



Key Connections in Calf Management

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What can you do to improve calf health, growth, and welfare? The National Animal Health Monitoring Service conducted a survey in 2014 and 2015 to try and answer that question. One hundred and four farms from 13 states provided data from a total of 2,545 heifer calves. Each calf was followed from birth until weaning. Based on those calves' performance, the following relationships were found for disease incidence, colostrum management, and average daily gain. Knowing these relationships can help identify both specific calves that may be at risk and general farm management practices that could improve calf productivity.

The chance of getting a disease was higher:

- In calves with lower birth weights
- In calves with lower serum IgG (IgG concentration in the blood of calves reflects the amount of antibodies absorbed from colostrum.)
- In calves without natural ventilation
- When temperature humidity index was higher

The chance of contracting cryptosporidiosis was greater:

- On large farms
- In younger calves
- In higher temperature humidity index conditions

The chance of contracting giardia (an infection of the intestine known to cause diarrhea) was greater:

- On small farms
- In older calves
- In calves experiencing a lower average daily gain
- In calves that had experienced cryptosporidiosis previously
- In higher temperature humidity index conditions

Passive transfer of colostral antibodies was more successful:

- In the Western US compared to the Eastern US
- If colostrum was heat treated (Heat treatment or pasteurization of colostrum decreases bacteria counts. Studies have shown reduced absorption of antibodies with high bacterial counts in colostrum.)
- If colostrum came from a parity 1 cow (because production was lower, resulting in a higher concentration of antibodies)
- If time from birth to feeding of colostrum was short (Ideally, colostrum should be fed within 6 hours of birth.)

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- If volume of colostrum fed was greater (for every 1 L of colostrum fed in the first 24 h after birth, serum IgG increased 0.56 g/L)
- If IgG levels in the colostrum were higher (for every 10 g/L increase in colostrum IgG, serum IgG increased 1.1. g/L)

Average daily gain was higher:

- In calves born from cows in parity 2 and greater
- In calves born as singles as opposed to twins
- In calves that did not experience cryptosporidiosis or giardiasis
- In calves fed a greater amount of protein in their liquid diet per day (every 2.2 lb of protein fed per day resulted in 0.04 lb/day of gain)
- In calves that had no diseases present versus those that had one or more disease
- In calves bedded with straw, hay, shavings, or some combination of these as compared to calves bedded with sand or no bedding
- When the temperature humidity index was less than 50

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