

ing gluten meal it is a very difficult matter to extract all of the butterfat from the buttermilk.

In general, feeds containing much oil have a tendency to slightly increase the fat content of milk when first fed, but the fat percentage gradually returns to normal. It seems that the feeding of concentrated oil feeds stimulates an abnormal condition in the cow for a few days and radical changes are noted in the composition of the milk, but the continuous flow of milk containing a high percentage of fat is due to the individuality of the cow and not to the rich oil feeds.

Linseed oil is considered by some authorities as an excellent feed for dairy cows, but after careful investigation, the following conclusions seem pertinent in regard to it. Linseed oil causes a decrease in the volatile acids and an increase in the melting point of butterfat. However, the melting point of the butterfat is not always indicative of the firmness or body of the butter. An excess of linseed oil produces a soft, salvy butter,

	Water	Ash	Fat	Hard-
	Content	Casein	ness	
Dry Feed	7.60	3.07	88.93	17.0
Mangles	8.24	2.66	89.13	16.7
Potatoes	5.89	3.26	90.89	15.5

It is rather difficult to locate the origin of taints in milk since the milk may become tainted after it leaves the cow. While it is entirely possible that warm milk may exhale odors in cooling, it is also true that it is capable of absorbing other odors at the same time and that an exposure, even for a short time, to an air that is befouled or tainted with any obnoxious gases may be sufficient to impregnate the milk so that the odor can be recognized hours afterward. Besides the odors that are absorbed subsequent to milking, milk invariably has a more or less pronounced odor that is derived directly from the animal herself that is usually referred to as the "cowy" or "animal odor," due to certain feeds. The peculiar property of rapid diffusion throughout the system by means of the circulation and the subsequent absorption by the

TYPES OF FARMS MOST PROFITABLE

Personal Preference, Location, Kind of Soil and Available Capital

Amount of Labor Income Bears Direct Relation to These Important Considerations, Says Federal Expert in Farm Management, U. S. Bureau of Farm Management.

From Lecture of D. A. Brodie at Oregon Agricultural College

The very first factor in determining the type of farming is personal preference and experience. Very few people engage in farming who do not have some preference as to type of farming. Occasionally we find a farmer unsuited to his taste or former experience. In some cases he keeps on with it because the circumstances do not permit of easy change, or the type may be well suited to the local conditions and therefore not good business to change.

To one who is looking for a suitable location for a farm, this phase of the matter will wield a great influence, as he will very naturally look for the conditions which suit his favorite type of farming. It not infrequently happens that in the desire to establish a favorite type of farming local conditions are overlooked and a type wholly out of keeping with these conditions may be established. Instances are, the planting of fruit and truck localities where transportation facilities are inadequate, as has been done in many sections here in the west, or the establishment of

from town. No doubt this marks the distance where the best combination of perishable and staple products exists, and where land values are low enough to allow fair profits after the interest on the investment is deducted.

The size of the farm is a factor in determining the type of farming. A man who is looking for a farm on which to establish a poultry plant is not likely to look for large acreage; likewise, one who contemplates general farming does not look for high-priced land near the city. These figures are largely made up from the study of representative general farms and do not represent any highly specialized types. In all these surveys the size in direct relation to the labor income. This indicates that, for general farming at least the size of the farm is important. The following table on the relation of size of farm to labor income makes this matter clear:

Avg. Acres	Avg. Labor per farm.	Avg. Income.	Avg. Income per Acre.
37.4	416	11.12	
72.9	848	11.63	
106.9	998	9.34	
149.4	1467	9.82	
179.1	1956	10.92	
239.8	2758	11.42	
321.8	2838	8.82	
623.8	6182	9.91	

Relation to Farming.

The type of soil is also a factor in determining the type of farming. Certain crops are adapted to one type of soil and some to another, as, for example, one set of truck crops such as cabbage, celery, turnips, etc., are suitable to a muck soil, while sweet potatoes, tomatoes, etc., are best suited to lighter soils. Likewise others do best in clay soils.

The same is true of field crops and the kinds of stock that are to be kept. In this connection such matters as drainage, rocky or stony land need to be considered. Above all the land



Typical Eastern Oregon bonanza wheat farm. A specialized type of farming.

with an inferior flavor. Linseed oil meal when fed in a balanced ration does not affect the quality of the butter.

The experimental work with such feeding stuffs as silage, kale, rape, clovers, etc., and their effect on the quality of butter has been extremely limited and very little data is available. But the work that has been done would appear to substantiate a few facts. Other conditions being favorable the butter made from the milk of silage fed cows is of an excellent quality, having the proper consistency and body and free from an unpleasant flavor that one might expect from the silage. Even rape silage imparts no taint to the butter.

Turnips and rutabagas need to be used on the dairy with extreme caution, because of their liability to impart an unpleasant taint both to the milk and to the butter. This depends to some extent upon the amount fed and the method of feeding, which should not be done until after milking.

This Station in 1896 carried on some experiments comparing the feeding of dry feeds exclusively and the feeding of some root crops. Five cows were used in the test which extended over three months time. The first period they fed clover hay, corn stalks and grain mixtures. The second period they added mangles to the above ration. No material changes in the quantity of butterfat yield were noted, but an analysis of the butter produced showed some variations.

The average percent of fat lost in the buttermilk when the cows were fed nothing but dry feed was .022, when mangles were added it was .027, and when potatoes were added it was .025. The average time required for churning was on dry feed (34) minutes, on mangles (36) minutes and on potatoes (86) minutes.

In churning cream from potato fed cows a great deal of frothing occurred and it took twice as long to complete the churning.

Comparative Composition of the Butter:

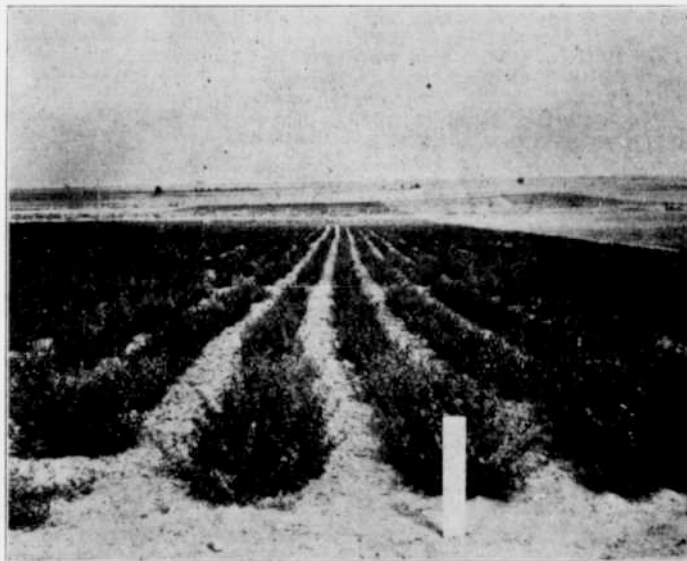
milk makes it necessary to use considerable care in the feeding of certain food stuffs. In the majority of cases where such foods are fed to excess and are given to the animal immediately after milking the peculiar odors will be thrown off so that at the succeeding milking they will not be apparent.

RECORD YIELD OF ALFALFA SEED IN HARNEY COUNTY

Oregon Agricultural College, Corvallis, Ore., July 5 — A yield of 9.6 ounces of seed and 42.5 ounces of straw was secured from a single alfalfa plant in Harney County in the fall of 1914. The plant was selected from the border row of a field planted in rows 26 inches apart, season of 1913. This plant was separated by about 30 inches each way from all the other plants. Concerning the plant, Mr. L. R. Breithaupt, the county agent conducting the co-operative tests in which it was produced, says:

"The plant was the Baltic variety, a hardy, dry-land strain with wide-spreading root system and much divided crown, characteristics of alfalfa adapted to withstanding droughts of summer and severe cold of winter. Baltic alfalfa is one of the 'variegated alfalfas,' so-called because of its great range of blossom colors. Any color from light yellow to varying shades of green and purple may be found among the flowers of a single plant, whereas the ordinary alfalfa has but the purple blossom. This variation is believed to be due to a small amount of the blood of the hardy, wild-flowered variety of Central Europe, secured through natural hybridization."

So far as can be learned this is the heaviest yield ever recorded from a single plant of alfalfa. A number of co-operative tests have been conducted in Harney County, and Mr. Breithaupt, who is also superintendent of the Harney Branch Experiment Station, thinks it probable that alfalfa seed of this variety will soon be produced there in commercial quantities.



A new dry land crop—alfalfa in cultivated rows—that is converting Eastern Oregon wheat lands to the diversified type of farming.

dairy and other types which require steady labor in places where such labor cannot be had.

Location of Farm.

The location of the farm in its relation to large cities and market centers determines the character of products that must be produced if profits are to be expected. Market milk and cream must be produced within easy access to the centers of distribution. The same is true of other perishable products. Likewise, products of large bulk like hay, cannot be profitably shipped long distances owing to the heavy cost of transportation. On the other hand grain and stock can be raised further back from the centers where land is cheaper and because they can be shipped long distances with little loss. The distance that the farm is located from town and the character of roads and the topography are also important factors.

Figures taken from Bulletin 295 of Cornell University show that in this locality the most profitable farms are located between one and two miles

should be fertile or a cheap means at hand for making it so.

Capital Available.

The available capital has its influence on the type of farming. To those already in the business it controls to a large extent the rate of expansion in any direction, such as enlarging enterprises already established or in starting new ones.

COOPERATIVE SOCIETIES AID

"Cooperative societies among farmers improve the quality and increase the quantity of farm products," says Dr. Hector Macpherson, of the Oregon Agricultural College. "They are an incentive to better business methods, by joint marketing they lower expenses and increase prices for commodities, by cooperative purchase they make immense savings in purchasing farm supplies, and they promote neighborliness, stimulate social solidarity, create a desire for education, and result in all-around better citizenship."