

Salt, Shade and Water for the Cows

"What are those small boxes for on the other side of the water bowls?" we asked a Russell Co. dairyman recently as we walked through the stable looking at a fine herd of dairy cows. "Oh, those are salt boxes," he replied. "We keep them full all the time and it is surprising how much they will take." There was one box to each two cows and each box would hold about two double handfuls. There were twenty-nine cows in the stable beside the horses and all got salt, although the cows took far more than the horses. At the time of our visit the boxes were empty, but our informant seemed so much in earnest about the value of salt for the cattle that we asked him why there was no salt before the cows then. We were told that the last of the salt had been used the day previous, but that some would be out from town by noon. On further inquiry we were told that the cows dropped in milk right away when they did not have any salt and that the owner could generally tell when he weighed the milk if they had enough salt, whether he had done the milking himself or not. In the present instance the cows had dropped in yield the evening previous and that morning as a direct result of the lack of salt.

We were told that all of the stock consumed about 140 pounds per week most of which was taken by the cows, but this seemed to us like quite a lot. Extensive trials made at Wisconsin seemed to show that about one ounce of salt per day per 1,000 pounds liveweight with an additional quantity amounting to about one ounce for every 30 pounds of milk produced was sufficient to supply what the animal needed, but at this rate the herd mentioned above would require only about 50 pounds per week. It is true, of course, that the amount of salt required depends largely upon the character of the feed and the salt content of the feeds used. This herd was very well kept and was fed largely upon purchased feeds even to the roughage so that although we did not inquire closely it is probable that concentrates were fed liberally, as the milk was being produced for the city trade.

Salt is particularly necessary for all animals consuming large quantities of vegetable feeds but carnivorous animals or human beings who eat a good deal of meat do not require so much of it. The reason that animals living largely on vegetable matter require so much more salt is stated to be because along with this kind of feed a great deal of potassium is taken into the system. This potassium is excreted through the kidneys, but while in the body, some chemical action takes place between it and sodium chloride, or common salt, with the result that a good deal of salt is excreted along with the potassium. This leaves the body short of salt and results in the well-known craving for salt that is often seen in animals. Thus common salt is needed to help expel the comparatively large amount of potassium taken in with feeds of a vegetable character.

At the Wisconsin Station, Babcock kept cows in milk without salt for varying periods up to one year, but did not find that the composition or quantity of the milk was affected by the lack of it for short periods. In this respect he differed markedly from the experience of the dairyman to whom we have already referred. It was found at Wisconsin, however, that cows kept without salt showed a strong craving for it after two or three weeks, but that they quieted down and gradually changed to a condition wherein they began to lose their vitality. Their coats became roughened; they got thinner and finally broke down completely. In most cases they would recover their normal condition if salt was given to them again in sufficient quantities. Some feeders prefer to throw the salt on the feed, while others, mentioned above, like to have it before the cows all the time. Where this is done rock salt is often used and the cows can lick a lump of salt until they get what they want. Salt is just as necessary when the cows are on pasture as when they are in the stable. A good sized lump of rock salt can be left in one corner of the pasture field or they can be given their salt when brought to the barn for milking and for feeding.

Plenty of good, fresh, clean water is just as essential as salt for the dairy cow. Any animal requires a large quantity of water to maintain the body processes and most human beings take far too little water for their own health, but the dairy cow requires infinitely more on account of the large amount of roughage she consumes and the milk she produces. Milk is mostly water and although the cow can often get material from her own body to make the solids of milk when she is not being fed heavily enough, it is absolutely impossible for her to get enough water any other way than by drinking it. Water, therefore, aside from its value to the body of the cow, is absolutely essential to milk production. Where a special effort is made to produce milk in quantity, running water in the stable will undoubtedly pay if the experience of practical dairymen is of any value. So long as the cows get all the water they need it does not make much difference how it is supplied, although the most convenient method is undoubtedly by means of water bowls or troughs in front of the cows. During the summer pure water in the pasture is essential and it should be as convenient as possible. If it is impossible to have water in the pasture at all times, care should be taken that the cows have plenty of opportunity to come to the barn for it.

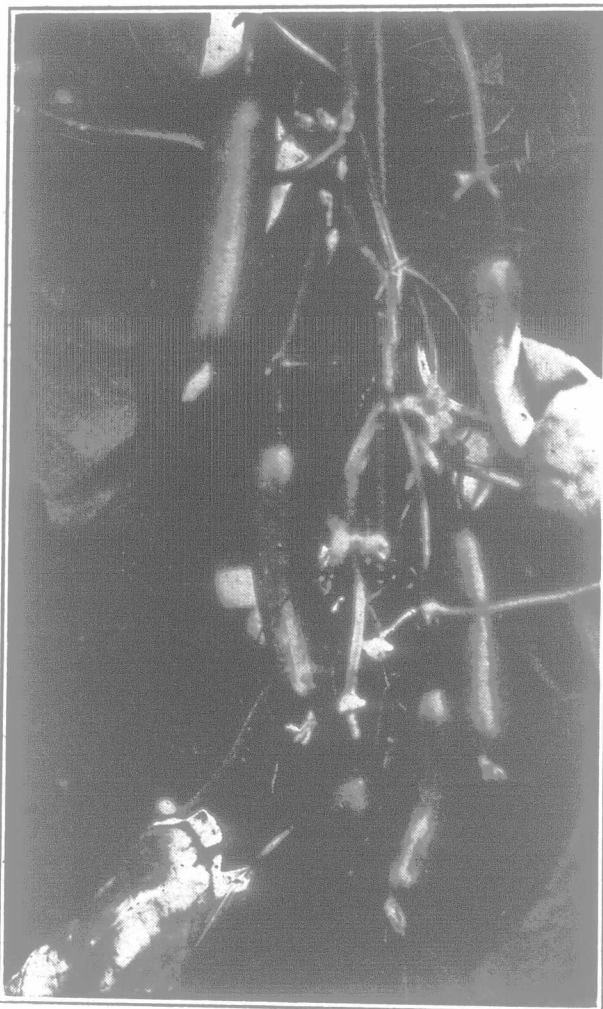
Shade also is essential in the pasture field. Every farmer knows that when the hot weather and the flies are both bad at the same time the cows are bound to go down in the amount of milk they give. Spraying with a good deal to lessen the trouble from flies and shade will give a herd a chance to get out of the hot sun. It is a good idea to have a shade for the horses and

the teats of the cows will get sunburned in which case the cows should be brought into the stable unless there is plenty of shade available. The cow is a living organism carrying the most delicate machinery for the manufacture of milk and it never pays to neglect precautionary measures that will tend to keep the cow in a normal condition when she can do her best work. Plenty of shade in the pasture will allow the animals to get a good feed. After they are milked in the morning and then lie down comfortably and chew their cuds until ready for another feed of grass or clover. Attention to such matters as salt, shade and fresh water will mean that the dairyman will get more economical results from feed and labor and this is necessary in order to meet the present high cost of production.

HORTICULTURE.

Some Observations on the Horticultural Experiment Station at Vineland.

It is not too much to say that perhaps the one Government institution in the Province of Ontario which holds a greater interest for the practical and commercial horticulturist whether he be engaged in commercial fruit growing or vegetable gardening, is the Horticultural Experiment Station at Vineland. This institution was established in 1906, largely through the instrumentality of the late M. F. Rittenhouse, Chicago, who presented a large part of the land that now constitutes the station proper, to the Government. For the next seven years it was next to impossible to accomplish anything of very great value to the practical grower, for the reason that to develop a station of this kind requires a very great deal of preliminary work, that is not always appreciated by those who are not actively engaged in



A Splendid Growing Crop of Indoor Cukes.

Growing in the greenhouse of the Horticultural Experiment Station, Vineland. This crop is developing without artificial fertilization and is seedless. Very promising results have been secured from this breeding work, which was begun about 1912.

experimentation. The land in the first place had to be cleared, some kind of a working policy developed for the guidance of future operations and the land layed off in blocks and planted to the different kinds of fruits. Naturally, the matter of variety testing was one of the first things undertaken and from the fact that there are at the present time over 800 varieties of all kinds of fruits now under test at the station, one may gather that to lay these orchards out, plant the trees and take note annually of the behavior of the different sorts, requires an immense amount of work in itself without any hope of practical reward until bearing age has been reached and several crops secured. Buildings, of course, had to be erected and for an institution of this character where both labor and equipment are necessary in greater degree than on the average farm, building operations require much time and interfere markedly with other work of the station.

Naturally, also, at a station established primarily for research and experimental purposes in horticulture, the question of variety improvement tends to occupy first place. The variety is really the basis of either

fruit growing or vegetable gardening, next to the soil itself; and the securing of suitable varieties of all fruits and vegetables for all purposes, entails very extensive breeding operations if results are to be secured in any reasonable length of time. Many years are necessary before even the first fruits can be grown as a result of the original breeding work and from the fact that a large number of seedlings must be grown to get even one worthy new variety, those that reach the fruiting age must be further tested side by side for some years before the commercial grower can be given new varieties with any degree of assurance that they will be of practical value and superior to those already in use. It is also a fact that much land is needed to grow breeding material, especially for the tree fruits as the seedlings increase in size and must be planted farther apart. These and other factors tend to delay the time when the station may hope to stand out as offering immediate practical advantages to the commercial grower and to contribute in any appreciable degree to the volume or quality of the horticultural crops grown in the Province.

It may fairly be said that the first seven years were required to get this basic work started and fairly going and that 1914 had arrived before Vineland Station had become fairly organized to do work of more immediate practical importance. Even before that time, but to a much greater extent since, certain cultural experiments had been started, until, for lack of sufficient land, the development of the station was more or less held up until about three years later when the original 90 acres was supplemented by the acquisition by rental and purchase of an additional 57 acres. Incidentally, it is unfortunately necessary to observe here that until the latter acquisition was made there was really but little land on the station that was really suited to the culture of the tender fruits for the development of which the station is considered by many growers in the Niagara District to have been primarily established. The original choice of the site was, it must be admitted, unfortunate in this respect, in as much as the soil is for the most part heavy and lumpy and very difficult to work, as contrasted with the sandy loam that characterizes the soils of most of the good fruit farms of the surrounding district as well as of the Niagara District as a whole. Of the whole range of fruits planted on the station grounds from apples to strawberries the plum seems to be about the only fruit that does at all well on this soil. The additional land that has been secured is, we believe, of the proper type and will not only make it possible to secure the optimum results from the work done, but will make it possible to do this work much more economically. However, we present this matter merely as a factor in the development of the Station and not as an argument in depreciation of the Station itself. The mistake was made and there seems no practical way of eliminating it.

We have already referred to the fact that the growers of the Niagara District believe more or less generally that the Horticultural Experiment Station was established primarily for the development of the tender fruit industry in the Province and particularly in the district bordering on Lake Ontario from Toronto to Niagara Falls. Such does not seem to have been the attitude of the Government, with the result that apples, for instance, have been given a great deal more attention at Vineland than would be warranted by the extent of this crop in the so-called tender fruit districts. There is no doubt of the fact that the apple crop is easily the most important fruit crop in the Province; nor is there any doubt of the fact that the Vineland Station is the only Government institution devoted to the development of Agriculture, that is equipped and capable of doing the necessary work in connection with the apple industry. We are of the opinion that the attitude of the Government is the correct one and that it would be exceedingly unfortunate, at least until such time as other and more distinctly apple stations may be established, if the greatest factor in the fruit industry of the Province were to be relegated to the care of other and less suitable institutions. It must be remembered that the problems of the apple grower are the major problems of the Ontario fruit industry and that this crop furnishes the bulk of the monetary return to the Province from fruit production. This is not to say that a fruit station in the tender fruit district is not necessary because the apple crop is not prominent there, for we are convinced that the tender fruits and the small fruits are capable of great development in Ontario, especially the latter to which there has been too little attention paid in the past. The small fruits are among the hardest of our fruits and are thus able to succeed in parts of the Province where the more exacting tender sorts would fail immediately. In addition to the tender and small fruits there is the vegetable crop which is of equal importance to the whole of the fruit crop and for the development of which similar soils, climate and general conditions are required to those that will serve best the development of tender and small fruits. Vegetable work at Vineland has without doubt been entirely inadequate so far, but the character of the soil on the original farm has been quite unsuited for really efficient work with vegetables, with the result that irrigation work, for instance, has had to be to some extent abandoned until such time as it can be commenced on the newly acquired acreage. The difficulties confronting the station at the present time are not particularly attributable to the men in charge, who are doing their best under a combination of circumstances and more or less indifferent co-operation from both Government and growers, of whom we shall say more later.

It seems to be a moot point now as to whether the Station will be retained by the Province or handed over

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