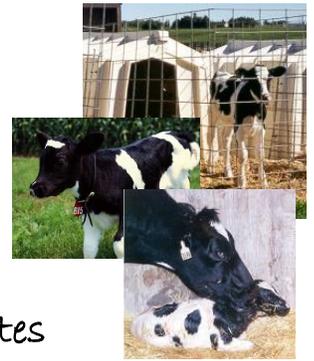


Calving Ease

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Water The Magic Growth Promoter

- Just do it! Make clean water available to dairy calves from Day 1!
- Why feed water before 14 to 21 days?
- Why feed water if calves are drinking milk/milk replacer?
- Why feed water during freezing weather?
- Tips for more efficient water feeding

Just Do It!

Want to stop reading right now? Too busy to read all the reasons for feeding water? Take my word for it, just do it. Make clean water available to calves from day one. It is good for calves.

Why feed water before 14 to 21 days of age?

On the average U.S. dairies report beginning to feed water to dairy replacement calves at 17 days of age (USDA 2014). Does that make this the most profitable practice? No. Research findings suggest sooner is better. When comparing growth rates (body weight at 5 months, hip height and body length at 10 weeks) starting water availability at Day 1 is superior to waiting to begin offering water on Day 17 (Wickramasinghe).

Also, feed conversion efficiency measured at ten weeks of age shows an advantage for starting water on Day 1. All these findings point to the conclusion that earlier water availability encourages better rumen development compared to waiting for two or three weeks to start offering water to newborn calves.

Why feed water if calves are drinking milk/milk replacer?

Our dairy replacement heifer calves need access to “free water” or water that goes into the rumen. Remember, rumen wall maturation depends on the products of fermentation in the rumen – a process that requires both water and solid feeds. By the way, remember to keep water pails and waterers clean to encourage greater water intake (Wiedmeier).

However, by the action of the esophageal groove on the side of the rumen, milk/milk replacer is diverted directly into the abomasum – bypassing the rumen. Thus, even though a calf consumes a lot of water when drinking her milk, this is not “free-water” available to the rumen.

Remember, as we decrease the amount of milk fed we should expect calves to increase the volume of water consumed. See in the data below how water intake shot up as milk volume was cut back (Eckert).

Age of calf	Water Consumed Daily (quarts)	Milk/milk replacer fed daily with ad-lib calf starter grain
Week 6	1.5	still drinking 8.5 quarts milk replacer
Week 7	3.7	milk replacer cut back to 4.25 quarts at 49 days
Week 8	9.5	no milk on day 56
Week 10	11.7	this is the second week after full weaning

Why feed water during freezing weather?

Well, calves are warm-blooded mammals. Freezing weather or not their rumen is maintained at 101-103F. They still need “free-water” to support fermentation. When we compare growth rates among calves fed without any water to calves raised with free choice (ad lib) water we can see significant improvements associated with water. [Volac]

Gains among calves raised with or without ad lib water during Preweaned Phase [Weights taken at birth and 11 weeks of Age]

Feeding Program	Conventional Milk Replacer Feeding	Intensive Milk Replacer Feeding
Gain No Water	99lbs	110lbs
Gain ad lib Water	118lbs	136lbs
Advantage Water	19%	24%

Tips for more efficient water feeding

- Take advantage of gravity when possible. Water always runs downhill. Float-controlled flow into bulk tanks works reliably in temperate conditions.
- Never carry water when it can be pumped through a pipe or hose. Frost-free hydrants coupled with hoses can make a world of difference.
- Bulk transfer water by planning ahead – for example, by using a float fill-controlled elevated tank the time to dump-fill a water transport tank can be cut 90% compared to hose-filling.
- Schedule water pail cleaning (especially during hot weather) to match labor availability (e.g., all summer I cleaned 20% of water pails 5 days a week right after feeding calf starter grain).
- In freezing conditions, take advantage of habit-driven calf behavior – feed water on a consistent timetable – same time every day. If calf care personnel carefully observe winter water consumption patterns of calves a “feed-and-dump” routine can work very well.

References: Wickramasinghe, H.K.J.P and Others, “ Drinking water intake of newborn dairy calves and its effects on feed intake, growth performance, health status, and nutrient digestibility.” Journal of Dairy Science 102:377-387 (2019). Volac news “Water is essential for all forms of life” accessed July 2017 <http://www.volac.com/news/agriculture-news/news189/water-is-essential-for-all-forms-of-life> . Quigley, J. “Calf Note #04 “Water, Water Everywhere” at www.calfnotes.com . USDA Dairy 2014 Dairy Cattle Management Practices in United States. USDA-APHIS VS-CEAH Fort Collins, CO. Wiedmeier, R.D. and Others, “Watch the Drinking Water Quality of Calves Reared in Individual Hutches.” Utah State University AG/Dairy 2006-01pr. E. Eckert and Others, “Weaning age affects growth, feed intake, gastrointestinal development, and behavior in Holsten calves fed an elevated plane of nutrition during the preweaning stage.” Journal of Dairy Science 98: 6315-6326 (2015).

Our thanks to Attica Veterinary Associates, P.C. for their support for this issue. Visit their web site, www.atticacows.com for more information. Calf resources featured are Calf Facts Resource Library, Calf Management Newsletter, and “Calves with Sam” blog.