

Effect of Corn Silage on Flavor of Milk.

Ever since silage has been used as a feed for dairy cows, there has been more or less controversy over its effect on the flavor of milk, the objection being occasionally raised that milk from silage-fed cows had an unpleasant, if not a disagreeable flavor. To determine what foundation, if any, there was for this belief, the experiment herein described was undertaken and conducted by the University of Illinois Agricultural Experiment Station in the following manner:

The University dairy herd was divided into two lots, one of which was fed forty pounds of corn silage per cow per day, which is the maximum amount for economical feeding, together with a small amount of clover hay and grain. The feed for the other lot consisted entirely of clover hay and grain.

The milk from both lots was cared for in exactly the same manner, being removed from the barn as soon as drawn and taken to the dairy building where it was cooled. After standardizing to four per cent. butter-fat, that there might be no difference in the flavor of the milk from the two lots on account of a variation in this respect, the milk was put in half-pint bottles and sealed.

In each case, before asking for a comparison, a bottle of milk from each lot of cows was agitated to incorporate the cream thoroughly, and the milk in each bottle was poured into a separate glass. Three questions were then asked the person whose opinion was desired: First, "Is there any difference in the two samples?" Second, "Is there anything objectionable about either?" Third, "Which do you prefer?" In every case the milk was known by a number only, and those whose opinions were obtained were not told concerning the manner of production, that their judgment might be unbiased by any prejudice they might have had as to the use of silage in milk production.

The people whose tastes were consulted were divided into three classes: ladies, men of the faculty, and men students. In the first case, as reported in a table, the silage had been fed one hour before milking. Of the 29 ladies, 10 preferred the silage milk, 14 the non-silage, and 5 had no choice. Of the men of the faculty, 27 preferred silage milk, 20 the non-silage, and 7 had no choice. Of the students, 20 preferred silage milk, 4 non-silage, and 4 had no choice.

A preference for silage milk was indicated by 51 per cent. of the 111 tests made when silage was fed one hour before milking. When silage was fed at time of milking, 71 per cent. preferred silage milk; and when fed after milking, 51 per cent. reported the same preference.

The summary of all results shows, that of the 372 tests made, 223, or 60 per cent., preferred silage milk; 40, or 11 per cent., had no choice; and 109, or 29 per cent., preferred the non-silage milk. The people who chose the non-silage milk were, as a rule, those who do not drink milk, hence their opinion is not so important as is that of the people who consume milk more freely.

Samples of silage and non-silage milk were sent to five milk experts in Chicago and other cities, accompanied by a letter asking the same three questions. One of these experts had no choice, one decided in favor of the non-silage, and three preferred the silage milk.

It was noticed that most people could detect a difference in the flavor of the two samples of milk, but it was expressly stated in every case that there was nothing objectionable about the flavor of either sample.

To determine further whether the public generally objects to silage milk, twelve half-pint bottles of such milk were delivered at the best hotel in the Twin Cities each day for a month, making 360 samples in all. These were served to guests who drank milk, and no complaint or criticism of any kind was made.

For the past nine years the Department of Dairy Husbandry at the University has delivered from 100 to 150 quarts of milk a day to people in the two cities. During this time the cows have been fed an average of about forty pounds of silage per day, except when on pasture, and no complaints of a bad flavor in the milk have been received.

Mr. H. B. Gurler, of DeKalb, who is one of the most progressive dairymen of the State, has been producing certified milk for the past ten years, and selling it in Chicago at twelve cents a quart. All of this time Mr. Gurler has been feeding silage to his cows, excepting during the season of the year when pasture was abundant, and with the best of results.

This is strong evidence that if the silage is of good quality, and used in reasonable amounts in connection with other feed, it is one of the best feeds obtainable for dairy cows when pasture is not available. It must be remembered that in all of this work nothing but good silage was fed, and no spoiled silage was allowed to accumulate in or around the silo. When silage imparts a bad or disagreeable flavor to the milk produced from it, almost invariably the cause is

that the silage has not been fed properly, or that spoiled silage has been used.

It should not be understood from this discussion that the time of day a food is fed, which may impart a bad flavor to the milk, is of no consequence. All the feeds of this nature should be fed after milking and not before, to avoid the possibility of producing an unpleasant flavor in the milk. And the milk should not be allowed to remain many minutes in the stable uncovered after being drawn, as it will quickly absorb injurious flavors from the atmosphere of place.

Thirty-day Cow Tests.

The Dairy Commissioner's Branch of the Dominion Department of Agriculture is conducting a series of 30-day tests of individual cows in herds supplying milk to certain factories in the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. Following are the results of the first test:

Herd No.	No. of cows.	Average per cow.			Highest per cow.			Lowest per cow.		
		Milk lb.	Fat %.	Fat lb.	Milk lb.	Fat %.	Fat lb.	Milk lb.	Fat %.	Fat lb.
1	18	1074	3.2	34.8	1335	3.4	45.3	765	3.5	26.7
2	20	842	3.6	30.6	1010	3.8	38.3	535	3.6	19.2
3	12	910	3.5	32.5	840	3.9	41.1	790	3.3	26.0
4	11	791	3.3	26.2	965	3.7	35.7	555	3.3	18.3
5	15	733	3.6	27.3	920	3.8	34.9	630	3.4	21.4
6	16	932	3.3	32.0	1160	3.9	45.2	905	2.3	20.8
7	29	877	3.6	31.8	1210	3.6	43.5	460	3.4	15.6
8	19	1022	3.5	35.9	1270	3.6	45.7	735	3.7	27.1
9	20	996	3.5	35.8	1300	4.0	52.0	900	3.0	27.0
10	25	935	3.4	31.8	1365	3.6	49.1	425	4.0	17.0
11	12	938	3.3	31.2	1225	3.8	40.4	915	3.0	27.4
12	6	812	3.8	31.1	825	4.4	36.3	745	3.3	24.5
13	10	980	3.6	33.9	1055	4.0	42.2	860	3.1	26.3
14	8	1090	3.5	39.0	1420	3.9	55.3	730	3.3	24.0
15	10	676	3.6	24.5	880	3.5	30.8	560	3.7	20.7
16	9	879	3.8	33.4	1330	3.9	51.8	650	4.0	26.0
240		914	3.4	32.1						

Quiet Heifers.

Each dairyman knows that it pays well to be on intimate terms with all his animals, young and old. "But," says one, "there is other work to do besides petting the calves." True, and yet it often pays to drop some of the other work and handle these developing animals. Groom them, and convince them that you are their best friend. Manipulate the udder frequently, and go through the motions of milking. This may help to develop the udder and familiarize the animal with the process, and soon she enjoys it, and expects you to thus handle her. How often do I hear people ask: How can I cure a kicking cow? If you bought her, sell her again as soon as you can. If your heifer or cow kicks, you are to blame, not the animal. In fact, you have no business to have a kicking cow. The heifer's udder for a few days after calving is swollen and inflamed; she is nervous and excited. She has entered, to her, a new world. If you have handled her and fully gained her confidence previously, she will now look upon you as "a friend in need," and if you approach her gently, speaking to her kindly, first rubbing the udder, and then drawing the milk very gently, using plenty of time and patience, she will feel the great relief, and not only have full confidence in you, but transfer to you her maternal affections, and ere long she would suffer torture ere she would lift a foot. This is not preaching. Every animal in my stable was raised on my place, and I can go in and set the pail under any one, from the seventeen-year-old to the eighteen-months-old that had a calf but a few weeks ago, and sit on my stool and finish milking, and not a foot will be lifted. It pays in more ways than one to be on intimate and friendly terms with your animals. —[Dairyman.]

Preparation and Use of a Culture.

That there has been such a strong prejudice against the use of cultures in the minds of some of our best cheese buyers is not to be wondered at when we consider the careless, slipshod methods in which some makers prepare cultures, and the unrestricted use of them by others, regardless of the ripeness of the milk, or the acidity and flavor of the culture. The flavor of the culture used will largely determine the flavor of the cheese or butter made; the need of full and exact knowledge of the proper method of preparing and using cultures is manifest.

First, provide suitable cans. It is better to have a duplicate set, if possible. Cans similar to the ordinary shotgun cans, which are eight inches in diameter and twenty inches deep, are quite suitable. When the milk is in small lots it can be more readily heated and cooled than if kept in larger quantities. For convenience in heating and cooling, a special box or tank, large enough to hold the cans containing the culture for one day's use, should be provided. This should have steam and cold water connections. The cans may be left in this box, so as not to be influenced by the outside temperature.

In starting a culture, it is advisable to use a commercial pure culture. Such may be obtained from our Bacteriological Department, or from any of the dairy-supply houses. Empty the mother culture into a quart of cooled pasteurized milk, and allow it to stand at a temperature of 75 degrees F. until coagulation takes place. Two per cent. of this culture may then be added to pasteurized milk at a temperature of 70 degrees for the next propagation.

After selecting the milk for culture, heat to a temperature of 185 degrees, stirring occasionally while heating. Allow it to stand at this temperature for 20 or 30 minutes, then cool rapidly to a temperature of 65 or 70 degrees F. To this milk add sufficient of the culture already prepared to develop an acidity of not more than .7 at the time the culture is required for use.

If the culture is to be kept for more than 24 hours, it is advisable to use a lower temperature—60 degrees F., or under. Aim to produce the same acidity from day to day. Before using, remove one or two inches of the milk from the surface of the can, as the surface is more liable to contamination from outside sources; break up the remainder by stirring well in the can. At this time take out a small quantity to propagate culture for next day. A glass sealer should be provided for this purpose.

The indications of a good culture are as follows: The whole mass is firmly coagulated, no liquid is found on top, and it has a milk-acid flavor pleasant to taste and smell.

A culture may be used to advantage when the milk is maturing slowly, or when it is tainted or gassy.

One-half of one per cent. is the greatest quantity which should be used at any time, and this quantity should be used only when the milk is known to be in a sweet condition.

Milk should be set slightly sweeter when culture is used. With gassy milk its use is especially beneficial. Culture with bad flavor or with too high an acidity should not be used.—[W. Waddell and A. McKay, in Bulletin 143, O. A. C.]

Of Interest to Our Butter Exporters.

The Inspector for the Department of Agriculture, at Bristol, England, in reporting to the Extension of Markets Division on the perishable cargo ex the S. S. Turcoman, which arrived from Montreal on June 27th, makes the following reference to a shipment of butter, put up in one-pound blocks, wrapped in parchment paper, and packed 50 in a box:

"Thirty-nine cases butter: These boxes were opened by the Customs authorities, and were found to contain 50 one-pound prints, and the whole lot was detained owing to the wrappers on the prints not being stamped, in accordance with the Merchandise Marks Act."

The Act referred to provides that packages containing cheese or butter imported into the United Kingdom must be stamped with the name of the country of their origin.

The highest object of pure breeds is to improve the common stock. The faster it can be done, the greater the benefit. The dairy tests disclose to the practical dairymen the best blood for their use. The show-ring only indicates where typical members of the breed—not necessarily those of greatest dairy capacity—can be found. But when people go into the dairy business for the sake of profits and not for the sake of simply going into dairying, then there is no longer an alternative. You have but one course to follow. You must have a specialized dairy animal, and accord her that treatment which is part of, and inseparable from, her make-up. You must feed her liberally of suitable feeds, give her kind and generous treatment, place her in warm, well-ventilated stables, and never expose her to any conditions that would excite or discomfort the animal.—[John Mitchells, in Michigan Farmer.]