

Water Intake for Calves Fed Different Milk Allowances

Guilherme Borges Bond, Edmond Pajor

Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary. 3330 Hospital Dr NW Calgary, AB T2N 4N1.

Email: gborgesb@ucalgary.ca

Water is an important nutrient for the development and growth of dairy calves. Despite its importance, the provision of water to calves varies greatly. A recent Albertan survey found that the age at which calves are introduced to water ranges from 1 to 70 days. Furthermore, few studies have addressed how water intake is affected by milk allowance. The objective of this study is to describe water intake of dairy calves under different milk allowances.

Fourteen male Holstein dairy calves, aged 0 to 3 days old at the start of the study, were housed in individual pens in a temperature- and humidity-controlled facility in the Veterinary Science Research Station in Calgary during the summer of 2014. Calves were assigned to 2 treatment groups, according to milk replacer feeding levels: (1) *Ad libitum* (ADLIB) and (2) 10% of body weight (CONV). Free access to water and dry feed was provided from the start of the project. Daily water and feed intake were measured by weighing initial and left-over weights. Animals were weighed weekly to estimate growth rates and to correct the milk feeding scheme for the following week. Weaning occurred gradually from weeks 7 to 8 weeks, and calves were followed through additional 4 weeks.

Conventionally fed calves drank more water than the ADLIB fed calves (4.60 versus 4.01, respectively, $p < 0.01$). Main differences occurred on the weeks immediately before and after weaning. Average milk replacer intake of ADLIB calves was higher than CONV calves by one third (9.03kg versus 6.01 kg, respectively, $p < 0.001$). Overall starter ration intake was higher for calves fed conventionally (1.28 kg for ADLIB and 1.70 for CONV, $p < 0.001$), mostly driven by the pre-weaning starter intake. Calves on the ADLIB treatment gain significantly more weight on the pre weaning phase (5.83 versus 4.24kg for CONV, $p < 0.01$), but gain virtually no weight on the weaning period, when compared to the CONV calves (0.6 versus 6.8kg, respectively, $p < 0.001$). Provision of free access to water is very important for pre weaning calves. Supporting water intake during weaning is particularly important for ADLIB fed calves, mainly to facilitate the transition from milk to dry feeding, and to maintain optimal growth rates during this period.