

# Adams Advanced Nutrition, Inc.

Doug Adams, PAS  
PromiseLand Feed & Seed  
9187 Myersville Road  
Myersville, Maryland 21773  
240-818-8401 or 301-293-8444  
E-mail: [advadams@verizon.net](mailto:advadams@verizon.net)  
WEB: [www.rennut.com](http://www.rennut.com)



## How Does Your Forage Smell?

Different smells can help you determine what is actually happening in the silage. It can also provide you with tips regarding certain problems that may be occurring during the

silage fermentation process. Dr. Limin Kung, noted for his research of silages and preservation, shares the following advice on what you can learn from these silage smells and their impact to a dairy operation.

Sweet-smelling silage is not always an indicator of the best fermentation because the sweet smell is probably coming from high concentrations of alcohols produced by spoilage yeast and undesirable bacteria. High concentrations of alcohols are commonly found in both high-moisture corn and corn silage, and are usually associated with a significant amount of dry matter loss. These silages are also very likely to heat when exposed to air in the silo, bunker or feedbunk.

In contrast, foul smelling silage is a pretty good indicator that something has gone wrong. There are several foul odors you may encounter in silages. First, the butyric acid smell – which smells like baby vomit – is common in alfalfa and grass silages that are high in moisture content. This acid is produced by bacteria called *Clostridia*. In addition, these silages may also smell fishy and ammonia-like because of the excessive breakdown of protein and resulting formation of compounds known as polyamines.

You probably will never smell these odors in silages if the dry matter content is greater than 35 to 40 percent because *Clostridia* do not grow well in dry silages.

Ironically, silages with high butyric acid content are very stable when exposed to air and will not overheat, but are also characterized by large losses in dry matter, high ammonia and soluble protein content, poor digestion, and low energy. Consumption of large quantities of silage with a high concentration of butyric acid may also sometimes lead to subclinical ketosis.

Another foul smell is the musty/moldy odor that comes when silages have undergone aerobic spoilage, which smells like rotten socks. Excessive amounts of air (as a result of poor packing, poor covering, slow feedout rate, or poor face management) lead to an explosion of spoilage yeasts that is then followed by rapid growth of molds and spoilage bacteria. Moldy silages should not be fed to cows. Sometimes, but not always, this silage may contain high concentrations of mycotoxins. Silages that smell moldy are usually hot and steamy (or have gone through a heat). Feeding aerobically spoiled silage can lead to depressed intakes and production.

Sometimes silages have a very sharp smell of vinegar. Vinegar is the common name for acetic acid, which is an end product of many organisms that are active in silage fermentation. Extremely wet corn silages often have high concentrations of acetic acid. In the past, silages that were high in acetic acid because of uncontrolled fermentation were considered undesirable because there was some evidence that such silages depressed intake.

Research shows, however, that silages inoculated with *Lactobacillus buchneri* undergo a “controlled” acetic acid fermentation to help improve aerobic stability and when fed, they do not depress intake. Other inoculants may also provide the same results (check out inoculant products from Renaissance).

A mildly sweet tobacco/molasses smell in corn silage is a definite indicator of heat-damaged protein. In all silages, when this smell is noticed you can be sure of excessive heating. The silage should be tested for bound nitrogen, also known as unavailable nitrogen or acid-detergent insoluble nitrogen (ADIN), and the protein requirements adjusted in the ration accordingly.

In some silage, a nail polish-like smell may be present. Compounds like phenyl-acetic acid may be responsible for this smell. To date, researchers are unsure of the significance of this odor in silage.

Arguably, the best silage fermentation – called homolactic acid fermentation – should have little or no distinct odor because the dominant acid produced in this process (lactic acid) has almost no smell. Silage should be wilted to the correct moisture, chopped to the correct length, and silos, bags, and bunkers filled quickly, packed tightly and sealed promptly.

Good silage has a positive impact on productivity and profitability. What is planted – and how it is harvested and preserved – is critical to the end results.

Smell the silages on farms! It might make a difference.

*(edited from an article by Mycogen)*

**THINKING ABOUT SEED FOR NEXT YEAR?  
TAKE ADVANTAGE OF OUR EARLY ORDER  
DISCOUNTS & SAVE!**

**Plant For Milk! Plant For Results.  
Wolf River – Mycogen – Garst – King's - AgriCulver  
CALL ME FOR DETAILS.**

*Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows? Call me! My goal is to help you. That's Renaissance's commitment!*

**VOLUME 6 – Number 9 – September 2007**

**RENAISSANCE... for RESULTS!  
MAKING A DIFFERENCE YEAR-ROUND  
QUALITY & SERVICE YOU CAN COUNT ON**

# An investment ~

## **PRESERVATIVES for RESULTS!**

It's time to think about preservatives and inoculants that can help preserve your forages this year. I can offer you quality **BIOTAL** and **KEMIN** products, which are research-tested for results time after time. These products can help maximize forages, helping to improve productivity and profitability. Get the facts and plan to use one of these excellent products this fall – an investment in quality nutrition! You (and your cows) will appreciate the results... preservatives and inoculants from Renaissance!



## **Forage inventories... ready for fall and winter!**

In a year of drought and variable weather patterns, it is critical to know your forage inventories. Many areas have had adequate rainfall, while others have been lacking the necessary rain to make a difference in their crops this year. Do you know what your forage inventories are going to be? Don't wait until fall (or winter) to check this out. Planning ahead, when the possibility of forage shortages exists, can help to save time, money and frustration later on. Once you have determined that there is a shortage, and the amount of available forage you have to work with – then you can begin to strategize how you are going to meet the needs and demands of your livestock this winter. The options are many ~ but forward planning is important. Here are a few suggestions to consider, if forage shortages are possible on your farm.

- Plant specific forage crops this month! Check out what is available and plant as soon as possible, if you are going to need a fall cutting to aid forage supplies.
- Locate producers that have forages to sell! Make sure you purchase not only on price, but also on the overall quality and nutrient value of these forages.
- Work closely with your Renaissance Nutritionist to determine the most effective ways of feeding what you have – whether home-grown or purchased forages.
- Make sure all the cows in your herd are paying their way! This might be a good time to cull cows that are lagging or have not been productive.

Many more possibilities exist that can help you through these coming months! I will be happy to work with you to discover the best solution for your situation.



**Adams Advanced Nutrition, Inc.**

9187 Myersville Road  
Myersville, Maryland 21773

[www.rennut.com](http://www.rennut.com)

# *September 2007...*



*forage inventories... ready for fall and winter!  
how does your silage smell?*

*Check it out.*