

SOUTH DAKOTA–Ruminal Net Wrap in Cows Fed Ground Hay

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Plastic net wrap is a common binding material for large round hay bales, but cow death has been associated with net wrap buildup in the rumen. Utilizing it for chopped or ground forage for winter feeding is common, but the net wrap is rarely removed prior to grinding due to time constraints, resulting in pieces of plastic being fed to cattle. Farmers have experienced cows losing weight with diarrhea during a relatively short time frame, exhibiting symptoms similar to Johne's or hardware disease. No treatments worked and when posted following death, a wad of net wrap and feed was removed from the digestive tract. This has been termed "plastic" or "software" disease.



Start of net wrap ball being removed through rumen cannula; ~1/4 of the ball is outside the cow.



Net wrap after removal. Net wrap removed through rumen cannula; and feed entangled was ~3' when laid out flat.



Net wrap ball with placental tissue wound up in it, found in a cow that had recently calved.

To quantify how rapidly net wrap builds up, six ruminally cannulated Angus cows located at the SDSU Cottonwood Field Station were fed hay ground without net wrap removal. Three cows had a small piece of net wrap (4.72" x 4.72") placed in the rumen (Net+) at the beginning of the feeding period to determine if prior feeding of net wrap influenced further accumulation, while 3 cows had no net wrap in the rumen at initiation of feeding (Net-). Cows were fed grass hay (88% DM, 12.5% CP, 60% TDN) to maintain weight and body condition, purchased from a single source and ground two times during the 140-day feeding period using a 5" screen. Bales had 1½ wraps of Pritchett® Net Wrap Green per bale.

Study results indicate a significant amount of net wrap (~0.91 lbs DM) accumulated in the rumen of all cows during the 140-day feeding period to displace approximately 1.15 gallons of rumen contents. The long-term impact of net wrap accumulation is unknown. However, since plastic material is not digestible, it is likely that net wrap will remain in the rumen throughout the cow's life, potentially resulting in long-term negative impacts (i.e., rapid weight loss, diarrhea, and death). Cases of cows dying from complications associated with the buildup of net wrap or other plastic materials in the rumen are becoming more frequently documented. Further research is needed to understand long-term implications.

For complete study results, contact Adele Harty at adele.harty@sdstate.edu.