

Helpful Benchmarks for Raising Calves



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Raising healthy calves is one of the most important and hardest tasks on a dairy farm. Healthy calves turn into healthy cows and the months from birth to weaning sets up the calf for

the rest of its life, as well as the longevity of being a high producing dairy cow. To ensure that the calves are getting the best care in order to thrive there are a few factors we need to look at including the mortality rates, morbidity rates, growth rates and colostrum management.

Mortality/Morbidity Rates: First, let's distinguish the differences between mortality and morbidity. Mortality is defined as the loss of calves before they reach maturity and can occur during the preweaning period or later. Morbidity refers to the occurrence of calves experiencing health issues including conditions like scours, respiratory infections, or naval infection. Essentially, morbidity is the "sick calf" count and mortality is the "dead calf" count. Tracking mortality and morbidity rates allows producers to quickly identify the potential cause of issues such as scours, respiratory infections and early death. Target mortality rates are found in Figure 1. Morbidity rates are separated for scours and pneumonia cases. Scours cases are defined as a case of diarrhea which requires any intervention for more than 24 hours. The target morbidity rates are found in Figure 2.

Figure 1 TARGET MORTALITY RATES	
24 Hours - 60 Days of Age	<5
61 - 120 Days of Age	<2
121 - 180 Days of Age	<1

Figure 2 TARGET MORBIDITY RATES FOR SCOURS	
24 Hours - 60 Days of Age	<25%
61 - 120 Days of Age	<2%
121 - 180 Days of Age	<1%

Pneumonia cases are defined as a case of respiratory disease which requires individual treatment with an antibiotic and the target rates are found in Figure 3.

Figure 3 TARGET MORBIDITY RATES FOR PNEUMONIA	
24 Hours - 60 Days of Age	<10%
61 - 120 Days of Age	<15%
121 - 180 Days of Age	<2%

Growth Rates: We associate growth rate with Average Daily Gain (ADG) which is very important to monitor while raising dairy calves. Ideally, the calf should double its birth weight between 24 hours to 60 days of age. Growth rates ultimately affect the timing of puberty which therefore impacts the age at first calving and lactation milk production. Properly raised calves will be healthy and ready to freshen between 22 and 24 months. This is why calves doubling their birthweight by weaning is critical because it sets the calves up to become healthy high producing lactating cows. Target growth rates are shown in Figure 4.

Figure 4 TARGET GROWTH RATES	
24 Hours - 60 Days of Age	Double birth weight
61 - 120 Days of Age	2.2 lbs. average daily gain
121 - 180 Days of Age	2.0 lbs. average daily gain

Colostrum Management: Colostrum is the most important factor for a newborn calf because it is the very first meal the calf gets and provides the calories and immunity necessary for the calf to survive. Four important things in colostrum are calories, antibodies, white blood cells, and hormones, all of which a calf needs to survive. Colostrum helps with growth rate, feed efficiency, general health, age at first calving, herd survivability, and affects 1st, 2nd, and 3rd lactation production. This is why colostrum management is very important to monitor. Check that it is always at the highest standard. All colostrum should be tested using a brix refractometer prior to feeding and producers



should strive to feed calves colostrum that tests greater than a 23% Brix. Feed enough colostrum to deliver a minimum of 200g of IgG within four hours of birth. Colostrum delivers important nutrients to the calf that

help protect the calf from harmful bacteria and infections throughout its whole life. Important to remember with colostrum management are the three Q's: Quantity, Quality, Quickly. Quantity regards feeding four quarts of high-quality colostrum within the first four hours of life. Quality stands for the colostrum being tested and only being fed at a minimum 23% brix or higher. Lastly, Quickly refers to feeding the colostrum within four hours of birth. Colostrum should be free of blood, debris, and mastitis, as well as being disease free. The target bacteria count (also known as standard plate count), target E. Coli count, and coliform target count are found in Figure 6. By having good colostrum management

Figure 5 COLOSTRUM READING

	% Brix	g IgG/ Qt	g IgG in 4 Qt
AVERAGE QUALITY (Use For Bull Calves)	20.2	26.9	107.8
	20.4	29.0	115.9
	20.6	31.0	124.0
	20.8	33.0	132.2
	21.0	35.1	140.3
	21.2	37.1	148.4
	21.4	39.1	156.5
	21.6	41.2	164.7
	21.8	43.2	172.8
	22.0	45.2	180.9
	22.2	47.3	189.0
	22.4	49.3	197.1
22.6	51.3	205.3	
22.8	53.3	213.4	
GOOD QUALITY (Use For Heifer Calves)	23.0	55.4	221.5
	23.2	57.4	229.6
	23.4	59.4	237.8
	23.6	61.5	245.9
	23.8	63.5	254.0
	24.0	65.5	262.1
	24.2	67.6	270.3
	24.4	69.6	278.4
	24.6	71.6	286.5
	24.8	73.7	294.6
	25.0	75.7	302.8
	25.2	77.7	310.9
	25.4	79.7	319.0
	25.6	81.8	327.1
	25.8	83.8	335.2
26.0	85.8	343.4	
26.2	87.9	351.5	
26.4	89.9	359.6	
26.6	91.9	367.7	
26.8	94.0	375.9	
27.0	96.0	384.0	

Figure 6

Target Standard Plate Count	<100,000
Target Coliform Count	<10,000
Target E. Coli Count	<1,000

and abiding to these standards and guidelines, your calves should be set up for a successful life.

These benchmarks are critical to follow as a guideline for your calf program in order to produce happy, healthy, high-producing lactating cows in your future herd. If you have questions or want to see where your calves are with these benchmarks or want suggestions on how to improve certain areas of your calf program, please consider reaching out to Crystal Creek® at 1-888-376-6777 to speak to one of our nutritionists or veterinarians about our nutrition and management counseling.

References available upon request.