

Some advice offered to farmers in relation to calf growth promotes the feeding of high levels of milk replacer and/or using calf milk made with high crude protein. In both these cases calves become fat, are more prone to disease and ADG are often less than that achieved on traditional systems (Table 3).

Product	Intake per day	Mortality (% of calves)	Antibiotics (% of calves)
20% CP (100% milk protein)	454g/day	8.1	47.8
27% CP (100% milk protein)	681g/day	23	61.4

Table 3: Effect of high protein on health (Quigley et al).

This is because the crude protein level is far greater than the milk protein included and the calf has to use energy to get rid of this excess unusable protein. Dry feed intake is also reduced, delaying rumen development (Table 4). Dry feed intake can adequately replace milk as the rumen bacteria convert plant protein into a bacterial protein and this has the same amino acid specification as cow's milk (Table 5).

Milk replacer intake	500g	600g	1000g
Concentrate intake at 50kgs	500g	400g	0
Concentrate intake at 75kgs	1000g	900g	500g
Concentrate intake at 100kgs	1500g	1400g	1000g

Table 4: The effect of milk replacer feeding on dry feed intake.

Amino acid	Milk	Bacteria	Soya bean meal
Histidine	2.6	2.0	1.1
Arginine	3.4	5.1	3.4
Lysine	7.5	7.9	2.7
Methionine	2.5	2.6	0.65
Phenylalanine	4.6	5.1	2.2
Threonine	4.4	5.8	1.7
Valine	6.3	6.2	2.4
Leucine	8.3	8.1	3.4
Isoleucine	5.8	5.7	2.5

Table 5: Amino acid content of milk, soya bean and bacteria.

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Fresh Start Heifer is designed to be fed to dairy heifer replacements after colostrum feeding



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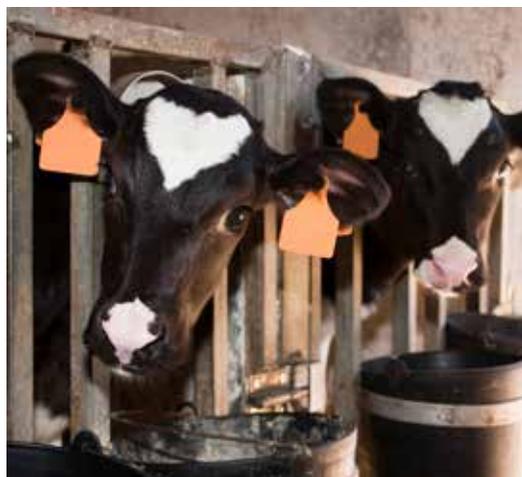


The objectives for any farmer rearing heifers are to protect the potential of the calf and at the same time convert the calf from a simple stomached animal in to a ruminant. The conversion process starts within the first week of life and will take 10 months to complete.

Fresh Start Heifer is designed to be fed to dairy heifer replacements after colostrum feeding. It is concentrated calf milk made with skim milk and other milk proteins exclusively. The high oil and low lactose levels allow it to be fed at much lower levels than other calf milks (Table 1).

By feeding lower milk replacer rates:

- Calves will eat more dry feed increasing rumen development, creating a warmer calf and improving the calf's immune system.
- The inclusion of only milk proteins makes digestion and utilisation of the feed easier for the calf.
- Increasing dry feed intake reduces weaning age. This will reduce the labour and costs associated with calf rearing by 15% for every week weaning age reduced. If this labour saving is dedicated to early calf care it will again reduce long term issues and costs. This can also reduce pen group size on computerised feeders by up to 50%.



Feeding Fresh Start Heifer

It should be fed at a minimum of 400g a day and can be fed at 70-75% of a standard calf milk. There is no need to feed above 700g of Fresh Start Heifer/day.

Product	Lactose	Crude Fat	Milk Protein	Crude Protein
500g of Fresh Start Heifer	200g	120g	100g	100g
500g of standard calf milk	280g	90g	45-65g	110g (including non-milk protein, poorly digested)
700g of standard calf milk (Higher concentration)	350g (excess converted to fat or excreted)	126-140g	70-90g	161g (including non-milk protein, poorly digested)

Table 1: Comparing the feed value of Freshstart heifer to a standard based powder.

Fresh Start Heifer is made with Skim milk, Buttermilk Whey and 5 vegetable oils. No hydrolysed plant protein or flour is used. The fat and lactose levels are similar to cow's milk but contain higher omega 3 levels. The low heat treatment and low TBC ensures the milk ingredients have the same value as milk suckled from a cow.

Twice a day feeding recommendations

Mixing

Always mix at a rate of 125g per litre of mixed mix or 1 measure of powder to 4 measure of water.

Age of calves (days)	AM Feed (litres)	PM Feed (litres)
1 - 4	Colostrum	Colostrum
5 - 8	1 ½	1 ½
9 - 13	2	2
14+	2 ½	2 ½



Computerised machine feeding

Calibrate machine with every new batch of powder. Fresh Start Heifer is compatible with all computerised feeders. Feed at 12.5 to 15% concentration.

Protecting the calf and keeping it healthy requires good management, best use of available housing and plenty of labour. These last two points are often where calves struggle as both can be limiting factors on many farms. Efforts to reduce labour can compromise calf health (Table 2) and in the long term actually increase labour and vet bills.

Treatments	Feeder (N<6)	Bucket (N<6)
scour	47	33
Pneumonia	28	9
Number of infected pens	9/17	5/17
Mean age with pneumonia	54	36

Table 2: Comparison of calf health using bucket or computerised feeders to rear calves (Liverpool University).

