

BULLETIN LXXX.

EFFECT OF FOOD ON MILK AND BUTTER.

During 1891 we conducted an experiment similar to the one here reported.

The cows used in the experiment were six in number, divided into three lots—two cows in each lot. The general plan was to feed each lot for four weeks on one ration, note the quantity and quality of the milk and butter, then change to another ration and feed for four weeks until each lot had been fed each ration for the same length of time. The rations were:

No. 1. Ensilage, 30 lb.; oats raw, 20 lb.; hay (cut), 10 lb.

No. 2. Hay (cut), 20 lb.; linseed oil meal, 4 lb.; cottonseed meal, 5 lb.

No. 3. Hay (cut), 20 lb.; pea meal, 4 lb.; oatmeal, 5 lb.; corn meal, 8 lb.

The effect on the fat and solids not fat was as follows:

The average per cent. of fat given in the milk by the three lots when fed ration No. 1 was 3.67; on No. 2, 3.49; and on No. 3, 3.25.

The average per cent. of solids not fat from all the lots when fed on No. 1 was 7.79; on No. 2 8.62; and on No. 3 it was 8.37.

In every case there was a slight decrease in per cent. of solids not fat when the cows were fed the poor ration.

Some conclusions from the experiment of 1891:

1. When there is a deficiency of fat or albuminoids in the ration, the animal draws from her own body to make up this lack, maintaining about the same *quality* of milk, though the quantity may be greatly reduced.

2. When an excess of nutrients is fed these are doubtless wasted to a considerable extent, and if fed for a length of time might do injury to the animals, though these cows ate their full ration for a period of 21 days without apparent injury.

3. Judging from the returns from the winter ration we may expect to receive profit from a much wider ratio and on less nutrients than the German standard calls for.

4. In answer to the question, Was the fat fed in the food recovered in the milk? these experiments show that on ration No. 1 more fat was recovered in the milk than was fed in the food, and on Nos. 2 and 3 the returns of fat in milk were about the same as the fat fed, but whether it all came from the fat of the food or not was undecided.

Guelph,

President.
Treasurer.
Chemistry.
Geology.
Science.
Agriculture.
Master.
Gymnastics.
Dentist.
Chemist.
Bursar.

Toronto.
Wellington.