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Minnesota Experiment Station

Farmers' Institutes

School of Agriculture

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NORTHEAST EXPERIMENT STATION.

An Acre of Land in Northeastern Minnesota, when cleaned of stumps, will usually go far toward paying for the cleaning with the first year's crop, according to experiments at the Grand Rapids station. The Station recommends co-operative buying of dynamite in the timbered sections of Minnesota so that it may be procured in large enough quantities to be had at the wholesale price. Duluth and the iron range towns affords one of the best local markets in the West for farm products. The land is wonderfully productive when cleared of its natural incumbrances. Dynamite and knowledge of its use do the cleaning.

In Raising Pigs in northeastern Minnesota, as practiced at the experiment station at Grand Rapids, it is important to remember that some of the most profitable food is clover pasture and skim milk. Expensive grains are fed only to finish the product grown on inexpensive pasture and dairy by-products. Good clover pasture always should be ready for the six weeks old pig.

Eight Pigs Per Sow have been raised at the Northeast Experiment Station at Grand Rapids the past three years. The Yorkshire breed is noted for its large litters and strong constitution. The brood sows are wintered on second crop of clover, boiled roots, skim milk and half a pound each of grain daily. They are comfortably housed with access to a yard in the day time. Exercise is an important element in their care. The sows are bred in December, farrow in March or early April, and raise but one litter a year. The Station keeps the good mothers as long as they are productive—from four to six years. Only brood sows are carried through the winter.

Bacon Hogs.—The Experiment Station at Grand Rapids is raising bacon hogs—Improved Yorkshire, and practices having their sows farrow in March and April. The pigs are turned into a clover pasture when from six to eight weeks old, and are fed a little shorts and milk. In September barley and peas are added to their ration, and for two months they are fed all they will eat. They reach prime condition about the first of November and weigh from 130 to 150 pounds. In the local market the price the past three years has averaged eight and a half cents per pound. The cost of production has been estimated by Supt. McGuire to be four and one-half cents a pound. Good housing, early farrowing clover pasture, skim milk, barley, shorts and peas, easily obtained with little expense, make a good profit in the pig industry.

ORGANIZATION AMONG FARMERS.

Farmers' Clubs.

The report of the Farmers' Clubs of Meeker County, reaching the Extension Division of the Minnesota Department of Agriculture, shows the shipment of a car of stock every week and the receipt by the farmers co-operating of the entire proceeds of the shipment, except a small commission honestly earned by, and paid to, the manager for going with the stock and doing the business. The Club also maintains a seed exchange at Litchfield where the farmers can procure home grown seed. The social features are also a means of promoting the greatest harmony among the people of the neighborhood.

Dassel has a club that has recently tested one hundred and fifty head of cattle for tuberculosis. It maintains a system of cow-testing for milk production. Every cow entered has a correct ration worked out for her every month according to Prof. Haecker's standard. More than three hundred cows are in this association. Co-operation is also practiced in buying supplies and selling produce. The social and business features are attracting new members. Crop rotation, soil fertility, better care of stock are among the subjects of frequent discussion, and attract new members.

The Live Farmers' Clubs in Meeker county, where there are twenty or more co-operative creameries and elevators, have become associated in a central league. This suggests the thought to the division of agricultural extension that all the farmers' clubs in each county, all co-operative creameries and co-operative elevators, should get together in a central federation, and at least once a year meet and discuss the matters that have arisen in the different local clubs for which no satisfactory solution has been found. Wherever matters of mutual interest to a county have arisen in any one club worthy of promotion the several clubs can unite and decide upon a course of action, discuss everything pertaining to the common good and develop other questions worthy of promotion.

EXPERIMENT STATION.

SUMMER SCHOOL AT UNIVERSITY FARM.

A summer school at the Minnesota Agricultural College at St. Anthony Park will begin on June 20th and continue until July 29, to give agricultural instruction to school teachers, principals and superintendents of schools. Those wishing college credits will be regularly registered as university students and pay a fee of $10.00. Those desiring the work outlined without taking the college credits will be charged $4.00. Minnesota teachers taking elimentary agriculture only will be charged $1.00. Board and room for the six weeks will cost but $21.00, in advance.

FARMERS' SHORT COURSE.

The faculty at the college and school of agriculture at St. Anthony Park, is already preparing for the Farmers' Short Course next winter, when a much larger attendance is anticipated than ever in the past. Last winter's course brought nearly two hundred and fifty farmers to the Experiment station. Facilities were over-crowded. The dining room, originally intended for the accommodation of four hundred people, last winter had to accommodate about twelve hundred. Without the short course difficulty was experienced in taking care of the school and college.

Prof. Mayne is having the basement of the dining hall reconstructed so that less trouble will be experienced next winter. He will also reconstruct the systems of instruction so that classes will be promptly and systematically handled.

Instruction in the Origin of soils, their physical make-up, movements of soil water and tillage; the seed—its parts, germination, selection and storage will be given at the teachers' summer school at the Minnesota Experiment Station, St. Anthony Park, beginning June 20th.

Domestic Art and Domestic Science will be two of the subjects taught young ladies attending the summer school and college of agriculture, St. Anthony Park, from June 20th to July 29th. Those desiring may confine their work to those subjects, or may, in addition, elect one or more regular subjects.

Write Prof. D. D. Mayne, University Farm, St. Paul, for Agricultural Summer School bulletin.

ENTOMOLOGY.

CUT WORM DESTRUCTION.

The State Entomologist, Prof. F. L. Washburn, says that some relief may be had from cut worms by the use of poisoned baits, made and applied as follows: Make a bran mash, sweeten with molasses or brown sugar, and add enough Paris green to make it a decided green color. A big tablespoonful of this placed at intervals among the plants, just at nightfall, will attract the cut worms, and kill a large number. These baits should not be put too close to the plants for fear rain will wash the Paris green against the plants and injure them. Cut worms do not die immediately upon taking this poison, but it is sure death after a few hours. Traps, consisting of pieces of board, placed about the garden, may be used, under which the cut worms will be found in the morning. Some birds prey upon them, and various parasites and predaceous insects attack them. In the case of field crops, where it is possible, frequent cultivation will turn the worms up, enabling birds and other enemies to prey upon them.

PINTSCH OIL FOR GOPHERS.

In Colorado prairie dogs have been destroyed with bisulphide of carbon gas in a manner similar to the experiment tried in Minnesota at University Farm on pocket gophers. Recently the Colorado Station has tried, with wonderful success, Pintsch oil—a by-product of the Pintsch gas used for lighting trains. It has been used in the same manner as bisulphide of carbon is used, with equally fatal results on the prairie dog. It is assumed in Minnesota that if Pintsch oil fumigation is destructive of prairie dog life in Colorado it ought to be equally so in Minnesota with pocket gophers, and the Minnesota Experiment Station probably will experiment with it. This oil is only half as expensive as bisulphide of carbon, according to the Colorado report, and can be procured at railroad centers where there is a Pintsch gas factory. Only half as much of it is required to kill a prairie dog in his burrow as of bisulphide.

THE POCKET GOPHER.

Bisulphide of carbon on a piece of burlap or oakum, thrown quickly down a pocket gopher's burrow, preferably when the soil is most, Prof. Washburn, Minnesota enomologist, says has killed many pocket gophers in his experiment work. He uses half a pint of bisulphide at a burrow. The chemical costs at wholesale is about eight cents a pint. Its gas is very poisonous, heavier than air, penetrates the burrow, and causes death by suffocation. The openings mus be completely closed with dirt to prevent air going in. Do not use matches or a light when using bisulphide. **It is dangerously explosive.** Reort to strychnine has sometimes been had. A little on a piece of potato, pushed far down the hole with a stick so that no scent of the hand is left in the earth, has killed many.

DON'T KILL THE TOAD.

Prof. Washburn of the Minnesota division of Entomology at University Farm finds toads to be friends of the farmer. They feed entirely upon an incredible number of insects. The federal department of griculture, investigating the toad, dicovers the startling fact that in twenty-four hours the insect food consumed by one toad equals in quantity four times the capacity of its stomach which is practically filled and emptied four times every twenty-four hours. One hundred fifty-nine stomachs examined by the department showed a content of 19 per cent of ants; 6 per cent of cut worms; 10 per cent thousand legged worms; 9 per cent caterpillars; 8 per cent of ground beetles; 5 per cent of destructive weavle; 3 per cent of grasshoppers, together with crickets, spiders, sow bugs, potato bugs and a miscellaneous lot of other insects. Protect the toad. Teach the thoughtless boy friendlines to this helpless, harmless, useful animal.

AGRICULTURE.

FIGHT QUACK GRASS NOW.

Get to work now on the small patches of quack gass. Set them apart for special attation during the rest of the summer. Keep the underground stems from being dragged to other parts of the fiel. If the patches are two large to smother with tar paper dig up the grass, shake out the roots and under-groun stems carefully, and haul them from te field and burn. A five or six-tined fork will be found a valuable tool for ths work. If dead the roots and stems may be plowed under to increase fetility. Look the patches over every week to catch any plants that may have been left or that may have developed. These patches may be plated to any cultivated crops. For management of large patches or fields of quack grass see Minnesota Press Bulltin No. 36.

Fodder Corn.—At te Minnesota Experiment Station it is thought that fodder corn may be plated this year up to the 10th or 15th of June. It will yield several more tns per acre than hay. Harrow the field smooth, sow the corn in drills three feet to three feet eight inches apart and the kernels from one to two inches apart in the row. Fodder corn may be harrowed until it is two or three inches high, but harrowing this must not be construed as suggesting the harrowing of field corn. Such harrowing is regarded at the Station as bad practice. Cultivate the fodder corn every week through the growing season.

Seed Corn Week, Sept. 19th-24th, 1910.

Are you really interested in having better seed corn for next season? Would you be willing to assist in boosting the reputation of our state along the line of production and particularly along the line of corn? Could you be counted on to co-operate with the extension division by saving your seed corn early this season and urging your neighbors to do the same?

We need to make this "seed corn week" a state-wide movement.

Reports received at the Minnesota Experiment Station at St. Anthony Park from Minnesota Farmers who raise large yields of corn and potatoes show that the cultivation of corn immediately after planting (when it may be done deeply) and kept up as long as possible in the season, gives the best yields and best quality of grain. Cultivate shallow, not more than one to two inches deep, after the roots begin to grow.

Harrowing corn is not recommended, but if farmers persist in this practice, it should be done when the corn is dry. It is then less tender and not so liable to be broken down. Harrowing should not be done when the land is wet and weather cold. Care must be exercised not to thin out the stand when harrowing. If the ground is lumpy, full of old corn stalks or rubbish harrowing is even more undesirable than on good land.

The Old Method of Cultivating corn was to go over the field with a drag when the corn was just coming up. This method is no longer recommended by the Minnesota department of agriculture. Modern methods at University Farm, St. Anthony Park, are the use of the cultivator and deep stirring of the earth as soon as planting is over, and shallow cultivation when the roots have started.

Over a period of nine years' experimentation at the Ohio station, shallow cultivation of corn shows a lead in grain harvested of four bushels per acre over deep cultivation during that period, regardless of weather conditions. Experiments at the Minnesota station at St. Anthony Park are in line with Ohio and several other states.

Bull Thistles, Common in Pastures, cannot always be killed by mowing. Mowing tends to prevent maturity of seed. Cutting off the thistles just below the surface of the ground, two or three times a year, will effectually eradicate them. Working the ground in rotation of grass, grain and corn is a very sure way of eradicating weeds.

Kill the weeds in the corn and potatoes. Weeds take up moisture the crops need and prevent the circulation of air thus encouraging the spread of plant diseases. They shade the ground and keep the soil from absorbing heat—an important factor in corn growth.

Killing Weeds is but one object of cultivating corn. While important to kill weeds the preservation of moisture in the soil is equally so, and is done by shallow and frequent cultivation.

Frequent and Shallow Cultivation of corn at the Minnesota Experiment Station shows best results at husking time.

Cultivate Corn Often to save soil moisture is advised by the Minnesota Experiment Station.

BOTANY AND PLANT PATHOLOGY.

SPRAYING OF DANDELIONS.

For the past two years iron sulphate has been used at the Minnesota Agricultural Experiment Station for the eradication of dandelions in lawns. Fairly good success has resulted from these experiments. Although spraying the dandelions does not by any means mean absolute destruction of this pest, it at least kills many of the flowering stalks and keeps hundreds of dandelions from coming to seed. It also kills many of the younger plants. If one were to spray a lawn carefully for an entire season the result would possibly warrant the time and expense connected with the spraying. Iron sulphate at the rate of 1½ pounds to 1 gallon of water is the proper proportion to use on the lawns. The spray should be applied with a sprayer which gives a very fine, mist-like spray. Apply the solution about three days after the lawn is cut, on a day that is bright and warm. The grass will be somewhat blackened but little damage results. Some of the white clover, owing to its broad leaf is somewhat injured. The lawn should be sprayed about once a month. Care should be taken when spraying to keep the solution off of the cement walks as it discolors them.

W. L. OSWALD,
Minnesota Experiment Station.

The Division of Botany and Plant Pathology has just prepared a novel weed seed collection of twenty-four seeds, including seeds of quack grass, Canada thistle, mustard, etc. The collection is now on sale. Price 50c to farmers of this state, and 75c to non-residents. Send orders to Cashier, Minnesota Experiment Station, St. Paul, Minn.

HORTICULTURE.

Strawberries.—The Minnesota Experiment Station has had best results by cultivating the strawberries set out in the spring, and by picking off all blossoms that appear during the first year. Fruiting the first season weakens the plants. The Station keeps the runners in the row where they will take root and form new plants.

ANIMAL HUSBANDRY.

SCOURS IN PIGS.

The Minnesota Experiment Station at St. Anthony Park has found the cause of scours in little pigs to come largely from over and irregular feeding, together with sudden changes in food. The little pig is greedy and its stomach and intestines are comparatively small. The digestive juices decompose the food and turn it into a milky, soupy condition from which the digested material must be assimilated, or it must be pushed through the intestines. When an excess of food is given the overplus must be passed along with the indigestible matter in the faeces. The faeces are thin, soft and watery, and the animal is scouring. Scouring pigs are not economical pork producers.

Lighter feeding is the remedy rather than drugs. Sudden changes in the ration should be avoided, but the amount of food should be gradually increased from day to day in proportion with the pig's development.

The Minnesota Experiment Station does not recommend the killing of an animal for the purpose of human food within twenty-four hours after feeding. When an animal is on full feed it is impossible to thoroughly drain the veins. Food in the stomach rapidly decomposes after the animal is killed, and the gases generated often flavor the meat disagreeably. Water, however, may be given up to the time of slaughter. It keeps the temperature normal and helps to wash the effete matter out of the system. A nicely colored carcass results.

DOMESTIC SCIENCE.

ANOTHER LESS THAN A DOLLAR DINNER.

Four college girls of Miss Sheppard's senior class in domestic science gave the last of the class dinners, of the college year, recently, in the Domestic Science Building, at the Experiment Station, at St. Anthony Park. Six guests were present. After lowing is the menu: First common —Tomato soup, croutons; second, stuffed heart, potato puff, lima beans, Parker House rolls, pickles; fourth, Waldorf salad, pastry, meringue, coffee, Rhubarb pie, cream, cheese was 99½ cream, sugar. The cents for 16 cents for cents, or a little college dining each person. In student at hall the meals cost cents, but this season of the year food, eaten is the actual cost of the about 8 cents.

In setting hens incubating artificially, the M Experiment has found best results by selecting eggs of a uniform size, with smooth shell and as perfectly formed as possible.