

Rearing calves well



Ashton McDonald

A recent study reveals how greater milk allowances can positively affect calf behaviour and welfare, but liveweight differences disappeared post-weaning.

Globally, our understanding of animal welfare has evolved. Instead of thinking only about health and production, we now take a broader perspective that includes behaviour and affective state, which considers an animal's experiences and mood.

Hence, the latest research on calf rearing doesn't simply focus on reducing illness and increasing weight gain, but includes examining behaviours such as how much time calves spend lying and grooming.

DairyNZ's Ashton McDonald, who recently completed a Master of Science through The University of Waikato and AgResearch, studied the effects of milk allowance on the growth and behaviour of Holstein-Friesian calves.

Conducted at the Pāmu calf-rearing facility near Taupō, Ashton's study compared calves offered 5L of milk replacer per day from one week of age until weaning (at 12 weeks of age), with those offered a higher allowance of 10L/day. Calves were reared indoors with an automatic milk feeder until five weeks of age. After that, they went out onto pasture and were group-fed with a calfeteria.

Average daily milk consumption was 4.9 and 6.6L/calf for the 5L and 10L calves during the first five weeks of age. Calves offered 10L milk replacer per day spent more time lying and grooming, which indicated a positive affective state (e.g., calmness and fullness).

In contrast, the calves offered 5L/day had increased activity and visited the milk, meal and hay feeders more often. They had many unrewarded visits to the milk feeder (average 38 of the 50 visits per day for 5L calves versus three of the 15 visits per day for 10L calves, at 2-5 weeks of age). These behaviours indicated a negative affective state (e.g., hunger and frustration).

Liveweight gains were lower when less milk was offered, but from week 14, following weaning, average liveweights were no longer significantly different.

A good calf-rearing system will balance welfare, costs and labour requirements. As we learn more about what is important to calves, we can improve our systems to enhance calf welfare, while remaining profitable.

Average liveweights of calves offered different milk allowances from arrival to weaning.

TABLE 1.

Average liveweights (kg)	Calves offered 5L per day	Calves offered 10L per day
At four days (arriving at rearing facility)	39	39
At five weeks (calves going on pasture)	49	54
At 12-13 weeks (weaning)	86	93
At six months	187	193
At 12 months	287	289

This project was funded by AgResearch and DairyNZ with in-kind support from Pāmu.

Animal welfare is more than just health– it includes natural state and affective state. As we begin to understand more about these other aspects, our animal care practices will change.

Affective state

Relaxed • calm • satisfied

Natural state (behaviour)

Lying and resting • grooming • playing • sucking

Health and function

Disease free • growing well



Prepare calf facilities in autumn

- Clean out last season's bedding and re-order. Ordering early will give woodchip and sawdust time to dry out before calving.
- Tackle any maintenance. Check gate latches, pen dividers and troughs are in good order.
- Check that your bobby calf loading facility is suitable for calves and people, especially the flooring which can become slippery.

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