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ORCHARD AND GARDEN

November 1 to 8
It is not too late to gather some nut and tree fruits for planting next spring. It is not too late to plant some hyacinths or daffodils in pots for spring flowers.

If the ground is not frozen and is dry it will pay to soak the shrubby plantings thoroughly. Otherwise they may freeze dry during the winter.

It might be a good plan to purchase the required amount of seed potatoes this autumn. Indications now are that they will be high in price and hard to get next spring.

Farmers' Bulletin 750, Department of Agriculture, Washington, D. C., is a thirty-six page bulletin on roses for the home. This may be obtained by writing to the Division of Publications, Washington, D. C.

Do not store canna roots in a cold cellar where the temperature gets close to freezing. They will not stand chilling, neither do they want to be kept so warm as to shrivel and dry.

It is a good plan to throw a few shovelfuls of earth close around the trunk of young apple trees, at the same time clearing all grass and trash away. After the first fall of snow tramp well, close to each tree. This treatment will discourage mice from nesting about the tree and gnawing the bark under protection of the snow.

Some of the nurseries in England and other European countries employ many women in their work. Much of this work they do as rapidly and as well as the men. In one nursery, where thousands of buds must be set, the women are able to set 1000 to 1200 buds a day, which is as much as the men will do.

One of the most interesting and valuable of late summer or early fall shrubs is *Hydrangea arborescens grandiflora* or "Snowball" hydrangea, so named from its snowball-like flowers. *Hydrangea paniculata grandiflora* is also good. It commences to flower the latter part of August and its large pointed trusses are ornamental till after heavy frosts, especially as they change from a greenish white to purplish bronzes.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minnesota.

ORCHARD AND GARDEN

November 8 to 15

Do not let the squash freeze. Watch the cabbage for indications of rot.

Gladioli may be stored under the same conditions as potatoes.

If onions are frozen for storage, they should be kept frozen till time to use them in the spring.

Darwin tulips are worth planting for the beauty of their effect in late spring. Some varieties may also be forced in the house.

Have you made any provision for the birds this winter? They should have grain and seeds after snow flies.

The Minnesota State Horticultural Society meets in the West Hotel December 5-8. It will pay you to attend.

Cover the strawberry bed lightly with straw as soon as the ground freezes. When it is frozen solid put on four or five inches of clean straw or light hay.

Where it is not desirable to plant in the autumn plants may be dug or purchased and heeled in firmly (buried in the earth) until time for spring planting.

Chrysanthemums should be in full bloom now, and it will be time well spent to visit some of the greenhouses growing these plants. The park board greenhouses in both Minneapolis and St. Paul have fine exhibitions.

It is safer to cover raspberries and blackberries than to leave them unprotected in Minnesota. Good crops are often raised without covering, but there is danger of the tops dying to the ground or killing out entirely.

Is your place distinctive? Has it certain characters that mark it from other homes on the road? How often in giving directions for finding a place along the road we locate a farm by certain objects about the place, such as an evergreen hedge, a row of hard maple, an unpainted house, a dilapidated barn, or a well-kept yard and well-painted house.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minnesota.

PREPARING FOR GRASS

Fall Seeding to Rye or Wheat Helps the Seed Bed

If you have a field in cultivation this season which you expect to seed to grass in the spring, and if you are not particular as to the kind of grain, you can save labor by disking thoroughly and seeding to rye or winter wheat this fall. Spring sown grains will do, but it is the observation at the Northeast Experiment Station at Duluth that the heavier clay soils of the region become so firmly packed through the winter that the seed bed is not in so good condition for the spring-sown grains.

NEW LAND BANK LAW BRIEFLY SUMMARIZED

For the benefit of Minnesota's farmers the University Farm Press News is printing the following summary of the new federal land bank law, which has been prepared by E. Dana Durand of the department of agriculture of the University of Minnesota. It has been made as brief as possible. Possibly your farmer readers will be interested.

Very sincerely yours,
University Farm Press News.

There are to be twelve federal land banks. One will probably be located in Minnesota.

The original capital stock of these banks, out of which they will make their first loans to farmers will be subscribed by the federal government. The stock of each will be \$750,000.

Afterward, the principal source of money for loans to farmers will be from the sale of debenture bonds. Each bank will be allowed to issue such bonds to the extent of twenty times its capital, but the bonds will have to be covered

ELECTRIC PLANTS MANUFACTURE ICE

A few days ago the mayor of a city of about twenty-five hundred people wrote to the Municipal Reference Bureau of the University of Minnesota, inquiring as to the feasibility of a municipal ice and cold storage plant in connection with the municipal electric light plant.

The city has already completed a central station heating plant which will utilize the exhaust steam from the engines during the colder months. This is a practice which is becoming more and more common, and saves and utilizes a great deal of heat which would otherwise go to waste.

In the summer a like saving could be effected by using the steam for the manufacture of ice. There are several such plants in the country already, and they are rapidly increasing. Generally a city does not attempt to supply the entire market, but the amount it does sell acts as a very beneficial regulator of the private prices.

FARM LOANS WILL BE SUBJECT OF STUDY AT FARMERS' AND HOME-MAKERS' WEEK

The opportunity to make a careful study of farm loans will be one of the novel features of Farmers' and Home-Makers' Week at University Farm, St. Paul, January 1-6, 1917. This opportunity is to be afforded especially to representatives of farmers' clubs who will attend the annual meeting of the Minnesota Federation of Farmers' Clubs, which will be called at University Farm during Farmers' and Home-Makers' Week. The program for the discussion of the subject of farm loans is now being prepared.

Soil Survey to be Held

The subject of soils is another matter of first importance that will receive attention at the same conference. C. G. Hopkins, the leading authority on the subject in the United States will be the principal speaker. Mr. Hopkins is a speaker of great power and compelling interest.

As Minnesota is hearing more or less of the matter of a complete soil survey of the state, no farmer interested in the subject of a soil survey, either of the state or of his farm, should miss the opportunity to hear Mr. Hopkins.

Great Program for Women

The Division of Home Economics of the University is making special preparation for a splendid program for women. The plan is to offer a program that will be of extraordinary interest, not only to the women of the country, but to the women of the city as well. It will cover practically every phase of home life.

Livestock Sales

Another innovation will be a series of livestock sales. Some of these will be at University Farm, others at South St. Paul stock yards. They are sure to excite interest

HOGS THRIVE AT UNIVERSITY FARM

Results of experimental work in pasturing hogs at the Minnesota Experiment station this summer show that the hogs there do not starve. R. C. Ashby, animal husbandman in charge of swine, fed a large number of hogs different rations of grain along with their pasture, with very satisfactory gains. One group of hogs, self-fed on shelled corn and alfalfa pasture, at a cost of \$6.20 for each 100 pounds of gain, returned a gross profit of \$168.09—not including labor, risk, interest or other overhead—per acre of pasture.

The farmer will be interested in knowing what the results were. The rations were as follows:

1. Three per cent of live weight in shelled corn, with alfalfa pasture.
2. Four per cent of live weight in shelled corn with alfalfa pasture.
3. Shelled corn, self-fed, with alfalfa pasture.
4. Four per cent of live weight in shelled corn with two pounds of butter-

AMENDMENTS NEED VERY CLOSE STUDY

Two amendments to the state constitution are to be voted on at the November election.

Amendment No. 1 calls for the setting apart of \$250,000 from money derived from the sale of school and swamp lands to be used in constructing roads, ditches, and fire breaks, through, in and around school and swamp lands and for making clearings on such lands, the money to be replaced by the increased returns from the sale of the land.

The reasons given in favor of the amendment are as follows:

It will quicken the settling up of northern areas of the state.

It will make it easier for settlers who buy school and swamp lands to get a start.

It will lighten the drain, for roads and other expenses, upon settlers already in the territory.

It will add large acreage to the lists of taxable property and swell the school funds.

It will increase the prosperity of the state and will cost neither the state nor the public one cent.

The other amendment provides for the lending of state school funds on improved agricultural lands in Minnesota as security. The reason given for this is that the value of the agricultural lands of Minnesota is now so thoroughly established that there is no longer reason why mortgages on such land should not be taken by the state as security for loans.

These amendments are worthy of careful study.

WILL AID DEFENSE OF PUBLIC HEALTH

A field secretary to assist various local public health organizations has been secured by Dr. I. J. Murphy, executive secretary of the Minnesota Public Health association.

L. W. Feezer, recently with the New York state health department has been chosen to fill this position. Mr. Feezer is a trained public health worker with an exceptional scientific foundation, and a very thorough practical training. For several years Mr. Feezer was assistant to the secretary of the American Public Health association. Later he was with the Massachusetts state department of health for a year.

Mr. Feezer's services will be at the disposal of both private and public health organizations. During the next few weeks he will devote considerable time to organizing committees in various communities to conduct tuberculosis week campaigns. Following that he will devote several months to developing special fresh-air rooms in the schools of smaller cities and villages of this state.

GREEN MANURING GOOD IN NORTH

On some of the newer northern farms the soil is rather short in organic matter. With small clearings it is necessary to work the land intensively, and with small herds the quantity of manure available is insufficient to maintain fertility. Consequently animal manure must be supplemented by something else.

To meet this situation the Northeast Experiment Station at Duluth uses the following plan in the orchard set out in 1915. A crop of rutabagas is grown among the trees. After this is harvested the ground is disked, and a crop of rye is sown. This is turned under the following June, and the land is replanted to a root crop.

This is what is called green-manuring. If it is done with care to prevent the possible souring of the soil after several years, excellent results ensue.—M. J. Thompson, superintendent, Northeast Experiment Station.

VARIOUS CAUSES OF BLOODY MILK

Bloody milk is more objectionable, perhaps, as a matter of appearance than as a menace to health. Hemorrhages may occur within the udder as a direct result of a bruise caused by rapid motion, by a bad position while the cow is lying down, by the tread of a cow in an adjoining stall, or because of the breaking of a tiny blood vessel or the escape of red corpuscles through thin vessel walls. Heavy feeding may also produce bloody milk.

The remedy is careful milking and light feeding with laxative foods and repeated small doses of mild physic. When the trouble occurs with cows giving a heavy flow of milk and under heavy feed, improvement follows a marked reduction of the ration. A change of stall may give good results, if it allows a cow to obtain a better position and avoid uneven pressure on the udder while lying down. Cows with long heavy udders should be driven slowly and should not be driven over high hills.

Cleveland operates a cold storage plant, where small family or neighborhood consignments are stored at reasonable charges. A crate of thirty dozen eggs is stored from April to January for forty cents, for example. A hundred pounds of butter are kept from June to February for fifteen cents, a barrel of apples may be kept a season for forty cents.

If it should be proved by experience that cities having steam electric plants can provide such service for the citizens of the town and for the neighboring farmers at a reasonable cost it will open a whole new field for practical community service.

Rations fed	Feed cost of 100 pounds gain	Profit of pasture per pig	Profit per pig
1.....	\$5.922	\$105.85	\$3.599
2.....	5.885	157.44	4.920
3.....	6.203	168.09	4.387
4.....	5.981	144.21
5.....	6.010	99.80	3.164
6.....	6.136	81.79	2.590
7.....	5.780	77.164	2.443
8.....	5.177	138.84	4.438
9.....	5.534	109.60	3.425
10.....	5.638	165.52

POTATO GROWERS TO MEET JAN. 3

The second annual meeting of the Minnesota Potato-Growers' Association will be held on Wednesday, January 3, 1917, at University Farm, during the Farmers' and Home-Makers' Week. A potato exhibit will be a feature of the meeting this year. Every potato grower in the state, whether he is a member of the association or not, is being urged to enter an exhibit and attend the meeting.

Last year the Wisconsin Potato Growers' Association staged the largest potato show in the United States. It is the plan of those behind the proposed exhibit at University Farm to make it one of the best in the history of the Middle West. Minnesota can produce potatoes equal to those grown in Wisconsin.

A program of interesting and important topics to every potato grower will be discussed. Particulars can be obtained by writing to A. G. Tolaas, University Farm, St. Paul.

With the splendid grasses of northeastern Minnesota and the great demand for grass seeds, the northeastern farmer is urged to prepare for a crop of the kind next year. It may be either timothy or clover, or the two mixed. The time to make preparation is now.

Put some sand over the boxes or bins in which root crops are stored. It will prevent their drying out.

Do not put too much cover on the perennials. Enough to keep them dry or to hold the snow is all that is needed.

among the large numbers of live stock breeders who will be in attendance.

The Minnesota Livestock Breeders' Association will hold its annual meeting at the Farm during Farmers' and Home-Makers' Week, likewise the associations of the breeders of various kinds of cattle, including the breeders of Short Horns, Aberdeen Angus, Herefords, Holsteins, Guernseys, Jerseys and Ayrshires, horses, sheep, and swine. Other conferences to be held during Farmers' and Home-Makers' Week will be those of the vegetable-growers, potato-growers, fruit-growers, the Crop Improvement Association and creamery managers.

The week will not only give an opportunity for study, but for recreation and entertainment as well. Farmers should make their plans to come and bring their wives. Nearly 2,000 will be present.

The results of feeding these various rations including cost, profit per acre, and profit per pig, appear in the following table:

Rations fed	Feed cost of 100 pounds gain	Profit of pasture per pig	Profit per pig
1.....	\$5.922	\$105.85	\$3.599
2.....	5.885	157.44	4.920
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5.....	6.010	99.80	3.164
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8.....	5.177	138.84	4.438
9.....	5.534	109.60	3.425
10.....	5.638	165.52

The profits shown by ration 7 and 9 were reduced because one pig in each lot proved to be unthrifty and had to be removed.