

infection of milk is due to contaminated water used for washing the milk vessels or for augmenting the bulk of the milk by fraudulent additions. My own opinion is that an escape of faecal matter from the cow while being milked often falls into the milk pail, and that this is generally the real cause of typhoid infection in milk. I have actually seen this to occur when inspecting dairies and examining suspected cows, and I am perfectly sure that it often takes place. The polluted water idea seems to me to be far fetched and inadequate.

Balanced Ration for Dairy Cows.

A large share of success in dairy farming is due to systematic feeding. Unless some definite system is followed in providing a well-balanced ration for dairy cows, the best results cannot be obtained. A well-balanced ration for dairy cows, according to the American standard, should be composed as follows :

	Lbs:
Total organic matter	24.5
Digestible protein.....	2.2
“ carbohydrates	13.3
“ fat.....	.7
Total digestible nutrients.....	16.2
Nutritive ratio.....	1: 6.9.

The following arrangement of foods, though a shade lower in total organic matter than the standard, may be considered as being approximately correct : Barley, 2 lbs.; bran, 8 lbs.; clover hay, 6 lbs., and corn ensilage 45 lbs. Other combinations of foods might be made that would give the same nutritive ratio and as good results if fed to dairy cows. Dairymen will have to be guided largely by the kinds of feed they have at their disposal, in forming the most economical ration for dairy cows.

F. W. Woll, of the Wisconsin Experiment Station, in Bulletin 38, gives a large number of rations used by successful dairymen in America and Canada. We give below a few of these rations, and though some of them will be found deficient if compared with the standard, yet they have been used with good results by progressive dairymen.

(1) 10 lbs. clover hay, 35 lbs. ensilage, 2 lbs. oat straw, 5 lbs. cornmeal, 5 lbs. beans, 5 lbs. oats.

(2) 40 lbs. corn ensilage, 10 lbs. timothy hay, 5 lbs. bran, 3 lbs. cornmeal, 2 lbs. oil meal.

(3) 30 lbs. corn ensilage, 12 lbs. clover hay, 8 lbs. wheat middlings, 1 lb. oil meal.

(4) 30 lbs. corn ensilage, 12 lbs. of hay, 10 lbs. ground oats.

(5) 50 lbs. corn ensilage, 10 lbs. clover hay, 3 lbs. straw, 5 lbs. peameal, 2 lbs. oats.

(6) 19 lbs. corn fodder, 9 lbs. clover hay, 1 lb. barley straw, 4 lbs. cornmeal, 3 lbs. barley meal, 3 lbs. bran.

(7) 45 lbs. corn ensilage, 12 lbs. clover hay, 8 lbs. shorts, 4 lbs. cornmeal.

(8) 12 lbs. timothy hay, 5½ lbs. corn fodder, 6 lbs. corn meal, 2 lbs. oats, 2 lbs. barley, 5 lbs. bran, 7½ lbs. potatoes.

(9) 25 lbs. clover hay, 34 lbs. mangolds, 3 lbs. corn and corn meal, 1½ lbs. oats, 2 lbs. wheat bran.

(10) 40 lbs. corn ensilage, 15 lbs. hay, 5 lbs. bran, 2 lbs. cotton-seed meal, 3 lbs. corn meal.

What Cheese Is.

Not long since an article appeared in a prominent journal, which set forth the claim that certain results could be obtained in cheese-making from milk of a certain test of fats, from the fact that the solids, not fat, amounted to so much, and the resulting cheese would reach such a corresponding weight. There was one fatal error in the statement, and that was in assuming that all the solids in milk could be retained in the cheese in the making. No process of coagulation of milk has yet held two of the solids captive, the albumen and the sugar. Sugar is the most abundant of all the milk solids, and cannot be fixed by the action of rennet. In most published analyses of milk casein and albumen are classed under the one head of casein, but the rennet action does not hold the albumen perfectly, only as small percentage, possibly 10, and the balance escapes in the whey with the sugar, so at last the full cream cheese has only about 2¼ pounds of casein to 3 pounds of fat, and the balance of the weight of the cheese, 32 per cent., is made up of water. The composition of a full cream World's Fair cheese was as follows: Fat, 36.18 per cent.; casein, 27.19 per cent.; water, 31.70 per cent.; ash, 2.97 per cent. To see how good cheese rates, as compared with best sirloin steak, the substance of the latter is given: Water, 60 per cent.; fat, 20 per cent.; albumen (equivalent of casein), 19, or 39 per cent. of food solids, against 63.37 per cent. solids in cheese, and the cheese is practically all digestible, which shows the great value of good cheese as an article of diet and economy.—*Practical Farmer.*