

in close touch with the work and as time goes on much good should be accomplished. These demonstration orchards are not a new thing, one of the very first having been undertaken by the publishers of "The Farmer's Advocate," but each year sees them located in different sections. They are managed practically the same as outlined, in all the districts where located, and are situated where the Department believes most good may be accomplished. They must eventually prove a valuable factor in improving the class of fruit produced in these sections. If there is a demonstration orchard in your district get all the good out of it you can. Do not stand on the outside looking in. Get into the orchard, talk with those in charge, ask questions and find out the why and wherefore of the undertaking.

THE DAIRY.

Cooling Milk in Ice-house.

Editor "The Farmer's Advocate.":

To keep milk in hot weather we take an empty carbide can (square), sink it in the ice, in ice house, being careful to have the solid ice well up around it. Then fill in enough water to cover milk in creamer. Always chill the milk before putting in and keep carbide can covered with a rug whether creamer is in or not. By putting a little formaldehyde in the water one doesn't have to change water over twice a month, or move the can.

Muskoka District, Ont.

A. J. C.

Bitter Flavors.

When the cows first go to pasture, various flavors are often found in the milk. Quite frequently it is bitter.

Bitter milk may be due to a weed in the pasture, or to the use of other foods capable of imparting bitter or disagreeable flavors. In other cases bitter flavor is due to certain germ infections which bring about chemical changes in milk, producing the bitter flavor. This usually occurs in the case of milk that is sweet when drawn, but in the course of several hours, even days, a bitter taste develops due to certain bacteria.

There is a less common and less important form of bitterness which develops in milk that has been heated and has stood for several days. In this case it may not sour or curdle but may become quite bitter, because of the presence of certain spore-bearing germs that were not destroyed by the heating.

Correct the fault in feeding in the first case, or disinfect the cow's teats and udder thoroughly before milking. Scald thoroughly the milk pails and all milk utensils. Do not leave milk standing uncovered in the stable; and especially do not rinse out any milk containers with unboiled water, after they have been carefully sterilized by scalding. This advice given by a Minnesota veterinarian is worth acting upon where the bitter flavors are likely to mean loss of trade.

POULTRY.

Temperature and Deterioration in Eggs.

Some extensive experiments carried out by the United States Department of Agriculture, throw some light on the relation of temperature to deterioration in eggs. The range of temperature at which the eggs were kept was from 63 to 88° F. When subjected to the above range of temperature, there was no loss in fertile eggs from one to six days old, but with fertile eggs seven days old, one out of every six had deteriorated, so as to become a second, which meant a decrease in quality of 16.7 per cent. It must be remembered that this is a comparatively low summer temperature, and much greater loss would result in very hot weather and especially with eggs in the sun or near stoves. The conclusion was reached, that fresh fertile eggs placed in an unheated room of the dwelling house, the maximum daily temperature of which is 88° F., or under, will, if marketed frequently, be in sufficiently good condition at the expiration of seven days, but it is wiser to dispose of them twice a week.

With eggs kept in a dwelling house in extremely hot weather, it was found that after twenty-four hours 40 per cent. of the fertile and 20 per cent. of the infertile eggs had developed into seconds. At the age of four days 40 per cent. of the fertile eggs are a total loss, and on the fifth day 100 per cent. In the infertile eggs the rate of deterioration is not so great, but after the fourth day 100 per cent. of the eggs are seconds. At the end of seven days the infertile eggs have a market value of 60 per cent. of their original value, while fertile eggs, under the same conditions, are a total loss. During extremely hot

weather, when the maximum temperature is 100 degrees or over, both fertile and infertile eggs start to deteriorate during the first twenty-four hours, but the loss in infertiles is much less than in the fertile eggs.

During these experiments eggs were placed in nests of layers. Where sitters were not present in the flocks fertile eggs showed a loss in seven days of 38 per cent. greater than that in infertile eggs under similar conditions, and where sitters were present the loss was 32.8 per cent. greater. The bulk of the loss in the two fertile-egg experiments was caused by the development of blood rings and rots, while, in the infertile, it was due to seconds. The infertile eggs proved to be more resistant to deterioration than the fertile eggs when placed in nests for layers with sitters present, as is the case in most farm flocks in summer. The total loss at the packing house, with sitters present for fertile eggs, was 64.1 per cent. and for infertiles, under the same conditions, 31.4 per cent., and the quality of the infertiles was much superior to that of the fertiles. Irregularity in gathering the eggs from the nests used by the layers is one of the ways in which a serious loss in the quality of the eggs may occur on the farm, and infertile eggs are the most resistant to this condition. The greater loss occurring in fertilized eggs, where no sitters were present, is explained by the fact that throughout the day the nest was occupied by laying hens. This proves that eggs should be gathered regularly and frequently.

Eggs were also placed under sitting hens. Fertile eggs showed signs of deterioration in twenty-four hours, and in thirty-six hours blood could be detected. Development of blood goes on rapidly up to forty-eight and seventy-two hours of incubation, and if the germ dies then blood rings may be plainly seen. Infertile eggs show a shrinkage.

It was found that eggs kept in a cyclone cave proved much better in quality than those kept under other conditions.

The weed nest, the nest in the straw stack or under the corn crib and the stolen nest, favor the production of these spots, blood rings and rots, and eggs from these sources are always to be looked upon with suspicion.

Two-thirds of the total loss in fertile and infertile eggs takes place on the farm, the basic factors responsible for this condition being the haphazard methods of poultry management.

If the eggs are fresh when delivered to the buyer, it is impossible, with the present methods of transportation, for them to reach the packing-house without showing a slight deterioration in quality—approximately 12 per cent. of their original value.

The results of all the experimental work point to the fact that the production of the infertile egg is the greatest asset in the attempt to produce high-quality market eggs during hot weather.

Give the hens clean nests; gather the eggs, at least, once daily; keep the eggs in a cool, dry place; market them once a week, and kill or sell mature male birds immediately the hatching season is over.

FARM BULLETIN.

Out to Grass.

By Peter McArthur.

Getting out to grass is certainly the event of the year for the animals on the farm. I know, because I have a strong fellow-feeling for them. When the sun begins to get warm, and the grass starts to grow, I get impatient for the time when I can fling myself at full length on the sod without being scolded for taking chances of catching cold. When the cows were allowed out for the first time they could hardly wait to go through the gate before they started to graze, and for a couple of hours they kept at it as if their lives depended on getting a good meal. But presently something stampeded the young cattle, and the whole bunch began running, bunting one another, and jumping around as if indulging in a foolish sort of sun dance to celebrate their freedom. When this was over, the red cow started on her annual inspection of the fences. The thorn hedge, woven with barbed wire, baffled her, as it did last year, and I thought everything was all right. The next time I looked she was in the clover field. The spring flood had loosened things around the government drain. After driving her out I fixed this break in the fence, only to find that she was in the field again. She had to find a place where the wire fence had been cut to haul out wood and had managed to push through. Turning her out again I made a thorough job of mending this, and that ended the trouble. She made a complete round of the field, stuck her head over every fence and bawled, but that was all. Now I can go about my work without giving a thought to the fences. The red cow and I examined and tested them thoroughly

on the first day and fixed them for the summer. Really, the red cow is a great help. If it were not for her I might be bothered with fences all season, but one day is enough. She examines the fences thoroughly and after she finds the weak spots I fix them up. If her calves take after her I shall be able to advertise a new strain of useful stock. No farmer should be without one of these fence-testing cows to help him keep his farm in shape and protect his crops.

For a few days everything was quiet in the pasture field, and then, all of a sudden, there was a noise like a general election. All the cattle began to bawl defiance. A big, slab-sided two-year-old steer began to lead the herd towards the line fence. He had his head down, his mouth open, and walked catercorner, roaring like one of the bulls of Bashan. A neighbor had just turned out his cattle, and they were approaching the line fence, and putting up the same warlike bluff. I would have had more respect for the dehorned two-year-old and his war talk, had it not been that on the previous evening I had seen him being prodded across the field by a sharp-horned little yearling heifer. He grunted and got out of her way like a fat man getting beyond the reach of a suffragette's elbow in a street-car rush. But he certainly did make an awful noise. He seemed to have inside information about an emergency, and the herd on the other side of the fence was as noisy and indignant as if some one were trying to apply the closure. I don't know why it is, but I always find something in the actions of cattle to remind me of politics. There is the same tendency to go in flocks, to make a wholly unnecessary amount of noise, and then to accomplish nothing. When the two roaring herds finally met at the line fence they merely stuck their noses through the wires and sniffed at one another for a few minutes, and then went back to pasture. The crisis was over.

When the driver got out for the first time she went through the gate on the run. She ate quietly for a couple of minutes, then lay down and had a most satisfactory roll. When she got up she took a look around the field, squealed, jumped into the air and began to give an exhibition of energy that I didn't think was in her system. She must have had it in cold storage all winter, for she hadn't been using much of it on the road. She galloped, kicked and snorted, and I sat down and tried to figure out whether she was snorting at the kick or kicking at the snort. But like many another problem I have tackled, it was too deep for me. There were times when she had all four feet in the air at once, and looked as if she could have kept four more going. She would gallop round in a circle, then come to a sudden stop and snort. When the echo of the snort came back from the woods, it would scare her so that she would start off on the gallop again. After she had relieved herself and galloped around the field in this way about a dozen times, she finally settled down and began to eat. After watching this exhibition I made up my mind that there will be more speed in my drives to the post office in the future. I thought she was troubled with "that tired feeling," that comes to all of us in the spring, but now I shall have no compunction about using the whip. She has simply been loafing on me.

How is it that the newspapers are having so little to say about the frost of Friday, the ninth? Apparently, the official observers did not have the same kind of weather as we had in this district. According to the testimony of oldest inhabitants we had the sharpest frost known for many years and although at the present writing, it is impossible to say how much damage has been done, I am afraid that most of the fruit has been destroyed. The cherry and apple blossoms were all frozen and are now withered brown. As our thermometer registered two degrees of frost at sunset I was on the watch all night. At twelve o'clock there were four degrees of frost, and by three a.m., the thermometer had gone down until it showed eight degrees of frost. By that time I was busy with bon-fires, but a slight breeze was stirring from the north, so that the smoke did not lie well over the orchard. I devoted most of my attention to the Spies, but it is yet too early to know whether I managed to save them. The blossoms have not opened, but it is a fact that the part of the orchard which was kept filled with smoke during the cold hours is not so badly frost-bitten as the part that was uncared for. The frost was so severe that it killed all the strawberry blossom, and even the leaves on the beeches and maples in the woods. According to the official reports that I have seen, only two degrees of frost was recorded in other places, and but little damage has been reported. Perhaps the news will come later, for it does not seem possible that a frost so severe as we had, could be confined to a small area. An examination of the