

Rumen Fluid Sampling: Diagnosing Rumen Acidosis

Ruminal acidosis can be diagnosed by collecting samples of rumen fluid by rumenocentesis and measuring the pH of the fluid.

Collection Protocol

1. Samples of rumen fluid should be collected from a minimum of 6 early lactation cows and 6 mid- lactation cows.
2. The samples of rumen fluid should be collected 2 to 4 hours after concentrates have been fed in component fed diets or 4 to 8 hours after total mixed rations have been fed.
3. Nordlund has developed a system for classifying the results of rumenocentesis. If 30% or more of the cows in either groups have ruminal pH's of less than 5.5, the group has a problem of ruminal acidosis. If more than 30% of the early lactation cows have ruminal acidosis, than there is a problem with adaptation of the cows to lactating cow rations. If more than 30% of the mid-lactation cows have ruminal acidosis, than there is a ration formulation or feeding problem.

Collection Technique

1. Collection site is from the ventral sac of the rumen which should be identifiable 15-20 cm caudoventral to the costochondral junction of the last rib.
2. The site is clipped and surgically prepped.
3. The cow should be lightly sedated (20-25 mg Xylazine IV for adult cow) and preferably hobbled.
4. A 16 ga 5 in stainless steel needle is used. Insertion through the skin is the most painful to the cow. When the cow calms down, the needle is inserted to the hub and rumen fluid aspirated with a 10-20 ml syringe.
5. 3-8 ml of rumen fluid uis sufficient. The pH should be measured immediately using pH paper or pH meter. We prefer the field ready, compact pH meters but narrow range papers that span the pH range of 4.0-7.0 showing gradients of 0.20-0.30 units are acceptable.