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Planting Seed Corn in 1912.

It has been said about the scarcity and the poor quality of seed-corn this spring. However, bad conditions may have been pictured, but the picture is not too strong. A great deal of corn, germinating perhaps not more than fifty per cent, will have to be planted, if the people of the Northwest are to plant anywhere near the amount that is normally planted to corn ear-production. Wherever possible it is of course recommended that farmers use only perfect seed, but know that this is rarely possible this year. Therefore, where corn of perfect germination and quality cannot be secured, it is considered that fifty per cent, seventy-five per cent, or even fifty per cent germination is better than nothing; where such corn only is to be planted, we recommend planting the corn in drills, using from one-half to three-fourths and twice more seed per acre than is usually planted. In other words, where corn has been customarily planted in the hill, three kernels perfect corn per hill, we recommend planting five to seven kernels in a hill of the poorer germinating corn. Where planted in drills, the kernels generally should not be closer than one in every twelve to fourteen inches. Therefore, in drilling, use the seed in accordance with the earlier germination.

Seed-corn to be sown thickly for other purposes is also going to be scarce. Butt and tip kernels, from which have been saved for seed ear-production, would in an instance such as we have this spring be recommended for planting for fodder purposes. The rule given above for planting corn would apply also for other purposes. More fodder and other annual forage should be grown this year, because there will be a scarcity of meadows and pastures throughout the Northwest. The season of 1910, followed by the dry spring conditions of 1911, has caused a great increase in the acreage of grass lands, and lessening the producing value of many of such lands which have suffered the adverse conditions; hence supplemental crops, such as fodder corn, millet, sorghum and the grains, suited for hay purposes, or possibly pasture, will be found useful.

People who planted rye last fall will be provided with an early spring pasture, whether or not they wish to sow the rye for seed purposes. In other words, the rye can be pastured early in the spring, if the field is carefully watched so that it shall not be too severely grazed; and it will then come on and produce a reasonably good seed crop. Rye is a crop that farmers generally do not use as much of as they should. It is a profitable cash crop and one that lends itself to meeting unforeseen conditions better than the other cereal grains. It may be sown early in the fall and stored in the spring. It makes a good hay crop. It yields well and returns a good net profit per acre.—C. P. Barns, Agriculturalist, Minn. University Farm.

Give Us an Agricultural Survey.

Continually urging upon the people and the lawmakers of Minnesota the necessity of a complete agricultural survey of the State, Dean Woods is performing a service which will one day be appreciated. Minnesota today very much in the position of a business man attempting to carry on great enterprises with no adequate knowledge either of the amount of his capital or the character of his investments. The State is known to have rich land, good, indifferent and poor; but where these several grades are located has never yet been more than vaguely set down on the map. It is known to possess vast mineral wealth; but the deposits of this wealth have as far been located only in spots. It is known that immigration to fill up its unoccupied lands; but there is today no official guide which can be used in pointing out to the immigrant the fertile places where he may locate with the assurance of a reward for industrious endeavor, or to warn him against the seductions of those who would sell him a "grave of hope." The truth can be told, fearlessly and with confidence, about a large proportion of our Minnesota lands, and with advantage both State and settler. It should be truthfully told about other lands whose only proper destiny is their perpetual devotion to forestry. When a survey shall be made—which shall be the truth, the whole truth and nothing but the truth—about every intersection of land in the State—in which we may look for such an inrush of intelligent immigrants as shall result in "old" Minnesota the story of filling up of "new" Oklahoma.—C. P. Barns, Extension Division, College of Agriculture.

To Editors.

The University Farm Press News is prepared with a sole view to the use of the matter in its columns by the editors of Minnesota papers. It has no subscription list, and is not sent to farmers. The endeavor is to fill its five columns with short articles relating to various phases of rural life and industry—articles which every intelligent farmer will read with satisfaction, but which we want him to read in your paper, not in ours. You are at liberty to use the articles with or without credit or name of author—as editorials or as clippings, just as you may prefer.

Gas-Light for the Farmstead.

If a practical demonstration, made in the hall of the School of Agriculture a few days ago, counts for anything, it is now just as easy for the farmer as for the city man to illuminate his buildings by gas, and at no greater cost. This is done through the agency of "Blau-gas," so named from its inventor, a German named Blau. It is a compressed, portable gas; its use involving the erection of no "plant" beyond a small steel cabinet, occupying about as much room as the common tin "safe" used in kitchens; which cabinet is set against the wall, outside the building, and connected with the interior piping. No excavation or covering, or protection against frost, is required. The gas is supplied in large steel bottles, in pairs. When one is emptied it is returned to the company; the other bottle maintaining the light while the first is replaced, so that the supply need never fail. The business is like that of supplying milk in bottles, which are returned to the dairy when emptied—only the steel bottles of compressed gas are considerably larger.

The following claims are made for the new illuminant:

1. For the amount of light and heat made available, the equipment required, as well as the service, is the least expensive in the market. The pipes can be very much smaller than for coal or acetylene gas.
2. The light is clear and steady, with no variation in its intensity. It is as bright when a bottle is nearly emptied as when it is full.
3. The apparatus is absolutely proof against freezing. A plant—set, as usual, in the open air—at Winnipeg, was unaffected by a temperature of 53 degrees below zero.
4. For cooking purposes, and for heating water, it is claimed to be superior, in that it produces several times as much heat per cubic foot as ordinary city gas. It will bring water to the boiling-point in half the time required by coal gas. It does not blacken enamelled-ware which is brought in contact with the flame; nor does it discolor walls or ceilings.
5. With a proper burner, it can be used with perfect security in barns and outhouses, competing in point of safety with the electric light, which costs so much more to install. It is used in coal mines as a substitute for the "safety lamp." Put up in small bottles, it affords a brilliant and convenient light for vehicles.
6. It can be used in flatirons and warming pans, and for a variety of household purposes, with perfect safety. If an ordinary city gas-jet is turned on, unlighted, in a closed sleeping room, it kills whoever lies there. If Blau-gas is thus carelessly used, it will make the sleeper sick, but will not kill him. The danger from explosions is about one-third that attending the use of coal gas.
7. The gas can be used in blacksmithing, in cutting steel and iron, and in welding various metals, including steel, cast iron, aluminum and brass. It was employed in cutting up and removing the tangled mass of steel beams in the ruins of the Equitable Building in New York.
8. Beyond replacing the bottles when empty, the plant requires no attention whatever.

Like many another "gift of science," "Blau-gas" comes to us as the result of an accident. The inventor was the gas expert of the great German balloon-making concern which builds the German war-balloons we have read so much about. The company wanted a highly compressible, portable gas, that the same might be supplied at different stations for its balloons, thus making a return home unnecessary when a fresh supply should be needed. After several years of experiment, Herr Blau succeeded in producing a highly "compressible and portable" gas. But lo! its specific gravity, when expanded, was greater than that of air; so it was useless for balloons. However, the other uses to which it can be put turn out to be so much more valuable that the company is quite reconciled to the disappointment.—C. P. Barns, Extension Division, Minn. Col. of Agri.

Springtime Soil-Tillage.

In a large portion of Minnesota, the latter part of March or the early part of April witnesses the beginning of those operations in soil-tillage which are so largely to determine the quality and amount of the crops grown. Good tillage must provide a home for good seed, in a soil well-pulverized and enriched and freed from weeds, if, later on, the greatest reward is to come to the tiller.

The study of so-called "dry farming," as well as of irrigation processes, has during recent years brought about considerable modifications of the ideas formerly dominant in relation to the purposes of tillage. While no less importance is attached to the breaking up of the soil and reducing it to such "tilth" as shall facilitate the absorption of plant-food by the growing crop, and while the destruction of weeds remains one of the important objects of tillage, more emphasis is today laid upon such a treatment of the land as shall best conserve the supply of moisture, hinder evaporation, and keep "the watery gifts of the skies" in the soil until they shall have been fully utilized in crop-production.

It is established that this latter end will be most effectively served by the use, in the spring, of the disk and harrow on fall-plowed land, to pulverize the surface and thus break the continuity of contact, among the soil-particles, which promotes the capillary ascent and evaporation of moisture. A finely-divided surface not only affords a good seed-bed, but, as a protective mulch, it conserves the water-supply. And as Dr. McGee, the hydrographer of the Reclamation Service, declares in a recent article—it is really upon the adequacy of the water-supply, rather than upon the quality of the land, that success in agriculture depends. He shows that we have in America enough cultivable land to support two billions of people; but the water-supply is sufficient only for one billion; so the latter figure is set as the limit of population which can be supported on our continental domain.

Spring-plowed—since it is not to have, so largely as fall-plowed, the benefit of winter's saturations and freezings, and thawing—should be even more thoroughly worked. As the furrow-slice is otherwise likely to dry and harden in the sun and air, each day's plowing should be harrowed as soon as done. If, after this, one disking will give you a fairly good seed-bed, two or three diskings, with alternate harrowings, will assuredly give you a better one, with fewer weeds to steal away fertility, and with a practical certainty of a larger crop. If disking can be preceded by sub-surface packing, for the purpose of firming the lower part of the furrow-slice and uniting it with the subsoil, an additional means is provided for the retention of moisture, and an insurance against the effect of droughts.

The depth of plowing should be varied from year to year, to avoid the formation of a hard, compact layer of subsoil, such as will attend continual plowing at a uniform depth. Heavy soils should be plowed deeper than light ones. In most Minnesota soils, seven inches is considered "deep."—C. R. Barns, Extension Division, College of Agriculture.

Co-Operation in Getting Seed.

The benefits of co-operation are finding a splendid illustration, this year, in the work being done by the Minnesota Field Crop Breeders' Association in collecting and distributing information as to the location and ownership of available supplies of seed grains and grasses in Minnesota. The Association's first Bulletin, just issued, gives the addresses of fifty-six members who have corn, oats, barley, wheat, flax, clover, timothy, millet and other seeds for sale; also of 98 others, Minnesota farmers, who have for sale similar seeds, grown from stock purchased from the Minnesota Experiment Station. They are located in all parts of the State, and by writing for the bulletin the most convenient source of supply may be learned. Every farmer will find it to his advantage to join the Association; the membership fee in which is only \$1. Address C. P. Bull, Secy., St. Anthony Park, Minn.

An Iowa apple-grower declares that by thorough spraying, several times repeated, he is able to gather a crop 99 per cent free from worms. That this counts when marketing-time arrives, is shown by the fact that he gets twice as much per barrel for his apples as do growers who have neglected spraying, besides having a larger crop to sell.

Experiments at the Michigan Station show that there is little if any difference in the amount of butter-fat in the milk of a heifer and of a mature cow. Somebody's imagination would seem to have afforded the only foundation for the popular belief to the contrary.

More Schools of Agriculture?

The recent eagerness of the people in rural Minnesota for instruction in Agriculture is intensely gratifying to all who are patriotically interested in the best development of the State. The eagerness would appear to have grown to an insatiable thirst. Never was there such a resort to the fountains of knowledge; and—notwithstanding the establishment of numerous additional fountains, like the new State Schools of Agriculture at Crookston and Morris; in the experiment and demonstration farms at Grand Rapids and Duluth; in thirty high schools aided under the Putnam Law, and in numerous others which have undertaken to support an Agricultural course—the demand is still for more and more Schools of Agriculture.

Too often, however, this demand is made in ignorance of, or in defiance of, the fact that the creation of new schools has already outrun the supply of competent teachers of Agriculture. In many cases men wholly incompetent have been given such appointments, simply because competent ones were not to be had. The results have been and cannot be otherwise than bad. A few ill-informed men, in places of authority as teachers, may easily bring the "New Agriculture" into contempt. Better far to defer the opening of any new School of Agriculture, or of an agricultural department in an ordinary school, until well-trained teachers can be had.

The legislature will be wise if, at the next session, it shall consider most carefully all demands for the creation of new Schools of Agriculture, and concentrate its endeavors on the strengthening and improvement of those already existing.

As things now are, the state of agricultural education in Minnesota is comparable to that of the United States navy, in which the number of ships is so far in excess of the number which it is possible to man with efficient crews, that whenever a new vessel is launched another, perhaps as good, must be laid up, in order that the new one may be manned. Let us have, first, more qualified teachers; then we can be sure that buildings and grounds and endowments, when supplied, will be effectively used in satisfying the prevailing "divine hunger" for agricultural knowledge.—C. R. Barns, Extension Division, College of Agriculture.

Get Rid of Smut.

This is the time of the year to insure against smut in grain. Year after year smut appears in the State, and causes great losses. There is no reason why this should be the case if the seed is properly treated.

The best known and most widely-used substance for treating seed grain is formaldehyde. This can be bought in drug stores at a moderate price. One pint is put into forty gallons of water, and the seed grain is then dipped in the mixture in such a way as to wet the outside of every kernel. Or the formaldehyde solution may be sprayed onto the grain, while spread upon the floor—it being raked or shovelled over frequently.

A few precautions should always be observed:

- (1) Formaldehyde varies in strength, and, if there is doubt as to its quality, a sample of it should be sent to the chemist of the Experiment Station, in order to determine its exact strength.
- (2) The sacks in which the grain is treated should first be cleaned by boiling in water, or by washing in a strong solution of formaldehyde.
- (3) Everything which the grain touches after having been treated, sacks, seeder, etc., should be very thoroughly cleaned with a strong solution of formaldehyde (1 pint to 10 gallons of water).
- (4) If seed is kept for some time after treatment: do not let it sprout or mold; do not let it freeze while swollen after treatment; allow for the swelling of the seed, if you sow the grain soon after treatment, by planting more per acre.

This formaldehyde treatment will prevent stinking smut of wheat, covered smut of barley, and smut of oats. It also prevents flax-wilt if the treated seed is sown on land which has grown no flax for five or six years. It will not prevent loose smut of wheat, loose smut of barley or corn smut. These must be dealt with differently.

Bulletin No. 122 and Extension Bulletin No. 14 of the Minnesota Experiment Station give all information and precautions necessary in treating for smut. Every farmer who intends to treat his seed grain should send for these bulletins at once.—E. C. Slakman, Assistant in Plant Pathology, Minn. Col. of Agr.

As was anticipated, the consolidated school is proving to be a great promoter of punctuality in attendance. Pupils quickly learn that they must be ready for the wagon when it calls at their homes, and the accidents are rare which prevent the wagon from reaching the schoolhouse "on time." Some schools report not a single case of tardiness during a term.

Rural Credit Associations.

The banks already existing in the Northwest, State and National, are so numerous and so widely distributed as apparently to render unnecessary here the banking feature of the new organizations which have recently become popular in Germany, formed especially for lending money to farmers and the owners of small rural industrial enterprises. What is needed, instead, is the simple organization of co-operative credit associations, the collective means of all the members of which shall be behind every application for a loan made by any individual member.

That farmers usually pay high rates for loans, and that the size of such loans is usually limited to a figure below the amount which they may advantageously use in productive enterprises, are facts due chiefly to the circumstance that—mortgage loans excluded—the loan is usually backed by only one or two names, and these representing only moderate resources. Increase the security, and the rate goes down, while all limitations on the amount are practically abolished. This is the main secret of the success of the "Raiffeisen plan," under which the amount of money placed at the disposal of the German farmers, collectively, has grown to more than a billion and a half of dollars in a single year—all lent at about 5 per cent. Another secret is the fact that loans are made only for productive undertakings; never for purposes of speculation or extravagance.

There exists among farmers a just repugnance to the raising of money by mortgaging the farm. Often they will go without needed funds rather than resort to a mortgage. The credit association—to membership in which only men of known character are admitted—offers to the banks something even better than a mortgage. The collective character and resources of a hundred or of several hundred men, acquainted with one another, and living in such close proximity that schemes of deception as to the purposes of a loan are practically impossible, make every piece of paper offered a bank by their association practically "gilt-edged." If the local banker has not himself all the money needed, he will get it from some financial center; and he will handle it on a very small margin rather than have the association go elsewhere.

The practicability or impracticability of borrowing a modest sum of money may often determine the question whether a crop shall be a large or a small one; whether only a steer or two or a car-load shall be "finished" and marketed; whether a fine crop of potatoes shall be saved by the timely erection of a root-house, or lost for want of it. The organization of a "Credit Association" would enable many a farmer to settle these and similar questions in advance and in the right way.—C. R. Barns, Extension Division, Minnesota College of Agriculture.

It is said that the musicians of a brass band are unable to play in the presence of a man sucking a lemon; it makes their mouths water so much. A semi-circle of cows gathered around a silo, when the silage is being served, will, it is said, present a similar spectacle. They remember the, to them, delicious flavor of the silage; its odor titillates their nostrils, and the water fairly drips from their mouths. Herein is further proof of the value of silage in cattle-feeding. A feed which thus stimulates the appetite of the cows can hardly be otherwise than excellent for them.

The community which wants a new School of Agriculture today would do well first to find a few competent teachers; and then, when these have proved their worth, build a house and provide for them a demonstration farm. It is the teacher, rather than the building or equipment, that counts for most. The personalities, for instance, of such men as Willet M. Hays, S. B. Green, T. L. Haecker and Otto Luger, identified with the Minnesota School of Agriculture at its beginnings, were worth more to its development than the whole University Farm, as it then existed.