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## ORCHARD AND GARDEN NOTES.

JUNE 15.

Set out late cabbage and celery.

Continued cultivation means success in the garden.

Early peas should be in evidence now. Better plant a few rows more for later use.

Dwarf horticultural or cranberry beans make excellent shell beans. It is not too late to plant them now.

Keep the dahlia plants pruned and tied to stakes for best results. Too many stems produce poor and inferior flowers.

Have you looked up any of the canning outfits? They save the fruit and vegetables for winter use at small expense.

Tulips may now be dug to make room for other plants. Take up tops and all and store in some cool, shady place until the foliage dries, then they may be cleaned and put in a cool place in sacks till October when they may be replanted.

Spiraeas and other plants blooming early in the spring may now have some of the wood that bore flowers taken out, making room for the new growth which will produce the flowers next year. Careful attention to these things means better plants next year.—LeRoy Cady, Horticulturist, University Farm, St. Paul.

## ORCHARD AND GARDEN NOTES.

JUNE 22.

Another sowing of string beans will mature for late use.

Rutabagas or turnips may still be planted. They do best on new land.

Keep the blossoms picked off the pansies and sweet peas if you want flowers throughout the season.

The strawberry season should be at its best now. To bring the best price on the market, berries must be clean, evenly graded, and of good quality. Do not use old packages for marketing. They are unsanitary and detract from the selling value of the fruit.

Are the currant bushes well filled with nice, large fruit? Small fruit is not always chargeable to a poor variety, but is sometimes due to poor culture and no pruning. Currants are borne largely on wood three or four years old. Older wood should be pruned out and enough young wood also to prevent crowding. This may be done early in the spring or in the autumn. Cultivate and add barnyard manure to the plants occasionally.

According to Frederick E. Olmstead, in the June issue of Country Life in America, it has cost the city of Boston about \$7,650 per acre to put the trees on the fifty acres of Boston Common, in good condition. It cost \$7,550 per acre to trench the soil and supply proper plant food and about \$100 per acre to protect from insect ravages. It is said that the land in this same Common or Park has a valuation of \$864,329 per acre. This means an actual cost at six per cent in loss of taxes of over \$51,000 per acre. And yet some of our larger towns and cities begrudge spending a few hundred dollars occasionally in their parks.—LeRoy Cady, Horticulturist, University Farm, St. Paul.

## SOW FODDER CORN.

Don't forget that fodder corn is the king of forage crops and is especially valuable for the young stock when sown at the rate of about three pecks per acre. It can be sown with the ordinary grain drill if the feed cups are so plugged or covered as to sow rows three feet six inches apart.

A corn planter may be used by adjusting the dropping device so as to sow thickly. If once over the row does not put in enough seed, go twice in the same row and sow accordingly.

The kernels should be from three to six inches apart in the row or proportionately thick if planted in hills with the planter. A yield of from three to five tons of field-cured fodder or ten to fifteen tons of green fodder will be produced per acre if sown as above stated. Seed for fodder corn may be sown as late as June 15, or, in case of scarcity of pasture or hay, it may be sown as late as July 10 provided there is sufficient moisture in the soil to germinate the seed.—C. P. Bull, Associate in Farm Crops, University Farm, St. Paul.

## TEACHERS STUDY AGRICULTURE.

The College of Agriculture Thrown Open to Minnesota Men and Women During the Summer Months.

For six weeks beginning June 18, the Summer Training School for teachers and the Summer Session of the College of Agriculture will be in session at University Farm, St. Paul. Instruction is offered in methods of teaching and school organization and management; also review work and credit courses in the subjects required for common school certificates, and special instruction in agriculture, manual training, home economics, drawing, and music. Credit work will be given in arithmetic, grammar, United States history, geography, physical geography, reading, physiology, civics, physics, algebra, plane geometry, and composition. At the close of the session an examination for certificates will be held by the State Superintendent, Hon. C. G. Schulz.

The best public school educators of the state have been engaged to teach the classes in the certificate subjects, and the classes in agriculture and home economics will be taught by members of the regular faculty of the College of Agriculture.

This work is open to teachers of the rural and elementary schools of Minnesota free of charge.

The courses offered at the summer session of the College of Agriculture are the regular college courses and are taught by the regular college faculty, using the same equipment used during the college year. Students of college grade will be given regular college credit for courses finished. The college fees are from \$10 to \$15 for the entire summer session according to the amount of work taken. Board and room may be obtained at the college on application to the Registrar, University Farm, St. Paul.—A. V. Storm, Director of Summer Schools, University Farm, St. Paul.

## KINGHEAD.

Cease sowing grain containing the seeds. Because of the great difficulty of separating from seed grain it is desirable to buy seed from an unfested farm or locality. When necessary to use seed wheat containing seeds of kinghead, much of the latter may be floated off by immersing the seed grain in water. The kinghead is light and may be skimmed off when it rises to the top. The weeds usually appear near the roadside or edges of the fields, where they can be cut with a mower before the seed matures. In some seasons they will spread through the grain crops and crowd them badly. Then they should be hand pulled or cut with a scythe. The main point is to prevent them from going to seed. These weed seeds in wheat seriously injure its flour-making quality and lessen the value of the crop.—Andrew Boss, Agriculturist, University Farm, St. Paul.

## SPADE UP CHICKEN FEEDING PLACES.

On most farms feed for the flock is scattered about on the ground, and the chickens are continually fed within a small space. The surface of the ground soon becomes foul with the droppings of the flock. True, the sunshine acts as a germicide, and if the space is at all sloping the washing of the rain helps some, but generally the spot is level and often muddy. The ground quickly becomes contaminated, with the continual tramping of the flock, and if there be one sick fowl the whole flock may soon become infected. This is especially true with small chicks and young turkeys. The first advice given in cases of general loss is "change your feed place." It is often impossible to find another location so convenient and accessible.

The spading up of the feeding place once or twice per week will bring good results. It will tend to purify the ground. It will induce exercise on the part of the flock, which is always desirable. Especially is this true when the flock is confined in yards, and green feed, so necessary, is difficult to obtain. If grain is scattered, as one spades up the ground much will be buried so deep that hens will not scratch it out and it will be thrown up at the next spading with green succulent blades that are greatly relished by the flock.

Be sure to try this method of often spading up the feeding places and watch results in avoiding infectious diseases and improving the general health of the flock by inducing exercise and furnishing palatable succulent feed.—N. E. Chapman, Extension Poultry Specialist, University Farm, St. Paul.

## DOCTOR OF AGRICULTURE.

Dean A. F. Woods of University Farm, Honored by Nebraska With This Degree.

The University of Nebraska honored Dean A. F. Woods of the University of Minnesota Department of Agriculture with the degree of Doctor of Agriculture. The occasion was the dedication of a plant industry building. Dean Woods was assistant chief of the Federal Bureau of Plant Industry before coming to Minnesota.

He graduated from the University of Nebraska in 1890 after which he taught in that institution for some time before taking up work in plant diseases for the Federal Government. Very few men have been honored with this degree by any American universities.

## TELEPHONE AND MAIL BOX FOR THE SCHOOL.

Good for the Rural Home, Why Not for the School?

The telephone and mail box should form part of the equipment of every rural school. They would bring the parents and the outside world into closer touch with both teacher and pupil, and help solve many of the rural teacher's problems. In case of illness or severe storm the teacher might know in advance of the absence of the pupil. In case of sudden need the pupil might be more readily summoned home from school.

Many progressive schools take daily newspapers and one or more farm journals. All should do so and should receive in addition many valuable free bulletins issued by the United States Department of Agriculture, Washington, D. C., and by our own Department of Agriculture, University Farm, St. Paul. A mail box for each school would bring this material regularly to the teacher's desk instead of to her boarding place or to the home of one of the directors from which it might not be forwarded. A mail box would enable those who distribute such material to place the school on its mailing list to remain there year after year. At present the usual plan seems to be to put the teachers on the mailing list and as teachers too often change each year, great confusion results.

These conveniences cost very little. Bring the matter up at your next meeting and see that they are put into your schools. Few investments will pay larger dividends in the education of your boys and girls.—T. A. Erickson, Rural School Specialist, University Farm, St. Paul.

## TRACTION ENGINEERING SHORT COURSE.

Farmers Learn to Handle Steam and Gasoline Engines.

Forty young men have just attended a five weeks' Traction Engineering Short Course at University Farm. They describe themselves as German, Scandinavian, Swedish, Norwegian, English, Scotch, Welsh, Yankee, and Irish-American and came from Iowa, Wisconsin, Ohio, South Africa, and Minnesota.

Students who have taken this course in the past year have made good in localities scattered from Canada to South America but most of them come for the purpose of learning to use steam and gas tractors in threshing, plowing, and numerous other ways on the farm. When they have completed their work they usually return to the farm from which they came and ninety per cent of them are now running their own or their father's engine in connection with their other work.

Some of those recently enrolled already had special engineer's licenses permitting them to operate steam boilers and machinery in Minnesota and all who took this course may receive engineer's licenses. Experience in handling engines is required of all who apply for the course, but no greater educational requirements than can be obtained in the common schools has been established.

The location of University Farm between the two great cities of the Northwest helped to guarantee every facility necessary in training proficient engineers. The men spent their mornings in lectures and study and their afternoons in operating steam and gasoline engines, about three-fourths choosing steam engines. They were instructed in physics, steam boilers, pumps, blacksmithing, belt lacing, babbitting, pipe fitting, rope splicing, soldering, and tube setting, as well as the actual operation of the engine.

## EGG-MARKETING BULLETIN.

Recently Issued From University Farm Bureau of Research in Agricultural Economics.

About forty-five thousand copies of Extension Bulletin 36 on Egg Marketing have just been mailed from the Office of Publications, University Farm, St. Paul. Fifteen thousand copies more are available for those whose names are not on the permanent mailing list. This is a sixteen page bulletin but for those who want further information, a forty-five page book has been published as Experiment Station Bulletin 132. Applicants should specify which bulletin they wish.

The briefer bulletin proceeds from a brief discussion of early methods of egg marketing to the present methods of marketing indirectly through commission men and jobbers and directly from farmers to retailers. In connection with the indirect method the author explains the conditions which determine whether the commission man or the jobber is more likely to predominate, the advantages and disadvantages of cold storage, and the loan and insurance features by means of which cold storage concerns obtain incidental profits.

Studies are made of typical cases of marketing through the creamery and co-operatively through the Dassel Farmers' Club, and the retail price of eggs is analyzed in such a way as to indicate what portion of the price paid by the consumer goes to the original producer, the shipper, the jobber, and the retailer. Both these bulletins were prepared by Professor C. W. Thompson, who has recently left his position as Director of the University Bureau of Research in Agricultural Economics, to assume charge of nationwide work along similar lines for the United States Department of Agriculture. Many of the suggestions made with regard to egg marketing are equally applicable to the marketing of other farm products.

## CANNED STRAWBERRIES.

A dark colored firm variety of strawberry is most desirable for canning. Fill sterilized jars as full as possible without crushing, with firm, clean berries. Then fill the jars with a syrup made by using sugar and water in the proportion of one cup of sugar to one and one-half cups of water. Set the jars, with the covers laid on loosely, in a steamer or on a rack in a kettle of water, and cook until the contents of the jar are scalding hot. Seal and set away for future use. The filled jars may be set on a rack in a dripping pan containing a little water and set in the oven to cook; finish as before. It is well to have extra syrup to use in filling the jars if they seem not quite full after cooking.

Two teaspoonfuls of pineapple juice added to a quart can of strawberries improves the flavor. The same amount of lemon juice improves the flavor for some.

A very delicious strawberry sauce is made by sprinkling the washed and hulled strawberries with sugar, three-fourths of a cup of sugar to one quart of prepared strawberries. Allow them to stand over night. In the morning set in the oven and bake until boiling hot, put into sterilized jars, and seal. Do not allow the fruit to cook to pieces but simply become boiling hot.—Mary L. Bull, Extension Domestic Science Specialist, University Farm, St. Paul.

## CANNING GREENS.

Why not can a few jars of beet greens or spinach for winter use? Beet greens are easy to prepare and plenty of tops are usually available at thinning time.

Select them when young, and if small beets have been formed the greens will be better. Wash the greens thoroughly free from foreign matter, rinse in several waters, and cook in a small amount of water or steam them. When cooked enough, usually from twenty to thirty minutes, put into sterilized jars, press down until the liquid covers the top and seal and set away for use when desired.

Spinach may be canned in the same manner. If the greens are steamed there will be a small amount of liquid present. Scalding vinegar may be poured on after putting the greens in the jars.

Try at least one can of greens this year, they are cheap, easily canned, and furnish a pleasing and wholesome variety.—Mary L. Bull, Extension Domestic Science Specialist, University Farm, St. Paul.

## THE HOME WATER SUPPLY.

Healthfulness, Convenience and Cheapness the Essentials.

Usually the first considerations in locating a well are convenience, cheapness of construction, and certainty of striking an adequate water supply. The well is therefore usually located near the house or the barn, and often in a low place subject to seepage or surface drainage from the barnyard or outbuildings, thus contaminating the water and making it dangerous to health. Water thus contaminated may cause typhoid fever or similar diseases, contaminate milk, butter, and vegetables sold from the farm, and altogether directly and indirectly cause great loss and suffering to the farmer and to the country at large.

Often these wells have clear, cold, sparkling water, and it is hard to make their owners believe that it cannot be safely used without first destroying the bacteria and removing the source of contamination. If this cannot be done, it is necessary to dig a new well in some location free from such danger. This should always be the first consideration in the location of a well.

It may cost a little more to distribute the water, but it is money well spent. A pure water supply is one of the most valuable assets of a farm. The water should always be piped to the house, barn, and garden. The saving of labor much more than repays the cost of such distribution.—A. F. Woods, Dean, Department of Agriculture, University Farm, St. Paul.

## SOIL MOISTURE.

By reason of the cool, moist weather which has been prevalent over the entire Northwest, the soil has not dried out as usual, and the crops have not shown the same degree of growth as in normal years. Many therefore think that there is an abundance of moisture in the soil. From a crop production standpoint this is not generally the case. Let it be remembered that the soil became exceedingly dry during the years 1910 and 1911, and the rainfall since that period has not been in excess of the normal. The immense crop of 1912, together with the very dry fall season, depleted the soil moisture to a point where only an excess of rain can possibly bring it back to a safe condition. We have not had this excess of rain or its equivalent in snow.

With these conditions existing, it behooves the farmer to look carefully to his cultivation methods. A good dust mulch should be established and maintained, and the weeds kept down, for they are moisture users. Shallow cultivation should be practised as deep cultivation cuts the roots of the crops and retards their growth and maturity.—C. P. Bull, Associate in Farm Crops, University Farm, St. Paul.

## HOW MUCH SHOULD THE SILO HOLD?

The amount of silage required and the size of silo needed to hold it can be quite closely calculated provided the number and kind of animals to be fed from it are known before building.

An average cow or beef animal may be fed about thirty-five pounds of silage per day and the usual period during which silage is used in this latitude will be about 210 days. Large animals or those that are being fattened may consume considerably more than thirty-five pounds per day but this has been found a fair average.

In a silo of ordinary depth, the average weight of the silage is about forty pounds per cubic foot. Near the top of the silo, however, where the pressure is not great, it will weigh only twenty-five pounds per cubic foot while at the bottom of a thirty-five foot silo it may weigh sixty pounds. Taking these averages, if a cow eats thirty-five pounds of ensilage in a day, she will eat thirty-five fortieths, or seven-eighths, of a cubic foot per day and with this as a basis it is easy to determine the number of cubic feet of ensilage required to feed a cow or any number of cows throughout the season. The diameter of the silo must be such that the stock on hand can use one or two inches of silage off the top each day during the winter and at least three inches per day when summer feeding of silage is to be practiced. This is necessary to keep the silage from spoiling.

A silo ten feet in diameter is adapted to feeding ten mature cattle. One twelve feet in diameter will feed fifteen head, and one fourteen feet in diameter will meet the needs of twenty head; but if there are thirty or more cows to feed, a sixteen-foot silo should be erected. These silos should be thirty or forty feet, or even more in height.—A. D. Wilson, Superintendent, Extension Division, University Farm, St. Paul.