Soils and Crops

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Good Hay at the Lowest Cost.

Haymaking is a task that must be performed while the heat of summer is oppressive. There is also a good deal of anxiety connected with the operation, for a good deal of skill and judgment is required to make and secure hay in good condition so as to give the best results as feed. When the weather conditions may reduce the quality and consequent value of the hay for food at home or commercial purposes, hay may be termed "dried grass," but this does not convey the meaning of all that we want or all that is desired in hay. Grass may be dried before it is cut and yet be unpalatable as food for farm animals and yield little nutriment when it is consumed. As fresh grass is in itself a nearly perfect food for live stock the hay made from grass cut when it is at its best, and cured so as to retain all the constituents of the grass, with only the loss of the water during the process, is the hay that is not only the most palatable but the most profitable as feed.

The man who operates a large farm and who has a good deal of hay to care for should have a complete outfit of modern hay-making machinery, because other work on the farm is likely to interfere with the handling of the hay crop and haying must be done in the shortest possible time. The small farmer can get along with more modest equipment. All necessary preparations for handling the hay crop should be made a few days in advance of the time the mower is to be put in the field. A machine may need overhauling and repairing, possibly some new machine will need to be purchased, and it is not advisable to wait until it is time to begin haying before this is done.

Of course, the time when hay should be cut is a matter of much importance. I always begin cutting clover when about one-third of the heads have turned brown. At this stage it is about eighty per cent. water and cannot be stored safely if it contains over sixteen per cent., so the problem of curing clover hay is simply that of evaporating the difference between eighty per cent. of water and about sixteen per cent. or less. In order to do this quickly or in from twenty-four to thirty-six hours, it must be done through the leaves. As soon as the stem is separated from the stubble the supply of water from below ceases while the evaporation from the leaf continues as long as it has life in it. To secure this quick evaporation air must have free access to the leaves. Hence the problem of curing clover hay is to keep it in as loose form as possible. When the crop is heavy and the sun hot, the leaf structure of the upper part of the swath is often killed, as is shown by the leaves becoming brown or black, while those in the under part of the swath are scarcely changed in color. Hence the value of the tedder in lifting the swath and allowing free access of the air. Unless this is done the clover is sunburned, and if the leaf structure is killed before the sap is out of the stalk it is impossible to make a good quality of hay, nor can the curing be done in any reasonable time. It is impossible to cure clover hay properly during damp muggy weather. It is, however, an easy matter to cure it in clear sunshiny weather with a fresh north or northwest wind. In fact, it is easy to cure clover hay as it should be cured if the atmosphere is very dry with sunshine and any kind of a breeze. The problem, therefore, is to keep the clover so loose during the curing process that it is quickly converted into hay by the evaporation of the moisture through the leaf and before the leaf structure is destroyed by the hot sun. With favorable weather clover in the condition above described can be cut one evening, tedded or put in small windrows before dinner the following day, and hauled during the afternoon.

Where one has only a few acres of clover probably the best method of handling is to cut it and allow it to wilt, put it in small piles, then cover it with hay caps and let it go through the sweating process in the piles.

I begin cutting my first crop of alfalfa when it is about one-fourth in bloom. When the time for harvesting alfalfa approaches it begins to prepare for it as though it were a foreseen event by throwing out buds near the root, thus forming a crown. If the alfalfa is cut before it has prepared itself by throwing out these buds or new shoots from the root it will not do anything in the way of growing until it has time to start these shoots. That may be a matter of a week or ten days. In the meanwhile weeds will fight for the possession of the land and, therefore, if the alfalfa is cut too early there will inevitably be a short crop following. If, however, we neglect to cut alfalfa soon after it has made the new growth the plants will begin to throw their strength to these buds, the main stalk will start to crinkle down, and the hay will grow and produce seed, but the second crop will not be as good for hay as it would have been had the first crop been removed, for a seed crop detracts a good deal from the next cutting. If the first crop is cut at the proper time then the plants will start off vigorously and we shall soon have a good growth for a second, third or fourth cutting. I always run the cutter bar of the mowing machine rather high when cutting alfalfa, as otherwise there is danger of cutting off the buds or shoots that are growing to make the next crop, thus seriously damaging the following crop.

There are two ways of handling alfalfa. One is to cut at the time specified above, allow it to wilt, put it in small piles, then cover with caps and let it stand for a few days. Then on a clear day remove the caps, open up the piles, air and sun the hay and then put it in the mow. The other method is to cut it in the evening or early in the morning after the dew has dried away and put it in small windrows. Then when, by taking a wisp of it and twisting it hard, no moisture can be seen on the outside, it is ready to be put in the barn. The first is the safest way so far as the present crop is concerned, but the objection is that if the piles remain on the ground more than a day or two the alfalfa underneath will be killed and the field will be badly spotted. Alfalfa is no more difficult to cure than clover, provided there is the same amount of heat, wind and sunshine. In fact, it is scarcely as difficult. Whichever method is adopted the great object in curing alfalfa is to preserve the leaves and it should not be allowed to stand until after they have begun to fall which they will do shortly after the new shoots from the root are an inch or so in length. The greater part of the nutriment in alfalfa is contained in the leaves. In feeding values these are worth more than their weight in bran.

I always prefer to cut timothy when it has reached the stage of full bloom and the first blossoms have begun to fall. At this stage the plant has attained its maximum growth and it also contains the maximum of digestible nutriments. The plants have been gathering and storing up soluble nutrition until the point of blossoming is reached after which the seed begins developing and drawing upon the nutriment in the stalk which becomes concentrated in the seed. From the cell the soluble nutrition in the stalk gradually diminishes and the woody fibre, which is insoluble in water, begins to increase and continues until the seed is mature. Hence the proper stage of growth at which to cut timothy for hay is immediately after full bloom.

Timothy hay does not require as much sunshine for curing as clover and alfalfa. If the day is bright and breezy I proceed as follows: I start the mowing machine in the morning as soon as the dew has dried away and stop the same as soon as I think there is sufficient timothy cut to handle during the day. If, however, I have suspicion of foul weather I stop the machine before I think there is half enough down, as it is better to secure one or two loads of hay thoroughly well made than to have twice the quantity partly spoiled with a rain shower. I start the tedder about one hour after starting the mower. If the timothy is very heavy it is given a second tedding, going in the opposite direction. Then about noon I start the rake and about an hour later commence hauling and clean up the last swath before night. After the hay is in the barn the latter is tightly closed at night. There is no danger of heating or moulding in the mow if the timothy is cut when the bloom is on the head and mowed away without any rain or dew on it. The hay will come out in the winter bright green in color and it will be worth as much to feed and the stock will relish it almost as well as the grass it is made from.

The Dairy

Where calves are turned together in pasture some arrangements should be provided so that at feeding time each calf will receive its regular amount of feed. I find it a good plan to construct a row of stanchions with a shallow trough in front for grain to hold the calves while they are eating. The stanchion should be partitioned off in such a manner so that the calves cannot lick or suck one another while the taste of their dinner is still in their mouths. With such an arrangement a number of calves can be pastured together without their contracting bad habits.

Keeping in mind that the first year of the calf's life determines in a large measure its value at maturity, the prudent dairyman will exercise particular care to encourage strong bone and muscular development. To achieve this purpose a well-balanced grain ration should be supplied regularly. I find that a ration compounded of equal parts of ground oats, cornmeal and bran, with a small allowance of oil meal, gives splendid results. I feed this ration twice daily in amounts that the calves will readily consume.

The man who succeeded in putting "til" in fertilizer was a real benefactor.

Tuition often brings better judgment than intuition but both are valuable.

The Horse

Where the sow raises only a single litter of pigs during the year it is permissible at times to allow her to wean the pigs herself. Ordinarily, however, it is better to see that the pigs are independent of their mother at from nine to ten weeks of age. Reduce the amount of feed allowed the mother and remove the pigs to other quarters. If the sow can be kept on dry feed in limited supply, she will soon dry up. The pigs may be fed on the same rations as they had before weaning. The pasture should be continued. If possible provide alfalfa or some other legume crop and give them all the oats that they will clean up. Corn and tankage can be fed at this time to advantage.

Cow-Testing Advancement.

Under the cow-testing plan conducted by the Dairy Branch of the Dominion Department of Agriculture there was a great increase last year in the entire country of the number of herds and cows tested, of the testing centres established, and of the total tests made. What is more important is that advance is indicated in the average production both of milk and fat. The report on the subject for 1921 records an increase in seven provinces last year compared with the preceding year. New Brunswick fell away a little, and the Saskatchewan Department of Agriculture undertook the operation of the entire system in that province. In Manitoba, the provincial dairy branch takes complete charge of the field work as well as organizing and supervising the testing centres, while the Dominion Dairy Branch compiles the records and pays for the testing. The other provinces all co-operate with the Dominion department in the conduct and direction of the work.

The policy in force requires the farmers to supply the necessary equipment to weigh the milk, and to keep samples for three days during each month, while the Dominion Dairy Branch, through the provincial dairy promoters, organizes and supervises the testing centres and compiles the records received at the Ottawa office.

In Ontario last year, due largely to the District Representatives and the provincial Dairy Instructors, the work nearly doubled, and in Quebec the provincial Dairy Inspectors conducted campaigns which resulted in a remarkable increase. The advance made is shown in the report by statistical tables, recording the number of herds and cows tested, the number of centres established, the number of tests, and the average total production of milk and fat in each of the last three years. It also gives the average production and increase of seven herds in 1921 compared with 1919, each showing a marked increase; the number of herds, cows and tests by provinces in 1919, 1920 and 1921, and the number of cows tested with the average production of milk and fat at the four principal centres in Ontario. In 1919 there were 2,416 herds and 22,517 cows tested in all the provinces. In 1921, there were tested with Saskatchewan excluded, 5,194 herds and 47,895 cows. In directing attention to the necessity of the proper feeding of milch cows, the Dominion Dairy Branch urges farmers to keep a record of the feed of each cow, and supplies forms free of charge for that purpose.

Low-analysis fertilizers are the shoddy of soil improvement.

The alfalfa enthusiast should keep his plow-points sharp.

Smoke
OLD CHUM
The Tobacco of Quality
½ LB. TINS—and in p'k'gs.

Transplanting June Grass.

Many times June grass will die out on small portions of a lawn and it is difficult to reseed these poor places. Some people have resodded these poor spots, others have attempted to reseed Neither way is very satisfactory. The resodding always shows plainly in the old lawn, more like a patch on a man's coat.

An excellent way to handle these poor places or any other places where June grass has failed to catch and do well is to take small pieces of June grass sod, put them down on the ground where the grass has failed, and then chop them fine with a sharp shovel or spade, strike hard enough so the sod is thoroughly mixed with soil underneath, then pack the ground, either by tramping on it or rolling it. The June grass roots have thus been transplanted into the soil and will usually make a quick growth and before the season is over one can scarcely distinguish these patches from the better portion of the lawn.

Butchers Can Help.

It has been pointed out that butchers in small towns have an unusual opportunity to influence the improvement in live stock grown for meat purposes. One progressive firm of butchers has a number of well-bred young bulls which they seek to introduce into the herds in the communities from which they secure their supplies. Whenever they buy a sire for slaughter they always make an effort to replace that sire with something better.

This same firm also takes pains to display in the windows of their shop the carcasses of well-fed animals. This display is brought to the attention of feeders with appropriate cards showing how the animals were fed and the percentage of dressed meat. From the figures given the producer is able to understand how it is possible for the butcher to pay better prices for properly bred and properly fed stock. These butchers say that this work pays them and they feel it has been instrumental in improving the herds in their section.

Tobacco dust will get rid of red ants that are so troublesome in orchards and gardens. Hoe the dirt away from the roots of the trees, sprinkle a few spoonfuls of dust around on the top of the soil, cover with a thin layer of earth. Sprinkle the water, or let the rain carry the dose home. This also controls the red ants which bother roots of asters in the flower garden.

What Dusting Will Do

A Summary of Tests in Fruit Pest Control

It is generally conceded that two men and a team can prune, cultivate and fertilize more than twenty-five acres of orchard, but that they could not with one liquid spray outfit do full justice to more than twenty-five acres. The limiting factor of an economical unit is therefore the spray rig.

A dusting outfit can easily take care of sixty acres of orchard in one season, and if dusting is equal in pest control to spraying, the change to dusting would have the effect of increasing the economical unit of fruit orchards and make cultivating the limiting factor in determining the maximum area that one team, two men and equipment could care for, or the economical unit for fruit production. But the tractor, especially the lighter types, has come to the aid of the fruit grower, by supplying this limited cultivation factor, which performs, more economically, an increased amount of work than men and teams can perform.

The reputation of dusting has in the past been the reputation of sulphur dust; it might be best to enumerate some of the advantages, questionable points and disadvantages of dusting. The advantages of dusting that are generally appreciated are:

1. Greater speed in application. A dusting outfit is capable of treating from five to ten times as much orchard or vineyard as a spraying outfit in a given time.

2. More suitable timing of applications. Owing to the rapidity of application the grower can time his applications to better suit the weather and the stage of the fruit.

3. Less waste time. Dusting operations should be done during weather unfit for most agricultural field operations, such as immediately following a rain or very early in the morning, while spraying operations require the best of weather.

4. Lower cost of machinery. The initial cost of dusting outfit is two-thirds that of a sprayer, the cost of upkeep is less, the gasoline used is less and the duster is a longer-lived machine.

5. Lighter weight of dusting apparatus. A dusting outfit with dust and operators on it does not weigh more than one-third the weight of a sprayer ready for operation, so it can be taken over hills and over wet ground where a sprayer would mire.

6. Less liability to trouble and breakdowns. A dusting outfit in practice is a reliable machine and is not responsible for delays due to leaky valves, blowouts, etc., which frequently occur with high-pressure sprayers.

7. Simplicity and speed. This makes a greater appeal to the grower. More fruit growers will dust than will spray even if the total cost is the same, because it is less trouble. This is highly important, especially in an orcharding community where it is desirable in the interests of every individual to improve the standard of product in the entire community. Of these advantages the first and last are probably the most important.

It is most curious to find that on averaging thirty experiments conducted in New York, Michigan, Illinois and Nova Scotia, that the total average gives the following: An average of sixteen years of thirty experiments, shows percentage of 56.5 on scab; 25.4 per cent. on worms, and 22.2 per cent. sound fruit, on unsprayed orchards; on sprayed fruit, 15.6 per cent. scab; 5.2 worms, and 71.5 sound. As against this consider the results over the same period of years of dusting, namely: Scab, 15.6, or the same as when sprayed; worms, four per cent, and sound fruit, 74.4 per cent, or more than in sprayed.

These figures refer to the 90-10 sulphur dust only. It is curious to find that the percentage of apple scab in the dusted and sprayed plots is exactly the same, while the dust is slightly superior in insect control and in total number of sound apples.

At the Nova Scotia Experiment Station during the past three years, considerable work has been done with a new dust solution devised by Prof. G. E. Sanders. This is in the proportion of four per cent. metallic copper and one and a quarter per cent. metallic arsenic which has been demonstrated as effective as the 90-10 sulphur lead arsenate compound.

This dust is equal to liquid spray, both in the control of fungous diseases and biting insects. Which demonstrates dusting is at least equal to spraying in all controls, save those of sucking insects, especially the Psylla and green apple bug, but the difference is so slight even in this, as to be more than offset by the difference in cost of application and amount of acreage that one outfit can handle economically.

Parents as Educators

Fear a Menace to Children—By Bertha Mason

It is surprising how many children leave their homes to enter into a larger social sphere with fear instilled into their thoughts. If all mothers could realize that fear is a most menacing disease surely fewer children would enter the kindergarten with trembling.

Most kindergarten or primary teachers have at some time felt the pang of seeing a child show fear. Frequently a teacher wonders why she does not win the whole-hearted, loving response which most children so readily give to the efforts of a sympathetic friend. No child can give his best attention when there is present a dread of what might happen if he makes a mistake. Be that sensation of fear ever so vague it will check ready expression of thoughts and retard natural, normal mental development.

All teachers and public welfare workers will testify that many parents and relatives threaten children with various direful punishments to be administered by policemen, doctors, teachers, goblins and numerous imaginary beings.

A five-year-old boy entered a primary room in September. His eyes were weak. That, however, did not explain his evident fear of the teacher. If she approached to help him he invariably crouched to one side and never once responded with more than a questioning half smile to her efforts to put him at ease. Of course, she called upon the child's mother. During the conversation the mother said, "We want him to mind and we told him you would almost beat him to death if he didn't. I think he believes us, too."

She seemed quite proud that her boy would "obey," not seeming to consider that submission is not always discipline. To the teacher it was pitiful. The child's effort to see resulted in an inevitable nervous strain. Through fear of consequences if he answered questions incorrectly he was no doubt silent at times when he could have responded. And he probably made other mistakes through nervousness.

It is not only teachers who must contend with consequences of such a course. A few days ago I saw a child who was ill scream and pull the covers over her head as soon as the physician neared the bed. "If you don't hush the doctor will grab your tongue," said the mother. Of course the child's fear was only increased. Naturally it was impossible to accurately diagnose her case as she had worked herself into a serious nervous state.

Later the same physician remarked to me, "Why don't people teach children that we want to help, not hurt them?" He then cited many instances where adults had threatened children with "the doctor" if they didn't obey. For obvious reasons such a course is very unfair to the physicians and the children who gain such harmful conceptions.

Every child should learn that unpleasant consequences inevitably follow certain actions. But to teach a child to fear individuals, real or fanciful, is an injustice to the child, to those who are to share the responsibility of guiding him and to each member of the society of which he becomes a part. It is through knowledge and not fear that he learns self-control and respect for principles of right and laws of society.

Rules for Feeding Dairy Cattle.

The Dominion Animal Husbandman sets down in No. 68 of the Experimental Farm circulars three very concise and explicit rules for feeding dairy cattle. The first is: Never overfeed; the second: Feed according to the individual needs and desires of each animal; and the third: Feed regularly both as to the hours of feeding and the character of the feeds. Relative to the last, the Animal Husbandman points out that sudden changes in feeds are liable to cause not only a loss in gains or production, but will often induce ailments such as diarrhoea, bloat, milk fever, etc., all of which are described in the circular with suggested treatment and remedies.

A Durable Whitewash.

Make a thin paste of fifty pounds of hydrated lime in boiling water, or one-half bushel of quicklime may be slacked in seven and one-half gallons of water, keeping the vessel well covered and stirring occasionally. To this is added one peck of common salt, which has been dissolved in hot water; three pounds of rice flour, boiled to a thin paste, which should be stirred in while hot; one-half pound of Spanish whiting and one pound of clear glue, thoroughly dissolved in boiling water. This formula is particularly suitable for interior work. Mix well in the order mentioned above and allow the mixture to stand several days before it is applied. It should be put on with a brush or spray as hot as it is possible to handle the mixture.

"How much more decent were it to see schoolhouses strewed with green boughs and bowers than with bloodly birchen twigs."—Montaigue.

THE CHILDREN'S HOUR

A Money-Making Stunt.

One spring a few years ago I resolved to make some money. I thought that keeping chickens would be an easy way. I decided to have Plymouth Rocks as they are quite large and would sell for more than a smaller chicken in the fall. After I had thirty eggs which I had bought of my mother, I could hardly wait until they were hatched. As I was so honest about promising to pay for my eggs my brother suggested that I pay for the rent of the incubator, which I did.

When they hatched the chickens were healthy and so very hungry that I fed them too much and they all died but two. I was now in debt two dollars and fifty cents and nothing to show for it but two chickens and the experience.

As long as I was this much in debt I decided that I might as well buy some more for I wouldn't be apt to even pay my debt with two chickens.

In a few weeks the second bunch hatched and they proved to be just as healthy as the others. But I was more careful this time.

Sometimes I would get very discouraged as I thought of the heavy debt over my head. For every day the debt was growing larger, for as the chickens grew they ate more.

About the last of October I sold all of them but three chickens and a rooster. I had all of my honest debts paid and ten dollars and forty cents left as a profit. I intended to raise chickens the next year but as circumstances prevented I raised ducks instead.