

THE DAIRY.

A cow with a thick, mellow skin is more likely to put on flesh than to become a heavy milker. This is an indication of the beef type.

Never purchase a dairy cow with a thick, wiry skin. Such a cow is seldom a good feeder or a good milker, and is usually kept at a loss.

The size of the udder is not always an indication of the milking qualities of the cow. Many cows have very large, fleshy udders and are not heavy milkers.

In soilage cropping, it must be remembered that the highest degree of palatability of any crop extends over a comparatively short time, at most. It is, therefore, important that the crops follow each other in rather close succession, if best results are to be obtained throughout the season.

Pasture grass is said to make an albuminoid ratio of one to five. This is a narrow ratio, but, nevertheless, it is a fact that most cows give their heaviest milk yields during the months of May and June, when grass is abundant. The large yield is no doubt due to some extent to the succulency of the feed, and to the fact that most cows are commencing a new period of lactation. Even so, this fact should be some criterion in compounding rations for dairy cattle.

Pasteurizing Milk in Bottles.

A short circular of the United States Bureau of Animal Industry, by L. A. Rogers, Dairy Bacteriologist, sets forth directions for the home pasteurization of milk. The circular points out that milk delivered in the cities in the summer months frequently contains bacteria in such large numbers that it is not a safe food for children, especially for infants whose food consists entirely of milk. In many cities a special milk may be secured, but this is sometimes difficult, and always involves additional expense. When it is impossible to obtain milk entirely free from suspicion, it is advisable to pasteurize the milk, especially if it is to be consumed by small children. The pasteurization should be done in such a way that disease-producing bacteria, as well as those likely to produce intestinal disturbances, are destroyed, without at the same time injuring the flavor or the nutritive value of the milk. This may be accomplished in the home by the use of a simple, improvised outfit.

Milk is most conveniently pasteurized in the bottles in which it is delivered. To do this, use a small pail with a perforated false bottom. An inverted pie tin, with a few holes punched in it, will answer this purpose. This will raise the bottles from the bottom of the pail, thus allowing a free circulation of water and preventing bumping of the bottles. Punch a hole through the cap of one of the bottles, and insert a thermometer. The ordinary floating type of thermometer is likely to be inaccurate, and, if possible, a good thermometer, with the scale etched on the glass, should be used. Set the bottles of milk in the pail and fill the pail with water nearly to the level of the milk. Put the pail on the stove or over a gas flame, and heat it until the thermometer in the milk shows not less than 145 degrees nor more than 150 degrees F. The bottles should then be removed from the water, and allowed to stand from 20 to 30 minutes. The temperature will fall slowly, but may be held more uniformly by covering the bottles with a towel. The punctured cap should be replaced with a new one, or the bottle should be covered with an inverted cup.

After the milk has been held as directed, it should be cooled as quickly and as much as possible by setting in water. To avoid danger of breaking the bottle by too sudden change of temperature, this water should be warm at first. Replace the warm water slowly with cold water. After cooling, milk should in all cases be held at the lowest available temperature.

This method may be employed to retard the souring of milk or cream for ordinary uses. It should be remembered, however, that pasteurization does not destroy all bacteria in milk, and after pasteurization it should be kept cold and in a cleanly manner, and used as soon as possible. Cream does not rise as rapidly or separate as completely in pasteurized milk as in raw milk.

When milk is to be used for infants, the pasteurization should be done in the nursing bottle to avoid the possibilities of contamination and the necessity of warming the entire lot of milk each time a feeding is taken. This will require, on account of the smaller bottles, a slightly different method than for ordinary bottles. A bottle should be provided for each feeding with the

exact amount of milk required. An extra bottle should also be provided, as there is always the possibility that a bottle will be broken in the process. If the milk is modified, this should be done before pasteurization. Bottles not provided with seals may be plugged with ordinary (not absorbent) cotton, and the thermometer held in one of the bottles by the cotton plug. A wire or tin basket to hold the bottles upright in the water is very convenient. Place the bottles in the pail of water, and heat until the thermometer shows that the temperature of the milk is 145 to 150 degrees F. Then remove the bottles, change the thermometer from the milk to the water, and add cold water until the temperature of the water is also 145 to 150 degrees F. Put the bottles back in the water and cover with a bath-towel or other suitable cloth. Hold in this way at least 20 minutes, and then cool by running water into the pail. When the milk is cooled to the temperature of the tap water, it is an excellent plan to pack broken ice about the bottles and hold them in the refrigerator in this way.

The milk should not be removed until immediately before it is used, and if bottles are warmed and not used, they should be discarded.

Turning the Cows on Pasture.

Editor "The Farmer's Advocate":

The breath of spring is in the air—that warm, seductive breath that lures the leaves from their little brown shells and calls on the grass to wake up and come forth. Soon every tree and valley and hillside will have donned its fresh, beautiful dress of green, and Old Mother Earth will be smiling at the new creation.

How marvellous is this yearly resurrection; the miraculous beauty and tremendous power of it all never grows old, but each spring awakens afresh our admiration and awe.

We look out upon the fields covered with the fresh young grass, and we think how the cows would enjoy a feed. We know they long for it, just as we crave a dish of rhubarb or the tender first lettuce of spring. Then perhaps, too, we realize our barn feed is getting low, and it would be economy to turn them on the grass. Now, what I say is, "Don't do it!" Nothing is so harmful to a good pasture as putting cattle on it before it is ready. In the early spring the ground is still soft, and often wet. The cattle tramp the grass down and smother a lot of it in the mud. Then, the grass is so short, and the cows so eager, that, in order to get a mouthful, they nip the root-crowns, and a great many of the plants die.

In reality, the cows get very little food, and they have had to tramp all over the field for it, using up the energy that should be directed to the manufacture of milk, and spoiling what would in two weeks' time have furnished lots of splendid food. There is nothing in the whole world to equal good grass for the production of a big supply of the best of milk. We should consider the commercial value of our pasture fields, and so treat them as to make them yield us the largest returns.

Let the old grass plants have time to send up a good bunch of blades, and give the small, young plants of clover and grass a chance to get a fair start before they are cropped off.

There is another side to turning the cows out early in the spring. The weather is not to be depended on. The morning may bid fair to be a lovely day, and before noon a cold, chilling wind may spring up; and if the cows are out, instead of feeding, you will find them huddled together in the lee-side of a fence corner, looking dejected and cold—a poor condition to warrant a full milk pail.

A great many of your cows will likely be fresh. At such times the udder is very susceptible to atmospheric changes, and dampness. To be exposed to chilly winds or cold rains, and to lie down on the damp, cold ground, may ruin your best cow for all time.

When the grass is far enough on in growth not to be injured, turn the cows on it for an hour or two each day for a week, gradually lengthening the time. In this way they will not crop the grass so close, nor will cows injure themselves. If they are allowed to stay on too long, they are apt to get too much grass, and, it being so tender and succulent, causes it to soon ferment, and bloating follows. It is dangerous to let the cows eat all they wish at first. If you do, look out for trouble. Any sudden change of food is apt to be upsetting to the digestive organs, and especially that from stable feeding to turning on to spring pasture. Care must be exercised under any conditions, but more especially if the cows have been getting no succulent food in the stables.

There is still another phrase to be considered—the effect on the milk and butter when cows are suddenly changed from the stall feeding to gathering their own living in the fields. Any violent change in the cow's diet usually tells in the milk. One of the most objectionable food taints of milk

and butter may be developed by letting the cows feed heavily on a strong clover pasture. Producers of dairy products should rigorously guard against any fault being found with their milk, cream or butter; and so it is to their interest to only let the cows feed for a short time at first on the grass, until the digestive organs become accustomed to the green food, and then there is likely to be no danger of the milk being affected.

Keep your cows off the grass until it has a real good start, then only turn them on it for a short time each day, is what I would like to impress. My three points are:

It is much better for your pasture lands.

It is better for your cows in very many ways.

It is better for the milk. You will get more of it, and of better flavor.

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Disease-producing Bacteria in Milk.

It is now generally recognized that many of the diseases which may be communicated from one person to another are caused by specific bacteria. The organisms causing some of these diseases have not yet been discovered, but the causal bacteria of many have been isolated and studied in detail. Some of these diseases occur usually only in human beings; others occur usually in animals, and are only occasionally transmitted to man, while others may occur with equal frequency in both man and animals.

It is well known that certain diseases are sometimes disseminated through milk. By this means an epidemic may appear suddenly, and last for a comparatively short time, or the infection may be continued for a long period, and the development of the disease be so slow and obscure that the source is unknown.

Tuberculosis is an example of the latter class. So much in regard to this disease is still unknown, so many widely-separated views are held, even by those most familiar with the subject, that it is impossible to make positive statements. However, tuberculosis has been studied in such detail that many facts have been well established, and many theories advanced are so probable that they cannot be disregarded until they are disproved.

The question of the identity of tuberculosis of man with that of animals has been raised, and while it is not yet accepted as a fact by all investigators, a large majority of the people whose opinion has weight believe that the two diseases are identical. Assuming that they are, much difference of opinion exists as to the possibility of transmission from cows to man through milk. It is well known that other animals, including calves and pigs, may be infected by drinking milk from tuberculous cows, and the possibility that man, and especially children, may become infected in this way is so great that to disregard it on the ground that it is still unproved is carelessness approaching criminal negligence. The tendency among those who are studying the question most carefully is to consider milk as a serious source of danger.

A number of epidemics of diphtheria and scarlet fever have been traced to the milk supply. In diseases of this nature, the milk is infected by someone suffering from an attack of the disease, or through someone who has been in contact with the patient. Obviously, no one suffering from a contagious disease, or one who is caring for a diseased person, should be allowed to go near the stables or milk room, or handle milk utensils. The only really safe way is to enforce strict quarantine against farms where contagious diseases are known to exist.

Typhoid fever, while not as contagious as some other diseases, is readily communicated from one person to another. The ordinary channel of communication is generally considered to be the drinking water, which may be contaminated by sewage, but occasionally it is disseminated through the food. Milk may become infected with this disease in various ways. Contaminated well or spring water may find its way into the milk through milk pails, cans or bottles which were not thoroughly scalded after rinsing in cold water; the cans or bottles of milk may be left to cool in contaminated water, and become inoculated by the accidental addition of a few drops of water; the cows may wade in water or mud containing the typhoid bacillus, and the small drops of muddy water which dry on the animal's flank may carry the organism to the milk; or flies may go directly from the waste from the sick room to the milk or milk utensils.

It has been demonstrated in the last few years that certain people may carry and give off from their bodies virulent disease-producing bacteria, even though they may be in good health. This is especially true of typhoid fever, and there is no doubt that dairymen have in many instances been the cause of serious epidemics, without any out-