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Perspective

Are Calf to Beef Farmers Over Feeding Calf Milk?

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Farmers buying calves are keen to look after them as well as possible to get a good thrive early in life and it seems plausible that the more milk you give a calf the better the animal will be in later life. But is there sufficient evidence that using high level of milk will make any long-term positive difference to the calf or to the farmers bank balance?

If beef was a highly profitable enterprise it would not be a significant consideration but the reality is that spending an extra €50 - 75/ head is a significant proportion of the profit farmers are making from beef their beef enterprises.

It is true that the 1st few weeks of a calf's life are crucial but the milk volume plays a limited role, in fact, the calf's birth weight, immune system, colostrum, transition milk feeding and disease challenges accounts for 97% of the variability in later performance [1,2]. Moreover, the weaning of the calf and its post weaning performance also plays an important role [3].

Farmers buying healthy, strong, two week old calves are buying calves with no control over many influential factors as these happen in the first days to weeks of life. The main concern for the purchaser is to keep calves healthy and getting them eating dry feed. The 1st critical job is good housing, cleanliness, and keeping calves in small groups. Bedding calves well and providing a nested, sheltered area in the pens with adequate fresh air plays an important role in keeping calves warm and healthy. The second job is done by providing fresh ration and fresh clean water and roughage from day one. This will develop the rumen which will be main driver of growth for the rest of the calf's life.

Earlier research completed by Teagasc, the Agriculture and Food Development Authority in Ireland reported that as calves consumed more milk, they ate less concentrates and at 12 - 16 weeks live weights were the same regardless of milk volume fed. This result was due to increased post weaning growth check when fed increased amounts of milk [4].

Treatment	Maintenance	Maintenance X 1.5	Maintenance X 2
Milk intake/day 1 - 49	480g	720g	980g
Conc. intake day 1 to 70	650g	630g	520g
ADLWG 1 - 70	540g	680g	700g

Table 1: *Summary of research conducted by Fallon and Harte, 1986.*

**Conc = concentrate; ADLWG = Average Daily Liveweight Gain*

***Maintenance refers to feeding maintenance level of energy requirements.*

This research combined with many years of anecdotal evidence would suggest that feeding 1.5 times the maintenance requirements is optimal for economics and calf health.

Furthermore, there is a lack of sufficient evidence that feeding additional milk replacer will keep calves allow calves to reach their targets earlier and remain healthier [5]. In fact, the opposite can sometimes be the case especially if the milk replacer is high in crude

protein. Other factors such as the concentrate offered, weather, housing and other stressors on calves a likely to have a greater influence on calf health than we realise [6].

Farmers should be aiming for feeding approximately a bag and a ¼ for two week old calves and less if calves are 3 weeks old. By offering calves dry feed, clean water and straw from day one, calves should have a sufficiently developed rumen to begin the weaning process at 6 - 7 weeks of age rather than waiting until they are on the farm for 8 weeks or longer.

Feeding calves a skim based milk replacer once-a-day will allow calves to consume a full feed and digest it slowly. Once a day calves are actually under less stress than twice a day fed calves and will consume more dry feed before and after weaning.

Bonanza Calf Nutrition have worked with the Bull beef unit at Harper Adams University for more than 10 years and in independent trails, calves which were fed a maximum of 600g of calf milk/day were always ahead of the UK's EBLEX growth rate targets. Calves fed twice a day always achieved growth rates of 0.9 - 1 kg from purchase to 12 weeks on trial.

On a trial where calves were fed either once per day or twice per day, a difference could clearly be seen between the two groups. Calves fed Shine Once-a-day were 8 kg heavier at 12 weeks and at slaughter at 13 months compared to twice a day milk fed calves. The twice a day calves received 3 kgs more calf milk as they were 5 days older when weaned. Further information on all trial work can be found on bonanzacalf.ie/research/.

	Purchased at 2 Weeks Old	Purchased at 3 Weeks Old
15 - 28 days	8.4 kg	4.2 kg
28 - 42 days	8.4 kg	8.4 kg
42 - 49 days	3.5 kg	3.5 kg
49 - 56 days	2.8 kg	2.8 kg
Total usage per calf	23.1 kg	18.9 kg
Cost at €2.4/kg	55.44	45.36

***Table 2**: Suggested milk powder usage for beef calves.*

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