TECHNICAL BULLETIN
COW/CALF

QLF QUALITY LIQUID FEEDS

THE IMPORTANCE OF WATER FOR THE COWHERD

365 COWHERD NUTRITION BY QLF

As summer begins to wind down, cattlemen are faced with declining pasture conditions. While nutrient considerations for protein and energy should be addressed, the most important nutrient – Water – still merits valuable attention.

Water plays a role in many physiological functions such as; temperature regulation, growth, reproduction, lactation, metabolism & digestion. Requirements for water vary greatly. Predicting these requirements is not as simple as one would expect. Consideration for animal size, stage of production and ambient temperature need to be addressed (Table 1).

Table 1.

Estimated Daily Water Intake for Beef Cattle Based on Temperature and Stage of Production, gallons									
	Growing Cattle			Finishing Cattle			Pregnant Cows	Lactating Cows	Mature Bulls
Temp., F	400lb	600lb	800lb	600lb	800lb	1,000lb	900lb	900lb	1,600lb
40	4.0	5.3	6.3	6.0	7.3	8.7	6.7	11.4	8.7
50	4.3	5.8	6.8	6.5	7.9	9.4	7.2	12.6	9.4
60	5.0	6.6	7.9	7.4	9.1	10.8	8.3	14.5	10.8
70	5.8	7.8	9.2	8.7	10.7	12.6	9.7	16.9	12.6
80	6.7	8.9	10.6	10.0	12.3	14.5		17.9	14.5
90	9.5	12.7	15.0	14.3	17.4	20.6		16.2	20.6
Adapted from Nutrient Requirements of Beef Cattle, Seventh Revised Edition, Updated 2000									

Water requirement for mature cows varies depending on the stage of production. Cows in early/mid-gestation have a lower water requirement than those 90 days prior to calving. As cows enter the last 1/3 of pregnancy, water requirement begins to rise as they prepare for lactation. Water requirements are highest 60 days post-calving, coinciding with peak lactation. Mature bulls require similar amounts of water as lactating cows.

Composition of the diet will also influence water consumption. Cattle grazing lush pastures or fed silages typically contain high moisture levels. Whereas harvested forages such as hay or grain may contain low moisture content. Thus, cattle consuming hay and supplemental feed may consume more water than those on pasture. The salt content of the diet will also influence water consumption.

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The concentration of water in the body must be kept as constant as possible for normal tissue function to be maintained. Mature beef cows are comprised of approximately 65% water (NRC, 2000). This equivalates to 845 pounds of water for a 1,300 lb cow; or 105.6 gallons. Water can be lost through excretion of urine, feces, evaporation from the skin or respiration from lungs (NRC, 2000). Metabolically, cows have a low tolerance for dehydration. Data suggest a 10% reduction of body water may be fatal (Meehan et al., 2015).

Water consumption may be influenced by water quality. Providing cattle with clean, fresh water is the first step to ensuring good nutrition. Restricting water intake can lead to a decrease in feed intake (including supplement consumption) and cowherd performance. There are a number of items that affect water quality. Management considerations should be made to prevent negative impacts on water quality.