

## DAIRY PIPELINE

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### IS IT POSSIBLE TO START A DAIRY FROM SCRATCH?

Conventional wisdom would suggest that the answer to the question above is a no brainer. “No, of course not” falls off the tongue so quickly, it barely requires a thought much less a minute’s analysis. However, there is growing evidence in Smyth County that a start-up, grass-based dairy has a chance and even perhaps some advantages to an established family dairy farm in Virginia.

The dairy established by Andy and Kim Wallace north of Chilhowie is a good case study. Andy worked for nearly 20 years after graduating from Patrick Henry High School as an electrician and plumber in the area. He and his brother Jeff (who remains in the contracting business) were in demand because they did good work at reasonable prices and were reliable.

Andy and his wife Kim yearned for a day when they could return to the family farm and earn enough income to raise their children without an off farm income. In 1995, they decided to take the plunge and start a grass-based, seasonal dairy on 100 acres that Andy and Jeff had purchased in partnership from their grandfather and great uncle. Financing the operation without borrowed capital, Andy began digging the footers for the barn in March. Doing all the work himself or with family labor, by June, they were milking cows. Pictures of Andy and his eldest daughter Ava digging the foundation of the milking center called me back to when I helped my own father with the same chores as we started our own dairy back in the spring of 1968. A lot of water has poured over the dam but the sentiment is the same. There is a reason the word ‘family’ is first in the term “family farm.”

Andy and Kim’s success was recognized on Saturday, March 3, 2012 by the Southwest Virginia Agricultural Association. The Association honored the Wallaces as the 2012 Dairy Farm of the Year. What I admire

about Andy is his willingness to share his successes and failures with others. Routinely, when I have a request from someone wanting to enter the dairy business, I make sure they pay Andy a visit. Andy has been successful in utilizing native pastures, and he has experimented with varying success in the areas of crossbreeding, parlor layouts, grain feeding systems, and daily milking routines. He is quick to tell you that while he tried once-daily milking for an entire season, at the end of the season—and during the summer months—he just left too much money on the table to go away from twice-daily milking again. He has returned to Jersey breeding because they seem to convert grass more efficiently and he has gone back to a herringbone configuration on his parlor because his barn just didn’t have enough headroom to allow cows to comfortably flow through a side-by-side swing milker set-up.

Through it all, Andy has maintained one of the more profitable dairies in Southwest Virginia. Last year, he deemed a “successful year” clearing just over \$1000 per cow on his 70 cow herd. “We would have had an exceptional year,” Andy shared, “if we hadn’t gone to once-a-day milking last summer. We would have easily cleared \$1,200 per cow. That’s why I’m done with once-a-day milking!”

Animal health has been a plus for the Wallaces. Because of low cow culling rates, they routinely have youngstock to sell and this year, Andy is debating selling more as the milking herd pushes 90 cows. “We do best in the 60-70 cow range”, he says.

Can a dairy be started in Virginia? Yes indeed. It is not only possible; there are personal blueprints on how they can be great profit centers for both our families and our communities.

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### ACTIVITIES

**Spring Holstein Show –**  
April 7, Rockingham County  
Fairgrounds Harrisonburg, VA

**District 4-H Dairy Bowls:**  
April 13, Rockingham Co.  
April 14, Orange Co.

**Virginia Beef Expo**  
April 20-22, Rockingham County  
Fairgrounds, Harrisonburg, VA  
<http://vabeefexpo.org/>

**Invitational Youth Dairy  
Judging Workshop**  
April 28, Virginia Tech

**State 4-H Dairy Quiz Bowl:**  
June 26, Virginia Tech

**Little All-American**  
April 21

**Hokie Cow Classic Golf  
Fund Raiser**  
May 21

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“Consistency can  
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Bob James,  
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Dairy Nutrition

### HOW CONSISTENT IS YOUR CALF FEEDING PROGRAM?

Consistent nutrient content delivered at the desired temperature and appropriate time leads to better performance in pre-weaned calves. Field studies of calf feeding systems using waste milk on dairies and calf ranches in North Carolina and California found that fat content varied from 1.1% to more than 4.5%, though protein content was less variable. Reasons for such wide variation include the number of fresh cows and the inclusion of considerable quantities of flush water in the waste milk stream. Additionally, waste milk has a high concentration of bacteria with unknown effects on calf growth and health. Milk replacers purchased from a reputable manufacturer ensure that nutrient content of the powder is as stated on the feed tag.

However, consider where mistakes can occur when mixing the milk replacer. In most cases the powder is measured using a “cup” included in the bag. There’s usually a line slightly below the top of the cup indicating the desired measure of powder to be added to a given volume of water. In the haste to feed calves (it’s usually the last chore in the evening or the last one before breakfast in the morning) calf feeders frequently disregard the mark and add significantly more or less powder.

Another source of variation is the amount of water used to mix the powder. Mixing containers found on dairies and calf ranches range from 5-gallon buckets to much larger mixing tanks where water volume is often crudely measured. Milk replacer mixing was monitored without telling the feeders the purpose. Total solid levels varied from 9-15%. The influence on calf growth and health was difficult to measure; however, available energy and protein were either in excess or insufficient to even meet maintenance requirements. The impact of variation of the liquid diet on calf performance has been studied by Mark Hill and co-workers at Akey Nutrition in Ohio. They found that calves fed a liquid diet delivering a consistent level of nutrients per day had

greater daily gain, starter intake and feed efficiency than calves fed an inconsistent liquid whether it was milk or milk replacer. Another cause of inconsistency is the temperature of the liquid diet fed to calves. Due to their young age and small size, calves are very susceptible to cold stress. Feeding liquid diets at less than 100°F increases maintenance requirements for energy and reduces nutrients available for growth. Another concern with low temperature is the impact on proper mixing of the powder in the water. In such cases, nutrient levels of the liquid can vary appreciably from calf to calf. Feeding liquids too hot (>110°F) may discourage intake, though it’s not unusual to mix milk replacers or heat milk to higher temperatures during the winter so that it won’t be too cool by the time the calves are fed.

Consistency can be improved by following some simple protocols.

1. Use scales to weigh the water and powder. Milk replacers should be mixed to 12.5-15% solids which means adding 1.25 lb. of MR powder to 8.75 lb. of water (12.5%) or 1.5 lb. of powder in 8.5 lb. of water. One can assume that the weight of a gallon at 12.5% solids is approximately 8.62 lb.
2. Use a battery operated thermometer to measure temperature of the liquid. During the winter one might use water at 115 - 120°F to mix the replacer and allow it to cool to 110-105°F prior to feeding. When feeding calves using buckets, periodically check the temperature to make sure that it hasn’t gotten too cold. If this happens, consider mixing smaller batches of milk replacer more frequently.

In addition to providing a more consistent diet for the calves, using scales to weigh powder and water can reduce overfeeding or wasting expensive MR powder.

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