

DAIRY PIPELINE

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A CURRENT UPDATE ON BALEAGE TECHNOLOGY

—Gonzalo Ferreira, Extension Dairy Scientist, gonf@vt.edu

Last March, Dr. Wayne Coblenz, a forage scientist from the USDA-Dairy Forage Research Center (Marshville, WI), updated us about baleage technology during our 2016 Area Dairy Conference. Following are some of the main take-home messages from Dr. Coblenz:

- ◆ Well-made baled silage will often exhibit better forage quality characteristics than corresponding hays.
- ◆ Hay usually loses more leaves and requires more wilting time, which increases cell respiration and exposure risk to rain damage.
- ◆ Baleage has little or no spontaneous heating and less storage losses related to weathering (outdoor storage).
- ◆ The goal of baleage is to obtain a good anaerobic fermentation with a quick decrease of pH to ensure conservation of nutrients.
- ◆ The quality of the fermentation is related to the type of forage, as there are differences in sugar concentrations (corn and sorghum > small grain crops > legumes) and buffer capacities (legumes > small grain crops > corn and sorghum).
- ◆ Promote conditions that promote growth of desired bacteria (lactic acid producing bacteria, LAB) and reduce conditions that promote growth of undesired bacteria (*Clostridium* sp.).
- ◆ The best fermentation occurs when the forage has high concentrations of moisture. However, ensiling too wet forages

(>70% moisture) can lead to clostridial fermentations, which are not desired. Target for a moisture concentration range between 45 and 55%.

- ◆ Too wet baleage will result in very heavy bales, which can be less safe to handle or can overload equipment (e.g., loaders).
- ◆ Increasing the bulk density also enhances the anaerobic fermentation. For this, reduce the ground speed and decrease the windrow “thickness”, which will increase the revolutions per bale.
- ◆ Consider the operative capacity of your baling equipment when mowing your pastures. Exceeding the baling capacity will increase wilting time (due to waiting), therefore increasing losses and limiting fermentation.
- ◆ The fermentation for chopped haylage is typically better than for non-chopped baleage (there is greater exposure of sugars in chopped haylage, which enhances the fermentation). Because of this, using inoculants is more important for baleage than it already is for haylage.
- ◆ Adequate wrapping is critical to obtain good quality haylage. Wrap as quickly as possible (within 2 hours since baling) and use at least 4 layers of 25-micron film. In southern states (higher temperatures) or for long-term storage increase wrapping to 6-layers.



IT HAS BEEN A GREAT RIDE!

—R. E. James, Extension Dairy Scientist, Dairy Nutrition, jamesre@vt.edu

As I reflect upon my career I find that the most important things have been the people during my 40+ years in Blacksburg. It seems like yesterday that I arrived at Virginia Tech to begin my graduate studies in

dairy nutrition under the guidance of Dr. Carl Polan in January of 1972. It was during this time that the Set-a-Side program was instituted under the forward thinking of many Virginia dairy producers and the leadership of the Virginia Tech Dairy Science Department. This

Upcoming Events

See [VTDairy](#) for details.

June 10-11, 2016

Franklin County Open Youth Livestock Show

June 10-11, 2016

Maryland [Show like a Pro Workshop](#)

June 17, 2016

State Youth Dairy Judging Workout, Shenandoah Co.

July 5, 2016

7:00pm - Rhodes Driver Dairy – Heat detection and reproduction records management

July 26, 2016

7:00pm - Mastitis identification and management

August 9, 2016

7:00pm – SUDIA, milk promotion, ice cream social

August 1, 2016

State 4H/FFA Dairy Youth Field Day
Clarke & Frederick Counties

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 at least 1 week prior to the event.

visionary action has led to the establishment of our department being a national leader in dairy research and teaching. I

firmly believe that our department would not exist today without the Set-a-Side and our close relationship with our industry.

I owe a great deal of my success and enjoyment of my career to Dr. Carl Polan, my graduate student advisor here at Virginia Tech. Dr. Polan taught me as much about life as science. Granted I came to appreciate the joys of doing research and especially seeing it applied on dairy farms both in Virginia and around the world. However, I also learned life balance between my work, my family and myself and that everyone

has something to offer us. The life lessons I learned from Dr. Polan have served me well. I only wish that more people had that special opportunity that I have had with this wonderful man.

My fellow graduate students during my students in the 70's have become my closest friends and are like family. Some of this is due to the great environment for learning and collegiality created by the wonderful faculty and staff that existed then and continue to “work” in the Dairy Science department. I could fill up this page with their names, but special credit goes to the exceptional leadership provided by Drs. Cragle, White, Vinson, Nickerson and Akers. They established an environment which encouraged tremendous cooperation and a strong desire to serve the dairy industry of Virginia through our teaching, extension and research missions. I am pleased to say that the current faculty

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shares this same passion for our industry that existed when I began my studies here in 1972.

Prior to transitioning into a more significant role in extension, I had the pleasure of teaching so many outstanding students. I thank the parents who shared their children with us during a few short years of their lives. There was nothing more gratifying than seeing their personal growth while they were here and especially seeing the contributions they have made in the years since. Dr. Bill Etgen reminded me often that this was the greatest reward for a teacher and he was so right. It's also been great having the opportunity to teach their children and tell them stories about their parents! Finally, as I shifted into an extension role, it has been equally satisfying to have a closer relationship with our dedicated extension agents and dairy producers in Virginia.

Through my experiences I learned of the passion these individuals have

for their work and for serving Virginia agriculture. I am indebted to the members of the Virginia State Dairyman's Association and Virginia State Feed Association for their friendship and support of my programs.

Thanks to each of you for the contributions that you have made to our department and to our dairy industry in Virginia. I will “retire” from the department on July 1, but will continue to be involved with the dairy industry in other ways.

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



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