

# Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto.

## Conservation of Manure.

Barnyard manure is one of the most valuable by-products of the farm. However, its value can easily be and ordinarily is greatly lessened by certain adverse conditions, improper treatments and modes of handling. The value of manure lies not only in the fertilizing elements which it may contain—materials for which the farmer pays large sums when he buys commercial fertilizer—but also in the large percentage of organic matter and the great mass of bacteria. On the lighter soil types especially, organic matter may be the key to the scheme of improvement. The bacteria are of great value in that they are necessary for decay and resultant beneficial effects. A few ounces of rotting manure may easily contain a billion of these microscopic bits of life.

Carelessness and improper handling result in enormous losses, yet it is still no uncommon sight to see barnyards glutted with manure which has for months been exposed to the damaging action of rains, "fire-fonging," and the type of decay which spoils the word less in big letters. A farmer would not think of allowing a ton of commercial fertilizer to be washed by repeated rains—yet it is no small wonder who will day after day tramp through the barnyard and give no thought to more economical, sanitary and efficient methods of handling the farm fertilizer.

Leaching or washing out may cause the loss of large proportions of the phosphoric acid and potash, especially the latter, while improper fermentation generally results in the loss of large quantities of ammonia, the highest priced ingredient of commercial fertilizer. All three losses can be cut to a minimum by either hauling the fertilizer direct to the field as it is made, or by properly storing it in several pits with tight bottoms. In the latter case, preventing loss of ammonia by excluding any large amounts of air, and thereby saving up the kind of rotting or decay which does not set free this valuable fertilizing substance.

Poor stall floors and the lack of sufficient bedding of the right sort to act as absorbents, are common causes of loss of liquid manure, which contains even a larger per cent. of nutrients than the solid. Any system which fails to take care of this is incomplete.

Under the adverse conditions of weathering and improper decay, just described, the loss may easily equal fifty per cent. of the nutrient constituents, and probably much higher with the ammonia and potash, which are most easily lost. Experiments and practical tests have shown that in six months' exposure, horse manure has lost as much as sixty per cent. of its nitrogen, forty per cent. of its phosphoric acid and seventy-six per cent. of its potash. Converted to actual dollars, this loss might represent a very large sum on many farms.

"Fire-fonging," an apparent burning of manure, is caused in dry, open heaps by the action of certain fungi. Manure thus attacked soon becomes of little value. Moistening and compacting, the remedies for improper fermentation, will also prevent this action.

It should no longer be necessary to caution farmers against placing manure in small piles in the field, to be scattered by heavy later. Loss of ammonia and uneven distribution of plant food are the two main reasons. A

manure spreader will pay for itself in a short time where there is any great amount of farm fertilizer to spread. Fineness, even spreading and saving of labor are but a few of its many advantages.

Manure contains a smaller portion of phosphoric acid than of potash or ammonia and is therefore an unbalanced fertilizer. The addition of rock or acid phosphate, at the rate of about forty pounds per ton of manure will greatly increase the effectiveness of manure. Conclusive results have been produced as to this point. The phosphate can be dusted over the manure spreader loads as they are hauled to the field.

## Ice Supply on the Farm.

One day last summer I met a farmer who had been to the station with his cream. He had just received his cheque for July and showed his account for the Company for the same month. It credited him with 52 pounds butter fat at 47 cents from first grade cream, and 224 pounds butter fat at 37 cents from second grade cream. When I asked him how he came to have so much sour cream, he said he had no ice and that his well water wouldn't keep his cream sweet, especially over Sunday. Then I asked him why he hadn't put up ice. "Well," he said, "it was too much bother."

A glance at the figures in this man's account will show that he lost \$22.40 that month by not having ice.

Outside of its use on the dairy, ice is essential in the farm home for supplying the refrigerator, in which meats, butter and other perishable foods can be kept fresh for a number of days.

To know how much ice to put up, the following is a safe rule to follow: If engaged in the city milk trade the farmer should put up two tons of ice per cow. If supplying cream, one ton per cow is sufficient, and four tons for household use.

In putting up ice, one foot below the ice, one foot along each side, and two feet above should be allowed for the sawdust. If the weather is cold, it is a good plan to pack damp saw between the cakes. This prevents the air from melting the ice.

Ice may be stored in the corner of a woodshed or outbuilding, but it is better to have a building especially built for the purpose, because the dampness is apt to rot sills and walls.

In building, two things are essential, drainage and ventilation. Unless the soil is sandy, a few inches of gravel under the ice, with a drain to carry off the water is necessary. By having openings in the gables a draught can be secured which will carry away the warm air under the roof. Plans and suggestions for farm ice houses can be obtained free from the Central Experimental Farm, Ottawa, or from your nearest Experimental Station.

As ice often comes into direct contact with food and drink, it is important to secure it as clean as possible. It should never be taken from streams or ponds into which there is any drainage from houses or barns. Disease germs lying dormant in the ice may become very active if they get into man's food.

Good, clear ice, free from snow, harvested before it begins to melt, is the best.

Ice is free for the taking and requires only a little labor in harvesting, therefore, why shouldn't it be used on every farm, when it gives such good returns, not only as cash, but in convenience to the household.

## How to Tan Farm Hides.

First, remove hair. To do this, mix for an average-sized hide about a half-peck air-slaked lime in half-barrel of water and stir briskly. Then immerse the hide and let remain from three to five days, stirring two or three times daily. Try from time to time to remove the hair with any blunt tool, such as the back of a case-knife; remove all the hair, then rinse in clear water. Then make a solution of three pounds of crushed alum, half-pound of salt-petre, and one or two pounds of salt. Put these into enough water to fully cover the hide. Let remain two weeks, stirring, once or twice daily. At the end of two weeks the hide will be tanned. Tack the hide out on a smooth place, such as a barn door, stretching in all directions. Get out all the wrinkles and when nearly dry rub it with tallow, and, if at hand, good cod-oil, rubbing it in well. Then roll it up for a few days, keep in a warm place, not hot, away from the sun. Soften by rubbing well, and if necessary, use more tallow. This makes a light-colored leather. If it is to be blacked, do so before any tallow is put on. Use four ounces nut-galls, eight ounces copperas, dissolved in one quart of vinegar or cider, soaking the hide over night, or twenty-four hours if necessary. This method can also be used for cowhides and calf-skins.

**Tanning Hides with Hair on.** Make a mixture of three pounds of carbonate of soda; three ounces each of nitrate of potash, common salt, prussiate of potash, sugar of lead and pulverized copperas; nine gallons of water. Place the hide in this solution for two hours, remove carefully and rinse in cold water. If the hide is stiff, dip it repeatedly in this mixture: One gallon of soft soap, one quart of fish-oil, one ounce of borax, four ounces of soda, four ounces of alcohol and two quarts of hot water. This method is especially for hides to be used as rugs.

To tan any kind of skin with hair or wool on, or without: Take one pound of alum, one pound of Glauber salts, one-half pound of salt, one-quarter pound of saltpetre. Dissolve in warm water. Soak, work and dress. I once used skunk skins to make a robe, with success.

**Sheepskins with Wool On or Off.** Remove all fat meat from the skin by scraping with a blunt-edged knife. Soak the pelt in a bath composed of one pound of alum and a quart of salt, with enough water added to cover the pelt. Put the vessel away in a warm place and turn the skin in the liquid daily. After a week, remove the skin and dry it. When partly dry, rub and stretch the skin to complete drying.

If you want sheepskin for leather, remove the wool before putting into the alum and salt bath. To remove wool, place pelt with flesh side up and sprinkle with quicklime. Moisten the lime and leave for twenty-four hours, after which the wool can be pulled. The lime can be put on wool side of pelt, but injures the wool more than if placed on flesh side.

**Tanning for Robes and Rugs.** To tan hides with hair on for robes, mats, or rugs, wash the skin and remove all fleshy matter by scraping. Then wash hair side with warm water and soap and rinse. Take one-fourth pound each of salt and pulverized alum, one-half ounce of borax, and dissolve in hot water. Add enough eye meal to make a thick paste and spread on flesh side of skin. Then fold lengthwise, flesh side in. Let remain two weeks in an airy and shady place, then unfold, shake well, wash flesh side in water, and scrape with a dull scraper. Pull and stretch and work until dry. The amounts mentioned are enough for sheep skin; for larger skins use more in proportion. Farmers can make good robes from sheepskins treated as above and sewed together.

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**A Few Suggestions to Poultry Shippers.** Receivers of poultry in the consuming centres are having their usual trouble with dressed poultry. This is caused mainly by a discoloration of the poultry due to improper preparation. When shipments in this condition are received the commission house has great difficulty in disposing of the product and then only at a reduced price. This usually brings a complaint from the shipper because of the low price, which is often unjustified.

It is by far preferable to ship poultry alive, for then, if it should arrive at a time of the week which would necessitate its being kept over a few days, it could be done without detriment. It can also be prepared just before sale by the butcher so that it will have a fresh and clean appearance.

But if it is desired that dressed poultry be shipped, the following suggestions can be followed to advantage: After killing and bleeding, dip the fowl in boiling water to loosen the feathers. Then following the lay of the feathers, wipe them off; do not pull them off for that loosens the skin, and any break in the skin will produce a green spot in a few days. After the feathers are off dip the fowl in boiling water several times again, holding it in a second or two. This is to tear over the outer skin slightly and to make it cling to the inner skin. Immediately after put the body in running cold water, or ice water, and leave it there for at least four hours. This is to take out all of the animal heat and besides will give the fowl a nice plump appearance. It is very essential to have the fowl properly chilled before shipping.

Another essential to consider, especially in the shipment of dressed poultry, is the time of shipment. Poultry can be sold to advantage if it arrives at the market not later than Thursday morning. If it arrives Friday night or Saturday morning, it comes after all the butchers have been supplied for the Sunday trade. As it is difficult to keep dressed poultry over several days the commission man then has to force a sale at a sacrifice price, which causes extra work for him and invariably results in a kick from the shipper.

Chickens are more susceptible to discoloration in keeping than ducks, dressed turkeys, however, are not. Therefore, they should be shipped alive, or greater care should be used in dressing them.

**The Children's Hour.** Much fun on the ice can be had with a "make-shift ice-boat," one that any boy handy with tools, and who is the owner of a sled and a pair of skates, can readily make. This small ice-boat has its limitations, and when it comes to beating to windward (close-hauled on the wind), it will not do much, neither can it develop the flying railroad speed of the real ice-boat. Yet for all that, with the wind blowing fair, or even on a tangent, the "make-shift ice-boat" is quite the wonder; and if rightly made, the way it can skim over the ice in a good strong breeze, is thrilling enough for any speed lover.

To make our "make-shift," take a sled—the lower the better—a pair of stout skates, and two boards, the first, say, ten feet long by eight or ten inches wide. Then we will need a handful of good-sized wire nails, some small, strong rope, and a mast and a sail.

For the mast, any tight, stout pole will do, as it is guyed with the rope to strengthen it. For the sail, common drilling will do, or any good, strong cloth around the house; in emergency, mother's bed-sheets can be commandeered. In making the sail, one known as the "dog-eared" style is best, and as the mast will be ten or twelve feet high, and some six

## The Noon-Hour Lunch at School

There are many mothers in the land who pack dainty and wholesome lunches for their children, but there are also many busy and work-hard mothers, or perhaps a few careless mothers, who deem any lunch satisfactory if it satisfies the child's appetite, even though it is unwholesome and not at all well balanced.

Whichever may be the case, the child's dinner can not be complete without an appetizing hot dish or drink for lunch during the long winter day. Fortunately indeed, the child who carries to school a Thermos bottle filled with hot milk or cocoa, but all can not afford even these little necessities.

Last year the teacher in our district school noticed that the children did not study well after the noon hour. A little keen observation showed her the reason. Their food was heavy and unbalanced, and at best was nothing but a cold lunch; of course, the result was a sluggish brain, as might be expected. So our teacher began to make plans. After she had them all completed, she laid them before the parents, who heartily approved.

A little equipment consisting of the following, was donated or bought: A second-hand table, a second-hand cupboard, an eight-quart kettle, a tin dishpan, a quart cup, a soup ladle and enough soup bowls and teaspoons to go round. The dish towels were hand-knitted by the sewing class, as were the hot-pan holders.

The next thing was to decide who was to do the cooking. It was a small school and had but few older pupils. The older boys were appointed to empty dish water, get in water and help serve. There were two fourth class girls and two third class girls. One girl from each class was put on the same committee. Committee No. 1, under the strict supervision of the teacher, cooked for one week, and committee No. 2 did the dishwashing. The next week they changed about so that each committee had a chance to show its culinary skill. The teacher helped serve and taught the children how to do the cooking.

Close account was kept of everything, and at the end of the month a statement was sent to each parent. The total expense for each month was divided by the number of pupils; thus:

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setting the expenditures to the satisfaction of everyone.

It was not long before the teacher began to notice a change for the better, by the added zest and aptitude of the children for their after-dinner studies.

The week's menu for twenty children was as follows:

Monday—Rice boiled in milk.  
Tuesday—Bean soup.  
Wednesday—Milk toast.  
Thursday—Cocoa.  
Friday—Potato soup.

The potatoes for potato soup were prepared the previous night or in the morning before school, and left in cold water. The recipes we used follow:

**Rice Boiled in Milk.** Wash one quart of rice through several waters or until water is clear. At ten o'clock put it on to boil in four quarts of salted water. At 11:45 add a quart of whole sweet milk and one-half cup of fresh butter. This will need occasional stirring but is well worth the trouble involved.

**Bean Soup.** Put one quart of navy beans, with one level teaspoon of soda, on to boil at 8:45 o'clock. When they start to boil, drain and add fresh water. Put on to cook again. If a soup bone is to be used, it should be put in at once and if not, two squares of sweet milk and one-half cup of fresh butter should be added at 11:30. Salt to taste.

**Milk Toast.** We found it handiest to let each pupil bring its "quota" of toast from home, ready made. Four quarts of whole milk should be put on to heat at 11:30 o'clock. When it boils, add salt to taste and pour over the toast. Leave closely covered until ready to serve. This proved a favorite dish.

**Cocoa.** At 11:30 o'clock put on three quarts of milk and three quarts of water to heat. Mix one teaspoon of cocoa and one and one-half cups of sugar to a paste with water. Stir the paste in to the hot milk and water. Let come to a boil and stir well before serving.

**Potato Soup.** At 11:00 o'clock put two quarts of peeled and diced potatoes on to cook in four quarts of salted water. Let it boil until 11:30 o'clock. Then add two quarts of whole milk and one-half cup of fresh butter.

across the beam, the sail should be made to fit accordingly. Now that we have everything, first make one end of the longer board round (this is to be the bow). Then take the shorter board, some nails, and fasten a skate cross-wise on its underside, at each extreme outer end; they will be the runners, and must be fastened solidly, pointing ahead.

After nailing the skates on securely, take the short board and nail it cross-wise of the longer board, using four-inch cleats edgewise between the two, and place the short board about one-third of the distance from the bow. This cross-board must be fastened very firmly to stand the strain. Then take the sled and place it at the other end of the long board (rester style) and fasten it there with a light rope, so that the sled can be swung to the right or left, or run under to steer with. A cleat may be found necessary to make it even with the front. Next, in the long plank, and directly over the middle of the cross-board, we must bore the mast-hole, and step our mast, and then guy it taught with the small rope to outer ends of cross-board. Then attach the sail and when this is fastened on with good strong twine, the ice-boat is ready to use, and we can well remark: "Now for a race!"

**The Busy Bee in Winter.**

In winter, bees should be disturbed as little as possible. Nothing is gained and frequently much is lost by needlessly exciting them. Sometimes, however, an unforeseen condition may arise that makes it imperative to look after the bees even in mid-winter, but since these occasions are rare, it is best to follow the general rule to let them severely alone.

Instead of disturbing the bees, the spare moments of winter had better be employed in getting together the new hive bodies, sections, and a score of other things which, during the swarming time, we will wish we had done at our leisure.

If the surplus honey has not yet been disposed of, get rid of it at once. Liquify the granulated extracted honey by heating and bottling it in receptacles that are as air tight as it is possible to make them.

Now that the bees are not flying, melt up all old combs and cappings, as beeswax is worth money. On warm, sunny days in winter bees come out of the hives for a flight, even if there is snow on the ground, and if they alight on the snow, as they sometimes do, being torpid from long hibernation, they may become chilled so that they can not return to the hive.

It is well to cover the snow for ten or fifteen feet in front of the hives with a thin layer of straw, or litter from the hen house. They will alight on it and be saved from being chilled and disabled.

Every now and then we hear of some new strain of bees being exploited as possessing certain desirable characteristics apart from the old standby Italian bee, and it is well for the beginner to move slowly in adopting new methods and bees.

## How They Make Roosters Crow in the Movies.

This tale is about a rooster. On several occasions during the filming of rural pictures, in which "barnyard atmosphere" is an essential effect in the pictures, directors and their slaves have been confronted with one of the most troublesome problems that could possibly be conceived by the people who strive to make the public laugh.

No doubt you have sat in a theatre seat and watched a rooster crow on the silver sheet. You probably smiled and gave the matter no serious consideration. Or perhaps you said: "Simple enough," and let it go at that.

But just try to make one of the stubborn fowls crow. You would, without a doubt, wish that crazy creations never existed. It is with this difficult feature that members of the movie profession have to deal. In most cases they have to resort to a dummy for the purpose of producing a desired effect in pictures, and dummies are easily detected. The substitution of dummies for the real thing in pictures only causes picture patrons to turn up their noses in scorn and wonder what the manufacturers of screen stories take them for. One director of comedies was recently humiliated by several letters, which asked him if he thought he was really getting away with the idea of putting one over on the public. Why, a new-born baby could distinguish a dummy rooster from the real one. Where did he get the idea that movie fans were absolutely dumb?

The gentleman in question is one who has an international reputation for handling animals and fowls in pictures. He has frequently been styled, "the man who makes animals act." Evidently he realized that there could be nothing that could take the place of a natural actor, whether human or animal. He began a puzzling study of what he called "chickenology." For several days he wondered how he could make his rooster crow in his next picture. Every means that he resorted to proved useless.

The cameras were set and the cameraman wasted many thousands of feet of film waiting for the rooster to crow. But to no avail. It was absolutely useless. It couldn't be done. The director had given up the idea entirely, when one morning he saw his troublesome rooster walk proudly out of the coop in which he had been enclosed. Some sympathetic fellow had fed him for the fowl and unfurnished the door for the abused rooster to seek freedom.

The director watched the rooster strut from the coop and stop, stretch his wings and crow as if his very life depended on it. Now why in the world wouldn't the rooster do that for him? The proud king of fowls was put into the coop and kept for several hours, then turned loose again. The same procedure was followed several times. Invariably the rooster would crow after being imprisoned for several hours.

The psychology of making the rooster crow was finally determined by the fact that the coop had a low roof. The rooster while in it could not hold his proud head up. When liberated after a few hours of being in the coop he naturally had to stretch, and then his stretching was followed by the familiar sound which every one knows, the song of a rooster.

This means of making a rooster crow in a picture has been a great help to directors who like to make everything appear natural. When a picture is filmed that requires a rooster in the act of crowing, the fowl is procured and placed in a coop constructed so that he can not raise his head. When the time is ready for his part in the picture, he is placed before the camera and there he never fails to please the director with his "Cock-a-doodle-dee."

Now, you may be inclined to doubt this tale of a rooster in movieland. If you do, just try it on your own barnyard prince. Good bookkeeping is very important on a poultry farm, and this is the time to begin.

It is a risky business to begin a season's work with only one plow point, and an old one at that.

If the earth is not frozen too hard and you have stumps to pull, you'll em out now.

"I had rather have the care of cattle than be the keeper of the great seal of the nation."—John Burroughs.

The largest duck farm in the world is located at Spoon, Long Island. It is claimed that 150,000 ducks are quartered on it.

An egg-eating campaign would be of the highest value to the people of Canada, both from a financial viewpoint and from a health point of view.

In fattening chickens a low grade of wheat flour is a very economic feed, surpassing oatmeal in this respect. Oatmeal fattening is liable to be disastrous both for the hen and her owner. Flock fattening is best.

It is a maxim universally agreed upon in agriculture, that nothing must be done too late; and again, that everything must be done at its proper season; while there is a third precept, which reminds us that opportunities lost can never be regained.

## The Welfare of the Home

Lessons in Mother Nature's Kindergarten

BY MARY FRANCIS DAVIS.

One of the greatest privileges which a mother can enjoy is awakening and developing a love of nature in her children. This can be done by devoting a small amount of time each day to the concentrated observation of the flowers, trees, birds, clouds, snow and other beautiful offerings of nature. Mother Nature herself will outline the yearly program to be followed.

During the winter months, when much time is spent indoors, the hours may be improved by telling stories of animals, birds, ants, and bees, and showing pictures of these useful friends. There are many interesting things to be seen outdoors on winter walks. It is easy then, when trees are bare for children to learn to recognize them by their barks. This is a good time to discover and examine nests which the birds deserted when Jack Frost told them to fly to the warm Southland. When snow comes, catch some hard dry flakes on a slate, and let the children examine the beautiful crystals. Speak of the snow as a soft, white blanket covering the tiny seeds which are down in the ground, waiting to grow.

Then comes Spring with her helpers, the March winds, the April showers, and the warm sunshine. The children can be outdoors more at this time, and love to romp with the strong March wind, which is sweeping and blowing the dead leaves about. Watch for the first green shoots as they creep through the ground, followed soon by crocuses, daffodils, bloodroot and the tiny woods flowers. It is a great joy to be able to take children for walks in the woods at this season, but the little city boys and girls need not be denied the fun of seeing the little seeds awake. Try this interesting experiment.

Give each child a sponge, and have him moisten it and place it in a saucer in a sunny window. Then sprinkle it full of ordinary mixed grass seed, or if you keep a canary, and have bird seed, use that.

Do not tell the child that the seeds will happen, but let him wait for the changes that will come. Bring pussy willow stalks, and branches from other bushes into a warm, sunny room, and observe the budding of the flowers, trees, birds, clouds, snow and other beautiful offerings of nature. Mother Nature herself will outline the yearly program to be followed.

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Then comes Spring with her helpers, the March winds, the April showers, and the warm sunshine. The children can be outdoors more at this time, and love to romp with the strong March wind, which is sweeping and blowing the dead leaves about. Watch for the first green shoots as they creep through the ground, followed soon by crocuses, daffodils, bloodroot and the tiny woods flowers. It is a great joy to be able to take children for walks in the woods at this season, but the little city boys and girls need not be denied the fun of seeing the little seeds awake. Try this interesting experiment.

Give each child a sponge, and have him moisten it and place it in a saucer in a sunny window. Then sprinkle it full of ordinary mixed grass seed, or if you keep a canary, and have bird seed, use that.

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