

Anhydrous Ammonia for Legume-Grass Silage

by Randy Shaver

Introduction

Anhydrous ammonia has long been added to corn silage to increase nitrogen content and improve its aerobic stability. Some recent popular-press articles made mention of farmers that either use or have used this additive on legume-grass silage. This article will address the potential benefits or risks associated with this practice.

Are there any benefits to adding anhydrous ammonia to legume-grass silage?

Treating legume-grass silages with anhydrous ammonia increases the nitrogen content. However, because of the inherently high nitrogen content of legume-grass silages and the high solubility of non-protein nitrogen, the addition of anhydrous ammonia is of little value to lactating dairy cows. In contrast to legume-grass silages, anhydrous ammonia treatment of corn silage inhibits the growth of molds and yeast and improves its aerobic stability during feed-out.

Are there any risks associated with adding anhydrous ammonia to legume-grass silages?

Anhydrous ammonia treatment of legume-grass silages tends to raise silage pH and reduce dry matter recovery from the silo. In addition, treatment of legume-grass silages with anhydrous ammonia increases the risk of a clostridial fermentation causing silage to have a high ammonia and butyric acid content. This can adversely affect DM intake, milk

production, and cow health. The tendency for clostridial fermentation is greatest when added to legume-grass silages with 30% DM or less and when more than 5 to 7 lb. anhydrous ammonia is added per as-fed ton of silage. It is often difficult to consistently control DM content of legume-grass silages and anhydrous ammonia application rate during harvest. It appears that the risks associated with treatment of LGS with anhydrous ammonia exceed any potential benefits of this practice. Presently, we do not recommend that anhydrous ammonia be applied to legume-grass silages.

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