3-D Dairy Focuses on Turning Forage into Milk

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John, Bill, and Joe Diederichs

For many years, brothers John, Joe, and Bill Diederichs operated independent dairy operations along a short stretch of County Road WH in the rolling hills of northeast Fond du Lac County, Wisconsin. Although each operated separately, the brothers owned machinery together and each helped plant and harvest crops on all three farms. This arrangement improved efficiency, reduced labor needs, and saved machinery investment dollars. It also gave them practice in making joint decisions.

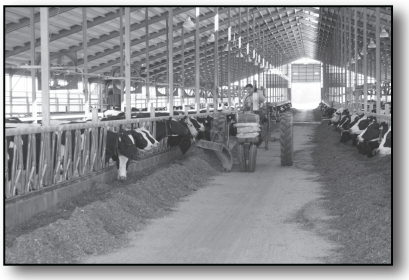
In 2000, one of the brothers asked, "If it works for machinery, why not cows?" The brothers combined their herds and built 3-D Dairy, a milking parlor-freestall dairy facility that now houses 800 milk cows with a herd average of 26,000 lbs of milk and 940 lbs of fat. Calves are raised for one month and shipped to a custom heifer raising operation. The farm currently employs a herdsman, nine milkers, a feeder, and additional part time help during busy crop harvest periods. John's wife, Linda, feeds the newborn calves and manages office operations for the farm.

The goal is to produce milk efficiently and profitably. High yields of quality forage play a primary role in making that happen. The cropping enterprise consists of 840 ac of alfalfa and 450 ac of corn silage. An additional 450 ac of corn are harvested as high moisture or dry grain. Like the forage, high moisture corn is stored in one of eight adjoining bunker silos.

Alfalfa for the 3-D herd is direct seeded with a Brillion Seeder and weeds are controlled using post-emergence herbicides. The brothers liked Roundup Ready® alfalfa and are hoping it becomes available again to help manage hard-to-control species like waterhemp. The Diederichs have always been quick to adopt new technologies when it made sense for their operation. They recently purchased a Pottinger™ 33', 3-unit disc mower to attain a wider swath width and hasten overall harvest time. The machine is operated at 13 mph in the field. After using the unit for two cuttings in 2008, they like the machine's ability to pick-up lodged forage at high speeds and the fact that forage is dried to a more uniform moisture content. To supplement the cutting system, a 34' Oxbo™ merger was also purchased. Currently, 72' of forage is merged into a windrow for their 320 HP Claas™ forage harvester.

Alfalfa is harvested between 60-65% moisture with a target range of 150-160 relative forage quality (RFQ). Alfalfa scissors-cut data are used to initially determine the optimum harvest time; weather and calendar date are also considered. The brothers place a high priority on bunker silo management. The 65,000 lb packing tractor, operated by John (Joe and Bill convinced him it was the best job on the farm), routinely attains densities of over 15 lb/ft^3. A silage facer keeps the bunker face smooth during feedout. The brothers are in the process of experimenting with different covering systems for their bunkers. The sidewalls are typically covered and draped toward the middle of the structure. Additionally, either a vapor barrier cover is used along with another layer of 6 mil. plastic or two layers of the plastic (without the vapor barrier) are used so the forage surface is covered with two or three layers. Split tires are used to hold down the plastic.

Corn grown for silage is planted at a rate of 34,000 seeds/ac. Although partial to one seed company, the brothers use University of Wisconsin Corn Silage Performance trial data and company recommendations to select hybrids with high milk/ac potential. The processed corn silage is harvested at 65-68% moisture. Local Forage Council silage drydown days are used to initially get a handle on whole plant moisture. Currently, alfalfa and corn silage each comprise about 50% of the forage DM fed to the milking herd. Cows are fed once daily with feed being pushed up along the feed alleys every 2 hours to help maximize DM intake.



Tractor pushing up alfalfa/corn ration to cows.

Hay is cut using a Pottinger 33' disc cutter.

3-D Dairy, like similar sized operations, maintains a nutrient management plan and utilizes manure to offset commercial fertilizer purchases. The terrain dictates that they closely follow a conservation plan to minimize soil and nutrient runoff. The operation has been a willing participant and host for local forage council activities such as field days. John is also a past board member of the Fond du Lac Co. Forage Council. Last year 3-D dairy was one of three farms that opened their doors and acted as hosts for the Midwest Dairy Challenge, a regional competition for college students. Working in small teams, students assessed all aspects of the working dairy farms and presented recommendations for improvement to a panel of judges and the participating farm families.

The growth and success of 3-D Dairy speaks for itself. A visit to the farm makes it obvious that there are two things that occur on a daily basis: attention to detail and constant questioning of whether or not there is a better way to get the job done. These three brothers, along with their families, have built an operation that epitomizes modern and profitable dairy and forage production at its best.