Testing Effectiveness of Surfactants on Stable Foam Involved in Primary Ruminal Tympany

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Through every livestock manager’s ownership of ruminants, or polygastric animals, ruminal tympany (bloat) is an issue that is very commonly encountered. In primary ruminal tympany, more commonly known as frothy bloat, an imbalance in the rumen forms a stable foam which traps gas inside the animal. This condition can often result in death if not quickly treated. The treatments for primary ruminal tympany, however, often vary from person to person. Veterinarians will often recommend the use of poloxalene, while others may suggest the use of arachis oil, dimethicone oil, or veterinary-grade mineral oil, all of which may be considered within the realm of home remedies. Thus, the experimentation of which surfactant is truly the most effective would allow livestock owners to be sure of the treatment they are purchasing. In this particular experiment, a synthetic stable foam was created with Dawn soap and water, to which a fixed amount of each surfactant was added. As a control group, water was added and stirred in, so as to create a point of reference. On average, mineral oil resulted in 36mL of the solution, poloxalene resulted in 17.3mL remaining, arachis oil resulted in 34.7mL, dimethicone oil in 39.3mL, and the control group in 35.3mL. It can thus be assumed that with a slight margin of scientist error, all oils stayed within 5mL of the control, whilst poloxalene resulted in a nearly 20mL drop in volume. Overall, the data suggested the irrefutable effectiveness of veterinary-strength products in comparison to home remedies.

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