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Propionic acid preservatives for baled silages

Varied application rates are tested on ensiled alfalfa–grass forages in a new article in *Applied Animal Science*

Champaign, IL, March 29, 2021—Propionic-based preservatives are commonly overlooked when ensiling baled forages, even though they are often used for storing dry hay. Rain damage to wilting forages can jeopardize forage quality, as well as suitability for ensiling, in part by leaching plant sugars that serve as the primary substrate for fermentation. Additional ways to enhance storage ability, silage fermentation, and aerobic stability of damaged forage crops could provide critical management tools for producers. A recent [article](#) in *Applied Animal Science* evaluates four preservative treatments of propionic-acid-based products applied to alfalfa–grass forages ensiled at two moisture concentrations and damaged by a rainfall event during wilting. The study measures storage efficiency, nutrient preservation, fermentation characteristics, and subsequent aerobic stability.

Propionic-acid-based preservatives improved the aerobic stability of round-bale silages, but the article cautions that the added investment must be an important part of any comprehensive management plan. “Preservative application, regardless of rate, was effective at improving the aerobic stability of alfalfa–grass baled silages compared with untreated controls,” said lead author Wayne K. Coblenz, US Dairy Forage Research Center, USDA-ARS, Marshfield, WI, USA. “While this option adds cost, it still may be a viable tool for overall production management, particularly in targeted situations where periods of exposure to air are likely during seasonal transitions and before consumption by livestock.”

Most modern balers come equipped with applicators for preservatives, or they are available for factory installation at the time of purchase. Propionic-acid-based products are commonly used to treat dry hay. “In addition, propionic-acid-based preservatives have been used in conjunction with fermented forages and high-moisture corn, demonstrating anti-mycotic properties that specifically limit heating and improve aerobic stability,” added Coblenz.

The article also provides in-depth information on varying application rates of a propionic acid-based preservative on storage efficiency, nutrient preservation, fermentation characteristics, and aerobic stability of alfalfa–grass silages. David K. Beede, PhD, editor in chief of *Applied Animal Science*, said, “Use of propionic acid-based products is not common to improve storage and nutritional quality of ensiled baled forages. Whereas this treatment adds cost, application of a propionic acid-based product might be a viable tool in some forage management scenarios, such as situations where periods of exposure to air are likely.”

The article appears in the April issue of *Applied Animal Science*.

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Notes for Editors

“Nutritive value, silage fermentation characteristics, and aerobic stability of round-baled, alfalfa–grass forages ensiled at two moisture concentrations with or without a propionic-acid-based preservative” by Wayne K. Coblenz and Matthew S. Akins (DOI: <https://doi.org/10.15232/aas.2020-02128>), *Applied Animal Science*, Volume 37, Issue 2 (April 2021), published by FASS Inc. and Elsevier Inc.

Full text of the article is available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or arpas@assoqh.org to obtain copies. To schedule an interview with the authors, please contact Wayne K. Coblenz at wayne.coblenz@ars.usda.gov.

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