

of these small plants; while the same conditions will make the larger manufacturers more careful in their making and curing.

Lower values for hogs will have its effect later in the smaller numbers marketed; it should also encourage the breeding of only the best bacon types. For the present it is compelling producers to feed more cheaply on clover, rape, and dairy by-products, which lesson of economic production will be used to greater advantage when prices improve.

One of the branches of farming that has not received much attention of late, but one that promises well for this season, is potato-growing. Blight in Michigan, and in some parts of Ontario, is responsible for short supplies this spring, and the high price of seed will prevent a very large acreage being planted. So rapidly is the blight and rot spreading, that it is practically imperative that the seed be treated with formalin and the tops sprayed with Bordeaux mixture. From all appearances one would be justified in planting quite largely where the soil is suitable and other conditions favorable.

The fall wheat crop in many districts has not made the improvement that was hoped of it. Already some has been plowed up and resown, while in other parts farmers are hesitating. Where such is the case, a good crop of feeding grain can be secured by sowing barley and an early variety of oats with the wheat, thus turning a questionable market crop of wheat into a fairly certain crop of feed.

Rape a Money-maker.

Rape is a great money-maker for the farmer, and yet there are comparatively few who have accepted it as such. It will fatten cattle, grow calves, prepare sheep for market, make the lambs increase rapidly in weight, and produce bacon cheaper than any other plant that will grow and flourish on prairie soil. Too much can scarcely be said in its favor. It will produce a fair crop on poor soil, a good crop on soils of average fertility, and a heavy crop on land that is rich. On soil properly prepared and containing a good store of plant-food, it will produce heavily even in dry seasons, but does best with a fair amount of moisture.

The ideal preparation for rape is just such as should be given for roots. It will not do well on sod, but stubble may be prepared so as to make a desirable seed-bed.

Sowing may take place any time from early spring until the last of June. If sown broadcast, a good plan is to use the grass-seed attachment of the seeder, and put on from four to five pounds per acre; or the seed may be directed down every third spout of the seeder, thus sowing it in drills. The heaviest tonnage per acre will be obtained by sowing in drills and cultivating with the horsehoe, but on the average farm, where labor is scarce and expensive, it is probably better to sow broadcast.

Five or six weeks after seeding the hogs may be turned in, but when cattle or sheep are to be given their first feed, care should be taken to see that they already have had their hunger satisfied; otherwise they will take a heavy feed, and bloating is likely to be the result.

It will pay every farmer who is raising a few hogs or calves to sow some rape. By using a few rods of the portable fence illustrated in the last issue of the "Advocate," an incalculable amount of benefit may be obtained therefrom, but it should not be fed to milch cows, because milk and butter will be sure to taste of rape.

Good Roads in Nova Scotia.

The Nova Scotia Government, alive to the importance of good roads, last session secured authority from the Legislature to appoint a good-roads instructor, and the appointment of C. R. Coutlee, of Aylmer, Que., is announced. Mr. Coutlee is a member of the Canadian Society of Civil Engineers, and is under forty years of age. He was educated at the Royal Military College, Kingston, graduating fifteen years ago. Since then he has been employed on important works from Montreal to Vancouver, and is now carrying on a general engineering practice at Vancouver. He is regarded as an expert on highway construction.

Two-cent Fares Asked.

At a meeting of farmers in Brant Co., Ont., a resolution was adopted asking the Dominion Parliament to impose a two-cent passenger rate on the Canada Southern division of the M. C. R., which runs from Windsor to the Niagara River. The passenger earnings of the road in question in 1902 were upwards of \$3,100 per mile. It was the only road in Canada which had earnings of \$3,000 or over, and would under the Michigan law be compelled to adopt a two-cent rate.

The Best Published.

Enclosed find my renewal. I believe it is the best farmers' paper published, and every farmer should subscribe for it, as it contains a large number of excellent experiments and ideas.

Wentworth Co., Ont. J. H. DICKENSON.

DAIRY.

Dairy Prints.

Marbling (streakiness) in butter is not a desirable condition. Leave that to the beef and bacon producer.

Keep tab on the cows this summer. Find out whether each pays for its keep, or gives a profit over that keep.

For the average farmer in the West, the dual-purpose type of cow is best suited to the conditions.

Prof. Shaw believes that \$18 a ton for bran is more than farmers in the Northwest can afford to pay for that necessary stock-food. Is this right?

You cannot expect your cows to rank as dual (or general) purpose if you let the calves suck their dams.

Do not expose the calves to the mid-day sun; have them keep civil-service hours—ten to four—inside the barn.

The by-products of the dairy need pigs and poultry to make a good profit.

Cheese Trade Notes.

Birmingham, Eng., is not a very large wholesale market for cheese, but very large quantities are purchased by retailers and jobbers in this district. The large shipping centres for this section are Liverpool and Bristol. Mr. P. B. Ball, Canadian commercial agent there, has made extensive enquiries as to how cheese comes into this market from Canada. One of the largest importers says:

Waxed Cheese.—There is no doubt that waxing preserves the cheese, and keeps it in good condition and avoids loss in weight, and the only reason the retailers object to it is because of the 4-6 ozs. per cheese additional loss in weight they have to suffer. It is well within our memory, however, when the retailer kicked just as vigorously against the custom of making the cheese in cloths, but this died a natural death, just as we imagine the objection to waxing will. Another firm: "Several of our customers object to waxing. No doubt it prevents the cheese from shrinking in weight, and keeps them milder than they otherwise would be. At the same time, it is very difficult to tell what month's make they are when preserved in this way."

"September Cheese."—One firm states that in their opinion shippers are most unreliable in selling a certain month's make, and state that it is becoming a by-word in the trade "that the month of September contains at least ten weeks." However, in the long run this finds its level, because experts here are generally able to detect the difference, and either an arbitration results, or we take care to place our orders in other hands.

Another firm states: "We think with reliable shippers there is no doubt about the make they give us being correct, and of course most goods are bought subject to arbitration this side."

Last Year's Cheese.—In talking over the subject of the quality of last year's cheese with one of the largest retailers in this section of the country, he stated that it was certainly due to the fact that prices were very high, and that cheese was rushed on this market not properly ripened to take advantage of the good prices. I asked whether it was the fault of the Canadian shipper or the English sellers that cheese sold as September cheese was proved to be an earlier make. He said this frequently happened through the anxiety of certain salesmen to improve their prices, and in several cases, through dealing with unreliable houses, he found that matters at times were not entirely satisfactory at the English end.

Branding Cheese.—I have asked several firms whether they thought it would be commendable for the Canadian Government to adopt the method of branding in precisely the same way (and with such good effect) as that used in connection with apples. The retailer certainly thinks this would be very good, but the importer does not think so, as I suppose it probably might not give the latter the same opportunity for making the extra price he would be able to if they were unmarked. It might effect the prices for a short time, but I think it would pay well ultimately. Until last year, retailers were very thoroughly satisfied with the quality of goods coming from Canada.

This same firm said the cheese of 1903 did not ripen as well as the cheese of 1902, and when I asked them if they thought it was due to waxing, they said they were unable to state positively. He thought it was quite probable, as when the cheese was cut and put in the shop, it cracked and dried on the surface very much and did not show up as clean a cut and close a grain as it should do.

From a retail standpoint, I think the method of marking the month of manufacture on the cheese would certainly have a very good effect in this market. I find a good many of the cheese shippers mark the town of origin, more particularly Brockville. The cheese from that district seemed to rank very high in the market here.

Temperature of Night's Milk.

The Chairman.—Has any person present made observations as to the temperature at which the night's milk should be kept in order to have the right degree of acid for cheesemaking when mixed with morning's milk? They have paid some attention to this in England, but I do not know that we have done anything in this country.

Mr. Stratton.—Experiments were made, covering a number of years. In these experiments, I took the temperature at which the milk was left at night, and again in the morning. It makes a difference when you take the temperature. But if it is at seventy degrees at night, it will not be much out of the way in the morning; that is, for summer or fall work.

Professor Dean.—That is, when mixed with the morning's milk?

Mr. Stratton.—Yes. Another point is that we did not always have good milk to deal with, and in our experiments we have just as bad cheese and as gassy cheese as anyone.

HUMIDITY AND MILK.

The Chairman.—The relative humidity would make some difference, I suppose?

Dr. Connell.—No; the temperature is the determining factor. The milk is always wet.

The Chairman.—The reason I mentioned that is that it is a common experience of everyone who handles milk that when you have the humid conditions that prevail before a thunderstorm, you have the milk souring very rapidly. It is popularly supposed that there is greater activity under such conditions—not necessarily that there is a difference in the milk, but that germs are more active. That is the common theory, and it is just as well to have it exposed if it is wrong.

Professor Harrison.—It is commonly thought that at the time of a thunderstorm the air is charged with electricity, and so the milk goes sour.

The Chairman.—I was not referring to the electricity, but to the humidity. It is thought that even at a fixed temperature the greater humidity has an effect upon the milk.

Professor Harrison.—So far as bacterial experiments have shown, there is no increase in the bacteria that cannot be accounted for by the rise in temperature. Dr. Conn. of the Connecticut Station, has done some work on this line, as also have several European investigators, and they have not shown that electricity stimulates the growth of bacteria.

The Chairman.—But that is not the point. The question is as to the humidity.

Professor Harrison.—Well, as Dr. Connell says, the milk is as wet as it can be anyway. It is simply a question of temperature.

The Chairman.—But I am referring to the moisture in the air.

Professor Harrison.—That has nothing to do with the bacteria in the milk. You have eighty-five per cent. of moisture there, and that is more than enough for bacterial developments.

The Chairman.—It is often said, and very commonly believed, that milk spoils more rapidly in very damp weather, even when other conditions are the same.

Dr. Connell.—The drier kinds of food, like bread or meat, would spoil more quickly in the humid atmosphere we observe before a thunderstorm. But, under ordinary conditions, that does not apply to moist foods like milk.

Mr. Leclair.—I understand, Mr. Chairman, that you wish to know the degree of acid which should be developed in the night's milk before the morning's milk is added to it, and the relation of this point to the temperature.

The Chairman.—The point I raised was to learn if there was any authority to let us know at what temperature the milk should be kept over night in order to be ripe for adding the morning's milk, when the milk is to be used for cheesemaking. If we wish to advise patrons to cool milk, it is important that we should know to what temperature to cool it. From Mr. Stratton's experiments, it would appear that a temperature of seventy degrees in the evening is about right in such cases.

Mr. Publow.—From my observations, made in going from factory to factory since the use of the alkali test was begun, I have been led to believe that if the morning's milk is mixed with the night's milk when the night's milk is over seventy-five degrees, the whole will be overripe for the best results. I would like to have the night's milk cooled so sixty-five degrees, so as not to have it too warm. But if it is at seventy degrees, it would be a good deal better than at seventy-five degrees. If you wish to keep it from Saturday night to Monday morning, it should be cooled to forty degrees if possible—certainly to fifty degrees or below.

Mr. Stratton.—In all this work I made the rennet test. I never found the milk over-ripe when I cooled it to fifty-four degrees or below; that is, for Saturday night's milk. Sometimes it was up to fifty-four degrees, and held at that temperature till Monday; and kept at that temperature, or below, it is not over-ripe. But above that temperature, kept from Saturday till Monday, I found it over-ripe.

Mr. D'Aigle.—I must admit that it is a revelation to me to find that aeration is not advisable. I am not going to say that Professor Dean is not right; but I have always found, particularly when I was making butter and cheese, that I could always get better results when I could have aeration of the milk. Of course, I am willing to be convinced by these experiments conducted at the college. But when there has