

Acknowledgments:

Mansfield University,
Biology Department
Laura West

Penn State Extension,
Craig Williams

Troy Veterinary Clinic,
Dr. Marsha Rosanelli

Contact:

Dr. Sarah Hazelton
Hazel-Rod Farm
339 Seymour Hill Rd.
Mansfield, PA 16933
(570)549-8174



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Hazel-Rod Farm
339 Seymour Hill Rd
Mansfield, PA 16933

Got Colostrum Quality?





**Sustainable Agriculture
Research and Education
Program Farmer Grant:
FNE15-830 Developing a
criteria to select colostrum
samples of poor quality**

The Objectives

Surveys have indicated that colostrum management on dairy farms is often inadequate. Despite the availability of on-farm measurement tools, such as the colostrometer and refractometer, the majority of dairy producers fail to assess colostrum quality. Good colostrum management is essential to the health of newborn replacements and life-long profit as it directly links to an adequate transfer of immunity to the calf. The first objective of this study was to assess the accuracy of the colostrometer and the Brix refractometer in a normal operation setting. The second objective was to create guidelines for identifying animals with poor colostrum.

The Study

Colostrum samples from 38 Holstein cows were collected and analyzed with a colostrometer and a Brix digital refractometer. Colostrum samples were visually appraised for color and consistency. Parameters such as lactation number, average milk production and somatic cell count in the previous lactation, calving difficulties, leakage of colostrum prior to calving and energy level of the pre-lactating ration were recorded.

The Results

The colostrometer and refractometer produced similar results. The refractometer was more convenient for on-farm use due to the greater durability of the equipment, smaller sample size required and ease of sample preparation.

There was no correlation between parity and colostrum quality. The average quality for colostrum visually appraised as yellow or thick was higher than that appraised as white or thin. However, there were several instances in which color and consistency did not correspond to quality. A lower energy ration (0.64 MCal/lb NE_L) in the weeks prior to calving was associated with inferior quality colostrum, as opposed to a higher energy ration (0.78 MCal/lb NE_L). In addition, one cow family was identified in which all of the members produced poor quality colostrum, regardless of parity, energy intake or any other measured variables, which suggests a possible genetic influence on colostrum quality as well.

It was not possible to develop a set criteria to select animals that would produce low quality colostrum. Current industry recommendations to test the quality of all colostrum samples is warranted, due to the numerous individual and possible genetic variables that can impact colostrum quality. In particular, colostrum from animals that experienced a lower energy intake prior to calving or that produced colostrum that visually appraised as thin or white in color should receive a higher priority for quality testing.