BUTTER-MAKING ON THE FARM

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There are many opportunities for the profitable manufacture of high grade butter on the farm. Whether it will pay to manufacture your cream into butter rather than sell to a creamery will depend upon market conditions, amount of cream produced, and your ability to make good butter. If you live close to a town that will furnish a local market for all the butter you produce, and if you make first grade butter that is of uniform quality from day to day, you can soon establish a reputation for your butter and it will command the highest price. That the quality of the average country butter is very low, is well known. The country merchant has found it impractical to pay for butter according to quality because every country woman thinks she makes the best butter delivered to his store; and if she does not receive the same price as her neighbor, the merchant loses a customer. As a result the merchant pays the same price for all country butter, and this price must of necessity be low. Even with the low price paid, the country merchant will tell you that he loses money every year on the country butter handled. It is seldom retailed for more than the merchant pays for it, and a very large per cent of it is dumped into a barrel and sold to the renovating factories.

On account of the low quality of country butter and the correspondingly low price that it brings on the market, it has proved more profitable on the average to sell the cream to a creamery. The average price paid for butter fat at the creamery is higher than the average price of country butter. For the purpose of protecting himself from financial loss and much unpleasantness, the country merchant has in many cases encouraged his customers to sell their butter fat to the creamery; and in some cases has established a cream station in his store. Creamery butter is more uniform in quality than
country butter and, on account of facilities the creamery has for storing the surplus during the season of excessive supply, a more uniform market can be maintained. It is therefore best that the most of our cream go to the creameries; yet there are many farmers so situated that they will find it more profitable to churn their cream and sell butter to private homes or to hotels and restaurants. Many more people should make butter for their own use, and many who do should improve the quality.

The two things most responsible for the low grade of country butter are lack of cleanliness in the production and care of cream, and holding it too long before churning. Both result in bad flavors in the butter. It is important to use clean methods in the dairy when the product is to be used for butter making, just as it is important when producing milk for the retail trade. Cream produced by unclean methods will soon go off in flavor, and will produce this flavor in any cream with which it is mixed. Undesirable flavors develop in old, or over-ripe cream and the butter made from such cream is of very poor quality.

CARE OF CREAM

Separating—The milk should be separated as soon as possible after milking. To insure complete separation of the cream requires careful handling of the separator. There are several factors that affect the efficiency of the separator. They are as follows:

1. The Speed of the Machine.
2. Temperature of the Milk.
3. Amount of Dirt in Milk.
4. Sour Milk.
5. Rate of Inflow.
6. Per Cent of Fat in Cream.
7. Vibration of Separator Bowl.
8. Cream Adhering to Core of Bowl.

(1) Speed of Machine—The number of revolutions of the crank per minute is stamped on the crank of almost every
style of separator and the machine should be run at that speed. If run at a lower speed some fat will be lost in the skim-milk; the amount increasing as the speed of the machine decreases. Running the machine faster than the speed given does not increase its efficiency, but causes it to wear out sooner than if run at regular speed. Time yourself with a watch until you become accustomed to running the machine at the regular speed. Run the separator at an even speed, keeping a uniform pressure on the crank at all times. There is a tendency with many to exert a greater force on the crank on the downward stroke than on the upward; thus giving the machine an unsteady motion. This uneven exertion of force brings a severe strain on the gear and will shorten the life of the separator.

(2) Temperature of Milk—For best results the milk should be at a temperature of 85 to 100 degrees. If milk is separated immediately after milking, the temperature will seldom be below 85 degrees. Any milk that has been allowed to stand over from a previous milking or has for any reason been allowed to become cooled to a low temperature should be warmed up before separating. It is much more difficult to thoroughly separate the fat from cold milk, and the cream is much more viscous, or syrup-like, than when separated warm, and has, therefore, a greater tendency to clog the core of the machine and the cream outlets.

(3) Amount of Dirt in Milk—An excessive amount of dirt tends to clog the cream and skim milk outlets, interfering with the efficiency of the machine.

(4) Sour Milk—Sour milk leaves more slime in the bowl than sweet milk and is, therefore, more apt to clog the outlets. This is especially troublesome if milk that is slightly sour is warmed up before separating.

(5) Rate of Inflow—If the milk is allowed to enter the separator bowl faster than it would under proper adjustment, the separation will not be complete. If the rate of inflow is very slow, the cream becomes so thick that it will not flow from the machine, resulting in a considerable loss in butter fat.
Keep the rate of inflow as nearly constant as possible throughout the run.

(6) Per cent of Fat in Cream—Most separators will do clean skimming, with cream running as high as 50 per cent fat, but above that point the loss of fat is considerably increased—the amount increasing with the richness of the cream.

(7) Vibration of Separator Bowl—If the separator is out of plumb, the neck bearing worn or out of adjustment, the bowl spindle sprung, the bowl out of balance, or the bearings dirty, there will be more or less vibration of the bowl while running. This vibration prevents complete separation, causing a loss of fat in the skim-milk. Besides causing a loss of fat, this unsteady motion of the bowl soon wears out the bearings.

(8) Cream Adhering to Core of Bowl—There is more or less cream, depending on a number of conditions, adhering to the core of the bowl at the end of the run. The amount varies to some extent with different separators, but is affected more by the temperature and acidity of the milk and by the richness of the cream. When cold or sour milk is separated or a rich cream skimmed, there will be a rather large amount of cream remaining in the core of the bowl. The separator should be flushed out at the end of the run with skim-milk or luke warm water. If milk is used, be sure that it is free from foam or it will serve only to clog the machine and not to flush cut the cream. When a large amount of milk is skimmed at each run, luke warm water will remove the cream more thoroughly from the bowl. When using water for flushing, care should be used to prevent too much water entering the cream can. To prevent this, place another receptacle under the cream spout as soon as the stream loses the appearance of cream.

CARE OF SEPARATOR

A good separator, properly cared for, should last for many years and, when in good condition, should give a skim-milk testing not more than .05 per cent of fat. Skim-milk from a separator often runs as low as .01 per cent.
Keep the bearings clean and well oiled. It is well to use kerosene on all bearings at least every two weeks. This cuts the gum and flushes out the grit.

Handle all parts carefully to prevent injury. Careless handling results in a bent and battered core and a sprung bowl spindle, causing an improper adjustment of the core and an unsteady motion of the bowl.

Wash the bowl and other skimming parts thoroughly after each run. The practice of washing the cream separator only once a day is one of the filthiest habits on the dairy farm. The moist slime and the warm temperature in the bowl furnish the best of conditions for bacterial development. The next cream skimmed will become contaminated and go off in flavor.

**COOLING**

The cream should be cooled to 50 degrees, or lower if possible, immediately after separation. Cool each new lot of cream thoroughly before mixing it with the older cream. Raising the temperature of old cream by mixing warm cream with it causes a rapid development of bacteria.

The cream may be cooled either by running it over a cooler or by setting it in cold water. If no ice is used, the cooling should be done in running water; or the water in the cooling tank should be changed often. The cooling will be hastened if the cream is stirred often.

The cream should be held at 50 degrees or lower until ready to ripen for churning.

**STORAGE**

The cream should not be stored in a room that is full of dust and odors. A cellar is not usually a good storage place for cream on account of musty odors. If used for cream, the cellar should not be used as a storage for vegetables, and every precaution should be taken to keep the air pure and as dry as possible. A good drain, good ventilation, and a coat of whitewash will do much to improve the condition of the cellar.

The habit of keeping the cream can in the kitchen or the living room of the house is a very objectionable practice.
temperature is too high in such a room during the day; the cream is apt to absorb the odors of cooking vegetables; and the baby finds the cream can a convenient place to dispose of hairpins, spoons, combs and any other article he may have in his hand when passing. The man who receives the cream at the creamery can tell you some surprising stories about the things he finds in the cream cans.

If ice is available, a good refrigerator is a good place in which to store cream. It should be so constructed that it will maintain a low temperature with an economical use of ice. The refrigerator should be scrubbed out and scalded frequently to keep it sweet.

Where there is a plentiful supply of cold water for cooling, the cream may be held in the cooling tank until ready for ripening. This is one of the most satisfactory and practical methods of storage on the average dairy of the Northwest because of the low temperature of our spring water.

**RIPENING CREAM**

Cream ripening means the souring of cream in such a way that will produce a desirable flavor and aroma in the butter. The term usually carries with it the idea that the souring takes place under special conditions. The lactic acid type of bacteria plays the most important part in the proper ripening of cream. It has been found by careful trials that a clean lactic acid souring of cream develops the most desirable and the most uniform flavor in the butter, and improves its keeping qualities by holding in check those forms of bacteria that produce the undesirable flavors. For this reason, the buttermaker endeavors to ripen his cream under conditions most favorable to the development of lactic acid bacteria to the exclusion of all other types.

The object of ripening is to develop a desirable and uniform flavor in the butter and to make the cream churn more easily and more completely. Butter from unripened or sweet cream has very little flavor and is not in demand in most markets on that account. The demand for sweet cream butter is growing,
however, but its manufacture is, at present, confined principally to the output of certain creameries.

Unripened cream requires a longer time to churn than well ripened cream and has a much greater tendency to foam in the churn. There is usually less loss of fat in the butter-milk with well ripened than with sweet cream. In other words, the ripened cream churns more completely than sweet cream.

Cream is ripened in either of two ways:

1. It sours as a result of the action of bacteria that are commonly present in the cream.

2. It ripens from the action of a particular type of bacteria that is added in a "starter."

When ripened by the first method, the cream usually is allowed simply to stand in storage until it becomes sour. This results in a variable and often undesirable flavor in the butter. Very good results may be obtained by this method when the milk and cream are handled under sanitary conditions and the ripening temperature properly controlled.

To insure good flavor under this method of ripening, one needs to churn often—at least three times a week in summer and twice a week in winter. In fact, frequent churning is best under any system of ripening.

For best results in ripening, keep the cream as cold as possible until about twenty-four hours before it is to be churned. Then warm the cream to a temperature of 65 to 70 degrees Fahrenheit and hold at this temperature until it begins to thicken. Stir the cream frequently during ripening to insure even ripening and to avoid lumpiness in the cream. When cream is not stirred during ripening, a portion of skim-milk collects at the bottom and forms a firm curd that breaks up into lumps instead of becoming smooth in consistency when poured into the churn. These lumps of curd cause white specks in the butter, injuring both its appearance and keeping qualities.

The cream also ripens unevenly when not stirred, causing it to churn unevenly, which results in the loss of a high per cent of fat in the butter-milk. Do not mix sweet cream with sour
cream later than twelve hours before churning, since a mixture of sweet and sour cream will not churn evenly.

Special care must be given to the control of the ripening temperature. If ripened at temperatures below 65 degrees, the ripening is very slow, and undesirable bacteria are apt to develop faster than the desirable lactic acid type. At temperatures above 75 degrees, a gas producing type is very likely to develop most rapidly and check the development of the lactic acid bacteria. While the lactic acid type develops most rapidly at temperatures between 80 and 100 degrees, when not held in check by the rapid development of other forms, temperatures between 65 and 70 degrees have been found to be most certain to insure the rapid development of lactic acid bacteria to the exclusion of all others.

As soon as the cream begins to thicken, cool to at least 50 degrees and hold at this temperature until you are ready to churn. If the cream is warmed in the morning to 70 degrees and held at that temperature all day, it will usually begin to thicken about night. It can then be cooled and held at a low temperature over night and will be in good condition to churn in the morning. Holding the cream over night at 50 degrees gives the fat globules time to harden, insuring a firm butter. If cream is cooled from 70 to 50 degrees and churned immediately, it will often give a soft butter because the fat has not had time to harden.

**STARTER RIPENING**

Under the second method of ripening, a certain amount of "starter" is added when the cream is heated for ripening. A "starter" is simply a quantity of curdled or sour milk that has a clean acid flavor and is capable of producing this same flavor in the cream to which it is added.

Starters may be divided into two classes: (1) Natural starters; (2) Commercial or Pure Culture starters.

A natural starter is one made by allowing the milk to sour as a result of the action of the bacteria that gain entrance during the ordinary process of its production and care.
A commercial starter is one made by adding a pure culture of certain types of bacteria to milk that has been pasteurized and then allowing it to sour as a result of their development at the proper temperature.

These pure cultures are prepared by a number of bacteriological laboratories and are sent out in bottles to butter-makers upon order.

To prepare a starter with a pure culture, the contents of the bottle are added to a quantity of pasteurized milk or cream and the temperature held at 65 or 70 degrees Fahrenheit until souring takes place.

In farm butter-making, the natural starters are more commonly used and give good results if carefully handled. Butter-milk, ripened cream, sour skim-milk or whole milk may be used as starters if of the proper flavor. Never use a starter that is off flavor because the same flavor will develop in the cream. Butter-milk should not be used as a starter if it is at all off flavor or if made from over-ripe cream. Lactic acid bacteria seem to be weakened by over-ripening and often develop so slowly when an over-ripe starter is used that other forms develop enough faster to control the ripening and produce undesirable flavors. Properly ripened cream makes a good starter, but one must use care to see that the flavor is clean and the cream not over-ripe. Milk makes the most satisfactory starter; skim-milk being more commonly used than whole milk.

To make a skim-milk starter, place in a fruit jar, or other vessel, that has been scalded thoroughly, a quart or more of fresh skim-milk and hold at 65 to 70 degrees Fahrenheit until sour. The starter should be used as soon as it thickens, since the bacteria develop more rapidly when used at this stage than when the starter is older. If a larger amount of starter is needed to ripen the amount of cream to be churned, place in a thoroughly scalded vessel enough skim-milk to make the desired amount of starter and add a portion of the first or "mother" starter.
Stir the starter thoroughly, before using, to prevent lumpiness; add enough starter to ripen the cream in about twelve hours; then proceed with the ripening as given under directions for ripening without starter.

Renew the starter each day by taking a portion of it as soon as it thickens and add it to a new lot of skim-milk. If at any time an undesirable flavor develops in the starter, discard that lot of starter and prepare a new one from fresh skim-milk as in the beginning.

The Cream Is Ready to Churn

The cream is sufficiently ripened when it thickens and takes on a somewhat glossy appearance when stirred. The flavor should be clean, pleasant and mildly acid. There are methods of determining the per cent of acid in cream for the purpose of learning the stage of ripeness, but the writer has not found them to be practical for farm butter-makers. One of the chief aims in ripening is to develop a desirable flavor and aroma and smoothness of body in the cream. When these are right the desired results are obtained. On the other hand, the acid test might show the proper degree of acidity when the flavor and condition of the cream are undesirable. The farm butter-maker should become proficient in judging the proper flavor and aroma and the smoothness of body of well ripened cream.

CHURNING

Factors Affecting the Churnability of Cream.—The following factors affect the churnability of cream:

1. Per cent of fat in cream.
2. Temperature of cream.
3. Fullness of churn.
4. Speed of churn.
5. Size of fat globules.
6. Composition of fat.
7. Acidity of cream.

1. The fat exists in the cream in the form of minute particles or globules. The richer the cream the more numerous are the fat globules and, therefore, the more frequently they
come in contact with each other, during churning. This frequent striking together causes them to collect into granules more rapidly than in thin cream, thus hastening the churning.

2. The temperature of the cream affects the hardness of the fat globules—the globules becoming harder at low temperatures. Warm cream will, therefore, churn more rapidly than cold.

3. If the churn is too full, there is not sufficient agitation of the cream to cause quick churning. The churn should be from one-third to two-fifths full for best results. This is especially true of barrel or other forms of revolving churns.

4. The speed of the churn should be such as to give the greatest agitation of the cream. If a barrel churn is turned too slowly, the cream slides from end to end instead of dropping; and if turned too rapidly remains in one end all the time.

5. Large fat globules churn more readily than small ones. The size of the fat globules varies according to the breed of cows and with the individual cow. Some breeds produce larger fat globules than others, and some individuals produce larger fat globules than other cows of the same breed. The size of the fat globules varies also with the time in the period of lactation, being larger during the earlier stages and smaller toward the end of the period.

6. The harder the fat globules the more difficult the churning. The fat globules are harder when the cows are on dry feed and during the latter part of the period of lactation. Some feeds produce a harder butter fat than others.

7. The formation of lactic acid during souring seems to render the cream more easily churned. There are more cases of difficult churning in winter than at other seasons of the year on account of the fact that we have a number of the above conditions occurring at the same time. In winter the cows are usually far advanced in the period of lactation; they are on dry feed; the cream does not sour readily on account of the cold weather and is often put into the churn before it
is thoroughly ripened; and the temperature of the cream is often too cold for easy churning.

Difficult churning in winter can usually be overcome by proper ripening and by having the cream at the proper temperature when churned.

Churning Temperature.—It is not possible to give any fixed churning temperature that will give best results at all times. The churning temperature must be varied to suit the conditions. A very practical rule is to churn at such a temperature that the butter will come in 25 or 30 minutes and be firm enough to stand up well after working. This temperature must be learned by actual trial. It will change with the season and with the feed. It may vary from 50 degrees Fahrenheit in summer, when the cows are fresh and on green feed, to 65 degrees in winter, when the cows are nearly dry and on dry feed. By using a good dairy thermometer all the time, the churning temperature may be regulated from time to time so as to avoid difficult churning and to insure a firm bodied butter. The cream should be poured into the churn through a strainer to remove curd particles.
Coloring.—Butter has a more pleasing appearance and is in better demand if the color is kept uniform at all times and of the natural shade of color produced when cows are on good pasture—commonly known as "June color." To do this, it will be necessary to use artificial coloring—increasing the amount gradually as the cows go on to dry feed and the natural color of the butter begins to decrease. The coloring is added immediately after the cream is placed in the churn.

To secure a uniform color it is best to test the cream with a Babcock tester and calculate the pounds of fat to be churned; then add a certain amount of color for each pound of fat. The right amount must be determined by trial, using at first only a few drops or $\frac{1}{4}$ cc. per pound of fat. When the proper color is secured continue to use the same amount of color per pound of fat at each churning so long as it gives the desired color. If the color becomes too light as the season advances, gradually increase the amount of color. If no tester is used then the amount of color must be determined per gallon of cream. This is done by starting with a few drops and increasing the amount as the season advances.

Fig. 3—Barrel Churn
The most desirable type of churn for small dairies.
Churning.—Scald the churn and cool thoroughly before the cream is put in. The scalding fills the pores of the wood with water, preventing the cream from soaking into the wood and causing the churn to become sour. It is necessary to cool the churn after scalding to avoid raising the temperature of the cream too much while churning. While revolving the churn containing hot water remove the drain cork often to release the pressure produced by the expansion of the hot moist air in the churn.

![Combined Churn and Worker](image)

Fig. 4—Combined Churn and Worker. Desirable for large dairies having power.

Pour the cream through a strainer to remove lumps of curd. Turn the churn at such a speed that will give the greatest agitation of the cream. As soon as the butter begins to break watch it closely to prevent over-churning. Stop churning when the granules are the size of wheat to the size of peas. There are several reasons for stopping the churning at this time. The butter-milk can be more thoroughly washed out; the salt more evenly incorporated; and the butter will have a more granular texture than when the butter is churned until it gathers into one large mass. It is impossible to wash all the
butter-milk from large masses of butter. The butter-milk that remains in the butter injures its keeping qualities and is one of the causes of mottled butter. The amount of working necessary to secure an even distribution of salt in butter that is over-churned will usually result in a sally texture and a weak body.

Washing.—The chief object of washing butter is to remove the butter-milk, thus improving the keeping quality of the butter. Washing may be made also to accomplish two other things: (1) to firm or harden the butter; (2) to improve the flavor. If the butter is soft when churned, it may be firmed by washing with water several degrees colder than the butter-milk and allowing it to stand in the wash water for a few minutes. Undesirable flavors in butter may be removed to some extent by washing. To best accomplish this, it is usually necessary to wash with two or more lots of wash water. Overwashing a clean-flavored butter will result in a flat flavor.

When the butter is churned into granules of the proper size, draw off the butter-milk through a fine wire strainer to prevent loss of small particles of butter. Then wash the butter in water at the temperature used for churning; or at least a few degrees colder than the butter-milk, using as much water as you have butter-milk. Wash by giving the churn eight to ten revolutions. If the first water comes off extremely white, wash again. If it comes off only slightly colored, one washing is sufficient.

Salting.—Draw the wash water off through a fine wire or hair strainer to prevent the loss of the finer particles of butter. Remove the butter, by means of wooden ladles, to the worker that has previously been scalded and cooled. Distribute the salt evenly over the surface of the butter. Use a salt that is finely pulverized and easily dissolved. It is well to sift salt to remove lumps and any foreign material that it may contain. Use only the best grade of dairy salt. Some of the grades sold as "table" salt dissolve very slowly and impart a strong flavor to the butter.
The amount of salt will vary to some extent according to the demands of the market. It ranges from one-half to one and one-half ounces per pound of butter. For most markets three-fourths to one ounce is satisfactory. It is best always to weigh the butter and the salt. It is impossible to secure uniform salting by "guess." If the cream was tested before churning and the pounds of butter fat it contained known, then weigh out a given amount of salt for each pound of
butter fat the cream contained. One ounce of salt per pound of butter fat is satisfactory to most markets.

If a combined churn and worker is used, as is the case in large dairies, be careful to distribute the salt evenly from one end to the other of the churn. This will insure even salting throughout the entire mass.

Working—The object of working butter is to incorporate the salt; expel the surplus water and butter-milk; and to secure a compact, close-textured body in the butter.

Unless a combined churn and worker is used, the working is done most conveniently on a butter worker. There is a variety of styles of both hand and power workers that are satisfactory. When only one or two cows are kept, the butter may be worked in a wooden bowl by means of a wooden ladle. A convenient worker for small lots of butter may be made as shown in Fig. 7. This worker is simple in construction and allows the water to drain off as rapidly as it is worked out.

![Fig 7. A Home-Made Worker Suitable for small dairies](VanNorman)

Work the butter only enough to expel the surplus moisture and to distribute the salt evenly. Over-working destroys the granular texture and weakens the body of the butter. Properly worked butter should appear rough and granular on the broken surface rather than possess the salmy appearance of lard, and the salt should be evenly distributed and thoroughly
dissolved. Undissolved salt or an uneven distribution of salt causes mottled color of butter.

Never handle butter with the hands. Always use wooden ladle. Butter adheres less to wooden utensils that have been thoroughly scalded and cooled than to utensils of any other material.

Printing and Packing.—A neat, attractive package adds to the appearance of the butter and will increase its sale. The most satisfactory packages are one and two pound bricks
wrapped in parchment paper. The butter should be firm when printed to give well shaped bricks. The bricks are wrapped in parchment paper on which is printed the name of the producer, the name of the farm, or the brand of butter. It is well, also, to print on the wrapper a short, attractive statement of the method of manufacture and the quality of the butter, and directions for the care of butter in the home. Use only the best parchment butter wrappers. It never pays to use cheap wrappers.

In some cases a pasteboard carton is used in addition to the paper wrapper. These cartons are very convenient when butter is delivered to private homes, since they protect the butter from the heat of the hands while delivering to a customer. It is also advisable to use the carton when shipping long distances.

![Fig. 10—A Desirable Package](image)

These wrappers and cartons are not expensive and they add materially to the selling price of the butter. The name and other printed matter on the wrapper and carton have considerable advertising value. A neat and attractive package stands next to quality in importance in determining the selling price of butter. A neat package attracts the buyer and high quality makes him a satisfied customer.
The ultimate aim of good butter-making is successful marketing. A great deal of good country butter is marketed through the country grocery at the price of the common run of country butter when it should command the price of good creamery butter, if properly marketed. The following factors are essential to the successful marketing of farm-made butter: (1) a superior product; (2) a market that demands and is willing to pay for a superior product; (3) a market that will consume all of your product.

Fig. 11—Shipping Box, Having Ice Can in Center. Very satisfactory for delivering to private trade

The quality of the product depends, of course, upon the care with which it is produced. Quality of the highest grade is the foundation of successful marketing. High quality will create its own demand and hold a market once it is secured.

To find the market that desires a high grade butter and is willing to pay a high price for it will require some effort on the part of the producer. If the farm is located near a good town of 2000 or more inhabitants, a very satisfactory market can be established by delivering to private families, hotels and restaurants. In the larger towns and cities it is sometimes possible to secure the patronage of one or two large hotels or
restaurants that will consume the entire output of a small dairy.

Another method of marketing that is often very satisfactory, and requires less time and expense for delivery than do private families, is to arrange with some up-to-date grocer to handle your output. It is important that you select a grocer that caters to a trade that demands high grade products and is willing to pay the price that such products should command. He should be a grocer that will push the sale of your butter, and will store it in a clean, cold refrigerator, where it will keep a fresh, clean flavor until sold.

Be sure of your market before you establish a large dairy. Better start with five cows and increase the herd as the demand for your product increases than to find yourself with more butter than your market will consume.

The price of first class country butter should range with the price of the same grade of creamery butter. This will, of course, vary with the season of the year. It is sometimes customary, when selling to private families, to have a fixed price throughout the year. This plan is not always satisfactory. One is apt to have an over-supply of customers in winter when his fixed price is lower than the prevailing market price of creamery butter, and will suffer a falling off in demand in summer when his fixed price is higher than the prevailing market price. It has been the experience of the writer, that it is more satisfactory either to follow the market price of creamery butter or to have a variation of five cents between the summer and winter prices—the higher price prevailing for eight or nine months and the lower for three or four months of the year.