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ORCHARD AND GARDEN

July 15-22

Head lettuce is best if put on ice several hours before it is to be used. Gasoline tractors hitched to road machinery do fine work cheaply and quickly.

Basswood trees, aside from being fine shade trees, furnish quantities of material of which to make honey. Plant more of them.

Roses have been better this season than for many years. Some varieties will do well in Minnesota if protected well over winter.

Never leave a garden hoe or rake on the ground with the sharp side up. Some one might step on it.

Sow the seed of early ripening trees, such as elm and maple, as soon as the seeds are ripe. Stratify late ripening seeds in sand or sawdust so that they may not dry out.

Garden peas, beans, and sweet corn freshly picked and put over the fire are much more palatable than those that are taken from the ordinary market. Ask any gardener.

It is cheaper to pay a good price for a good plant than to buy a bargain plant and have to buy another to take its place. Buy plants from regular plant dealers, give them good care and you will enjoy flowers and fruit.

The flower show of the Minnesota State Horticultural society at University Farm, June 20, was the best summer show made by the society. Hundreds of fine peonies were shown and many kinds of perennials.

The Japanese lilac has been especially fine this year. This tree-like lilac, blooming about the middle of June, is suitable either as a small tree specimen or for large shrubberies. It is of no value as a cut flower because of its strong odor.

Is your school ground grown up to weeds and brush? Why not mow it and make it clean and attractive?—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minnesota.

ORCHARD AND GARDEN

July 22-29

Watch the chrysanthemums for insect pests.

Keep the cucumbers picked if you want to keep the vine bearing.

Buds of many plants drop on account of too much rain and heat.

Grass paths are fine to use and see but expensive to keep up.

Don't stop cultivating the garden because it is hot work. Do more of it for the garden's sake.

Sow radish, lettuce, peas, and beans for late fall use. They are of fine quality in the fall.

Plow up the old strawberry bed and give the new one thorough cultivation. This will help keep the weevil in check.

Send for bulb catalogs and get that order ready for planting if you would have early flowers next spring.

If dahlias are stunted by hot weather in July, it is often well to cut them back severely and let the new growth carry full flowers.

Weigelia Eva Rathke, a red weigelia, was especially good the middle of June this year. This variety seems to be a little hardier than the rose-flowered variety.

Get some material such as vegetables, fruits, or flowers ready to exhibit at the state and county fair. You will help the show and learn something yourself.

There are few more satisfactory flowers to grow in the garden or border than the larkspur. They are to be found in colors ranging from light blue to dark purple.

Get the weeds now before they go to seed.

The high crowned, well drained road has been passable this spring, while the poorly made low road has been impassable, causing a loss of thousands of dollars to some communities.—LeRoy Cady, associate horticulturist, University Farm, St. Paul, Minnesota.

THIS REFRIGERATOR REQUIRES NO ICE

A refrigerator that will keep food products at a temperature of 55 degrees Fahrenheit can be made easily at home. It consists of an open framework of shelving around which is tacked cotton flannel, burlap, or some similar material, which is kept moist. The evaporation of the moisture holds the temperature down. A series of wicks, or strips of cloth, extending from a pan of water on top of the refrigerator to the covering of the refrigerator, provide the moisture. Such a refrigerator should be kept in the shade where there is a good current of air.

M. E. PREACHERS AT UNIVERSITY FARM

Methodist Episcopal preachers who are attending the summer school for rural pastors at Hamline university, St. Paul, July 7 to 26, have arranged to visit University Farm several times during their stay in the twin cities. They are also being addressed daily at Hamline university by members of the University Farm staff.

The object of this summer school for rural pastors is to give those in attendance an opportunity to avail themselves of the information and experience of others closely interested in the study of rural life problems. The general subjects studied daily are rural sociology, rural church methods, evangelism and religious education, agriculture and home economics, and homiletics. Lectures are given each evening. During the visits to University Farm the men will witness demonstrations by specialists in various lines.

NOSE GUARDS AID HORSES IN FLY WAR

The horse with a nose guard is out to beat one of the worst of the three American species of the bot fly. This fly lays its eggs on the short hairs of the lips just at the moisture line. From the lips they pass into the stomach and promptly make trouble.

The United States department of agriculture, according to advices received at University Farm, recommends two types of nose guards—or lip guards. One is a wide piece of leather attached to the bridle or halter and covering the lips; the other is a box arrangement that permits grazing. Either is fairly effective.

Carbon bisulphide is administered to horses which have been infected through the laying of the eggs of the so-called nose fly, but the use of this drug is very dangerous and should be given only by a veterinarian.

Fuller information about nose guards may be obtained by addressing United States Department of Agriculture, Washington, D. C.

POTATO WART IS A DANGEROUS DISEASE

Potato wart, against which the Minnesota experiment station is sending out warnings to farmers, is a menace to the potato industry in Minnesota. In some places in England, Ireland, and other parts of Europe, the losses caused by it are so heavy as to make potato growing unprofitable.

The parasite which causes the wart is spread most frequently by using diseased potatoes for seed. Soil once infested continues to be contaminated for many years.

The plant pathologists of the experiment station, therefore, are asking farmers to keep watch for warty potatoes and to report all suspicious cases either to the county agent or to the experiment station.

SECRETS OF ELEVATOR REPORTS CLEARED UP

As a means toward a clearer understanding of the problems of handling farmers' elevators, the agricultural extension division of the University of Minnesota has issued special bulletin No. 42, telling how to make and analyze an annual report for a country grain elevator. The bulletin is the work of Frank Robotka, of the division of agricultural economics and field agent in market business practice of the United States department of agriculture. The bulletin contains such a report as an elevator should make and explains the significance of the various parts. Copies of the bulletin may be had by addressing office of publications, University Farm, St. Paul.

BULL ASSOCIATIONS AID THE DAIRYMAN

The United States department of agriculture is seeking to encourage the organization of co-operative bull associations among farmers for the joint ownership and exchange of pure bred sires. Such organizations are designed to build up herds, to help its members in marketing dairy stock and dairy products, to fight contagious diseases of cattle intelligently, and in other ways to assist the dairy industry.

The department has outlined plans for organization in farmers' bulletin No. 993, copies of which may be had by addressing the Department of Agriculture, Washington, D. C. Assistance in forming such organizations may be had also by addressing W. A. McKerron, University Farm, St. Paul.

SILO ALMOST AS USEFUL AS BARN

The silo is rapidly becoming recognized as a necessary part of the Minnesota farmer's equipment. A Minnesota farm without a silo, at least in the corn area, is no longer up to date. The rapid adoption of the silo is accounted for by recognition of its advantages. These advantages are summarized by A. D. Wilson, extension director of the Minnesota college of agriculture, as follows:

If corn is cut at the proper stage and put into a good silo, the whole corn plant is eaten.

Silage is more convenient to feed than is any other rough feed commonly used on the farm.

Silage is both palatable and succulent.

The addition of a succulent feed to a ration increases the digestibility of the dry feed eaten.

With a silo it is possible to save corn that might otherwise, owing to immaturity, be largely wasted.

The silo not only provides excellent feed for winter time but furnishes a means of keeping more for summer use feed of high quality.

The silo furnishes almost a sure supply of feed, as there is no surer crop in Minnesota than corn.

BLACK FLIES BAD; HOW TO FIGHT THEM

The black-flies, or, more technically, Simulium flies, little black blood-sucking flies about a tenth of an inch, which are very persistent in their attacks on men and animals, are appearing in great numbers in various parts of Minnesota. Their bite is painful and its after effect is much more persistent than that of the mosquito.

The adults are a pest in our northern woods any summer, but are rarely abundant enough to constitute a serious annoyance elsewhere in the state. In the region of the lower Mississippi there have been plagues of these flies with enormous loss of life among mules, cattle, sheep, hogs, and poultry. There are even well authenticated reports of deaths of humans.

The most efficient method of warding off their attacks is by the use of smudges. Any materials such as old leather, rags, or rotten wood, which will burn with a dense pungent smoke, is useful for this purpose. A good smudge may be made by punching several holes in a tin bucket near the bottom, and building a fire of punk in it. Moss or green leaves on a camp fire add to its virtue. Tents or rooms can be freed of the flies by burning in them a few spoonfuls of pyrethrum powder.

Repellents, such as are of use against mosquitoes afford temporary protection when applied to the skin. Of these may be mentioned a mixture of equal parts of oil of pennyroyal and kerosene; plain oil of citronella, or better yet—

- 2 parts oil of citronella,
- 2 parts spirits of camphor,
- 1 part oil of cedar.

Still another good mixture which has the advantage of being more lasting in its effects is the following:

- 1 part oil of peppermint,
- 2 parts oil of cassia,
- 2 parts vaseline.

Relief from the bites may be obtained by bathing the affected parts with a strong solution of baking soda, or with a 3 per cent solution of carbolic acid in water, or by applying mentholatum or carbolated vaseline.

Animals may be partially protected by applications of grease or mixtures of axle grease and kerosene. When the black flies are very abundant it is often necessary to protect animals by building extensive smudges in the fields and before the doors of barns and stables. Attaching smudge cans to working animals is sometimes necessary.

SPECIALIST ADVISES RAT-PROOF ELEVATORS

Rats in the United States cause an annual loss amounting to millions of dollars. Among food products that suffer, grain in storage is perhaps the most important. Buildings under process of construction and intended to hold grain should be made rat- and mouse-proof; and elevators and other structures already built, should be reinforced against the pests, says F. L. Washburn, economic zoologist at University Farm.

A bulletin on the extermination of rats and mice, written by Mr. Washburn, may be had without charge on application to office of publications, University Farm. "Uses of Concrete on the Farm," bulletin 461, issued by the United States department of agriculture, gives details for the use of concrete in preventing losses by rats and mice. This bulletin is also for free distribution. Application for it should be made to the division of publications, United States department of agriculture, Washington, D. C.

EARLY FALL PLOWING PUTS MONEY IN BANK

Early fall plowing is a bank balance booster because it returns the best crops. It does this for several reasons, says Andrew Boss, vice director of the Minnesota experiment station, University Farm, St. Paul.

It gives a longer period for the decomposition of the stubble and other particles of vegetable matter turned under in plowing.

It opens the soil to the fall rains. It helps to dispose of weeds which interfere with growth of crops.

It lessens the amount of spring work and thereby allows the prompt sowing of the crops in the spring.

It enables one to avoid crowding at any time, and, therefore, is beneficial both to men and horses.

ARMY WORMS ON MARCH NORTHWARD

While reports received at University Farm indicate that army worms are on their way northward from Texas, A. G. Ruggles, state entomologist, believes there is no special danger to the crops of Minnesota. However, since reports from the United States department of agriculture indicate that the northern states may be invaded within the next three or four weeks, Mr. Ruggles approves the use of the poison bran mash used for cut-worm control in case the army worms do appear here. This bait contains the following:

Wheat bran, 25 pounds; Paris green or white arsenic, 1 pound; lemon or oranges, 6 finely chopped fruits; low-grade molasses, such as refuse from sugar factories, or cattle molasses, known as black strap, 2 quarts; water as needed, usually from two to three gallons.

HOW TO HELP CUT DOWN BIG FIRE LOSS

America's fire loss in 1918 was more than \$300,000,000. The loss per year in America is said to be in excess of that in all the rest of the civilized world. The fire loss in Minnesota in 1917 was \$3.40 per capita.

To avoid fires—Do not allow rubbish of any kind to accumulate on any part of your premises.

Keep all dust cleaned out of stores, basement, attics, factories, and elevators.

If it is necessary to have oily rags or waste on the premises, or oiled mops, keep them in metal cans, and keep the cans away from easily inflammable material.

Do not allow smoking near barns or garages or elsewhere where there is material that will burn readily.

Never leave an outdoor fire unattended.

Where electricity is used, have the wiring inspected and approved by properly qualified electricians.

Never use a paper shade on an electric light bulb.

Use only safety matches.

Keep your gasoline in an underground tank.

Never use gasoline or benzine in cleaning clothing near a stove or open fire.

Never look for a gas leak with an open flame.

Never use a lighted match to look for things in a dark closet.

Never let children play with matches.

LICE ADD TO COST OF PORK PRODUCTION

According to tests made by the United States Department of Agriculture at Beltsville, Md., reports of which have been received at University Farm, lice add a cent a pound to the cost of pork production. Two lots of hogs of 10 each as nearly equal as to the quality of the animals as possible were used in the tests. The two lots were managed and fed in the same way except that one lot was treated for the prevention of lice. In the other the lice were allowed to have their way. At the end of the fattening period it was found that the hogs infested with lice cost a cent a pound more to fatten than those which were not.

BARLEY BETTER FOR BETTER HARVESTING

Because barley is easily damaged by the weather, Andrew Boss, of the Minnesota experiment station, says barley should be harvested with special care:

It should be cut just as it reaches the golden yellow stage.

Immediately upon cutting it should be shocked in small shocks.

Shocks should be braced, and capped with at least one well broken cap.

Barley should stand in the shocks long enough to dry thoroughly.

As soon as dry it should be threshed or stacked.

EARLY SOWN WINTER GRAINS YIELD BEST

Winter wheat and winter rye sown in Minnesota between September 1 and September 20 make a more vigorous growth in the fall and, therefore, are better able to withstand winter weather. They also ripen somewhat earlier and usually give a heavier yield than the same varieties sown later. "This, therefore, is the time to plan the place for seeding the winter grains," says A. C. Army of the Minnesota experiment station. "Plow the land as soon as the crop growing on it this year is removed and prepare the ground carefully. Both winter wheat and rye may be drilled in corn with good success. A special one-horse drill is necessary for this, however."

TURKEY BEST WINTER WHEAT TO BE HAD YET

Turkey is the best variety of winter wheat of which large amounts of seed are available for sowing in Minnesota this fall, says A. C. Army, of the Minnesota experiment station. It is a bearded variety with white chaff. A new variety has been developed at University Farm which has been named Minhardi (Minn. No. 1505). This is a beardless, white chaffed winter wheat, which has proved much harder than the Turkey and a better yielder. Crimean, Accession No. 845, an unselected winter wheat, which has been grown at University Farm for several years has proved very hardy and a good yielder of grain of high quality. Only a very limited amount of the seed of these two varieties, however, will be available this fall.

NEEDLESS LOSS IN HARVESTING GRAIN

From 1 to 10 per cent is the estimated loss in harvesting, shocking, stacking and threshing wheat. At least two-thirds of this can probably be prevented, says L. B. Bassett, University Farm. Some facts, a knowledge of which will reduce the loss in grain harvesting, are given by Mr. Bassett:

Ripe straw is much more easily handled with the binder and will be in condition to thresh or stack in a much shorter time.

Marquis wheat is exceedingly hard to thresh at best. If cut on the green side it is almost impossible to do a good job of threshing.

Unless the straw is needed, cut the grain as high as possible, being careful to get enough straw so as to make a well shaped bundle.

Bundles of moderate size and good form are more easily shocked, stacked, and threshed than either large bundles or very small bundles. Remember the smaller the bundle the more twine per acre is used, as there is a certain amount of waste with every band made.

Do not trample down the corners of the field. Use care in driving the binder so as not to make a wider swath than the machine can cut. Oftentimes much grain is wasted by careless operation of the binder.

If parts of the field are lodged it may be necessary to cut some of the grain one way. This is advisable especially when grain is high-priced. Often a set of pick-up guards can be attached to the binder that will more than save their cost every day the machine is operated. It is a good plan to have a set of these guards on hand before the harvest starts as there is likely to be much lodged grain this season.

HOGS DIE OF HEAT; HOW TO PREVENT IT

The death in May of 651 hogs weighing about 157,000 pounds, with a money loss of \$18,360, reported by the government bureau of markets at South St. Paul, emphasizes the need of extreme care in shipping hogs in hot weather.

A large buyer of hogs at South St. Paul gives these rules for such shipments, and they are approved by Dr. C. P. Fitch, chief of the veterinary division at University Farm:

Clean cars thoroughly and sand before loading.

Load lighter than usual. Arrange with railroad to have the hogs sprayed as often as possible in transit.

Hogs shipped to the market, possibly to be reshipped to farms, need this extra care, says Dr. Fitch, because if care is not taken the resistance of the hogs to disease is reduced. This lowered resistance gives an opportunity for germs to multiply in the bodies of the hogs, and sometimes severe losses follow. Furthermore, the value of the double treatment against hog cholera is diminished on account of the lowered resistance to disease.