

The primary advantage in growing one variety exclusively is that the selection and isolation of the seed stocks can be maintained and all of the farmers of the community supplied with seed of the same high quality. Cultural methods are improved because it is plain in 1-variety communities that differences in the behavior of the crop are due to conditions of growth, not to differences in varieties. A farmer whose crop is poor learns to correct his mistakes instead of relying on the false notion of "changing the seed." The next crop is placed on better land or grown more carefully, and the community product is gradually made more uniform.

A continued production of the same quality of fiber places a community in a few years on a different footing in the marketing of its cotton. Competent buyers are attracted to the communities that produce commercial quantities of good fiber, and manufacturers are interested in obtaining regular supplies of the same cotton from year to year. Premiums that manufacturers have paid for the longer staples have fluctuated greatly in the past, chiefly on account of the limited and irregular supplies. The experiment of a properly adjusted production and use of long staples has never been tried, and is one of the problems that may be worked out by cooperative contacts between associations of manufacturers and communities of growers.

Conscious Community Interest Necessary

A cooperative relation is established among the members of a community by the planting of a single variety of cotton; but a conscious community interest must exist, as well as a desire to grow better cotton, if the 1-variety community is to function as a constructive organization and obtain the full advantage of growing better fiber. Cooperation has its problems that need to be studied, no less than tillage, cultivation, and seed breeding. One writer has said that cooperation is the seed of community life. This applies especially to the cotton industry, because community cooperation is required for the basic improvement of production through maintaining supplies of pure seed.

O. F. COOK,

Principal Botanist, Bureau of Plant Industry.

CREAM-Gathering Routes for Local Creameries Coming Into Wider Use Cream-gathering routes for local creameries have been used to some extent for many years. Since the motor truck has come into general use and country roads have been improved, this method of getting cream from the farms to the creamery is being more widely adopted.

A study made by the Bureau of Dairy Industry of cream-gathering routes revealed that at some plants the advantages of this method of hauling greatly outweigh the disadvantages, while at others the reverse is true. Where the producers bring sweet cream direct from the farms to the creamery, deterioration in quality in transit usually is very slight. Employing trucks to gather cream would cause much of it to be en route a longer time, with the result that the cream would be of poorer quality when it arrived at the creamery. On the other hand, where the producers bring their cream to the creamery only

once or twice a week as suits their convenience, the use of trucks to gather it three or four times a week will result in the creamery receiving a better-quality product. At some creameries the establishment of cream-gathering routes has resulted in improving the quality of the butter to such an extent that the increased price received for it more than paid the cost of gathering the cream.

Where cream is bought according to grade, cream-gathering routes may enable more patrons to deliver first-grade cream. In order that each patron's cream may be weighed, sampled, and graded after arrival at the creamery, the cream should be delivered in the patrons' cans.

By using cream-gathering routes the creamery management controls the day of delivery, the time of delivery, and the care of the cream while in transit. By having large loads of cream arrive at certain hours, the receiving and processing of the cream can be done more efficiently than when producers are delivering cream at all hours of the day. Cream-gathering routes may also increase the volume of cream procured by the creamery. New patrons may be obtained in near-by sections because of the service given them, and in more distant communities by extending the routes.

Creamery Management Should Control Details

All details of operating cream-gathering routes should be controlled entirely by the creamery management. In some communities persons not employed by the creamery have organized their own cream routes and fixed their own charges for hauling. Where this is done undesirable features usually develop. Cream haulers compete with one another for the same cream, they may invade the territory of a neighboring creamery and thus cause strife, or they may divert their load of cream to another creamery. These things can not occur where the routes are planned by the creamery management and the haulers are hired to cover a definite route.

The selection of suitable haulers is important because they become the creamery's point of contact with the producers. A conscientious hauler of good personality with the interest of the creamery at heart can aid in establishing among the producers confidence in the creamery management.

The main factor that determines whether or not it is advisable for a creamery to establish cream-gathering routes is cost. As cream is paid for on a basis of its butterfat content, the hauling cost is best expressed as the cost per pound of butterfat. When a producer hauls his cream to a creamery and attends to other business on the same trip, the cost of transporting the cream is small. When trips are made exclusively for carrying cream the cost of hauling is likely to be greater than the cost of delivery by cream-gathering routes. The cost per pound of butterfat of operating a cream-gathering route can be estimated quite closely by obtaining the following data: Number of miles to be traveled, pounds of butterfat to be obtained, wage rate for truck drivers, and cost per mile of operating the truck. This last item can be obtained from the manufacturer of the truck to be used. If the cost of hauling is \$10 per trip and only 100 pounds of butterfat can be obtained the cost will be 10 cents per pound of butterfat, which is more

than the service is worth either to the producer or to the creamery. If, however, 500 pounds of butterfat were obtained on this trip, the cost would be but 2 cents per pound of butterfat, which is less than the cost to the average producer when he makes a special trip to deliver his cream. In a study of cream hauling by the Bureau of Dairy Industry at 8 middle-western creameries the relationship between the cost of hauling and the number of pounds of butterfat obtained per mile was determined, as shown in Table 3.

TABLE 3.—Data on cream hauling obtained at eight middle-western creameries

Creamery No.	Average patrons per trip	Average miles per trip	Quantity of butterfat hauled per trip	Average distance between patrons	Average butterfat per patron	Average butterfat collected per mile traveled	Cost per pound of butterfat
	<i>Number</i>	<i>Number</i>	<i>Pounds</i>	<i>Miles</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Cents</i>
1.....	33.7	41.7	280	1.23	8.3	6.7	2.66
2.....	40.2	37.4	340	.93	8.5	9.1	2.41
3.....	39.4	35.5	327	.90	8.3	9.2	2.05
4.....	56.5	53.1	464	.94	8.2	8.9	2.18
5.....	44.7	36.9	645	.82	14.4	17.7	1.08
6.....	26.2	19.9	418	.76	16.0	20.9	1.05
7.....	21.5	23.5	205	1.09	9.5	8.7	2.20
8.....	29.0	28.1	227	.97	7.8	8.1	1.83
Average.....	36.6	34.7	377	.95	10.3	10.88	1.72

It is obvious that the cost of hauling would be relatively high in a section having patrons far apart and owning but few cows, thus producing but a small amount of butterfat per mile.

Employment of Truck Owners Proves Cheapest Method

Of the eight plants listed in Table 3, three owned the trucks used on the routes and hired drivers by the month. The remaining five employed men who owned trucks and paid these men, in a few cases, by the trip, but usually according to the pounds of butterfat hauled. It has been the experience of many plants that cream may be gathered at the least expense by employing men who own trucks to cover routes laid out by the creamery management.

Short routes are preferable to long ones because of the shorter length of time the cream is in transit. In order to have short routes and to arrange that all the cream reaches the plant early in the day, cream gathering provides employment for only a part of the day. Many creameries, therefore, employ farmers as cream haulers. A farmer living at some distance from the creamery can gather the cream in the territory between his farm and the creamery, deliver it, and then return to his work on the farm. Creameries operating their own trucks usually arrange their routes to provide full-time employment for trucks and drivers. The operation of a number of trucks by a creamery demands as careful managerial supervision as the operation of the creamery.

C. S. TRIMBLE,
Associate Dairy Manufacturing Specialist,
Bureau of Dairy Industry.