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DAIRY PIPELINE

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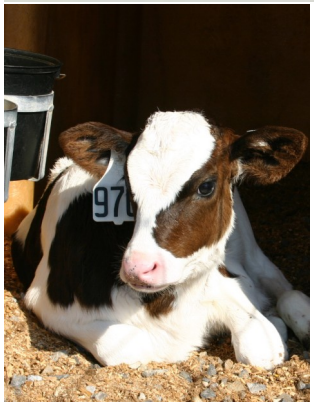

"...given that the dairy cow produces far more than one gallon per day from the beginning of her lactation and that on a solids basis it contains more than 25% protein and nearly 30% fat it's obvious that this practice creates some serious challenges for the preweaned calf."

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WHY HAS THE 20:20 MILK REPLACER BEEN THE INDUSTRY STANDARD?

For many years milk replacers containing 20% protein and 20% fat fed at a rate of 1 lb. of powder per day have been commonly accepted as the best diet for dairy calves. The powder was diluted with water to yield one gallon of liquid with about 12% solids. *Why?* At the time these recommendations were developed, the goal in raising dairy calves was to provide limited nutrients from milk powder to encourage calves to eat dry calf starter and thereby promote early weaning and low daily rearing costs for the preweaned calf. However, given that the dairy cow produces far more than one gallon per day from the beginning of her lactation and that on a solids basis it contains more than 25% protein and nearly 30% fat it's obvious that this practice creates some serious challenges for the preweaned calf.

One pound of milk or milk replacer solids is barely enough nutrition to support 200g of gain per day when the temperature is 60°F. As the temperature drops to 46°F, there isn't enough energy to support any gain and the calf will begin mobilizing body fat. The consequences of limit feeding calves are higher mortality and disease as demonstrated by a Minnesota study where 52% of calves fed this diet were treated for disease during the winter and approximately 13% during the summer. In this same study, calves fed pasteurized cow's milk had corresponding treatment rates of 20% and 4%.

Extensive research conducted at multiple universities—as well as feed company research—indicates a positive relationship between the composition of the liquid diet fed to calves and their growth, health, and performance once they reach the milking herd. Feeding recommendations are heavily dependent upon environmental conditions, but indicate that feeding at least 1.5 to 2.5 lb. of milk or milk replacer solids per day which contains 25% protein supports optimal growth and later performance. Desired fat content of the dry matter portion of the diet can vary from a low of 10% (summer) to as much as 30% during the coldest weather. These diets have commonly been referred to as "intensive" or "accelerated" programs when "biologically normal" is probably more appropriate.

The greatest risk in feeding limited amounts (1 lb. powder or one gallon liquid) of a 20:20 milk replacer occurs during the **first two weeks of life** when calf starter intake is minimal regardless of the liquid feeding program. Preweaned calves should double their birth weight by the time the reach 60 days of age. This requires an average daily gain of only 1.5 lb. per day for Holsteins and about 1 lb. per day for Jerseys. "Biologically normal" feeding programs will cost more per day. The return is in a lower cost per unit of gain, improved health and less treatment for respiratory disease and scours and higher production during the first lactation. Cornell studies found that each lb. of average daily gain during the preweaning period was worth more than 1,000 lb. of milk in the first lactation. Cutting feed cost by limit feeding calves a 20:20 milk replacer is a short sighted management decision which sacrifices future health and productivity of the animal.

—R. E. James
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Upcoming Activities

July 8-12, 2012
Southeast Dairy Youth Retreat, Florida

July 10, 2012
New River Valley Dairy Producers Meeting, Virginia Tech

July 25-27, 2012
Mid-Atlantic Dairy Grazing Conference & Organic Field Day, Washington College

July 31, 2012
Robotic Calf Feeder Workshop, Harrisonburg, VA

August 2-4, 2012
Virginia 4-H & FFA Youth Dairy Cattle Show, Rockingham County Fairgounds, Harrisonburg, VA

Oct. 20, 2012
Showcase Sale at Virginia Tech

See vtdairy.dasc.vt.edu for details regarding any of the activities above.

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.

"Shredlage is the word used to describe a new kind of corn silage produced when corn is harvested with a modified chopper."

What's up with shredlage?

Every year Webster's dictionary adds "new" words to it's voluminous Merriam -Webster's Collegiate Dictionary. To gain entry into this prestigious book of knowledge, the meaning of these newly fabricated words need to have been stabilized in the English vernacular according to M-W's Editor at Large. Last year's new words included "***tweet***" and "***bromance***" to name a few!

In the dairy world, "shredlage" is a word that has only entered our farm vocabulary in the past few months. Or perhaps I should say Shredlage™, as it has already been trademarked. Shredlage is the word used to describe a new kind of corn silage produced when corn is harvested with a modified chopper. The modification replaces a now standard kernel processor with what might best be termed a shredder processor. According to literature available on their website, the modification produces a longer particle size by shredding the crop length wise and through the removal of some of the chopper knives. After field testing their machine for two years, the manufacturers of the device conducted a feeding trial comparing shredded to conventionally processed corn silage. In an article printed in Hay and Forage Grower, University of Wisconsin extension dairy nutritionist Randy Shaver reported that an increase in energy corrected milk was observed. He did go on to note that additional research is needed.

So is shredlage a genuinely new concept? A quick internet search finds that it is not. In a research project conducted at Penn State University during 2000 and 2001, researchers sought to develop a harvesting method that increased the digestibility of both the fibrous and grain portion of corn silage while increasing effective fiber. This was achieved by running material through corrugated rolls operating at differing speeds prior to being chopped, a process they referred to as shredding. In a subsequent feeding trial, they noted an increase in production of 2.6% when compared to chopped silage. They also saw an increase of 0.3% when compared to kernel processing.

More recently, researchers at Purdue University found that shredding corn stover required 40% less energy to harvest than chopping. While their research was aimed at processing the corn plant for the cellulosic ethanol market, there are some implications for shredded silage as a dairy feed. Specifically they note shredding corn stalks increases the surface area of the plant material. In theory this would support the assertion that shredding corn silage can increase fiber digestibility.

The technology, while it seems promising, is several years away from being available to the average dairyman. The shredding processor unit is only currently available for Claas forage harvesters and comes with a price tag of $29,200. Similar to kernel processing, it is a technology that will require a few more research trials, a reduction in price and a few brave souls to try it out on a field scale. Perhaps if you try out **Shredlage™**, you'll **tweet** to us about it on our new VT Dairy Science Twitter account.

—John Welsh
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For more information on Dairy Extension or to learn about current programs, visit us at VT Dairy —Home of the Dairy Extension Program at: www.vtdairy.dasc.vt.edu.

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