

Title: Ruminant In Situ Digestion Trials

Species: Ruminants

Last Updated: 9/27/2006

Purpose

In situ digestion trials are studies performed by incubating small amounts of various feed types in the rumen of a cannulated animal. The experimental unit may be the feed bag with replicates in one animal, or multiple cannulated animals may be used with replicate samples across animals.

Potential Impact on Animals

Once animals are surgically cannulated and allowed to heal, the in situ digestion trials themselves have little to no impact on the animal other than restraint to add/remove feed pouches from the rumen.

The quantity and size of feed bags used can potentially impact the animal's ability to consume and digest feedstuffs. The total biomass of feed stuffs incubated at one time may not exceed 3% of the rumen ingesta¹. The size of bags used should be appropriate for the quantity of sample being used.

Procedure Description

1. Animals are cannulated as specified in SOP "Rumen Cannulation".
2. The animal is placed in a stanchion, chute, or if halter broke tied in a stall.
3. Protective gloves are put on both hands. At least one arm should be gloved using a full length obstetric sleeve in case exploration of the rumen is required.
4. The rumen cannula plug is removed according to the manufacturer's directions.
5. Feed bags are attached or removed from the cannula or plug, depending upon the style of cannula. Cannulas are monitored daily for excessive leakage and damage. Anytime the plug is removed all bags are observed to ensure their integrity and numbers. Any bags degrading more than normal or having lost their ties are repaired or removed. If a bag has been lost and cannot be retrieved the attending veterinarian will be contacted.
6. Samples removed are placed in sealed containers and handled and disposed of in the laboratory according to Safety Office approved policies and procedures.
7. Gloves are removed using appropriate aseptic technique and discarded.
8. The plug is replaced in the cannula according to manufacturer's directions and the animal returned to the herd.
9. Hands and arms are washed with a disinfectant soap and tap water.

References

1. Hristov and Broderick, 1996; J. Dairy Science. 79:1627-1637.