

# DAIRY PIPELINE

Volume 34, No. 7

September 2013

Department of Dairy Science

Blacksburg, VA 24061

540/231-6870 Fax: 540/231-5014

[www.vtdairy.dasc.vt.edu](http://www.vtdairy.dasc.vt.edu)



## IS YOUR SILO READY FOR HARVEST?

Silo maintenance is an overlooked area on many dairy farms. Down time during harvest can be a costly mistake—one that can be avoided with preventive maintenance. Most farmers start filling an empty silo first in a new harvest year, which allows the silo to be thoroughly inspected. If a considerable amount of feed is still in the silo it will be hard to assess the structure. Silage can produce acids that will over time erode concrete or unprotected metal and lead to severe silo deterioration. Removal of all old feed will allow the inside surfaces to be examined along with the outside. Some key areas to look for damage on horizontal concrete bunker silos:

- Cracked sidewalls = Leaky silos allowing for more air ingress, leading to more problems with heating and spoilage resulting in feed loss, or structural failure during packing or after which can cause serious injury or death.
- Cracked concrete or pavement, or rutted floors = allows for air pockets, pooling of water or spoiled seepage, and loss in tractor or truck traction.

Many dairy farms throughout Virginia also use trench silos—an unlined horizontal silo—typically with dirt sides. (A trench silo should be lined if it becomes a permanent structure.) These structures with open dirt floors and side walls need considerably more maintenance and work than a typical concrete silo. These trench silos with dirt walls and floors deteriorate over time, due to weather and use. Additionally, the dirt walls of these silos are never smooth which allows for air pockets, seepage, standing water, and a number of other problems that can lead to poor quality feed and management issues.

Another type of silo that is often used is the upright silo. Maintenance and pre-harvest inspection on an upright silo is more involved because they have lots of moving parts that need to be inspected along with the structure itself. There are unloader suspensions and cables, silo chutes, doors, fill pipes, hydraulic lifts, ladders, cages, roofs,

hoops, and the walls of the upright itself to inspect. It is best to make a checklist of every part to be inspected—right down to the smallest one. The bolts and nuts that hold the hoops in place and the concrete slab or walls the silo might be sitting on or made out of can cause an entire upright silo to collapse if not properly secure. The Corn Belt of the United States over the last few years has seen several fatal accidents that occurred as a result of upright silos failing and either exploding or collapsing.

A good start to a checklist for any type of silo could include the following:

1. Cracked concrete sidewalls.
2. Cracked concrete flooring.
3. Uneven floor pad - Places where water or seepage can settle.
4. Dirt side walls or floor showing considerable damage from tractors or weather - consider lining.
5. All mechanical parts in good to great working order.
6. All mechanical parts are free from debris or old feed - which could cause malfunction or fire.
7. Upright silo is standing in vertical position with no tilting.
8. Upright silo walls and roof are in good to excellent condition - repairs made if needed.
9. Correctly sized silos = incorrect sized silo can affect silage quality and feed-out rates.

It is important to seek professional opinions about a silo structure that may need repairs. Improper repairs or ignoring the problem will be costly, if not fatal in the end.

A safety checklist should be in place for any silo on the farm, whether horizontal or vertical. If you need assistance developing a pre-harvest safety checklist, your local Extension Office can help put one together.

—Cynthia Martel  
Extension Agent, Franklin County,  
(540) 483-5161 | [cmartel@vt.edu](mailto:cmartel@vt.edu)

“Silage can produce acids that will over time erode concrete or unprotected metal and lead to severe silo deterioration.”



## Upcoming Activities

**Sept. 10 - Pasture Management Walk w/ Organic Valley.** Learn about Rotational Grazing systems, soil health and fertility, and types of grasses and legumes to plant. Byron Brooks Farm in Franklin County, 5:00 PM. Contact [cmartel@vt.edu](mailto:cmartel@vt.edu) or (540) 483-5161.

**September 27**  
[2013 State Fair Junior Dairyman's Contest](#),  
 The Meadow Event Park, Doswell, VA

**Oct. 1 - 5 -- World Dairy Expo, Madison, WI**

*If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office*

“Proper packing to ensure good silage density is crucial.”

For more information on Dairy Extension or to learn about current programs, visit us at [VTDairy](http://VTDairy) —Home of the Dairy Extension Program at: [www.vtdairy.dasc.vt.edu](http://www.vtdairy.dasc.vt.edu).



R.E. James,  
 Dairy Extension Coordinator  
 & Extension Dairy Scientist,  
 Dairy Nutrition

## DR. GONZALO FERREIRA JOINS VIRGINIA TECH DAIRY SCIENCE

We are pleased to welcome Dr. Gonzalo Ferreira as our new dairy management extension specialist. Dr. Ferreira is from Lincoln, Argentina where he has been an extension professional and dairy business consultant since 2008. Prior to that he was a regional leader for ruminant species in Latin America for DSM Nutritional Products. He received his Ph.D. from Ohio State University and his M.S. from the University of Wisconsin-Madison. He earned his B.S. from the Catholic University in Buenos Aires. His research in graduate school involved the nutrient evaluation of corn silage and the influence of biotin on metabolism of dairy cattle. He has served as an invited lecturer on dairy nutrition at the University of Buenos Aires and the Catholic University of Argentina and as a teaching assistant at both Ohio State and the University of Wisconsin. Dr. Ferreira brings a wealth of experience to our department from his excellent graduate education, industry experience with DSM and extensive experience with dairy producers in Argentina. He will provide leadership in development of financial management and decision making tools for dairy producers. Dr. Ferreira will be traveling extensively through the state during the next few months to gain a better appreciation of our dairy industry and the challenges that it faces.



### SILAGE DENSITY

Forage quality is one of the most important factors affecting the level of milk production. Some of the factors affecting forage quality, such as weather, are out of our control. Other factors like forage variety, proper planting, harvesting time and silage density can be controlled.

After getting a good crop harvested it is extremely important to ensure it is properly

stored. Proper packing to ensure good silage density is crucial. Silage density in a trench or bunker silo is related to many factors, including forage dry matter, packing time, weight of the tractor, and silo filling rate.

Good silage density is important for many reasons. Oxygen is the enemy of good silage fermentation. Densely packed silage reduces the amount of oxygen that will be present. Proper silage density is also affects dry matter. Reduced silage densities result in greater dry matter losses (see table 1).

By taking samples from various places in the silo silage density can be calculated. If you are interested in testing the silage density of your silo please contact your local dairy extension specialist to schedule a visit.

—John Currin,  
 Extension Dairy Veterinarian  
 (540) 231-5838 | [jcurrin@vt.edu](mailto:jcurrin@vt.edu),

Silage Density lbs DM/ft <sup>3</sup>	Dry Matter loss at 180 days (%)
10	20.2
14	16.8
15	15.9
16	15.1
18	13.4
22	10.0

Table 1. Ruppel et al 1992 JDS

### DAIRY PRODUCER INPUT SOUGHT REGARDING GENOMICS

Genomic testing of dairy cattle is a new technology that may be used for herd improvement.

Our multi-state dairy research and extension group (Washington State University, University of Idaho, and University of Florida) is investigating new fertility traits for which genomic technology might be used. We are interested in what dairy producers have heard or thought about genomic testing.

We invite you to share your thoughts by completing a short survey at: <https://www.surveymonkey.com/s/6G8L8WS> The survey will take approximately 5 minutes to complete. All responses will be anonymous. Thanks for helping us understand dairy producer opinions and educational needs related to genomics.

—Joe Dalton, University of Idaho  
 —Dale Moore, Washington State University