

Soils and Crops

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Cooling Milk Pails.

Because of the present high prices of raw material, labor and feedstuffs, every farmer is striving to make the most of his farm by economical production and increased efficiency in farm management. This is especially necessary because the margin of profit is an extremely narrow one. We know of no way whereby the selling price can be increased more in proportion to the cost than by raising the quality of the product.

The quality of milk depends greatly upon the method of production or handling. No matter how carefully the milk is drawn from the cow there are always some bacteria in it; and these at ordinary temperatures develop very rapidly. These minute organisms are so small that a drop of milk may contain millions. They grow very rapidly at a temperature of sixty to ninety degrees Fahrenheit and require food and moisture like higher forms of plant life. Milk furnishes an ideal medium for bacterial growth and unless controlled by some means they will grow or multiply with great rapidity.

There are several methods of keeping down bacterial growth in milk. Cooling is a very economical and practical way which all farmers can practice with successful results, making a more desirable product for the consumer, as well as making one that is more profitable for themselves.

Cooling or even freezing the milk does not kill bacteria, but retards their growth. If milk that has been kept sweet or at the desired degree of acidity is allowed to become warmed, the bacteria which have been kept dormant will at once resume their growth. This explains why milk and cream should be kept thoroughly chilled, and never allowed to warm up until used. The process of cooling milk or cream checks the bacterial growth, and but few organisms thrive at a temperature below fifty degrees F. However, it is very important that the milk immediately after it has been drawn be cooled to fifty degrees F., or as much lower as circumstances permit. The importance of immediate cooling was shown by Dr. Conn in his experiments. He demonstrated that at a temperature of fifty degrees F. bacteria in milk multiply five times in twenty-four hours, while at seventy degrees they multiply 750 times in twenty-four hours. Milk may be kept sweet for quite a while at forty to forty-five degrees F. because the lactic acid bacteria or the principal bacteria that cause the souring of milk, practically stop growing at these temperatures. But dependence cannot be placed on these temperatures, as there are many other classes of bacteria

that can grow at these temperatures and produce undesirable effects.

Shortly after the warm milk is drawn from the cow bacteria start their rapid progress of development, and many times the milk is allowed to remain in the cow barn until milking has been completed. This may require an hour or more, depending upon the number of cows to be milked and the efficiency of the milking system. A few hours' delay in cooling reduces the keeping quality of the milk to a far greater extent than many people suppose. Not only the bacteria are very undesirable, but the butter-fat in the warm milk has the power of absorbing outside odors which impair the value of the milk to such an extent that it is not desirable to be put on the market. Many gases and odors can be removed by aeration or exposing the milk in thin films to the atmosphere. Fortunately, the construction of modern coolers is such as to make it possible to do the cooling and aeration in one operation. Dairymen would do well to consider what they expect to accomplish by aeration and cooling. Odors will be removed by aeration, but the milk must be aerated while it is yet warm. The so-called cow odors are removed in the best and quickest way by keeping manure out of milk. Cooling and aeration should always be conducted in a clean cool room which is free from all dirt and contamination.

There are several types of coolers on the market but not all of these could be used economically by the farmer; many farmers who retail their milk cool it with a cone-shaped cooler, the inner part being filled with ice water and the tank or milk receiver at the top has small openings at the bottom near the outside through which the milk discharges in fine streams directly upon the cone below, which is cooled by the ice water. The milk is then drawn off at the bottom of the cone and stored in a cool place until needed.

Another economical and practical way of cooling milk and cream is to place the containers into a tank where cold water is pumped into it in such a way as to enter the bottom, forcing the warm water out at the top. Water should be pumped into the tank at frequent intervals in order to keep the containers of milk and cream at as low a temperature as is possible. Lowering the temperature of milk and cream tends to keep down the bacterial count, keeping the milk sweet and avoiding the great loss by souring, as sour milk or milk high in bacteria will not be as valuable to the producer or sell on the market for as high a price as the low-count milk produced under favorable conditions.

THE CHILDREN'S HOUR

Once upon a time Jack Rabbit had ears about the size of Brother Possum and a tail as long as the next fellow. He'd have had them yet if he had not been such a curious chap. He always was listening and listening to other folk's affairs, sitting with his tail all curled up under him and his little bright eyes snapping like coals.

Whenever there was talking or quarreling or singing there was little Jack Rabbit. Pshaw, but he was a busybody, sure enough. He even went listening around two-legs' houses and more than once nearly got caught and popped into a pie. But he always managed to get pretty fast, and after a while folks really got used to the little chap sitting on his hind paws taking in all the news. The creatures, too, didn't pay any more attention to him than if he'd been a tree stump.

"That's only little Jack Rabbit!" they'd say to one another and go right on to their specifying. But not satisfied with all the things he heard in the woods and in the village where he visited, Jack started staying awake at nights and trying to hear what the goblins and fairies were up to. For many, many nights he listened to their secrets and first thing you know he began trying to put into practice the fairy charms and spells he had overheard. One day he met old Mr. Hedgehog. Mr. Hedgehog wished him good-day and asked him what all the news was.

Instead of answering, Jack stopped short and twinkled his whiskers. "Abra-cadabra dabra co!" mumbled Jack Rabbit, and, pop! away flew Mr. Hedgehog as invisible as air. He didn't know he was invisible either, and while Jack Rabbit laughed and laughed and all the creatures ran around telling one another that a ghost was in the woods that talked like Henry Hedgehog, and poor Mr. Hedgehog when he heard her husband's voice and bumped into something she couldn't see in the parlor fell into a swoon from which the entire village could not arouse her.

Now it happened that a little fairy chanced by and heard all the confusion and putting two and two together decided that some one was practicing magic.

And this conclusion once reached it was not hard for her to find the culprit. Changing Henry Hedgehog to her visible self again she hurried back to her companions and told them of Jack Rabbit's prank.

The fairies were very angry and resolved to teach Jack a lesson. And a little goblin, who was listening to

the fairies, on his own account resolved to do the same.

That evening Jack went as usual to the fairy ring and hid in a hole with only his ears sticking out the top. The fairies laughed and sang, all the time drawing nearer to Jack Rabbit's hiding place. And the goblins, led by the one little goblin who had heard of the fairies' plan, dug up through the ground till they were right under Jack.

And all at once the fairies all together jumped into the hole and seizing Jack's ears began to pull away for dear life. At the same minute the goblins broke through the last bit of earth and got hold of his tail. And for all that they were so small they tugged and tugged till between them they nearly tore Jack in two.

"Never do to let the fairies get him!" fumed the goblins.

"Whatever is holding him?" gasped the fairies. And they pulled and pulled till suddenly they all fell over in a heap. The goblins had pulled Jack's tail clean out. But before the fairies recovered their breath the little rabbit was half way across the forest crying in three different languages. And next morning when he saw how the fairies had stretched his ears, and he looked at the poor little piece that the goblins had left of his tail, he cried some more.

But ever after that he ran away from everybody and minded his own business. Which is a good thing.

Clean Milk from Milking-Machines.

An excellent grade of milk can always be obtained with the milking-machine if strict attention is given every day in the year to the proper cleaning of the machine and of the other utensils which come in contact with the milk.

The essential steps in cleaning milking-machines are as follows: (1) A rapid but careful washing of the machine by drawing through it immediately after each milking (a) a pail of cold water, (b) a pail of hot alkali water, and (c) a pail of clear hot water.

(2) The immersion of the teat-cups and all rubber parts in a good sterilizing solution (chloride of lime) before milking, allowing for the escape of air from the tubes so that the solution can reach all parts.

(3) A thorough weekly overhauling of the teat-cups and tubes. (4) The daily scalding and thorough drying of all metal parts coming in contact with the milk, except those parts kept in the sterilizing solution. Care must be exercised to maintain the sterilizing solution at an effective concentration.

Exterminate the Last One!

BY ESSIE H. HALL

If it were not for the fact that some varieties of mosquitoes carry malarial germs our mosquitoes might be compared to the family watch dog whose "bark is worse than his bite." While the bite of a mosquito is irritating and poisonous to a few persons, the greatest annoyance to most comes from his incessant buzzing. The itching from a mosquito bite may be relieved by rubbing with moistened toilet soap, by using a dilute solution of ammonia or a 5 per cent. solution of carbolic acid. Oil of citronella if sprinkled about will help in keeping mosquitoes away while sitting on the porch, but is not effective in protecting one during a night's sleep. A few drops of the following mixture sprinkled on a cloth hung on the bed will keep mosquitoes at a distance for a long time: 1 ounce cedar oil, 2 ounces oil of citronella, 2 ounces spirits of camphor.

Since the mosquito is the means of transmitting malaria from one person to another every effort should be made to get rid of it. To control mosquitoes it is necessary to get rid of all tin cans, old pails, unused barrels and so forth, in which even the least bit of rain or other water may collect. It is also necessary to care for all pools or other bodies of water, because mosquitoes breed in water. They will even breed in chicken pans, water troughs and so forth, if the water is not emptied and replenished every day or so.

Water barrels should be covered with wire netting of at least 14 meshes to the inch. The easiest and most effective treatment for ponds or fountains is to stock them with top minnows, gold fish or other small fish. These eat the larvae and thus prevent their development into mosquitoes. All ponds, fountains and streams should have clean sides with no vegetation growing down into the water. It is the marshy edges that give quiet spots where larvae may mature undisturbed by the current of the stream or by the fish. Mosquitoes only choose quiet undisturbed water for laying their eggs. If fuel oil or some other low grade oil is poured on the surface of water, the larvae are killed. The best oil is one that spreads rapidly and does not evaporate too quickly. An ounce of kerosene to 15 square feet of water surface is about the amount that is needed and such a film will stay about 10 days.

House flies are the filthiest and most dangerous of household pests. Because the disease laden filth they carry on their sticky feet and moist spongy mouths can not be seen without a microscope and because the fly's part in carrying typhoid fever, dysen-

tery, tuberculosis or other diseases is usually overlooked, flies are tolerated in many homes. The fly's habit of feeding in open closets, sputum on walks or in spittoons, slop, garbage, the food on our table or on baby's face means that unless every effort is taken, much nauseating objectionable dirt will be eaten even when no disease germs are present. If every person could just realize that the innocent-looking fly that rests on the piece of bread we are eating or drops in our milk, has probably left there something from the privy vault or slop barrel, we would not tolerate them in our houses.

Flies prefer to lay eggs in horse manure, although they will use any kind of manure or decaying vegetable matter. They lay from 100 to 150 eggs in two batches at an interval of a few days. From these eggs, flies mature ready to lay eggs in about two weeks.

In controlling the fly nuisance and danger, first, the number of flies must be kept as low as possible by treating or disposing of their breeding places and by killing them, particularly in the early spring; second, privies must be made flytight and have automatic dropping seat covers so the pest can not feast on body waste and thus pick up and transfer germs of typhoid, or dysentery; garbage pails must be kept covered and other filth disposed of; flies must be kept out of the houses and food must be carefully covered. Most housekeepers realize the importance of having the house carefully screened, or killing with poison bait, sticky fly paper or by swatting all flies in the house, of protecting food from flies and of covering the baby with mosquito netting if he sleeps on the porch. But there is much more work to be done on farms in the matter of making privies fly-tight and caring for manure. To control the breeding of flies, manure can be scattered thinly on the fields every day. This, however, is practically impossible for busy farmers in the spring when possible manure should be stored in a prepared manure pit or tight box, or removed from the stalls, piled and treated with borax. Eleven pounds of crude commercial borax, which may be bought for a few cents a pound, is needed for every twelve or thirteen bushels or sixteen cubic feet of stable manure. Sprinkle this over the manure pile and add a little water to carry the borax down into the manure. This kills the eggs and maggots without injuring the manure as a fertilizer. Not more than fifteen tons of manure so treated should be applied to the acre.

The Welfare of the Home

Little Plays to Act at Home—By Mary Frances Davis

A prominent educator says that no knowledge becomes a useful part of us until we have translated it into action. That is why small children love to play the thing which claims their interest at any moment. After seeing a parade, a little boy loves to assume a stiff military bearing, seize a stick for a flag, impress all available children as soldiers, and start a parade. Every mother of a little girl knows how very early baby girls begin to play at housekeeping. They love to wash clothes, iron, sweep, dust and "mother" their dolls. They should be encouraged in these activities.

This is the natural instinct of dramatization, and can be utilized in developing desirable qualities in a child, and in impressing useful knowledge, for the child comes to understand through doing. Children love to fly like landies, creep softly like mice, and gallop like ponies. After a trip to the Zoo, they have many glorious afterthoughts of pleasure in roaring like the lions, climbing like the monkeys, and imitating the antics of the bears. A wise mother will fortify her nerves, and encourage her child in this, for in assuming the roles of various animals, the child is coming to understand them, and to make them a part of his general knowledge. Children of kindergarten age, or even younger, love to "act" the stories

they know. Mother Goose rhymes are enjoyed by all the little folks, and mothers will find that children take keen delight in dramatizing them. After the children are thoroughly familiar with the incidents of Miss Muffet, Jack Horner and Jack and Jill, let them be those characters. In our own nursery, we find this a happy way to spend rainy mornings. Little Miss Muffet sits on a foot-stool, industriously eating make-believe curds and whey from a large tin plate, with a small tin spoon. We all recite the rhyme together, and at the thrilling words, "there came a big spider and sat down beside her," little brother lowers a whisk broom. Miss Muffet, much frightened, jumps up, dropping dish and spoon with a pleasing clatter, and rushes to a far corner. Then we all laugh, and the children shout, "Play it again!"

Little Jack Horner is easily dramatized. He sits cross-legged in a corner, with a bright-colored candy box which plays the part of the Christmas pie. As we recite "he put in his thumb and pulled out a plum," the hero holds aloft a small rubber ball, and cries, "What a great boy am I!" All of the simple nursery rhymes may be played in like manner.

There is a large field of material with dramatic possibilities which may be so utilized.

Pitting Roots.

In a properly constructed pit, field roots or potatoes will keep throughout the winter months as well as in the best of cellars. The pit needs to be well drained and constructed so as to maintain a temperature at which the contents will neither sprout nor freeze. To accomplish this, a system of ventilation, as well as watchfulness, is a necessity. The site that best suits the requirements is the side of a hill or the top of a knoll of a sandy or gravelly nature. Dig out a shallow trench 8 inches deep, 5 feet wide and of the desired length with the earth thus removed thrown back from the edge. The roots may then be piled up in the trench to a point about four feet above the level of the ground. A pit of this height and width will hold about a ton to each 4 1/2 feet of length. A layer of about four inches of straw will do for the first cover. This should be held in place by a layer of about 3 inches of loose earth. In the latter part of November the covering of earth should be increased to eight inches and the ends covered in. Another layer of straw and of earth is advisable when steady cold weather sets in, and the ventilating holes should not be choked but covered with straw. As the weather warms in the spring the ventilation should be cleared. These are the outlines of a pitting system described in a circular written by Mr. F. S. Browne, assistant to the Dominion Agrostologist, Ottawa.

After loading, the tamping should be done thoroughly, as a tightly tamped pit will result in much superior results by holding the force of the explosion in the under soil where it is desired, and the more thorough the tamping, the easier will the tree roots be able to penetrate in their search for food.

Fuse burns slowly, averaging, as I remember, about two feet a minute, so that after lighting there is an abundance of time to get away. With a proper shot there will be no throwing of dirt, but merely a heaving of the soil, for a large portion of the explosive force is downward and sideways. Seen after the shot it is advisable to take a pole and tamp the earth to settle any air pockets that may have been formed, for if this is not done the settling will take place during the first season's growth of the tree and the earth may settle away from the tree roots. After this tamping the site is ready to be dug out and the tree set.

Ten Rules for the Shipper.

1. Be sure that your product is in perfect condition.
2. Handle as little as possible, to avoid bruising.
3. Take up directly with the railroad details of crop to be shipped, and service required. Give ample advance notice, so that proper car service can be supplied.
4. Get a written acknowledgment from railroad, covering number and kinds of cars to be supplied and the rates to apply.
5. Load containers in car so that there is proper air circulation. Without this, icing or heating will be almost worthless.
6. Pack and brace contents so that load cannot shift or settle in transit, causing breaking of packages or bruising of product.
7. When using ice or heat, prepare the car in advance. Pre-cool the product, if possible.
8. Make exact check or count of contents of shipment, while it is being loaded.
9. Have arrangements made for immediate unloading of shipment at destination; if there is any damage, delay may greatly increase the loss.
10. If shipment is reported "off condition" at destination, arrange for immediate inspection. Get a government inspection report, if possible, as such a report is admissible as evidence in court.

Getting Rid of Rats.

I have finally gotten rid of rats. This is what did the work: Three cups of corn meal, three teaspoons of plaster paris. Stir together and then put away in a dark place in a pan. Place pan underneath a box with a hole in it just large enough for a rat to enter. Have the box with boards on all sides as though you did not want the rats to get in and you'll find that they will get the corn meal. Be careful that no chick or animal can get the corn meal prepared this way, as it will bake in their stomachs and kill them as it does rats.—H. J. Hart.

Homemade Horse Liniment.

Aqua ammonia, one ounce; turpentine, one ounce; linseed oil, six ounces. Mix, and apply by rubbing. The bottle should be kept well corked. If a stronger liniment is desired, a little more turpentine and ammonia may be added. This will blister if used freely and rubbed in, especially if it is covered to prevent evaporation.

FOWLS BRED TO ORDER

The improvement of poultry by breeding dates back to prehistoric times, but the notion of producing a new kind of chicken to meet certain definite specifications is wholly novel. This is exactly what has been accomplished recently at a poultry farm which the U. S. Government maintains for experimental purposes at Beltsville, Md. Nine years have been required to produce the ideal farm chicken, which is now declared to be established as a distinct breed.

One reason why Leghorns are so commonly kept by poultrymen and farmers is that they lay white eggs. New York and most other markets in the U. S. demand white eggs and offer a top price for them. But the Leghorn chicken is a small breed and inferior for table purposes; it is not a satisfactory "meat chicken."

What was wanted was a meat chicken with shape, size and market quality of the Dorking, but with a yellow skin, white plumage and four toes, and laying a large white egg. This was the order which the breeding experts at Beltsville were asked to fill.

In describing the method adopted, the Journal of Heredity says that three breeds were used—the white Plymouth Rock (American), the single-comb white Leghorn (Italian), and the silver-gray Dorking (British origin).

The Dorking is an ideal meat type of chicken—long bodied, low set and of good size, the hen weighing six and a half pounds and the cock eight pounds. But it has white legs, which are a disadvantage for market purposes, inasmuch as popular fancy favors yellow legs. Also it has a fifth toe which is almost a deformity.

The Plymouth Rock has white plumage, with yellow legs and yellow beak. It is a large fowl and excellent for table purposes. But it lays a brown egg, which, though reckoned highly desirable in Boston, is considered quite the reverse in New York.

The white Leghorn has white plumage, yellow legs and skin, and the normal four toes. It lays white eggs, but it is too small and too "leggy." When the three above-mentioned breeds had been crossed and re-crossed, reliance was had upon selection for the final development of the ideal farm chicken. That is to say, individual fowls which showed the combination of the most desirable points were picked out for mating. In this way, through a series of generations the new breed of chicken meeting all the specifications was produced.

The new chicken is called the Lamon. It is white, low set, with a long body, long breast, a shape indicative of high capacity for egg production, yellow skin and red earlobes. The egg it lays is large and white. In size it is about the same as the Dorking and on the table it presents a most appetizing appearance, affording a maximum of meat.

As it proved, the most difficult thing to achieve was the whiteness of the egg. Even a slight discoloration could not be tolerated; it must be perfectly white, like an angel's egg. The red earlobes (a characteristic of the Plymouth Rock) was introduced merely as a mark to distinguish the breed from large-type white Leghorns.

End Doors for Freight Cars.

The sliding doors now in general use on freight cars are clumsy and difficult to operate, especially when, as often happens, freight has got jammed against them during transit. Why not put the doors at the ends? What is the matter with constructing the freight car in such wise that its ends could drop out bodily, swinging downward on hinges to furnish inclined gangways for unloading the goods from the car?

This is the novel notion of a Canadian man, Lyndon W. Mannheim, who suggests that the mechanical arrangement required would be nothing more complicated than a pair of chains operated with pulleys and a couple of rotary drums. One man, by turning a crank, could lower the car-end or raise it into its closed position. A pivoted locking device engaging a pinion would hold the door in any desired position of adjustment. Thus the door could be fixed at the horizontal if its use as a temporary platform were desired.

Burning Trash.

Burning old papers and other rubbish is attended with no little danger, as the wind may suddenly arise and blow the burning material in all directions. Holders for such rubbish can be made from a few feet of wire and some old poultry netting, three feet wide. The top and bottom are made by bending a stout wire into a circle and covering with the netting. The bottom is securely wired to the outside netting, while the top is hinged by a loop of wire. A holder three feet high and about two feet in diameter is of a convenient size.

No animal is allowed in the judging ring at the Canadian National Exhibition until examined by a veterinarian and pronounced free of disease.

The new one million dollar live stock arena at the Canadian National Exhibition will have 8 1/2 acres under roof.

A youth of twenty is certain that he knows more than his father. When he reaches forty he is willing to concede that his father knows as much as he.

Poultry

Poultry culling is a summer job. After the flock starts moulting is the proper time for selection of egg producers. Under natural conditions the hens lay best in the spring.

The points to be noted in culling are: Absence of color in 1, vent; 2, eye ring or lid; 3, bill beak; 4, leg or shank.

If the hen is producing there will be an absence of color. The head of a laying hen is large, the comb and wattles are flushed and the eye is prominent. On the contrary, the hen that is not laying has a small shriveled comb and a white skirt on the comb and wattles.

The lay bones or pelvic arches, after the laying season are farther apart. After the moulting season, they are nearer together. A one-finger width indicates a poor layer, two, three, four-finger widths are the best layers for all flocks.

The width between the breast bone and keel bones (lay bones) indicates the hen's capacity. The best producers have a width of four or five fingers. To tell if the hen is moulting, open the wing and note the ten primary feathers. If the hen has eight she has started to moult. Five old and five new feathers indicate the hen is half through the moult. The hen never lays when she is in the moult but will when the feathers are coming back. The small dry vent indicates that the hen is not producing. If the abdomen is soft the hen is a better producer. Don't keep a baggy hen.

We could build a fine poultry house on every farm in the country on the amount of poultry lost last year. More attention should be given to proper housing, breeding of one strain, proper feeding and culling the flocks. For the amount of money invested, poultry can be made the best production on the farm.

Buttonhole the Judge.

When a judge finishes tying ribbons on a class of stock at a fair, he usually explains, to the people who are watching, his reasons for placing one animal ahead of another.

If he doesn't do so, ask him to. There is no better way to learn the points of a good animal.

Poultry judging will start at the Canadian National Exhibition Friday, Sept. 2.

Sheep Notes

The following grain mixtures are recommended for fitting the ram for the mating season: equal parts of oats and wheat bran; two parts alfalfa meal and one part corn; equal parts of corn and oilmeal; equal parts of field peas and oats, or equal parts of corn, oats, wheat bran, and oilmeal.

Use no sheep for service until one year of age. As a yearling, a ram may be mated with as many as thirty ewes without injury. As a two-year-old a ram is at his best. He can be used until eight or ten years of age if properly managed. He should never be allowed to become too fat or to be used excessively. A ewe should be at least a yearling before raising her first lamb; otherwise, her size and vigor will be so stunted as to result in smaller and weaker lambs.

Grass or stomach staggers is common where lambs and ewes are turned into rank, wet growth of clover or other green feed. In some instances the heads and ears swell enormously and the lambs die. Last year there were many losses from that trouble when lambs were turned into rich meadows and stubbles after haying and harvest. One should very gradually accustom all animals to rich pasture. Physic the lambs with castor-oil or Epsom salts. The dose is one tablespoonful of oil and up, and one ounce of Epsom salts up to four ounces for an adult sheep. Keep the lambs off rich pasture for a time.

Exterminating Quack Grass.

I have never seen published in any paper a method I have used successfully for exterminating quack grass quite cheaply. I plow the ground just deep enough to get all the roots and when dry go over it with the potato digger, shaking all the soil off the roots. In a clear hot day the roots will be dry and dead in an hour. If not they can be raked together and hauled off.

The extra work with the digger was well repaid in the crop of potatoes as the yield was double what it was when the digger was not used. There was not a spear of the quack left in the potatoes or in the oats the following season.—M. C.

The city sits like a parasite, running its roots out into the country and draining it of its substance. The city takes everything to itself—materials, money, men—and gives back only what it does not want.