this course. Since threshing is done mainly by steam and gasoline, and thousands of stationary engines are in use, the importance of this course should appeal immediately to every owner or operator of an engine, especially since under the Minnesota laws an engineer must pass an examination before he can operate steam engines.

A tuition fee of fifteen dollars will be charged for the entire course, or any part of it. The course covers instruction in all departments of operating and handling traction, stationery and gas engines. Each student must furnish work-clothes, overalls, and gloves and be prepared for the expense of car-fare on trips of inspection to different parts of the twin cities, where large engines and heating plants are in operation.

Board and room will be furnished on the camps for \$3.50 a week. Further information may be had by ad-

ressing Prof. Jas. M. Drew, Registrar, University Farm, St. Paul.

WINTER WHEAT.

The Minnesota Experiment Station suggests conservatism in sowing winter wheat, and would advise farmers to give it a good test on a small acreage for a couple of years before determining to grow on a large scale, or relying upon it for a profitable crop. Winter wheat has been grown as far north as Polk County, while in the southern part of the state it has been grown in considerable quantities in certain localities, but not extensively enough to warrant the station in recommending it as a general crop. Minnesota grown seed should be used always. Where a hardy variety has become acclimated, larger profits and a greater yield have resulted than from spring wheat. Among the varieties of winter wheat recommended by the Station, and tested there, are Turkey Red (Minn. No. 529), Bearded Fife (Minn. No. 550), and Russian White (Minn. No. 642). The Station advises Minnesota winter wheats to be sown not later than Sept. 1st, to enable the plants to develop strong roots before cold weather. Unless the soil is very wet the station would have the farmers sow their winter wheat in standing corn since the grain will be better protected through the winter and spring, than if sown on land plowed in the fall.

DIVISION OF AGRICULTURE.

SEED BREEDING.

One of the most important things which the Division of Agriculture of the Minnesota Experiment Station has done for the benefit of the farmers, is the breeding of pedigreed seeds.

It has been known for a long time that animals could be bred for efficiency along desired lines, but the knowledge is of comparatively recent date that seeds—those wonderful storehouses of energy, beauty and utility, could be similarly bred, and thus induced to produce a greater amount or a better quality or both of grain. That this is preeminently true, however, has been ably demonstrated by the Agricultural Division, which has produced several varieties of improved grains, including corn, barley, oats, flax, and wheat, which are much more prolific than the grains commonly grown and which have, in their increased yield, netted the farmers of the state many thousands of dollars. These seeds may be obtained from the Station or from co-operating seed growers, at reasonable prices, and with each purchase a certificate of pedigree and purity of seed is issued to the purchaser.

Prof. Andrew Boss, chief of this division, states that something over 15,000 bushels of pedigreed seeds have been distributed at first hand to 3,248 co-operating seed growers, and that these men have in turn supplied so many farmers that it is estimated that from one-fourth to one-third of the grain growing area of Minnesota is now seeded annually to improved seeds developed at the Experiment Station.

AGRICULTURAL ENGINEERING.

In the Department of Agriculture of the University of Minnesota, there was created in May, 1908, a Division of Agricultural Engineering.

An important part of the work of this division is the class work in the College. Under this instruction young men are taught the principles of road-making and drainage; they learn how to do road work under differing conditions, how to construct drains, the advantages and disadvantages of open drains in comparison with under drainage, and methods of land surveys.

The primary object of this Division, however, is to collect and disseminate information on the control of soil moisture for the improvement of farm lands.

Some special work has been done during the past year and experimental drainage systems have been inaugurated in the Minnesota Valley, the Red River Valley and near Duluth, and it is hoped that other experimental work can be arranged for in various parts of the state where special problems are to be solved.

Correspondence from farmers in regard to drainage improvements, completed or proposed, will be welcomed

by Prof. J. T. Stewart, chief of this Division, at University Farm, St. Paul.

COST OF PRODUCING FARM PRODUCTS.

The Minnesota Experiment Station, in cooperation with The Bureau of Statistics of The United States Department of Agriculture, has been gathering statistics on twenty or more Minnesota farms for the past seven years. The object of this work is to determine the cost of producing the various farm products under farm conditions. To get this data a man has visited the same farms each working day in the year and has recorded all business transactions, and the labor done on the farm the previous day by all members of the family and by the horses. In this manner accurate data regarding the cost of producing any of the common farm products has been secured. This data has been published by the bureau of statistics and may be secured free by writing to the Bureau of Statistics, Washington, D. C., and asking for Bulletin No. 73, on "The Cost of Producing Minnesota Farm Products."

COST OF CLEANING SEED GRAIN.

The average farm fanning-mill will handle about forty bushels per hour. At this rate in eight hours two men can clean 320 bushels. This will make the cost something less than one cent per bushel. By setting a mill so only 10% of the very best seed is saved for seed, and the balance sold or fed, seed of first quality and free from weed seeds can be secured.

Ten per cent of 320 bushels is 32 bushels. These 32 bushels will be free from weed seeds and will contain the best breeding individuals in the grain. It will cost in labor from five to ten cents per bushel. One bushel per acre increase in yield will pay for this labor and leave a very handsome profit. An increased yield from two or ten bushels per acre may be expected if seed grain is properly selected.

ANIMAL HUSBANDRY.

SHEEP AND THEIR TEETH.

Prof. Gaumnitz, of the Division of Animal Husbandry, at University Farm, St. Paul, says that fine wool sheep live longer than medium or coarse wool sheep. The former have been used successfully as breeders from 1 to 8 years, and the latter from 1 to 6, and more rarely 7 years. This indicates the extreme period of usefulness in the flock. The prime of life probably extends from 1 to 5 or 6 years.

The lamb has a short and small head as opposed to the head of the mature sheep. Its teeth are smaller in every way. They are usually smooth and white as opposed to a more corrugated, darkened surface in the old sheep. The age of sheep is told by the four pair of incisors which are found only on the lower front jaw. These are all present by the time the lamb is six weeks old.

In the yearling the central pair of small incisor teeth are replaced with a large pair when the lamb is ten to fourteen months old. They are almost twice as wide and much longer than those at either side.

At the age of two years the animal gets a second pair of large teeth.

At three years it gets a third pair of large teeth. It would then have three pairs of large teeth and one pair of small or lamb teeth.

The four years old has a full mouth of four pairs of large teeth. The outer ones are never as large as those in the center.

After the sheep is four years old it is difficult to tell the exact age. With age the teeth usually grow longer and narrower. They begin at six years to resemble shoe pegs. Sheep that are living on short pasturage and get sand with their grass wear their teeth short, even in old age. This is unusual in Minnesota. When sheep get long, peg like, or broken teeth, it is time to dispose of them.

New land is best for large yields of potatoes or sod land on which clover has been raised, though clover sod land is sometimes infected with white grubs or wire worms, which may do some damage. However, these pests are not likely to appear in sufficient numbers to do much injury unless the land has been in sod a long time. For best results have land in clover but one year.