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ORCHARD AND GARDEN NOTES.

Sow the hardier vegetable seeds early.

Sweet peas should be sown as soon as the land can be prepared.

Orchard trees may be top-worked now if dormant scions are available.

Prune any shrubbery that has become scraggly or is growing too thick.

Rose bushes should be pruned very severely if the best flowers are to be obtained.

Plant plenty of radishes, lettuce, peas, and beets. Young beets make excellent greens.

The latter part of April is usually a good time to set out strawberries and other small fruits.

Plan the garden for artistic effect as well as ease of cultivation. Group plants of like growing habits together.

Tulips should soon begin to break through the ground. Remove the covering gradually and before the tops have a chance to become white.

Do not set strawberries too deep. The roots should be well spread out and the plant set no deeper than it originally grew in the field.

If peonies are to be planted this spring the work must be done immediately, as it is difficult to move them successfully after growth starts.

Prune out any dead wood of fruit trees or bushes and burn it. Prune apple and plum trees enough to give them proper shape and for ease in spraying and cultivating.

Try starting a few cucumbers, melons and corn plants in the hothed or cold frame. Allow about four weeks from planting of seed until they are ready to set out in the field.—LeRoy Cady, Horticulturist, University Farm, St. Paul.

SOW STRONG SEED.

Low Germination Power of Alfalfa, Corn, Red Clover, Alsike Clover, Millet, and Orchard Grass Are Shown by Recent Tests at University Farm.

W. L. Oswald, in charge of the University Farm Seed Laboratory at St. Paul, tells us after making hundreds of tests, that farmers should watch carefully the seed planted this season. Alfalfa seed tested shows a great variation in germinating power. It averages 75 per cent, while the seed sown should not average below 85 or 90 per cent. One hundred twelve samples of seed corn showed an average germinating power of 89 per cent, or just a little below the 90 to 95 per cent usually required of good seed.

Ninety-nine samples of timothy tested averaged 88 per cent, but two or three samples of old seed failed to germinate at all. Among the seeds that germinated as well as can reasonably be required for planting, were barley, sweet corn, mammoth red clover, white clover, alsike clover, flax, rye and wheat.

Red top and orchard grass both showed very low tests, and broom grass was also decidedly below standard.

Every farmer should either test for himself or send samples to the Seed Laboratory, University Farm, St. Paul, to be tested.—J. O. Rankin, University Farm, St. Paul.

NEW TUBERCULOSIS BULLETIN.

University Farm Veterinarian Sends Out Useful Information.

Sixty thousand copies of Extension Bulletin 32 on Tuberculosis of Cattle are just been printed for general distribution. A portion of this bulletin is a reprint, with slight rearrangement, of Farmers' Bulletin 473 of the United States Department of Agriculture, prepared by the International Commission on the Control of Bovine Tuberculosis. This was a plain, non-technical statement of the nature and symptoms of tuberculosis with a brief planation of the tuberculin test. It has been especially adapted to Minnesota conditions by the addition of a statement of the law and regulation governing such matters in this State. Dr. M. H. Reynolds, University Farm, St. Paul, was secretary of the commission which prepared the original bulletin. He has added some interesting statements showing the relation of the tuberculous cow to human health.

THE JUNIOR SHORT COURSE.

University Farm Gives 331 Boys and Girls a Week of Agricultural Instruction.

The Junior Short Course for farm boys and girls, recently held at University Farm, St. Paul, was the third event of its kind held under the auspices of the Extension Division. In point of number enrolled and interest manifested by the boys and girls, it was decidedly the best ever held. The enrollment was 331, as compared with 308 in 1912, and 108 in 1911.

The students enrolled this year were older and more mature than in former years, and thus able to get more out of the week's work. The instructors are unanimous in their praise of the interest manifested by the students in all classes.

Classes for the girls were organized in sewing, cooking, poultry, and gardening. The boys studied dairy cattle, beef cattle, horses, poultry, corn, potatoes, and gardening. The classes in dairy cattle, beef cattle, horses, poultry, and corn were very large, this showing the tendency along the lines of better farming in the State at the present time. The work concluded with judging contests in the dairy, beef, poultry, sewing, and cooking classes. A big spelling contest was engaged in by the students on Thursday evening. The boys and girls were divided into junior and senior classes, and the contest ended with a free-for-all bout between the winners in the two classes. The youngsters spelled well, and demonstrated that spelling is not being neglected in our schools.

The afternoons were devoted to excursions to points of interest and trips were taken to the State Capitol, the Russell-Miller flour mill, the T. B. Walker Art Gallery, the stockyards at South St. Paul, Minnehaha Falls, the Soldiers' Home, and the new State Prison at Stillwater. These trips were thoroughly enjoyed by the students and gave them an insight into some of the big things of the Twin Cities. The boys spoke especially of the value of the trip to the stock yards.

The Junior Short Course has become a permanent feature of the Extension Division work and has come to stay. It is valuable both to the school and to the boys and girls who take the course. It gives them an opportunity to see the two great cities of our State with their many objects of interest, and also brings them in touch with the work done at the School of Agriculture. Many of the students expressed their intention of returning at no distant day to take a full course in the school. The institution itself enjoyed the influx of young life for the week, and will extend a hearty welcome next year. Come again, young people!—George F. Howard, Extension Division, University Farm, St. Paul.

WARNING TO POTATO GROWERS.

Potato diseases were especially serious last year and the attention of every potato grower in the state is earnestly called to this question. The Minnesota potato crop is large and especially valuable on account of the sale of seed potatoes. The diseases, particularly those of the soil, are commencing to gain a foothold in this state—as is bound to happen when potatoes are raised as extensively as they are here.

Now is the time to combat these diseases, before the state gets a bad reputation for diseased potatoes. Do not wait until the diseases are so bad that Minnesota seed potatoes are always suspected of disease. Minnesota farmers cannot afford to delay a single season. Every effort must be made to retain the reputation which Minnesota potatoes have enjoyed. It is easier to keep a good reputation than to get rid of a bad one, as some of the old potato-growing states are learning.

Let every farmer co-operate and let every potato grower see to it that his own fields do not become infested with the diseases which are so hard to get rid of and which gradually increase until the land is practically worthless for potatoes unless vigorous steps are taken to get rid of the diseases.

UNLESS MINNESOTA FARMERS HEED THE PRECAUTIONS AND CO-OPERATE TO SEE THAT THEIR NEIGHBORS DO LIKEWISE, THE WHOLE STATE WILL SUFFER, THE OLD DISEASES WILL INCREASE AND EVEN MORE DANGEROUS ONES, SUCH AS POTATO WART, ARE LIKELY TO GAIN A FOOTHOLD.—Dr. E. M. Freeman, Plant Pathologist, University Farm, St. Paul.

MINNESOTA WEED BULLETIN.

How to Recognize and Destroy the Weeds, and to Detect the Seed in Grain.

Do you know the common Minnesota weeds as they come through the ground, and at different stages of their growth? Are you familiar with the best methods of destroying them or preventing their spread? Can you recognize their seed among the oats, wheat, rye or barley you want to sow? If not, write today to University Farm for a copy of Bulletin 129 of the Agricultural Experiment Station. By means of drawings and descriptions, W. L. Oswald, Assistant Botanist, enables you to recognize the plants and seed of twenty-four of Minnesota's common weeds. When you have identified the pest which is causing you so much trouble, Professor Andrew Boss' clear directions in this bulletin will enable you to apply the most practical and successful methods of destroying your plant enemy.

USEFUL KNOTS.

New Bulletin Teaches Useful Knots, Splices, and Other Rope Work.

The Office of Publications, University Farm, St. Paul, has just issued 40,000 copies of Extension Bulletin 33, entitled Some Knots and Splices. If you did not secure one, there are 20,000 left in the reserve supply, and a postal will bring you a copy.

This bulletin presents information which will be found useful at all seasons of the year. For spring use, the author tells us that a rope halter renders halter-pulling uncomfortable, when the colt is first tied in the stable. A little later in the year it will be very convenient to know just how to splice the broken hay rope, while numerous other knots and the general information with regard to rope will be very convenient at all seasons.

This information was prepared, and illustrated with more than eighty photographs, by J. M. Drew, formerly in charge of instruction in this line at University Farm.

CORROSIVE SUBLIMATE FOR POTATO SCAB.

Bichloride of mercury, better known as corrosive sublimate, may be used to good advantage in the treatment of potatoes for scab. Dip the potatoes in a solution of four ounces of corrosive sublimate to thirty gallons of water. They should remain in the solution an hour and a half. Fresh mixture need not be added except as it may be necessary to keep the potatoes covered.

Potatoes may be dipped in this solution in sacks if desired. If the bichloride of mercury is added directly to the cold water it may take considerable time before all of it is dissolved. To overcome this difficulty, it is usually desirable to dissolve it first in a gallon or two of hot water in a wooden pail or crockery jar before putting it into the barrel. It must not be dissolved in a metal container because it corrodes the metal and ruins the vessel.

To avoid the trouble of weighing out small quantities of the poison at home, ask the druggist to put it up in two-ounce or four-ounce packages. Bichloride of mercury is a very deadly poison. It must be kept where children will not get it. The dipping solution must be kept covered so that animals will not drink it and potatoes which have been dipped in this solution should not be kept where the stock or poultry can eat them.

Bichloride of mercury is a stronger poison than formaldehyde and surer to kill the scab. It is so much more dangerous to have around, however, that most authorities prefer to recommend formaldehyde for ordinary use.—A. R. Kohler, Assistant Horticulturist, University Farm, St. Paul.

FLAX IS NOT "HARD ON THE LAND."

It has long been thought that the growing of flax was "hard on the land." This idea has no foundation in fact; nor is there any reason for adhering to it. The idea has gained acceptance because of the two reasons for decreased production. One of these is flax-wilt, a fungus disease, which kills the young plants and saps the vigor of the older ones. The other is the meager root system of the flax, which demands a goodly amount of available plant food. For these reasons, flax will do best upon a soil in which there is a large percentage of organic matter; a soil well supplied with moisture and free from flax-wilt disease. These conditions are under the control of the farmer, as is pointed out in Extension Bulletin No. 27.—C. P. Bull, Agronomy Division, University Farm, St. Paul, Minn.

A BILLION-DOLLAR LOSS.

Dean Woods of the Minnesota University College of Agriculture, Suggests Method of Reducing the American Farmer's Gigantic Annual Loss.

"The annual loss from plant diseases and insect pests in the United States is estimated at over a billion dollars a year. They destroy approximately 20 per cent of the annual crop product. The life history of the various grain smuts has been worked out and simple methods of controlling them discovered. Various root diseases of cereals probably have much to do in reducing yields and a large field is open here for investigation. In the case of flax wilt, a resistant strain of flax has been developed, and the same is true of cotton, cowpea, and watermelon wilt.

"The citrus growers of California are probably among the most expert marketers in the world, but until recently they were losing from 15 to 25 per cent of their fruit by decay in transit. Investigations made by the Department of Agriculture demonstrated that the trouble was due to slight mechanical injuries to the fruit in picking and packing. Moulds entered through these injuries and caused the rot. More careful picking and packing reduced the injury the first year to an average of two and one-half per cent. Similar studies showed how losses in other perishable products could be avoided. The field is a large one and the work has barely begun."

PARALYSIS IN PIGS.

Early Attention Will Save Serious Losses.

Weakness of the hind quarters is a condition frequently seen in growing pigs. It is a form of paralysis and the exact cause cannot be stated for all cases.

One of the most plausible explanations of paralysis in young pigs is improper feeding. A deficiency of mineral matter, especially lime salts in the diet, is believed to be responsible for the majority of cases. The shortage of lime salts results in the improper development of the bones of the growing pig, and the condition known as "rickets."

On the other hand, the diet may be all right, well balanced and wholesome, and yet the pigs may not be able to assimilate their feed and get the proper nourishment from it. In this case, the fault lies with the digestive organs. Pigs raised in damp quarters may develop weakness of the hind parts, often said to be of a rheumatic nature. In this case the remedy is self-apparent.

So it is evident that paralysis, rickets, malnutrition and rheumatism are similar conditions as far as symptoms are concerned. The same general line of treatment is indicated in all these conditions. Good, wholesome feed, a well-balanced ration, plenty of fresh air and sunshine, with dry, clean, roomy, well-drained and ventilated pens, are the first requisites.

Then see that the pigs have access to a supply of mineral matter in the form of charcoal, bone meal, crushed limestone, wood ashes, and salt. For medical treatment, tonics are indicated, nux vomica being generally accepted as the best. The bowels should be kept moving freely by laxatives, as constipation is generally present. If treatment is started early, recovery may be expected; but quite often these conditions are allowed to progress too long before receiving proper attention, and then treatment is usually of no avail.—H. Preston Hoskins, Assistant Veterinarian, University Farm, St. Paul.

UNCOILING NEW ROPE.

The proper way to take rope from a coil is to draw it from the middle. There are two ways to do this—a right and a wrong way. If it happens to be done the wrong way the rope will become twisted in a manner that will make it almost unmanageable. If done the right way it will come out without any twisting or snarling and all the rope in the coil may be drawn out without trouble. To do it properly the rope should be uncoiled toward the left, or opposite the way the hands of a watch or clock run.

By finding the inside end of the coil and observing how it uncoils, one may tell whether or not he is starting in the right way. If the rope uncoils to the right instead of the left the whole coil should be turned over and the end pulled through from the opposite side of the coil. The rope will then uncoil to the left and cause no trouble.—J. M. Drew, University Farm, St. Paul.

LOOSE SMUT OF WHEAT.

Of the two wheat smuts, the loose smut usually appears earlier in the season. It turns the entire wheat head, including the chaff, into a powdery mass, which is soon blown away by the wind, leaving only the bare stalk with a little smut dust sticking to it.

This takes place at the time the grain is in flower. The smut dust gets between the chaff, sends out a germ thread which gets into the young wheat kernel and stays there without changing the appearance of the kernel. But the next spring, when the grain has been sown and germinates, the smut threads in the kernel begin to grow also. They get into the stem tip before it gets out of the kernel, grow along inside this stem-growing point; and, at heading-out time, again change the head into a mass of smut powder. Since, then, the smut lives over inside the wheat kernel, treatment is comparatively difficult. Hot water is used, but the temperature must be at exactly the right point. Therefore small amounts should be treated and a seed plot started. For information concerning this article on the seed plot, write to Dr. E. M. Freeman, Plant Pathologist, University Farm, St. Paul.

GERMINATION TESTS OF SEED LABORATORY.

The following table gives the results of the germination tests of seeds sent in to the Seed Laboratory during the past three months. The average in most cases is fairly good. There were, however, some tests which were far below the average. The very fact that there is always some seed which germinates poorly should warrant testing every kind of seed which is sown.

Germinating power found and that desirable in seed:

Kind of Seed	No. of tests	Average germination		Test desired
		P. ct.	P. ct.	
Alfalfa	75	75	85-90	
Barley	51	92	90-95	
Brome Grass	6	63	75-80	
Corn, Field	112	89	90-95	
Corn, Sweet	11	85	85-90	
Clover, Medium Red	147	79	85-90	
Clover, Mammoth	10	87	85-90	
Clover, White	3	91	75-80	
Clover, Alsike	39	79	75-80	
Flax	37	91	90-95	
Millet	12	85	85-90	
Oats	72	87	90-95	
Orchard Grass	5	38		
Rye	2	94	90-95	
Red Top	9	44	65-70	
Timothy	99	88	85-90	
Wheat	65	91	90-95	

W. L. Oswald, in charge of Seed Laboratory, University Farm, St. Paul.

PREVENT GRAIN SMUT.

Oat smut, stinking smut of wheat, and covered smut of barley can be prevented by the formalin treatment, but corn smut and the loose smuts of wheat and barley cannot be so prevented. The two loose smuts can be prevented by a special method of seed treatment, while corn smut can be prevented only by the proper rotation of crops and precaution against using smut-infected manure on land intended for corn. Full directions on these points are given in Extension Bulletin 14, which may be secured by writing to the Office of Publications, University Farm, St. Paul. Special advice may be secured by addressing the Division of Plant Pathology and Botany at the same point.

VETERINARY NOTES.

Bowel troubles in calves are sometimes caused by milk that is excessively rich. Milk that is moderate or low in butter fat is usually better for young calves.

Indigestion in older calves is usually due to unclean milk or feed, unclean vessels, close confinement in dark, unsanitary stalls, and irregular or excessive feeding. In some cases it appears to be due mainly to sheer weakness and inability to digest.

The natural thing and frequently the best thing for softening a horse's hoof is cold water. In mild weather saturate a cloth of suitable size with cold water and tie around the crown of the hoof at night; or pack the sole of the foot with wet clay.

For calf cholera try the formalin treatment. Add one-half ounce liquid formalin to fifteen and one-half ounces of water. Reduce the milk ration at least one-half and add one teaspoonful of the diluted formalin to each pint of milk. Keep the calves in clean, dry, well-lighted stalls, and see that the milk, pails, etc., are clean.—M. H. Reynolds, Veterinarian, University Farm, St. Paul.