

Ruminal Acidosis in Dairy Cows: Balancing Physically Effective Fiber with Starch Availability

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While it is critical to meet the energy requirements of high producing ruminants, digestive disturbances must be avoided to ensure that meat and milk is produced from healthy animals in an efficient and cost-effective manner. Subacute ruminal acidosis decreases the digestibility of fiber in the rumen, decreases feed conversion efficiency, increases feed costs, lowers milk production, and increases laminitis. It can be difficult to identify animals suffering from subacute acidosis because the clinical signs are not unique to acidosis. In research we continuously monitor rumen pH to understand the factors that predispose cows to acidosis. An example of a rumen pH profile for a lactating dairy cow is shown in Figure 1. Ruminal pH varies considerably during the course of a day, with drops in pH following meals due to the high proportion of fermentable carbohydrates in the diet. In the case of subacute acidosis, ruminal pH drops below the ideal conditions for the fiber digesting rumen microorganisms. However, the pH recovers to pre-feeding levels as the acids are absorbed from the rumen and as the buffering capacity of the rumen increases due to salivation. However, subacute acidosis can develop into acute acidosis, and in that case, immediate intervention is critical.

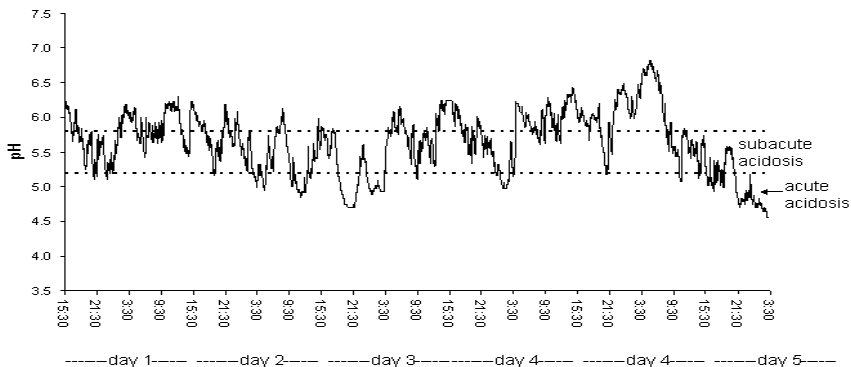


Figure 1. Ruminal pH profile in a dairy cow (subacute acidosis, pH < 5.8; acute acidosis, pH < 5.2).