

EFFICIENT FARMING

Bad Odors and Flavors in Milk.
Creamery owners and dairy inspectors frequently experience considerable difficulty in tracing the source of an unnatural flavor or odor in the milk delivered by a patron. In such cases it is first necessary to determine whether or not the abnormal flavor or odor is present when the milk leaves the udder of the cow or develops later. If any particular cow is giving milk which is tainted it is not due to bacteria, but to other causes.

If the milk from any number of cows shows the taint the feed or something which the cattle have eaten in the pasture is to blame. Carrots, turnips, wild onions, ragweeds, cabages, off-flavored grain feeds and other strongly flavored substances will cause tainted milk. Certain foodstuffs for cows, not ordinarily considered likely to produce bad-tasting milk, will at times do so. Where the bad flavor seems due to feed and there is nothing in the ration subject to suspicion, a change in feed is yet desirable, as the bad flavor may disappear as a result.

Cows that are kept in the pasture will keep reasonably clean, however, if the pasture is so situated that the cows have access to muddy pools or stagnant ponds, they will often stand in the water up to their knees, fighting flies and plastering themselves with mud. This mud dries quickly and readily falls into the milk pail. It is one of the most objectionable forms of dirt because it very quickly finds its way through the strainers and settles at the bottom of the cans and bottles. It is also loaded with dangerous bacterial life which have a deleterious effect upon the milk and its products. Cows that are plastered with this kind of mud should be thoroughly cleaned before they are milked.

One of the most prolific causes of trouble during the summer months is that of old, sour strainer cloths which are rinsed in luke-warm water and hung up to dry. These cloths should be put in boiling water and thoroughly cleaned before being used for another milking. Ordinary wire strainers are worse than none at all. They are very difficult to keep clean and are almost worthless for removing fine dirt and dust.

There are certain fundamental principles in cleaning dairy utensils that cannot be ignored. Milk should never be allowed to dry and become sour. It is impossible to clean the utensils properly after they have been allowed to become dry and sour. If it is impossible to clean them at once, fill them with water and they may be easily cleaned later. Rinse with luke-warm water before scalding. Then wash with hot water with the aid of some cleaning material; if possible expose them to steam a few minutes and place them in a place where they are exposed to the light and sunshine until the next milking. The best preparations to use in cleaning dairy utensils are the alkalis and carbonates, like soda, sal soda and lye, because they have the power to dissolve the coagulated albumen. Sal soda is one of the cheapest and most effective materials, as it is neither poisonous or corrosive.

Impure water used in washing dairy utensils frequently introduces dangerous bacteria that cause ropiness in the milk. In some instances impure water used in washing the pails and cans has been traced as the source of disease epidemics. As great care should be taken in obtaining pure water for washing the pails and cans as in

providing a supply of pure water for the cows to drink.

The Wheel Hoe.

The wheel hoe is very useful to both the gardener and the farmer. Its use is possible in many places. With labor shortage the investment of from \$3 to \$5 in such a tool pays big interest.

I have been using one of these tools for more than twelve years. The first year we had one on the farm I did not know what to do with it. It was unhandy, and I thought that it was easier to use a small garden hoe and a four-tined hook for the garden work. We had a one-fourth acre of seed onions, and it was quite a job to keep the weeds out and the soil loosened. Now I can care for five acres with a wheel hoe under ordinary conditions, and have a lot of time to do other work.

In using your wheel hoe it pays to look out for the dirt on the wheels. A rim of dirt a half inch thick will throw the blades out of balance enough to spoil its work. This will happen if the soil is a little wet or if there is a heavy dew. Take a dull knife or a stick and keep this wheel surface clean and your hoe will work far better.

When you buy extra blades you can save by filing the rivets off and using the old casting and replacing the blades only. Then it is economy to get a blade about an inch longer than you wish, and cut the end off a half inch. Thus a seven-inch blade will cut 6½ inches, and be thicker all the way up. If it sticks out a little too far it will prevent any strips of weeds being left between the rows.

Let me say here that I am talking of a double wheel hoe—that is, one that straddles the row of vegetables instead of going in between. I like this kind because it does not matter if the rows are not exactly parallel, or if one row runs further than another. Anyway, it is not possible to get as close to a row with a single wheel hoe as it is with a double one.

On part of the blade of a wheel hoe there is an upright that cuts the soil and weeds next to the row. If this is left sharp a good many vegetables are ruined by cutting the edges or sides. File this blunt and save this loss. An onion, for instance, will be spoiled if the outer layers of skin are injured.

When I file or sharpen my hoe I grind down the lower side—as it sets on the ground—and then smooth it down on the opposite side. I think a better edge can be put on this way, and it lasts longer. I take the blades off sometimes, and put them on the grindstone or emery wheel.

After you use a wheel hoe for a few years the spindle becomes worn, and this prevents close working around vegetables, because the wheels do not carry the rest of the hoe where you want it to go. I bush them when they are worn by using a layer of thin sheet iron or tin. It lasts a season, and makes the hoe work almost as well as new. A washer on the end of the axle will help too. One can buy new axles for less than a dollar, but the other way is about as good, and far cheaper.

For the ordinary sandy soil the one drawback to a wheel hoe is that the soil is cut off in a thin layer on top and then dropped back again, and the weeds go right along with their growth. We have got around this by making rakes to go on behind the hoes. A block of wood about five inches long and an inch and a half square had five or six inch holes bored through it, and No. 8 wire cut in pieces about seven inches long is put through the holes and fastened securely with a staple. This is bolted in one of the slots to the rear of the blade, and by bending the wires a little they will break up this slice of soil and so leave a fine mulch and also kill the weeds. This beats the rakes furnished with some hoes, because they can be easily adjusted by bending the wires.

I like to have some sort of a box



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on the handles of my hoe to put small stones and trash in as I go along. If this is just pushed aside when the work is done, then the same stuff has to be pushed around again the next time. The stones will cause the hoe to jump out of the ground when a wheel hits them, and they are no good anyway. Put them in the box as you come to them, and just tip the hoe over at the end of the row and they're emptied.

When you buy a wheel hoe there may be a lot of attachments for it that look good. I have a small set of disks that I have used. Two small plows came with it, and the rakes that I mentioned above. There are four or six small cultivator teeth that I find handy, and like them very much for digging up soil that is badly packed. The hoes just take the surface, and sometimes deeper working seems the proper treatment. The wheel hoe should have an adjustable handle. In some work you want the handle higher, and in some lower. And you may have a boy who will want to run the hoe, and he will be shorter and so want lower handles.



With the coming of warm weather it will be necessary to have shade for the chickens. Even more susceptible to the heat of the sun are ducklings. On commercial plants low shelters covered with boards or burlap are provided, if there are no trees or shrubs to give protection. Some such plan may be followed on a small place, but often it is quite possible and more satisfactory to furnish natural shade, which can be done by growing artichokes, sunflowers, or something of that kind. The artichokes can be allowed to grow right in the hen yard if protected until they get well started, for the hens will not eat the leaves. Of course, the Jerusalem artichoke is meant, the so-called French artichoke being an entirely different plant.

Jerusalem artichokes provide good shade when planted rather closely, and once started, will come up year after year. In fact, there is some danger that they will multiply and spread so fast as to become a nuisance.

RESTORING THE APPLE ORCHARD TO PRE-WAR PRODUCTIVENESS

By C. W. Baxter, Fruit Commissioner.

There is no doubt but that a considerable portion of the loss of fruit trees, especially in the province of Ontario, during the severe winter of 1917-18, was the direct result of war conditions. In 1914 the crop was large, and when ready to harvest war had been declared and marketing was in a chaotic condition. Later, owing to the great need of ocean steamship space for the transportation of troops and materials necessary for the successful prosecution of the war, an embargo was placed on the importation of apples into the United Kingdom; and with restricted markets many fruit growers became utterly discouraged and neglected their orchards. The weather during two growing seasons was also unfavorable, and scab developed to such an extent as to reduce the vitality of the trees, and many were consequently unable to withstand the severe winter. To ascertain to what extent fruit growers in the provinces of Quebec and Ontario might profitably undertake the re-establishment of apple orchards, therefore, it is necessary to consider conditions affecting the industry as a whole; also other industries correlated to the fruit industry.

For several years prior to 1914 there was a great demand for nursery stock, but, following the big crop of 1914 (which on account of lack of proper marketing facilities resulted in unprofitable returns to the growers, many of whom concluded there had been overplanting), this demand automatically stopped. The nurserymen continued to care for their plantings for two or three years, but eventually had to consign large quantities of nursery stock to the brush pile.

Following the cessation of hostilities came a renewal demand for nursery stock and, as the supply was very far short of the demand, prices advanced. In fact, so great was the advance that, together with the labor shortage, the time did not appear opportune to urge the re-establishment

sance. At least some should be dug out each season.

The sunflower has special merit in the fact that the seeds make excellent poultry food. Truth to tell, the sunflower is not appreciated as it should be, but of course the Russian or mammoth variety should be grown. These tall sunflowers standing close together make a good summer hedge and screen the poultry yard as well as providing shade in the fall.

Fresh water is needed as much as shade. It is best renewed several times a day, but if this requires too much labor, a barrel may be elevated on blocks and a small hole bored near the bottom. A plug with a groove in one side can be driven into the hole, thus allowing water to drip slowly into a basin underneath. There are patented drinking fountains on the market which will hold enough to supply a large flock all day.

Vermis are not a pleasant subject for discussion, but they must be reckoned with when warm weather comes, for then they multiply with almost unbelievable rapidity. This is especially true of the red mites which collect on the fowls at night and fill themselves with blood. They are harder to fight than common lice because they leave the hens or chickens in the morning, hiding under the perches or in cracks in the walls. The simplest way to deal with these pests is to use carbolineum or some such thick mixture on the under part of the perches and to spray the walls with a prepared lice paint, which can be put on easily with a common spray-pump. Even if the house becomes badly infested, all trace of vermin may readily be done away with by this plan, without an excessive amount of labor.

Norwegian Government experimenters have succeeded in producing a bread containing 20 per cent of fish.

Mix cake batter with ice cold water instead of milk. Your cakes will keep fresh and moist much longer than if mixed with milk.

From a humble beginning with 460 members in 1913, Manitoba at the end of 1919 had enrolled upwards of 30,000 boys and girls in farm clubs. In Saskatchewan their growth has been slower, but they are now gaining ground rapidly.

of the orchards which had suffered from neglect and frost injury.

Having regard to these conditions, the Fruit Branch has endeavored to emphasize the importance of growers giving the necessary attention to their orchards in order to produce the maximum amount of first-quality fruit, as well as the advantages of proper methods of grading and packing, and the great need for proper marketing facilities.

During the past winter officers of the Dominion Fruit Branch, in co-operation with the Provincial Departments of Agriculture, have held meetings in the various parts of the provinces at which practical demonstrations were given in the proper methods of grading and packing, and the advantages to be gained by having all apples packed in a central packing house. Where convenient, demonstrations were also given in pruning. Spraying and co-operative marketing were also thoroughly discussed. The attendance at these meetings, and the keen interest taken in all subjects discussed, indicate that greater attention will be given orchards during the present season than has been given for several years, and as the supply of nursery stock will no doubt be greatly increased within the next two years and the price correspondingly reduced, orchards in Ontario and Quebec will undoubtedly be re-established very soon.

Growers have every reason to feel optimistic as to the future of apple growing in Canada. The industry as a whole made no progress during the past eight years for the reasons already stated and, although prices for many agricultural products have declined during the past year, the price for the best-quality of apples has not shown any corresponding decline, nor is it likely to do so owing to the fact that production, even under favorable conditions, at the present time is estimated to be not greater than it was twenty-five years ago.

The Sunday School Lesson

JUNE 12.

Making the World Christian. Isaiah 11: 1-10; Acts 1: 6-9. Golden Text—Isaiah 11: 9.

Connecting Links.—Those who have found the true and the living God want to make Him known to others. The people of Israel found Him in many experiences of their history, but especially in the two great deliverances, from Egypt and from Babylon. It came to them in the teaching of the great prophets of the last centuries before Christ, that they should tell these experiences to the world. They had a story to tell to the nations, and a song to sing which all the world should hear.

Israel has been entrusted with the saving and enlightening knowledge of the true God who can save, and so is to be "for a light to the Gentiles," and for "salvation unto the end of the earth."

"The Lord hath made bare his holy arm in the eyes of all the nations; and all the ends of the earth shall see the salvation of our God."

So also Jesus would have His disciples tell the story of His redeeming and saving work. They had been with Him; they had seen and heard; they were to be His witnesses, telling His story to the world. The apostles and ministers of Jesus Christ have not only the story of God's great work for Israel in Old Testament times to tell, but also that of Christ and His work for the Kingdom of God.

Isa. 2: 1-10. There shall come forth a rod out of the stem of Jesse. Isaiah was expecting the birth of a child of the royal line of David, who would be the Saviour of His people, and who would be a great and just and glorious king. First to the weak, capricious, and unprincipled Ahaz, and afterward to the well-meaning but weak Hezekiah, he predicted the coming of this king, and he seems to have expected that He would come soon. As time went on he projected His coming farther into the future, and dwelt upon His character and His reign, with high anticipation and confident hope of great things.

Micah (5: 2-6) a younger contemporary of Isaiah, repeated the same prediction. Jeremiah (23: 5-6) took it up and made of it a message of comfort for those of his time who suffered at the hands of their enemies defeat, humiliation, and exile. Ezekiel, among the first of the exiles, saw Him in a brighter future as a second David, and as the good shepherd of His people (34: 23). Others, who followed, preserved and handed down this great hope to later generations, and seven hundred years after Isaiah, Jesus of Nazareth gave it a new meaning, a new direction, and a fulfilment in His Kingdom of the Spirit.

In Isaiah's expectation the coming King is to be richly endowed with the spirit of the Lord, with such wisdom and understanding, such counsel and might, such knowledge and reverent piety, as only God Himself can impart. By these high qualities and gifts He will be prepared for His kingly office, to rule wisely and well.

In verse 3 read (as in Rev. Vers.): His delight shall be in the fear of the

Lord. That will be the king's supreme virtue, and implies all other king's virtues. For the king who fears God will be just and merciful.

The rod of His mouth. This and the following sentence express in a fine poetic figure the directness and authority of the king's commands and laws. So also verse 5 declares the character of His rule—which shall be one of right and truth. The wolf, leopard, lion, and bear and poisonous serpents represent the fierce and warring elements of human society, which shall be tamed and made to live at peace.

The entire picture here presented of the reign of the great Deliverer is of a transformed society, in which peace with justice shall prevail. Mount Zion, the place of Jehovah's temple, is conceived as swelling and broadening until it fills the whole world, and the world of humanity becomes the holy temple of the Lord.

"They shall not hurt nor destroy in all my holy mountain. For the earth shall be full of the knowledge of the Lord, as the waters cover the sea."

Acts 1: 6-9. The kingdom to Israel. Even to the last the disciples of Jesus expected Him to establish again the kingdom of David and to be a real king with court and army and royal power. Jesus made no attempt to set up such a kingdom, yet He did speak of a kingdom of God, and He did assert high authority. His kingdom was to be of a new age and of a new order. It was to make real and supreme the will of God in the lives of men. It was to be, as men came slowly to understand, a mightier power than that of any earthly kingdom or empire—a kingdom of the Spirit.

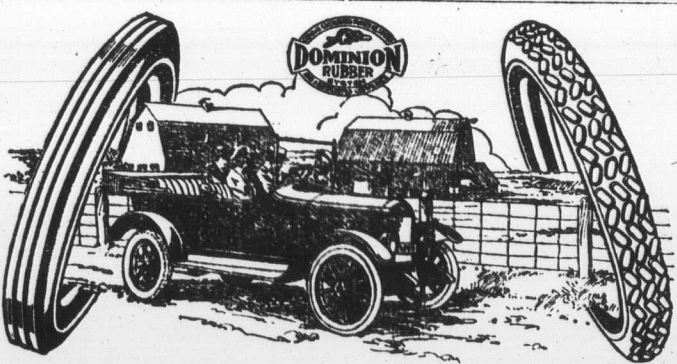
Jesus did not answer His disciples' question by a direct negative. He did not desire to destroy their national hope of freedom and greatness. But He did place before them two great immediate experiences and duties—the first, the receiving of power through the gift of the Spirit of God; and the second, bearing witness to Him in the world. Thus, and thus only would His kingdom be established in the world—the work of His Spirit in the hearts of men, and by witness-bearing. And thus would be fulfilled the old prophetic vision of justice, peace, and the knowledge of God filling the whole world.

Application. It was Mr. Beecher who once said, "As soon as a tree ceases to grow it begins to rot." There is no such thing as standing still either for the individual Christian or the Church at large. We must be continually reaching out, extending our activities, and seeking new fields of usefulness. If ever a Christian were to say, "I will cultivate the Christian graces in my own heart, and let others look after themselves," we know that person could not long remain a Christian. We live by growing. We cannot afford to be provincial in our outlook. As long as there are parts of the world un-Christian or others only partially Christian, that task is our challenge.

The Celestial Surgeon.

If I have faltered more or less
In my great task of happiness;
If I have moved among my race
And shown no glorious morning face,
If beams from happy human eyes
Have moved me not; if morning skies,
Books, and my food, and summer rain
Knocked on my sullen heart in vain,
Lord, thy most potent pleasure take,
And stab my spirit broad awake.
—Robert Louis Stevenson.

Potatoes may not be as cheap next fall as they are now. Better plant a few.



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