



DAIRY INFO

W-S Feed & Supplies, Ltd.
1805 Sawmill Road
Conestogo, ON N0B 1N0
Canada
1.800.265.2203
www.wsfeeds.ca
Taking service to another level!

How Does Your Forage Smell?

Different smells can help you determine what is actually happening in your 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 forage fermentation, 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*. Additionally, 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 35-40%, 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 (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. Forage 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)



Interested in discussing topics in this newsletter, or to do a better job feeding and managing your cows? Call us today. Our goal and commitment is to help you!

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SOLUTIONS FOR SUCCESS

Looking ahead...

With the harvest underway, it is time to consider late summer/fall planting and buying seed for 2014! Quality, researched-tested seed can make a difference in your feeding program: grasses, small grains, alfalfa, BMR Sorghum-Sudangrass, corn hybrids for silage or grain... we can provide what you need and help to ensure the seed you select is a "fit" for your soil, acreage and nutritional program. Check it out and invest today in quality forage for next year. Selecting the best seed can impact productivity in the future. That's what we can provide! Ask your W-S sales person. Call today!

**W-S Feed & Supplies ~
quality for a difference!**

Forage inventories... are you ready?

In a year of variable weather it is important to know your forage inventories ahead of time. Have you taken time to calculate your forage inventories? Don't wait until late fall to check this out. Planning ahead when there may be a possibility of a forage shortage can help to save time, money and frustration. Once you have determined if there is a shortage – and the amount of available forage you have to work with – then you can begin to strategize how to meet the needs of your livestock this coming winter. There may be many options, but forward planning is critical. Here are a few suggestions to consider, if forage shortages are possible on your farm:

- Plant specific forage crops this month! Check out availability and plant as soon as possible, especially if you are going to need a fall cutting to aid forage supplies for the coming season.
 - Locate producers (in your area) that have forages to sell, making sure you purchase not only on price, but also on quality and nutrient value.
 - Work closely with your W-S Feed nutritionist to determine the most effective ways of feeding what you have (home-grown or purchased).
 - 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.
- We will be happy to work with you to discover the best solution for your farm.



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