

and it forms the most complete ration for milch cows of any one food I know of.

4.—As to this question I am not now prepared to give an answer. Our experiments with grain are not complete. Am anxious to obtain all on this subject I can. F. C. ELFORD.
Huron Co., Ont.

Only Good Words for Lucerne.

1.—I use corn in the form of ensilage and also as dry fodder very largely; in fact, it is our main bulky ration. We sow it in drills; about 12 quarts per acre. I don't think there is much advantage in planting in hills over drills, except that you can cultivate both ways, but by harrowing the corn as soon as it comes up, and sometimes before, if the ground happens to get a crust on it, we have no difficulty in keeping our corn crop clean.

2.—In our locality the Dent varieties give the best results for ensilage, but for fodder I have not found any variety give me as good results as Stowell's Evergreen.

3.—Peas and oats mixed and sown at the rate of three bushels per acre, as early as possible in spring, will be ready to feed about the time the pasture begins to fail. Lucerne is also a splendid soiling crop, and will be ready for use sooner than anything else in spring. It does not seem to thrive so well, however, on clay land unless it is under-drained. I have been growing lucerne for about ten years, and using partly for soiling and also for hay, and I have nothing but good to say of it.

4.—I grow peas two-thirds and oats one-half mixed together and get the grain chopped. We rely principally on soiling crops in summer. For a winter ration we have found that thirty-five pounds of good sweet ensilage made from corn well-eared, with about six pounds of the chop mentioned and one quart of oil-cake meal, together with some dry corn fodder, gives us the best results. When bran is a reasonable price we use it. I think very highly of bran as a ration to balance ensilage, but it is generally too high-priced in our market. R. S. STEVENSON.
Brant Co., Ont.

Flint Corn Preferred.

1.—Have had to depend upon corn for over half the feed for our stock during the past two years, clover being so damaged both by frost and drought. I plant part in hills in the ordinary way, using the stalks as fodder and grinding the corn. I feed once per day. I sowed a piece of corn broadcast on new land; could see but little difference as to value between Dent and Western corn; cut part when pasture begins to fail, and feed in the field as I have no silo. The Western corn is hard to cure, but stands up better. I prefer hills for ripening corn, and drills for fodder corn.

2.—I prefer Flint for all purposes. Too much wood in Dent, and if sown thick enough to make it fine the under leaves all rot, leaving only a bare, slimy stalk, and but a few leaves on top.

3.—Clover and timothy, when I can get a catch, grown in the ordinary way. Had a small piece of excellent clover a year ago sown without any other crop.

4.—I grow corn largely because it suits amongst young trees in the orchard, but prefer chopped oats, wheat bran, and a little oil cake meal with it—two quarts a mess twice each day. Am feeding one peck of white carrots once per day to each animal, but do not think them so valuable as a grain ration. We only keep a small herd of thoroughbred Jerseys, and sell milk to customers. Have to be guided by circumstances, so cannot always feed just what I should like. SAMUEL HUNTER.
Oxford Co., Ont.

Ensilage Corn in Quebec.

1.—Would recommend corn to be depended on to supply fully one-half of the bulky food for dairy cows. Always plant it in hills two feet apart in the rows, which are three feet apart; about six stalks to the hill.

2.—For feeding in summer, and also for fodder, where there is no silo, by all means the sugar corns, either the Evergreen or Mammoth. For the silo the Dent is probably the best, but I do not plant it exclusively, as I find some years the Flint does best, so plant some of both. As to the best kinds, the time of sowing has a good deal to do with that. If we are ready early we sow the large kinds, such as Cuban Giant, Red Cob, White Pearl, Yellow Cap, or any large kind; if late, some of the earlier sorts, such as Butler Co., Thoroughbred White Flint, Longfellow, or Canada White; in fact, any kind that will come to maturity.

3.—I also grow tares and oats mixed, about one-third tares, and sown at different times, about ten days apart. Sometimes I sow millet if the season is late. Have not tried rape, but intend to try a small piece this year.

4.—I buy almost all my grain feed. In summer time we feed about 3 lbs. of bran, 1 lb. oil cake, 1 1/2 lbs. meal—that is, peas and oats ground together. Of course, we increase and decrease the quantity according to the abundance of other feed. In winter we just about double that quantity along with the ensilage, hay and straw. I like the ration to be about one half bran, but sometimes bran is too dear and we have to do with very little. After it goes above \$12 per ton we reduce our quantity of bran and increase the remainder of the grain ration slightly. These are the average rations per day, some cows receiving more and some less. I am obliged to produce the same quantity of milk the year 'round. D. DRUMMOND.
Petite Cote, Que.

Western Ontario Dairy Convention.

DIFFICULTIES IN CHEESEMAKING, AND HOW TO OVERCOME THEM—POINTS IN BUTTERMAKING—CURING ROOMS—SELLING CHEESE—WINTER DAIRYING—COST OF MILK AND BUTTER PRODUCTION—DAIRY FARM CROP ROTATION.

A cheese and butter makers' convention was held at the Strathroy Dairy School, under the auspices of the Western Ontario Cheese and Butter Association, on March 26th. This meeting was the occasion of our visit to the school, which we learned is to be conducted the coming summer as a creamery under the management of its present Principal, F. J. Sleightholm, B. S. A. It is well that some continued use is to be made of this well-equipped and ably-manned institution. While good instruction has been given during the past winter comparatively few students have attended. Sometimes between a dozen and a score, usually nearer the latter number, were in attendance during the best sessions, and at times pupils and instructors were about equal in number. In conjunction with the regular creamery capacity, the institution will continue to be run as an experimental station and school of instruction to those who wish to attend.

The convention was continued through an afternoon and evening session. At the former, 1st Vice-President J. S. Pearce occupied the chair, when some 80 or 90 were in attendance, among whom was a goodly sprinkling of ladies. Unfortunately, the bad condition of the roads prevented a large attendance of farmers.

Principal F. J. Sleightholm welcomed the visitors, and invited them to make a careful inspection of the School, its equipment, and the work being accomplished.

DIFFICULTIES IN CHEESEMAKING, AND HOW TO OVERCOME THEM

was the subject of a paper by Mr. Wm. Waddell, the cheesemaker of the School. Tainted milk is a great source of trouble, and should be always returned to the patron if the taint is detected before it is commenced to be manufactured. Every cheesemaker should occasionally visit his patrons, especially the more careless ones, and in a friendly way suggest improvements that may be made in producing and keeping milk, and impress the need of avoiding feeding foods likely to produce badly-flavored milk. The patron must feel that he has an interest in the finished product before he will do his best to send only the best quality of milk.

Gassy curds arise from many causes: cows in ill-health, breathing impure air, drinking bad water, dirty milk cans, want of aeration, and many other improper conditions the result of carelessness on the part of patrons. It more frequently occurs after cool nights when aeration was considered unnecessary. It was claimed that aeration is of far more importance than cooling. Gassy milk should be set when the milk coagulates from 2 to 4 seconds less than the ordinary time by the rennet test. Add more rennet, do not cut fine, don't over-stir at dipping time, pile curds deeply and stir often after milling. It was suggested to wash curds in hot water (105 degrees F.) when very bad. This, however, is liable to waste fat. One maker suggested that sweet whey from another vat be used to wash the curds.

Overripe milk should be returned to the patron. Always be ready to go on with the making as soon as the milk is in. Always use the rennet test. Do not commence to heat up until the milk is all in. Add a trifle more rennet, mixed with cold water. Dip with less acid on the hot iron.

Tampering with milk is overcome by paying by quality as indicated by the Babcock test.

During the discussion which followed it was recommended that there be less opposition in milk routes than is frequently the case. Two milk wagons going over the same route causes an unnecessary expense. Whey should be sold to the highest bidder, and not fed near the factory nor carried home in the milk cans. With regard to "starters," it was recommended that only pasteurized milk be used, to which a quantity of starter having a perfect flavor is added. Thick, soured "starter" should be thinned with pure cold water and carefully broken up and strained into the vat.

THE HANDLING OF CREAM SEPARATORS

was discussed in a paper by the School buttermaker, Mr. Henry Smith. Without going into this subject exhaustively, it might be stated that a cream separator should have a solid foundation and sit perfectly level. In a new creamery it was advised to use a spirit-level almost daily for the first few weeks. Uniform running power is very important. The belts, governors, etc., should be right. Use only specially prepared oil.

POINTS IN BUTTERMAKING.

The foregoing paper was followed by a discussion on buttermaking, when the following points were brought out:

It is a disadvantage to add cold water to butter when coming into granules when there is trouble in getting the butter to gather.

The advantage of having butter made in a creamery over the dairy was clearly shown. During the past winter dairy butter sold for 10 cents to 13 cents per pound, while creamery butter usually brought 20 cents.

In the creamery, practically all the butter-fat is recovered from the buttermilk, while there is a great loss in fat in the average home dairy.

Having the butter made at the creamery takes a great deal of drudgery away from the women on the farm.

Good butter cannot be made from milk produced from poor, inferior feed.

The cows must be healthy and properly cared for in a clean, light, comfortable stable.

Separated milk, before being taken home by the patron, should be heated to 160 degrees Fah., which will keep it sweet in a cool place for two or three days for calves or pigs.

CURING ROOMS.

Mr. R. Robertson, of London, introduced a discussion on cheese-curing rooms, when it was pointed out that much well-made cheese had been spoiled in defective curing rooms and those kept at too high or too low temperature. A curing room that allows the inside temperature to vary with the outside will have cheese leave it at a variety of prices seldom reaching the top. Most of the points made were much in keeping with those contained in our reports of the Guelph and Brantford dairy conventions. Cheese should be sold every two weeks to the highest bidder to avoid risks. It also pleases patrons to receive their cheques regularly. [NOTE.—If large enough.—Ed.] It is well to whitewash the windows thoroughly in hot weather, also the entire outside of the factory and curing room.

The evening meeting was presided over by Sec. J. W. Wheaton, who emphasized the importance of paying special attention to quality, as a greater quantity of dairy produce is not wanted except of the finest quality.

WINTER BUTTERMAKING

was the subject given Mr. J. B. Muir, of Avonbank factory, who referred to the management of the Avonbank factory. It is controlled by a joint stock company. The butter is made and marketed for 3 1/2 cents per pound. Half of the butter of this past winter was sent to Manchester, Eng., and half to Toronto. The average price for the winter in either case has been 19 1/2 cents at the factory, or 16 cents to the patrons. Nine-tenths of his patrons have silos, which enables them to supply an abundant quantity of milk all winter. When a patron sees another sending more milk than he is able to do from the same number of cows he at once seeks to learn the secret. This explains the prevalence of the silo. Patrons form clubs of 3, 4 or 6, and deliver the milk alternately. One of his patrons commenced on November 18th with six fresh cows and five or six strippers. In March he had ten fresh cows and three strippers, and has made his year's rent in butter (\$400), besides selling about a dozen fat hogs and feeding some skim milk to calves.

The question was asked, Will winter milkers give as much milk in summer as though they came fresh in spring? One patron had ten cows come fresh in February and two in April, and when the dry pasture came the early calved cows retained their flow quite as well as the later ones. It will cost some \$550 to equip a cheese factory with buttermaking machinery without having to put in a boiler or engine.

COST OF PRODUCTION.

Mr. Sleightholm, by the aid of a table, emphasized the importance of paying especial attention to cheapness of production. We cannot control the price except by making a superior article, but we have control of the cow through which the entire product must come. The following table shows the latest researches along the line of the cost of producing butter:

STATION.	Cost per lb. butter			Keep of cow one year.	Cost per day.	Cost of 100 lbs. of milk.
	For year.	Summer.	Winter.			
Minnesota.....	10 1/2c.	.....	14c.	\$38	.....	62c.
Cornell.....	14c.	.....	.....	.....	.....	65c.
Guelph.....	14c.	4c.	18 1/2c.	31	9-22c.	.....
Farm work.....	12 1/2c.	5c.	17.5c.	25	4-18c.	58c.

* June.
The causes of dear milk and butter are numerous, among which may be mentioned poor cows, poor feeding, poor care, and too short milking period. Frequently patrons are found who study their business and by seeking to supply favorable conditions realize from each cow often from \$50 to \$70 a year, while others who cannot be bothered with cows in the winter time, but seek to save money by feeding at about \$1 per month per cow, will draw from \$10 to \$15 per year for each cow's milk. This is the wages of ignorance and shiftlessness. Too often these are the men that proclaim the unprofitableness of dairying. A frequent cause of unprofitable summer milk production is the practice of allowing cows to stay out in the field fighting flies and hunting grass during scorching days. It is vastly more profitable to house them during such days and feed them well and allow them access to good pasture during the night. There are great differences between cows. Individuals vary more than breeds. Productiveness in cows depends more on conformation than on size or breed.

Mr. Leach claimed that he produces winter butter at 10 cents per pound. He feeds ensilage (which

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