

## 3 priorities to incorporate in your fresh cow program

Davy Brown for *Progressive Dairy*

### AT A GLANCE

Three primary goals for successful transitions are reducing complexity of feeding and care, monitoring key performance indicators and managing metabolic health.

The “transition period” is the point in time when a dairy cow transitions from pregnant and not milking to milking and not pregnant. It is somewhat akin to launching a rocket from a standstill to orbit in a matter of weeks. In addition to calving, this very stressful time is also marked by drastic changes in rations designed to meet the rapidly changing needs of transitioning dairy cows.

Rations shift from low-energy, high-fiber dry cow diets to high-energy, lower-fiber lactation diets – the “jet fuel” cows need to keep up with their increasing metabolic demands driving lactation.

Adding to this challenge is relatively low (albeit temporarily) dry matter intake (DMI) that occurs at the same time the mammary gland is calling for exponentially more glucose, amino acids and fatty acids in competition with the needs of other tissues in early lactation. A successful transition should include minimal metabolic disorders, minimal involuntary culls and maximal dairy performance. Helping every fresh cow shift gears smoothly and lift off successfully into lactation takes a great deal of intentional and consistent effort.

My primary goals for successful transitions are:

**1** *Reduce complexity of fresh cow feeding and care.* The simpler we can make any process, the more likely it is to be



done correctly and consistently. Fresh cow programs that involve multiple rations and pen moves might be developed with the best of intentions but may not be the best route for either the animals or their caretakers. Several sets of rations make the feeding program more cumbersome and leave room for daily execution errors. And a growing body of research has shown social disruptions caused by frequent pen moves are detrimental to feed intake, health and milk production.

**2** *Monitor and improve key performance indicators.* Tracking data over time makes it possible to monitor trends and evaluate the impact of herd interventions. Critical factors to monitor include peak milk, DMI, energy-corrected milk (ECM), milkfat production, protein production and days open. Days on feed in the close-up pen also are highly correlated with transition success, with a goal of at least 21 days for each animal.

Spending less than 14 days in the close-up pen is highly correlated to negative transition events, leading to higher risk of early involuntary culls.

**3** *Manage the metabolic health of every animal.* Monitoring the incidence rate of retained placenta, metritis, ketosis, displaced abomasum (DA) and hypocalcemia (milk fever) is a fundamental part of any good transition program. Preventing these diseases starts with sound transition nutrition but is often correlated with the body condition score (BCS) of cows as they exit lactation and during the dry period. I like to see BCS of 3.75 for cows when they exit lactation/enter the dry pen. Heavy-conditioned cows tend to have increased risk of metabolic disease during transition that is more related to events which occurred in the previous lactation rather than at transition.

**Continued on back**

**TABLE 1** Key performance indicators of a Holstein herd on and off fresh-cow supplementation

	Months	Cows	DMI lbs/ head/day <i>P</i> ≤0.05	Milk lbs/ head/day <i>P</i> ≤0.05	ECM lbs/ head/day <i>P</i> ≤0.05	Milk fat % <i>P</i> ≤0.05	Peak milk lbs/head/ day (2nd lact.+) <i>P</i> ≤0.05	Days open <i>P</i> ≤0.05
Control - Off	55	1,933	52.8	75.8	77.6	3.62	118	121
Supplementation - On Mega e	34	2,326	54.1	79.0	79.7	3.51	123	119

**3 priorities to incorporate in your fresh cow program, cont'd from front**

Under normal conditions, I expect cows to drop 1 BCS from freshening to peak milk. That’s about 170 pounds of body fat for mature Holsteins. In the first 30 days of lactation, a milk-to-feed ratio of 2-to-1 may be typical, but by 60 to 70 days in milk (DIM), I like to see that fall to about 1.7- to 1.9-to-1 (in 3X herds). At this stage a 2-to-1 ratio would alarm me as a sign that cows are losing too much body condition, thereby increasing risk of lameness and delayed breeding.

**Gut flora promotes immune health**

As fresh cows consume and digest energy-rich, highly fermentable rations, lactic acid accumulates quickly in the rumen, and pH may drop from its normal range of 5.5 to 6.5 to levels below 5.5, indicating subacute rumen acidosis; 5.0 signals acute acidosis. This highly acidic environment impairs rumen function and nutrient absorption, can cause fatty liver disease, may reduce rumen motility, leading to bloat, and can cause lameness.

Low pH also causes beneficial bacteria in the rumen and digestive tract to die and release endotoxins, leading to an inflammatory response

that can damage the epithelial lining of the entire digestive tract. A single cow’s digestive system has the surface area of approximately two tennis courts, making it the largest immune organ in the body. A heavy load of lactic acid affecting such a large portion of the immune system greatly reduces disease resistance and increases maintenance energy requirements, thereby robbing nutrients that would otherwise be used for productive functions.

*Megasphaera elsdenii* (Mega e) is a naturally occurring rumen bacteria that consumes lactic acid, which helps keep rumen pH levels in balance. Research has shown administering this in the first week after freshening improves dairy cow performance. **Table 1** shows performance data from a 2,000-cow Holstein herd where the rumen bacteria was used for several years. The dairy went off of it for a year and has now resumed administering it to fresh cows. They continue to use it because it is cost-effective, simple to administer and clearly beneficial to their herd health and performance.

In addition to preserving digestive integrity and metabolic health, we reduced complexity by eliminating the fresh ration in this herd. Fresh

cows are placed on the lactating ration immediately postpartum. These data suggest placing cows immediately on the high ration postpartum increased performance without compromising health.

Administering the rumen bacteria appeared to be an effective tool for dairy herd owners, managers and animal caretakers that improved cow health, dairy performance and reduced complexity in the transition-cow management and feeding programs. ↗

*Davy Brown, Ph.D, is a dairy nutrition consultant based in Eaton, Colorado. For more than 25 years, he has provided nutrition counsel to dairies in Colorado, the Texas Panhandle, Indiana and Belize.*



**Davy Brown**  
Dairy Nutrition Consultant  
Compass Nutrition Inc.  
dmanbrown@msn.com



Reprinted from February 25, 2021