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Cultivate the summer fallow as shallow as you can. French weed seeds will not grow through more than two inches of soil. Don't crop the land to cereals continuously. Put the summer fallow to flax or barley next year without plowing, and pull up the few weeds that show. Plow deep and early the following fall, summer fallow again the next summer and put to wheat or oats, without plowing before seeding. By this time you ought to have the soil ordinarily cultivated pretty free from the pests. If any seed germinates pull the plants out before seed is produced. This method calls for two summer fallows in succession but the fact that the land is freed from weeds repays the extra work.

In spraying mixtures against all ordinary weeds the following proportions of the chemicals are used: Iron sulphate 75 to 100 lbs. dissolved in 52 gallons of water and that quantity of the solution used per acre; copper sulphate, from 12 to 15 lbs. in 52 gallons of water, applied in same quantity per acre; salt, about a third of a barrel per 52 gallons per acre. The copper and iron sulphate should be suspended in a sack in the water, not simply dumped into the bottom of a barrel or tank and left to dissolve.

For information on weed spraying write to the North Dakota Agricultural College, Fargo, N. D., and ask for Bulletin No. 80 of that station, entitled, "Weeds and Methods of Eradication."

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The South Dakota Experiment Station has just issued a bulletin giving the results of some co-operative experiment work in sugar-beet growing carried on in that state during the past year. The average returns per acre for the whole state totalled \$65.33 and the cost of production amounted to \$37.64, leaving a clear profit to the farmer of \$27.67 per acre. In addition he had the tops for feeding and his land was cleaned of foul weeds. The average percentage of sugar was 18.44 per cent.

* * *

The growing of soiling crops to supplement pasture is said to be becoming more general throughout Ontario, though the increase is not very marked. Some sections report that many farmers follow this practice, more report that only a few are doing so, while in about one-sixth of the dairy sections none at all are grown.

DAIRY.

Prof. Carson Resigns

Professor W. J. Carson, who has had charge of the dairy department of the Manitoba Agricultural College since the institution started, resigned last week and the board is advertising for a man to fill the vacancy. Prof. Carson, it is expected will remain at the college until regular work is resumed in the fall. The board is also considering the appointment of a bacteriologist biologist and poultry manager. Announcement of the filling of these positions may be expected shortly.

Dairymen in Manitoba will regret Prof. Carson's retirement from the college staff. He has accomplished a good deal for the dairy industry since he came to the province two years ago, laid the foundation for regular and advanced dairy courses at the M. A. C., and placed the business in the country on a better footing than it has ever been before. The college authorities will have some trouble in securing a man of the same caliber to fill his place.

Encouraging Showing at Creameries in Saskatchewan

The increased interest that is being taken in dairying in Saskatchewan is to some extent shown by the statement given below. The figures constitute a comparison in the work of 1907 and 1908 to the end of June in each year at the creameries under government supervision:

Creamery	Season	No Patrons	Lbs Cream	Lbs. Butter.
Langenburg.....	1907	54	17805	5657
".....	1908	133	93,915	25,494
Tantallon.....	1907	44	8,140	2,494
".....	1908	79	31,547	9,165
Moosomin.....	1907	35	8,256	2,433
".....	1908	50	22,856	6,010
Qu'Appelle.....	1907	15	4,845	1,334
".....	1908	84	25,301	7,596

The make of 1907 was small but the conduct of the work and the prices paid to the farmers was satisfactory and it has influenced many to patronize the creameries who did not support them in previous years, but are now sending a liberal supply of cream. The results of the thorough work done by the Dairy Branch of the Department of Agriculture during the winter of 1908, through the extensive campaign of institute meetings conducted in the districts where the creameries were in operation, is manifest in the practical way by the favourable showing at all the creameries. These meetings following the results of

1907 wheat crop were most opportune. The feeling, in many places, was prevalent that farmers should resort to some other branch of work in conjunction with the wheat growing to provide for emergency cases. With a full explanation of the assistance the Government was extending, and the work they were doing to develop the industry, and also of the advantages to be derived from farmers uniting to make the undertaking a success, a favorable impression was left with the thoughtful dairy farmer, which is now being put into effect.

The butter market to date has ruled strong and there are indications that last year's prices will be maintained, and that the dairy farmers will, in any event, be fairly well provided for.

Giving "Reasons" In Dairy Cattle Judging.

At one of our provincial fairs this summer we watched a class of young men judging cows in a judging competition and afterwards listened to the reasons each of them gave the official judge for the particular placing made. It struck us that most of these fellows were a little weak in the reasons given to substantiate their placings. A majority of the class got the cows placed right, or placed very nearly as the official judge finally lined them up, but when it came to telling in simple language exactly why they had placed such and such an animal first, another one second and others third and fourth, they unloaded a of guff about the mildness of a certain cow's eye, the length of her head, fineness of the neck, breadth of nostril, and touched on a dozen or so other unessential points, some of them to the neglect entirely of that which with most judges is considered as outstandingly important. The boy who starts out to give reasons for placing dairy cows in a judging competition, by shooting off a lot of nonsense about the cow's muzzle, the shape of her forehead, the mildness of eye or the length of her tail may be able to judge all right but he has an altogether incorrect conception of what the good talking points of a cow really are. Most men when they judge dairy cows look for constitution and lung capacity in the size and shape of the chest, not in the breadth of the animal's muzzle, look for indications of a mild temperament in the animal itself as it stands before them, not by gazing sentimentally into the depths of the cow's eye.

There are two outstanding points which no good judge of dairy cattle neglects to emphasize if he is called upon to give reasons for his placings of a cow class in the ring. They are digestive capacity and udder development. These, not mild eyes, trim necks and broad nostrils are what every dairy cow must have if she is going to be a successful milk pail performer. These, not the insignificant and unessential things are what should first be pointed out when indicating the superiority of one cow over another either by competitors in a judging competition or by a judge in the ring. These things are essential in a dairy cow the others are not. As a general rule a man doesn't need to judge of a cow's constitutional strength by sizing up the cut of her nostrils, nor estimate her milking abilities by following up the milk veins, noting their tortuosity and the depths of the "wells" in which they end. If he has the cow before him the well sprung ample barrel, and full developed udder will be a much safer criterion for him to judge on.

The best reasons we ever heard given by a judge in a dairy cattle judging contest, were given some years ago by a gentleman officiating at a function of this kind at the Western fair, London. Reasons in those days were written, not given orally, so the judge, immediately the contestants finished writing out their reasons, gave his placing of the animals, his reasons for placing them in the order he did, and then retired to read over the boys' manuscripts. The judge's reasons certainly carried little cheer to the bunch of anxious looking competitors. He disregarded all such fine points as the color of the inside of the ear, or the size of the escutcheon, things which most of the competitors had been dwelling on, and went straight at the cow class before him sizing them up for their likely abilities to produce milk as indicated by the size of their barrels, which would contain the digestive apparatus necessary to transform food into lactic fluid, and by the size of their udders which would hold the milk after it was drawn from the blood and food. The judge's name we have forgotten long ago but we question very much whether any of the budding young dairy cow authorities who took their lesson and their medicine too, in that ring—for the judge gave scant attention for any boy's reasons if the essential points were not gotten at first—will ever get tripped up again for haranguing about the insignificant points of a dairy cow and leaving the really essential points untouched. It's the big things one wants to get after in giving reasons in a judging competition. If there's anything to be said about minor points it can all be said in a word or two at the last, or left unsaid altogether.

Ripening and Churning Temperatures

What is the correct temperature for churning and ripening cream?

Man.
This question is asked more frequently in this department than any other. We have endeavored time and again to impress enquirers with the fact that it is impossible to fix any temperature for ripening and churning, which in all circumstances would give satisfactory results. The conditions of the

cream, its age, quality, degree of ripeness can be satisfactorily done. This is an impossibility. There is no standard temperature for churning cream, as the temperature must be varied according to conditions. We do not know what kind of cream you have, whether it is rich separator cream or cream gathered from milk set in pans or cans. If you are using a separator and the cream is rich, it may be churned at any temperature from 42 to 54 degrees, but if it is thin you should need to raise the temperature somewhat. Thin cream in summer should be at a temperature of from 58 to 65 degrees, and in winter from 65 to 72 degrees. But these figures are merely given as guides. By observing closely the condition of your cream at each churning, that is as to age, ripeness, richness etc., and by a little experimental work of your own on churning temperatures you will be able to decide upon a temperature most suitable for your cream. The correct temperature ought to bring the butter in from twenty to thirty minutes. Regulate temperatures till you get it coming in about this time. If it comes too quickly, lower the temperature a degree or two for the next churning, make the cream colder; if the time required is much over half an hour, raise the temperature a few degrees.

In ripening, hold the cream sweet and cold—as cool as possible—until sufficient is collected for a churning. Then bring it to a temperature of 70 degrees, and add about ten per cent. of pure culture of good flavoured sour skim milk or butter milk. Let it ripen at a temperature of about 65 degrees, which is a good ripening temperature, for twenty-four hours before churning. Stir the cream with a tin stirrer during the process.

Testing Not Satisfactory

A farmer out in Alberta, the patron of a privately owned creamery, writes us for information on milk testing. It would seem that in this reader's district two creameries are competing for the milk. One of them is a government owned creamery and the other a privately owned and operated establishment. The Babcock test is the basis of payment for the milk at each plant. The private creamery claims to be paying better prices than the government creamery for the farmers' milk. What this reader wants is for us to enter into a detailed description of the operation of testing milk with the Babcock test. As whole volumes have been written describing the Babcock test, it is useless to attempt to cram all the information our friend desires into an ordinary article. This can be much better secured from a study of some text book on the subject, or from a practical operation of the tester.

We imagine, however, that he is more concerned to know how one creamery can pay more for milk than another, while both sell their finished products at practically the same price, and meet the same charges for labor and maintenance of the plant. However, he furnishes no definite statement of prices, tests, or weights, so we can do nothing but discuss the subject in a general way. We hear this kind of criticism quite frequently. Wherever two creameries are competing against each other, especially if there is only about sufficient milk in the community for one, there are bound to be stories circulating around that one is paying better price to patrons than the other. In some cases on account of having a more skilled maker, better marketing facilities, or because it sells its product in a different form, one creamery may be able to pay decidedly more for milk than another in the same district. But it is not very often that such occurs. More frequently when rumors are afloat that this, that or the other creamery is paying a higher price than its competitors for milk, there is mighty little ground for the statement, and the seemingly higher price comes in because the operator is juggling just a little with the figures.

It is easy for a dishonest man to graft in the milk or cream testing business. It is also easy for him to manipulate his tests and weights so that while not being actually dishonest, while giving the patrons every cent coming, he contrives to hoodwink them into believing that a larger price is being paid than for the milk or cream, than could be had for it at any other creamery. One way is to read the test low, have a large over-run and pay correspondingly high price for butter fat. If the tests are read down so that a hundred pounds of butter fat will give a hundred and twenty-five or thirty of butter which sells at a given price per pound, then the creamery giving the low test will pay its patrons more per pound for butter fat than its competitor giving a straight reading, but the patrons will have fewer pounds of fat to get paid for. So the final result is the same in both cases, though the patron whose milk has been tested low may be under the impression that he has been getting a better deal than the other fellow.

Then one occasionally meets with a butter maker thus able to show :s good returns on the hundred pounds of milk basis as he is per pound butter fat. The maker who follows such a practice is flagrantly dishonest. Such a man, where a farmers have no facilities for weighing their cream and detecting the weigher's dishonesty, can rob patrons right and left and they'll never know he's doing it. Makers of this class, however, are rare. In most cases, creamery operators do everything in their power to see that each patron gets as large a return for the product he sends in as it is possible to pay. That's all the average farmer wants, and he should send his cream where he has reason to believe he will get it.