

CALVING EASE

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Sam Leadley (Attica Veterinary Associates) & Pam Sojda (Offhaus Farms)

WATER A Vital Element for Calf Growth

How many of your heifers do you want to keep alive? How healthy do you want your heifers to be? How rapidly do you want your heifers to grow? Offering calves free-choice water is the vital element in being able to answer these three questions positively.

We want to keep mortality under five percent. We want to keep morbidity (heifers treated for pneumonia) under ten percent. We want heifers to gain at least 1.5 to 1.8 pounds per day. This just won't happen without free-choice water!

Conditions for Water-feeding Response

Improvements in mortality, sickness and weight gain due to water feeding will be minimized if three conditions are not present. First, newborn calves must receive quality care. Quality care means clean calving conditions, feeding enough good quality colostrum soon enough after calving, dipping navels and getting calves into clean, draft-free housing soon after calving.

Second, enough good-quality milk replacer and milk needs to be fed to provide for both maintenance and growth needs of the calves. Third, fresh, good-quality starter grain needs to be available to the calves all the time.

Quantity of Water Needed

To start with, let's be certain that milk or milk replacer is NOT counted as water. Pre-weaned calves need "free" water in addition to their milk. One reason for "free" water feeding is to provide the liquid for the rumen. When fed this water goes into the rumen where it mixes with small amounts of starter grain and bacteria. The substances released by this ruminal fermentation stimulate growth of the rumen lining.

A second reason for "free" water feeding is to help replace fluids lost due to scours. Calves with diarrhea may need two, four or even eight times the normal amount of fluid to replace fluids lost due to sickness.

In order to take advantage of a calf's genetic ability to grow, Kertz and Others have shown that calves need four pounds of water for every pound of dry matter consumed. The common amount of milk replacer fed is 16 ounces - one pound. The matching amount of water is at least four pounds (two quarts) just for maintenance and growth. More water is needed if the calf is scouring at all.

For example, a three-week old calf drinking four quarts of milk daily plus eating one quart of textured starter grain is taking in about two pounds of dry matter each day. The matching amount of water is at least eight pounds (four quarts or one gallon) daily.

Watch for Increased Water Needs in Hot Weather

As environmental temperatures go up, a calf's need for water goes up. Calves won't drink much more water at 60°F (16°C) than at 40°F (4°C). The biggest increases come when the temperature goes up from 60°F. Let's take the three-week old calf eating two pounds of dry matter a day (1 pound from milk, 1 pound from starter). Earlier we said that at 50°F (10°C) she needs eight pounds of water daily (that is 2 pounds dry matter times 4 = eight pounds or 1 gallon). At 70°F (21°C) we estimate this need at twelve pounds (1 1/2 gallons). At 80°F (27°C) and 90°F (32°C) her daily water needs go up to fourteen and nineteen pounds respectively (1 3/4 gallons at 80, 2 3/8 gallons at 90). Notice how rapidly the need for water goes up with the temperatures over 80! Remember that at the same age smaller calves will drink less while larger calves usually will drink more. At the same age calves eating less starter will drink less and those eating more starter will usually drink more.

Water Feeding Hints

1. Whenever possible, let gravity move water. One farm uses a 55-gallon barrel mounted on a tractor's 3-point hitch and a gravity hose. Another farm has an elevated rig mounted in the back of a JD Gator and a gravity hose.
2. Pump water rather than carry water by hand. By mounting an electric pump on top of a 55-gallon barrel one farm pumps water to calves. The electricity comes from two big used diesel tractor batteries. Another calf raiser has an outdoor hydrant near the hutches. She uses a hose to water calves. In greenhouse-like buildings hose watering is very common.
3. In non-freezing weather, expect to add about 1 minute per calf per day to feed water vs. not feeding it. In freezing weather, expect to add twice that much time.

PAYOFF?

If you start with healthy calves in good housing, adding free-choice water should add 0.3 pound daily gain over present gains. In eight weeks that adds up to an extra 17 pounds per calf. Plus, my experience suggests measurable decreases in both mortality and sickness when free-choice water is added.

Reference: A.F. Kertz, L.F. Reutzel, and J.H. Mahoney, "Ad libitum water intake by neonatal calves and its relationship to calf starter intake, weight gain, feces score and season." Journal of Dairy Science 67:2964-2969. 1984

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