

pH MATTERS

by JONES-HAMILTON CO



BeefUp Reduces Ammonia, Improves Cattle Hoof Health on Feed Lots

Jones-Hamilton Co. has dominated the pH and ammonia control market in commercial animal production for over 30 years with primary application in the poultry and dairy sectors. Extensive research and in-field use has proven that 100 lbs. of sodium bisulfate will sequester 55 lbs. of ammonia.

After learning about our potential to lower pH and eliminate ammonia, researchers at Iowa State University initiated a study to be conducted with Shane Jurgensen at Provisions Cattle Company in Nevada, Iowa. The goal was to evaluate the effectiveness of **BeefUp™** (sodium bisulfate) to lower the pH of the manure pack, decrease ammonia emissions and improve overall hoof health when applied to the manure pack, and feeding and drinking areas.

During the study, the product was applied weekly to feed and water bunk aprons and every 8 weeks to the bedding pack at a rate of 150 lbs./1,000 square feet. Cattle stayed on feed for ~200-210 days.

Control pH and Ammonia with BeefUp

Ammonia related respiratory issues are a significant challenge, especially in hospital and receiving pens. *“Ammonia is a huge thing when it comes to health,”* commented Jurgensen. *“When it’s a 110°F the ammonia is high; when it’s negative 30°F the steam in the ammonia is worse.”*

BeefUp is a dry, mineral acid that controls ammonia and lowers pH to biologically effective low levels. Low pH has been shown to create an unfavorable environment for the bacteria (**Table 1**) that can negatively impact hoof health and promote secondary infections. This can be especially impactful in high traffic areas.

“I spread BeefUp where cattle spend the brunt of their time. It cut the ammonia and cleaned the air.”

Relationship Between pH and Bacteria Growth				
pH	E. coli	Clostridium	Salmonella	Pasteurella
7.4	Heavy	Heavy	Heavy	Heavy
7.0	Heavy	Heavy	Heavy	Heavy
6.8	Heavy	Heavy	Heavy	Moderate
6.5	Heavy	Heavy	Heavy	Light
6.4	Heavy	Heavy	Heavy	Light +
6.3	Heavy	Heavy	Heavy	Very Light
6.2	Moderate	Heavy	Heavy	Very Light
6.0	Moderate	Heavy	Moderate	Very Light
5.8	Light	Heavy	Light	Very Light
5.7	Light	Heavy	Very Light	None
5.4	Very Light	Moderate	Very Light	None
5.2	Very Light	Moderate	Very Light	None
5.0	None	Light	Very Light	None
4.8	None	Light	None	None
4.5	None	Very Light	None	None
4.3	None	None	None	None

Table 1. Impact of pH on Bacteria Growth (Hardin and Roney)

“...Cattle were getting up better because of less pain, less problems.”

BeefUp Improves Performance from the Ground Up

In addition to the improvement in air quality, Jurgensen also noticed an improvement in hoof health and lameness scores. *“I could tell something was happening. There became a peace of mind going into these test pens.”* At the end of the study, there was a 74% improvement in normal hoof scores in the treated group (30% normal in control vs 53% normal in treated).

Given the environmental and overall hoof health improvements, Provisions Cattle Company will continue to apply **BeefUp** for ammonia and pH control. *“We got better feed conversions, better cost to gain. Why wouldn’t we use every tool in your toolbox?”*

Provision Cattle Company

is a custom cattle operation, specializing in finishing. Located in Nevada, Iowa, Provision is permitted for 5,200 head and has 25 pens, including 13 in monoslope barns, with a capacity of 60-180 head per pen. Purchased from Couser Cattle in 2023, the feedlot operates under low stress handling practices and leverages Performance Beef software to ensure rations are fed correctly and billing is accurate. Iowa State University vets and nutritionists develop feeding and treatment plans for animals onsite.



Watch Shane's Story



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