

## GROWING AND SAVING ALFALFA FOR HAY.

Editor "The Farmer's Advocate":

The growing of alfalfa has engaged the attention of a few farmers in this Province for a good many years, with varying success. As a rule, the first attempts did not prove successful, owing to a want of knowledge as to the proper manner of handling it. Experience has shown that, on suitable soils it can be grown with as much certainty as red clover, over which it possesses the advantage of being a perennial, instead of a biennial, yielding heavier crops and possessing a much higher feeding value.

## KIND OF SOIL.

Alfalfa delights in a good dry clay loam, free from dead water in the soil, but good crops are found growing on both heavy clay and light sandy soils, but they should contain an abundance of lime. The soil should be free from hardpan, so as to permit of the roots penetrating deeply into the ground; the land sufficiently rolling to carry off the surface water, so that it will not stand and freeze around the crowns of the plants.

## PREPARATION.

The preparation of the land is similar to that for securing a good catch of red clover; land that is clean, and rich in plant food, such as we have after growing a crop of corn or roots, is ideal. We do not plow such land, either in the fall or spring, but work up in the spring with the spring-toothed cultivator or disk harrow, followed by the common harrows, so as to make a fine seed-bed.

## SEED.

Secure the best seed possible. Much of the seed sold contains noxious weed seeds, and is of low vitality. Secure seed grown as far north as possible; if grown in your own neighborhood, so much the better. Much of the seed sold in this country is produced on the irrigated lands of the South-western States. This seed may germinate and grow very well the first year, but the plants do not stand our hard winters as well as those from northern-grown seed.

## NITRO-CULTURE.

On much of the land in Ontario, when alfalfa is first sown, it does not grow well, owing to a lack of nitrogen-gathering bacteria in the soil. This will be shown by the weak, sickly appearance of the young plants and an absence of nodules upon the roots. Sometimes people are misled by the fact that an abundance of nodules are found upon the roots of red, alsike and white clover grown upon their farms, and they rush to the conclusion that the same results will follow in sowing alfalfa; the bacteria that work upon those clovers are distinct from those which work upon alfalfa, but it has been found that the bacteria that work upon the sweet clovers (*Melilotus alba* and *Melilotus officinalis*) will also work upon alfalfa. This will account for alfalfa doing well in some places when first sown. The sweet clover often takes the form of a weed along the roadsides, the soil becomes permeated with the bacteria, which spread to the adjoining farms; the vehicles take up the soil in the form of mud, which is carried sometimes for miles; when it is deposited on the ground, the bacteria on the inoculated plants commence to multiply, the same as in the case of yeast that is mixed in flour, and the whole becomes a mass of germ life. Instead of going to some roadside or old alfalfa field to get a supply of bacteria, which would entail considerable labor in hauling soil, and at the same time run the risk of introducing noxious weeds, this culture can be obtained from the Bacteriological Department of the Agricultural College, Guelph. The price is 25 cents for enough to treat one bushel of seed; instructions are sent telling how to apply it. I have found that in some cases farmers did not pay enough attention to the instructions, or perhaps did not properly understand them. Those bacteria are small plants, invisible to the naked eye, and are grown upon gelatine. Some have thought that it was necessary to have this mass of gelatine dissolved and mixed with the seed. This is a mistake. Where they attempted to dissolve the gelatine and apply it to the seed, it proved a failure. In the first place, it is not necessary, and, in the second place, gelatine is not soluble in cold water. The result was that the gelatine caused the seed to roll up into balls, and those clogged the cups of the grass-seed sower, so that it became impossible to sow the seed with the machine. If the gelatine becomes broken up in the water, it will be better to strain the whole through a cloth.

From fifteen to twenty-five pounds of seed is sown per acre. This depends upon the quality of the seed. The best results we ever had were from 15 pounds per acre, but it was home-grown seed. Where sown with a nurse crop, barley is the best grain to sow, at the rate of three pecks per acre. I find there is a mistaken idea with some people in regard to a nurse crop. They think, by sowing a nurse crop, so as to shade the ground, they conserve the moisture. This is not correct, as the nurse crop of grain will throw off a much greater quantity of water through its leaves than the

sun would evaporate from the soil. We sow the seed in front of the drill; the hoes or shoes of the drill act as a small double-mouldboard plow, throwing the clover seed in between the two rows of grain, away from the roots and shading influence of the strong grain plants. We give a cross stroke of the harrows, and follow immediately with the roller, but have the Breed weeder hitched to the back of the roller. This breaks up the fine, smooth surface made by the roller, and leaves a fine mulch in its place that prevents rapid evaporation. After the grain crop is cut, do not allow any stock to pasture on field. It may grow up two feet high in the fall, but let it stay; it makes a fine place to catch the snow in winter to protect the young plants. It is well to roll it down in the spring, to break down any old stalks and press any small stones into the ground.

## CUTTING.

Cut when about one-tenth of the blossoms are out. We cut in the forenoon, and follow with the tedder as soon as possible. The farmer who attempts to make alfalfa hay without a tedder has a hard proposition, even with the best of weather. The mowing machine is the best machine that has been invented so far for cutting hay, but it has its defects. One is that the leaves and blossoms are all left on top, with the result that the sun soon destroys the tissues of the leaf, and it becomes hard and dry, and in many cases falls off. The leaf is the natural organ of the plant to carry off the sap by transpiration; if the leaf is destroyed, the sap has to make its escape through less-effective channels; therefore, it is necessary to keep the leaves on the plants in as green a state as possible until the sap is evaporated. This is best accomplished by tedding two or three times the day it is cut, and putting into small coils before night, allowing it to stand three or four days in the coils before hauling to the barn. Sometimes rain interferes with our operations. If it continues wet for several days, two men should go around with forks and haul the coil to a fresh place, so as not to kill the plants under the coil by smothering. We usually cut three crops from the same field in the season. The second and third cutting is much easier saved than the first. We ted two or three times after cutting, rake into windrows the same day, and let it lie in the windrows over night. The next forenoon we run the tedder lengthwise of the windrow, use the hay loader in the afternoon, and haul to the barn. We always get our finest hay in this way.

## BREAKING UP.

The question is often asked, How will we break up the sod, owing to the very coarse, strong roots that the plant possesses? This can be easily done by allowing all kinds of stock to pasture the fields close the fall previous to breaking. If horses are allowed to pasture late in the fall, or when the fields are bare in the winter, they will bite the crowns out, and the plants will die. When the warm weather comes, so as to rot the roots, the field can be plowed about the middle of May, the same as any other old clover sod, and the field will be a fine place to grow a crop of corn. Alfalfa should never be grown as a rotation crop, as it is too expensive seeding, and, with proper care, a field will continue in good shape for a number of years. It should always be sown without any mixture of other grasses, with one exception, and that is where there may be a low place in the field, when there may be doubts about it winter-killing. Then, after the alfalfa seed is sown, it will be quite in order to sow some orchard grass by hand on those spots. The orchard grass will be ready to cut at the same time as the alfalfa, and it will give three cuttings during the season.

Why has alfalfa failed so often?

1st. Sowing it on land that is not adapted to its growth, such as low land or hillsides that are springy, peaty soils—soils with too much acid in them; i. e., lacking in lime.

2nd. Pasturing. Perhaps more failures have come from pasturing than all other causes put together. It makes an excellent pasture plant, but it does not stand tramping by the animals' feet. Close and late pasturing in the fall is almost sure to prove fatal to it.

3rd. A lack of proper bacteria in the soil for the purpose of gathering nitrogen. This can be supplied by the nitro-cultures already mentioned, but the cultures have not proved uniformly successful, and we must look for a cause.

## WHY INOCULATION MAY HAVE PRODUCED NO BENEFIT.

It may have been that, where experiments have been tried in the same field, and no difference could be seen between the treated and the untreated seed, that the soil was already fully inoculated from the bacteria that work upon the sweet clovers, or from some alfalfa that has been grown upon the farm or adjoining farms years ago. In that case, we may dismiss the subject without further comment. Another probable cause is the manner in which the cultures are handled. Those bacteria are small, single-celled

plants, belonging to the lowest order of plant-life. Most of those bacterial plants are killed by the action of sunlight. When the farmer obtains the culture from the bacteriologist, he takes the glass bottle which contains it from its wrapping, and perhaps innocently places it in the window, where the sun's rays fall directly upon it; or he may have done everything properly until he commences to sow the seed, but, instead of sowing the seed in front of the drill, and having it covered immediately, he sows it behind the drill, and the seed lies there uncovered and exposed to the burning sun for perhaps the greater portion of the day. All of the expense and labor incurred is for naught.

HY. GLENDINNING.

Ontario Co., Ont.

## NOTES FOR FARMERS FOR APRIL.

By John Fixter, Farm Superintendent, Macdonald College.

1. If you have not planned a definite rotation of crops, plan a four-year rotation, subject to modification later on.
2. Keep all animals out of the pastures.
3. Remove colonies of bees from their winter quarters on a calm, dry day, when the temperature is 60° to 70° Fahr. Weigh every colony, giving those short of stores a frame of well-sealed honey.
4. Clean up around the house and barns, removing all rubbish.
5. As soon as the snow is off the ground, spread all manure that has been drawn during the winter, whether ready to plow or not.
6. See that all water courses are open; open furrows to let any water off the fields that can best be let off that way.
7. Do not work heavy loam or clayey soils when they are wet and cold; if you do so they will bake, and a good crop cannot be expected.
8. When the soil is in suitable condition, do not lose a minute. Early seeding gives the best results.
9. Sow the best seed procurable.
10. Sow clover with every crop of grain, excepting peas. It is the cheapest fertilizer.
11. Sow wheat, oats and barley on fall-plowed land, and prepare it thoroughly in spring before sowing.
12. Sod, plowed in spring, should be planted with corn, potatoes or peas.
13. Gather surface stones from the meadows, and roll the land as soon as dry enough to carry without cutting the sod.
14. Look after the brood sows. See that they have a warm, dry place for farrowing; watch closely when time is up.
15. Give brood mares plenty of light work for exercise, and good laxative food.
16. Watch the ewes lambing; separate them for a few days to a slightly warmer room.
17. Have some cows calve this month.
18. Look in on the whole of the live stock just before retiring.
19. Do not put off until to-morrow what should be done to-day.

## SILAGE BETTER THAN SHREDDED CORN.

Editor "The Farmer's Advocate":

In the March 12th issue of "The Farmer's Advocate" I noticed an article on shredding corn, by G. B., Essex Co. As I have had considerable experience in handling corn for myself, as well as for other farmers, I will try to give my experience, which I think will prove that the silo is the right method of caring for corn fodder. I have a threshing outfit, corn shredder and ensilage cutter, and have threshed corn with the separator for some farmers, and shredded for others, but find the silo gives best satisfaction, as more or less fodder is always wasted when put in a mow or stacked. Even when mixed with alternate layers of straw, there is a waste, which never occurs when a silo is used, provided the silo is not too large, so that the ensilage can be fed off fast enough that exposure to the air will not spoil it. I need not tell you that Dereham Township is among the first in dairy business, and as we have cheese factories, condensers, and Canadian Milk Product Co., within easy reach, we find good money in dairying, as Mr. Freenan's letter in a recent issue would prove; but as he sells his milk to the Canadian Milk Product Co., which pays a higher cash price than cheese factories, his average looks better. He claims ensilage is his mainstay for feed, as do all the farmers who have fed it. We have many siloes in this district, and find them a great success, and would advise G. B. to build one and prove it for himself. Cement siloes are fast taking the place of wooden ones, as they give better satisfaction in every respect.

As I am building a barn, and am at a standstill to know which is the better way to fasten cattle which have water supplied to them in the stable, and for days do not get out in stormy weather, the stanchions or tie-chains? would like to hear the opinions of others along this line.

Oxford Co., Ont.

A. D. H.