

Kansas State Agricultural College

EXPERIMENT STATION—Circular No. 21

OFFICE OF STATE DAIRY COMMISSIONER

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Better Butter for Kansas

A Circular Explaining the Relation Between the Quality of Butter and Prices Paid for Butter Fat

Poor Cream Loses Money for the Farmer

During the year 1911, Kansas dairymen and creamery men suffered a loss amounting to not less than one million dollars as a result of low prices paid for butter fat and received for butter. This loss was caused directly by the average quality of cream produced. Since the creameries could not make from this cream butter which would bring the highest possible price, they could not pay the highest price for butter fat. It must be said to the credit of the Kansas creameries that they employ the latest improved and most scientific methods of butter-making and are able to make the best butter possible from the cream received. For these reasons and by superior sales methods they have given Kansas butter a satisfactory commercial standing and are netting the farmers better prices for butter fat than the same quality of cream would return if factory conditions were less highly developed. The burden of the million-dollar loss was sustained by the cream patrons, especially by those delivering the best cream; for their cream went into the same can with poor cream, and thus the best quality was brought down almost to the general average of the poor cream.

Relation of Butter Fat Prices to Butter Prices

The market quotations which the farmer generally reads are those for the highest grades of butter. The Elgin market deals chiefly with the best quality of butter obtainable, but a small per cent. only of all of the butter made comes up to the required standard of excellence. As a result, the prices paid for butter fat have generally been from two to five cents lower than the quotations for the best butter on the principal wholesale markets.

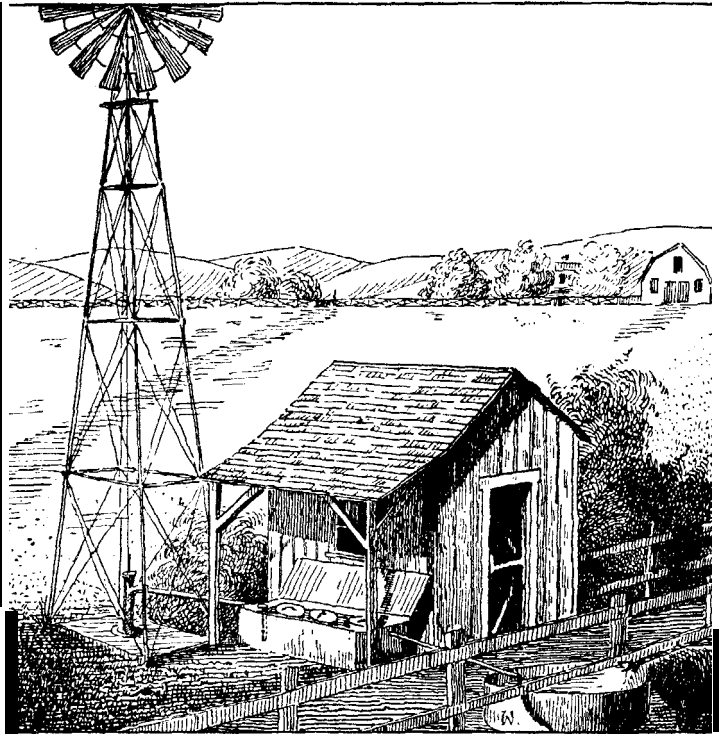
Better Butter Will Bring More Money to the Farmers

The production of more high-grade cream will not only result in better butter, which will bring a better price, but will create a further demand for Kansas butter and call the attention of the public to Kansas dairy products in

general. To attract attention to the product Of any locality invariably re-sults in a greater demand for that product. Furthermore, if better butter can be made when prices are generally low, this butter will be in strong demand for storage purposes in the late spring and summer and will thus result in higher prices for cream when the largest quantity is being produced.

What the Experiment Station Has Found

The Kansas Experiment Station has recently made a careful study of the cream situation and has found that a large percentage of the cream sold in



The Home of First-Grade Cream

This illustration shows an excellent arrangement for properly cooling cream. The tank should be placed on the north or east side of the separator house or other shaded place.

the state is inferior in quality and will not make first-grade butter, but is made into a second-grade product and sold at a reduced price. The result of hundreds of tests has shown that cream which was kept in well water, running springs, and tanks of cold water, was on an average of a very good grade, but cream that was kept in cellars, caves, and uncooled or unventilated places, was on an average of such poor quality that it would not make more than second-grade butter. Nevertheless, more than two-thirds of the cream produced was kept in the latter class of places.

The temperature tests showed that cream kept in wells and in places cooled by running water, or by water changed frequently, was less than 60°

F. during the hottest days of July and August, 1911. The cream kept in cellars, caves, and other places not cooled by water, had an average temperature of 76° F. The dampness of cellars and caves is often mistaken for coolness.

Low Temperatures Essential for First-Grade Cream

The souring of cream is caused by contamination with very small forms of life, such as bacteria, yeasts and molds. The development and the increase in number of this plant life which grows in cream is greatly retarded by keeping the cream at low temperatures. If cream is kept at less than 60°



The Home of Second-Grade Cream

This illustration shows the source of many of the bad flavors found in cream. The practice of keeping cream in cellars and caves has been largely responsible for poor butter and low prices for butter fat.

F., which can be done by keeping the can in cold water, it will keep in a good condition for three or four days. If the temperature rises to more than 75°, the bacteria will multiply rapidly, causing the cream to sour quickly and to develop flavors, some of which are not objectionable but most of which cause the cream to become strong and bitter. Such cream cannot be made into good butter.

Contamination by Impure Air

In addition to the bad flavors caused by molds and bacteria, we have also a great deal of poorly flavored cream caused by the absorption of flavors

from impure air. The butter fat in cream will very quickly absorb the odors given off by coal oil, spoiled vegetables, strongly flavored meats, and unclean stables; the butter fat is so sensitive to flavors that it also readily absorbs flavors of feed which cattle eat, such as weeds, spoiled silage, or musty hay.

Advantages of Grading Cream

The best results in the improvement of Kansas cream and butter can be brought about by paying for cream according to its quality. Just as the highest grade of butter on the market brings the highest price, so the highest grade of cream which will make the best butter should net the person producing it a better price than is paid for poorer grades. Cream should therefore be graded if the farmer is to be fairly recompensed for the cream he sells. This has never been successfully done, because it was difficult for everyone who buys cream to grade it properly and accurately according to its market value.

When we consider hand-skimmed cream, hand-separator cream, water-separator cream, cream of different ages and of different flavors, lumpy cream and smooth cream, it would appear difficult to grade it accurately according to what it is worth, but, after working on the problem for several years, the Kansas Experiment Station has shown that the different flavors and qualities of cream correspond quite closely to its sourness, or the amount of acid which develops in cream. As a result of this work a simple, accurate test was devised by which cream can be graded according to its market value and in absolute fairness to all.

Everybody Can Produce First-Grade Cream

The standard for first-grade cream has been drawn at a point where cream is about twice as sour as sweet cream on the point of turning. Cream which comes in this class is said to be first grade, as it will make a very good grade of butter. In several communities the dairy farmers are now having their cream graded and are receiving two cents more for first-grade cream than for second-grade cream. In some communities only two-thirds of the cream is first grade and in others nearly nine-tenths is first grade, depending on the way in which the farmers have been accustomed to care for their cream.

Those who are producing first-grade cream and are receiving the highest prices are interested in keeping their cream first grade, and those receiving the second-grade price, or two cents less, are endeavoring to take better care of it. The creameries buying the first-grade cream are obliged to pay more for it than for the general run of cream bought in other places, but they are just as willing to pay more as the farmers are to receive the extra premium money.

If good cream is worth more than poor cream, the man who produces it has a right to expect a higher price for it; and if his expectations are not fulfilled, he has a right to demand a higher price for it when his cream has been graded and shown to be first grade.

NOTE.—(This is the first of a series of circulars dealing with the production of better cream and showing how Kansas dairymen may earn for themselves better prices for butter fat by assisting in a movement to make Kansas butter of such high quality as always to bring the highest market price.)