

DAIRY.

The Effect of Food on Milk.

There is probably no more debated question among dairymen (experimentalists, and those whose everyday work is dairying) than the effect of food on the quality of milk. Below we give a synopsis of two investigations—one British, the other United States:

The U. S. View.—The Hatch (Mass.) Experimental Station has issued a bulletin giving the results of investigations on this subject conducted there. The bulletin says: "The quality of the food has little, if any, influence on the quality of the milk. Whilst some foods affect the flavor of milk, and possibly to a slight extent its color, it is conceded that foods rich in protein have a tendency to increase very slightly the percentage of fat in the milk of some cows; the same being true of foods rich in fat. But such increase is probably only temporary, the milk gradually returning to its normal composition. Cows very thin in flesh, and insufficiently fed, if brought into condition by proper food, will probably yield milk of rather better quality; but such improvement in quality will not, as a rule, be marked. The milk-producing function being under the control of the nervous system, any influence that disturbs the quiet or normal condition of the animal (such as rough usage, extremes of temperature, exposure to rain) will have its effect upon the quality of the milk. On the other hand, good and plentiful feeding increases the quantity of milk until the cow reaches her maximum productive capacity. So far, however, no method of feeding has yet been devised that so improves the quality of the milk as to enable a given quantity of milk to produce more butter at one time than at another. The quality of milk varies at the different stages of lactation, but this is entirely independent of the influence of food."

The English View.—At the Midland Dairy Institute some experiments on the feeding of cows were conducted, from November 2nd to January 4th. Fifteen cows were divided into three lots, as equally as possible in relation to milk yield, all receiving daily, per cow, 2½ lbs. of bran, 6 lbs. of hay, 10 lbs. of steamed chaff, and 50 lbs. of roots; while lot A received, in addition, 2½ lbs. of linseed cake (poor in oil), 3 lbs. of bean meal, and 2 lbs. of mixed oat and wheat meal; lot B, 4½ pounds of linseed cake (rich in oil) and 3 lbs. of bean meal; and lot C, 4½ pounds of linseed cake (poor in oil) and 3 lbs. of bean meal. Then the comparison was between a diet low in oil, one rich in oil, and a third rich in nitrogenous matter and low in oil. The contrast was hardly as marked as it might have been, but the result was that the average percentages of fat in the milk for the whole period were 3.6 for the cows fed on a diet low in oil, 3.8 for that of those fed on food rich in oil, and 3.7 for that of the cows fed on a rich nitrogenous diet. The solids (not fat) for the three lots were 8.71, 8.67, and 8.81. The churn test maintained the superiority of the second lot in respect of quantity of butter, but it was greasy and of low quality; while that of the third lot was the best. So far as the experiment goes, then, it indicates that extra oil in the food increases the richness of the milk and the quantity of butter, but that a large quantity of oil spoils the quality of the produce. On the whole, the rich nitrogenous diet was the best.

Points in Dairy Practice.

BY F. J. S.

Churning.—Cream should always be strained into the churn to remove the curd from it. While specks of curd do not enhance the selling price of butter, neither do they improve the flavor or keeping quality. It is not well to fill the churn more than one-third full; at the most, not more than half. A full churn means wasted muscle. It is well to remember that sweet cream must be churned at a much lower temperature than sour cream if we desire to get all the butter. Much butter-fat is unprofitably fed to swine because of ignorance or of inattention in this matter.

Difficulties experienced in churning are due chiefly to one or more of the following conditions:—

1. Cream too cold.
2. Cream too warm. (It is really no use to look to other things for the cause of the difficulty until these are fully mastered.)
3. Too much in the churn. Leave plenty of room for the cream to drop in all dashless churns.
4. Cream too thick.
5. Cream too thin; that is, with too much skim milk in it. The butter is slow to break, and, having broken, is slow to gather. This is especially noted in cream from deep-setting cans, more particularly in the winter months. In such cases a handful of salt will assist the separation. If a little butter-milk can be drawn off the butter can then be more easily gathered.
6. Cream improperly cared for, kept in too warm a place, or not stirred sufficiently while keeping and ripening.
7. Cows too long in milk. One farrow cow in a herd will often cause much difficulty in the churning, sometimes wholly preventing it. A fresh cow in the herd occasionally is an advantage in more ways than one.
8. Improper feeding. Confining cows to a single coarse fodder, especially dry, innutritious fodder, is a fruitful source of trouble. Unbalanced rations,

too, is a common source of difficulty. There is no more important matter in the animal husbandry of our milch cows, no more troublesome source of loss, than lack of variety of fodder. A mixture of grain is always better than any single grain. It not only gives more milk and better for each dollar's worth of feed, but the quality throughout is better.

When the butter breaks in the churn a little water added two or three degrees lower than the contents assists in getting a better separation of butter. This is not a necessity when handling first-class cream, but is usually an advantage. The churn should be stopped when the butter gathers about like buckwheat, the buttermilk drawn off, and the washing done. The purpose of washing is simply to remove buttermilk. It does not improve the butter in any way apart from this. Use water cold enough to keep the butter firm enough for working. Turn the churn fast when washing, that the granular condition of the butter may be preserved, since it thus takes the salt more evenly. It is well to remember that washing with very cold water does not put texture into butter. Low temperatures in the earlier stages must be depended on largely to do this.

Salting Butter.—When the butter has drained sufficiently it may be salted either in the churn or on the worker. The former method is an excellent one, and we are pleased to see it growing in favor. Sift, say, half or one-third of the salt on to the butter; then tilt the churn to show a fresh face of the butter, and sift on more. When the salt is all added, slowly turn the churn or swing back and forth until the salt has been thoroughly sifted through the granular article. It may now be gathered into lumps in the churn and left there or taken out and packed loosely into a tub. In either case it should be allowed at least three to four hours for the salt to dissolve, after which it may be worked and prepared for market. The above is unquestionably one of the best systems of working butter now practiced, being in vogue in many of the best private dairies and also in creameries. While taking the salt the butter should be kept in a cool place. When salting on the worker and working immediately after, more than ordinary skill and care is necessary to get a first-class product. Only good salt, fine and pure, should be used. Weigh both butter and salt; accuracy pays. When salting in the churn, the salt may be calculated from the amount of cream churned, the amount of milk from which the cream was taken, or the churn and butter may be weighed and the weight of the churn deducted.

Working Butter.—When salted in the churn and allowed to stand until the salt is wholly dissolved, much working is not required. Herein lies one of the advantages of the practice. The butter will show streaked when the working commences, and when the streaks disappear, the body being uniform in color, the working may cease. This constitutes a guard against overworking. Overworked, greasy butter is too common. One-half the ordinary working will be found sufficient. When salted in the worker, the butter may be worked once or twice. The latter we would prefer, especially during hot weather, since we find in actual practice that butter twice worked is of finer texture, flavor, and keeping quality. In this case, just work the butter enough to get the salt incorporated, then set aside at a temperature of 55° F. or thereabouts for three or four hours, when it may be reworked. When the streaks disappear the butter is sufficiently worked. Too often as butter comes from the churn it lacks body for safe and sufficient working. There is no doubt but that we have been accustomed to work butter too much. There is no doubt whatever but that, with the salting carefully and thoroughly done, time given for complete dissolving, and the observation of suitable temperatures, much less working may safely and profitably be done. All working should be by direct pressure. Avoid friction, rubbing, etc. The little lever butter-workers are more suitable than bowl and ladle or spoon.

Cross Breeding for the Dairy.

A writer in *Hoar's Dairymen*, calling for the experience of others in crossing breeds for the production of a model dairy cow, makes the following statements:—

"I have from time to time reported the results of my experiments in the crossing of Ayrshire sires with Jersey dams for the production of a cow that shall meet the demand for a milk and butter cow, both qualities considered. I have reported only the successes, for the simple reason that I have never known the cross so made to fail to produce a satisfactory milker. Hundreds of dairymen are trying the cross of the Holstein and Jersey, hoping to produce the much sought after model cow. The observation and experience of dairymen in this locality is that the cross of the Jersey and Holstein, while in some individual cases producing superior milkers and butter producers, as an average is not a success, and the second cross generally a failure. To make an improvement in breeding, the intelligent breeder must seek to concentrate some particular trait or quality. Freaks are no guide in breeding. The average Holstein and Jersey have little or nothing in common. In the cross nothing is concentrated. The results of experiments in this locality show that the cross is likely to destroy the quantity and size of the Holstein and quality of the Jersey. Neither breed is improved by the cross."

O. A. C. Dairy School.

Announcements are out for the Dairy School session of 1897 at Guelph, Ont., a copy of which may be had from Prof. H. H. Dean, or from Dr. Mills, President of the College. It will reopen on Jan. 15th, 1897, and remain in session for ten weeks. Factory and home dairying are completely covered in the course: 1. Cheesemaking will be taken up by Mr. T. B. Millar, instructor for the Western Ontario Dairymen's Association, with Mr. R. W. Stratton, experimental cheesemaker at the O. A. C., as assistant. 2. Cream separators, by Mark Sprague, instructor for the Ontario Creameries Association. 3. Buttermaking, by T. C. Rogers, assistant buttermaker, O. A. C., and J. H. Findlay, of Barrie, Ont. 4. Milk testing, by J. W. Mitchell, B. A., Lansdowne, Ont. 5. Home dairy, Jas. Stonehouse, Port Perry, Ont. Added to the above and the lectures by Prof. Dean himself, as head of the Department, there will be lectures by the O. A. C. Agriculturist, the Professor of Veterinary Science, the Professor of Biology, Professor of Chemistry, the Bacteriologist, the Farm Superintendent, the Experimentalist, and the Horticulturist, so that when the excellence of the general equipment is taken in account, nothing more could be desired. We trust, for the benefit of dairying as an industry, as well as for the students personally, that a larger number than ever before will avail themselves of the advantages of this splendid school.

To Keep Butter Fresh.

A simple mode of keeping butter cold in warm weather, where ice is not handy, is to invert a common flowerpot over the butter, with some water in the dish in which the butter is laid. The orifice at the bottom may be corked or not. The porousness of the earthenware will keep the butter cool. It will be better still if the pot be covered with a wet cloth. The rapid abstraction of heat by external evaporation causes the butter to become hard. Put the butter-dish into a shallow vessel, such as a soup-plate, in which cold water mixed with common salt has been placed. Cover the dish (but not the vessel containing the water) with a flowerpot. Keep it in a cool place and change the salt water often.—*Farming World (Scotland)*.

POULTRY.

Market Wanted for Early Birds.

To the Editor FARMER'S ADVOCATE:

SIR,—I read in your August 1st issue of preparing poultry for market. I have good poultry every year ready for market, but no market can I get. I had fine Plymouth Rock cockerels ready for market six weeks ago. I tried to find a market. I sold them all yesterday for 30c. a pair, and glad to get rid of them. Could some reader of the *Advocate* help me in securing a market for early chicks? Everyone writes: "Market your poultry early to obtain the best results." I would be much pleased if someone would help me to an early market. I am too late for this season now, but could be ready for another time. My chicks weighed from four to six pounds a pair and could have been sold for broilers long ago had I a chance to do so. M. M. M.

Parkhill, Ont., Aug. 6, '96.

[NOTE.—Our correspondent has touched a point vital not only to many poultry raisers on the farm, but of other products as well, viz., how to reach consumers without all the profits being swallowed up in the process. On the day our correspondent's letter reached us, chickens were selling in the city of London, (Ont.), some twenty miles distant, at from 40c. to 60c. per pair. Where persons cannot reach such markets personally the next best plan would be to make the acquaintance of some reputable dealer and show him that you can supply products of a high class at given times. Probably Mr. J. E. Meyer, author of the article on "Preparing Poultry for Market," referred to, can throw out some useful suggestions on this point.—EDITOR.]

Choosing Your Breeders and Layers for Next Season.

BY J. E. MEYER, WATERLOO CO., ONT.

It is time now for us to begin to cull over our stock, so as to have nothing but useful and profitable birds left for next season's breeding and laying. A hen, when properly fed and cared for, will lay the greater portion of her eggs in two years. After this age she will prove less and less profitable as she grows older.

As very few farmers have any means of telling the exact age of their fowls they will have to guess at it this fall. When a hen stops laying to begin molting is the proper time to kill all those that are over two years old. Some of these may still be laying when others are ready to kill, and you will have to wait.

As every farmer should have a way of telling the ages of his fowls, we shall give our method, which is inexpensive and perfectly reliable. We use a small punch made especially for this purpose, which can be obtained for thirty cents. With this punch we make a hole through one of the webs of each chick as we take it from the nest or incubator, putting the hole through a different web each year and keeping an account of how they are marked. These holes can always be seen.

You are likely to have a few hens over two years old that you know to be exceptionally good