[*Smith and James photo.*

Yard and feeding bails next to the milking shed.

FEEDING SKIMMED MILK AND MEAL CONCENTRATE

Age of calf	Whole milk (lb.)	Skimmed milk (lb.)	Meal (lb.)
1st day	On mother		
2nd to 4th day ..	Colostrum (5½)		
5th to 7th day ..	6		
2nd week	7		
3rd week	Change to skimmed milk		
15th day ..	6	2	
16th day ..	6	2	
17th day ..	4	4	
18th day ..	4	4	
19th day ..	2	6	
20th day ..	2	7	
21st day ..	1	8	
4th week		10	¼
5th week		10	½
6th week		10	¾
7th week		12	1
8th week		12	1¼
9th week		12	1½
10th week		14	1½
11th week		15	2
12th week		15	2
4th to 6th month ..		12	3

Whey Feeding

Suppliers to cheese factories must rely on whey as the basis of the calf's diet. Whey is deficient in both proteins and minerals, and therefore a supplement which is rich in both of these food constituents must be provided. The most suitable concentrate to meet these requirements is meat meal, which is reasonably cheap and plentiful. However, it is unpalatable to calves and it will give better results if mixed with barley, oat, or linseed meal in the proportion of 1 part of meat meal to 2 parts of cereal.

Greater care must be exercised in changing from whole milk to whey feeding. It should be done gradually, preferably taking 2 weeks to complete the change, as a sudden change is likely to cause an outbreak of scours. Boiling milk before mixing it with whey is advisable to prevent it coagulating, and if whey has to be kept for some time before it is fed to calves, it should be boiled to check acidity.

After the calf's first 2 weeks on whole milk, whey can be substituted for milk gradually, the change being completed during the next 2 weeks. On the first day of the change 1½oz. of meat meal mixture should be given and this should be increased gradually until the calf receives 10oz. when it is 5 weeks old. The quantities are increased to a maximum of 15lb. of whey and 16oz. of meal mixture when the calf is 10 to 12 weeks old. The following table is a whey-feeding chart, but the amounts fed must be varied to suit the needs of individual calves.

FEEDING WHEY AND MEAL CONCENTRATE

Age of calf	Whole milk (lb.)	Whey (lb.)	Concentrate (oz.)
First 2 weeks ..	Normal feeding		
15th day	7	1	1½
17th day	6	2	2
19th day	5	4	3
21st day	4	5	4
23rd day	3	6	5
25th day	2	8	6
27th day	1	10	8
5th week		11	10
6th week		12	10
7th week		12	12
8th week		14	12
9th week		14	16
10th to 12th week		15	16
4th to 6th month		12	12

Feeding Dried Buttermilk

Pure buttermilk has the same feed value as skimmed milk, but may contain varying quantities of added water. Dried buttermilk powder is more uniform in nutritive value and is suitable for calf feeding where only limited quantities of whole milk are available—for instance, on many town-supply dairy farms.

To prepare the dried buttermilk for feeding, mix 1lb. of the powder with a small quantity of cold water and stir it to make a smooth paste, breaking up all the lumps. Add hot water to make 1 gallon and stir thoroughly. It should be fed to calves at a temperature of 100 degrees F.

After the first 2 weeks on whole-milk feeding, buttermilk may be substituted for whole milk during the next 10 to 14 days, the quantities fed being the same as for skimmed-milk feeding. Dry meal should be fed from the end of the third week. As buttermilk powder is an expensive feed, it is desirable to wean the calf as early as possible, and this can usually be done when the calf is 10 to 12 weeks old. It should be fed 3lb. of meal concentrate daily from weaning until it is 5 months old.

The early-weaned calf has to rely to a greater degree on concentrates for its nutrition, and for this reason a meal mixture is preferable, as probably it would be more palatable and better balanced than a single meal. The following is a suitable formula:—

	lb.
Crushed oats	40
Barley meal	40
Buttermilk powder ..	20
Steamed bone flour ..	½
Ground limestone	½
Coarse salt	½

This formula can be varied according to circumstances; for example, wheat or maize meal could replace either oats or barley meal, and pea meal would make a useful addition. Meat meal could be included in quantities up to 10 per cent. of the mixture. Cod-liver oil should be given twice daily from the 4th to the 10th week.

Rearing on Limited Whole Milk

As may be necessary on farms where skimmed milk and other products are not available, calves can be reared successfully on a minimum of whole milk, though they may not thrive as well as calves fed on skimmed milk until 18 weeks of age or older. The method may be used on town-supply dairy farms as an alternative to buttermilk feeding.

The calf is fed in the usual way for the first 4 weeks—on the mother the first day, mother's milk until the 4th day, and thereafter whole milk at the rate of 1lb. daily per 10lb. of body weight. From the 5th week on, decreasing amounts of whole milk are fed, and the calf is weaned at 3 months. The following daily quantities of whole milk are recommended:—

To the end of the 1st week:	6lb.
To the end of the 2nd week:	8lb.
To the end of the 3rd week:	8lb.
To the end of the 4th week:	9lb.
To the end of the 5th week:	8lb.
To the end of the 6th week:	7lb.
To the end of the 7th week:	5lb.
From 8th to 10th week:	4lb.
From 11th to 12th week:	2lb.