SUMMARY BY ANN HOGDEN:
Direct-Fed Microbial Supplementation on the Performance of Dairy Cattle During the Transition Period.

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The take-home message from this article is that supplementation with a direct-fed microbial for 21 days before calving and 70 days after calving resulted in a significant 7.5% increase in fat and protein production compared to unsupplemented cows. This was achieved with a reduction in the level of mobilization of the cow's body reserves of fat and protein to fuel the lactation.

How did this occur?
By the supplemented cows maintaining:

1. Feed intake 20% higher than unsupplemented cows through until 7 days before calving when feed intake reduced to 7kgDM for both groups. This decrease in feed intake is hormonally influenced by the approaching birth and lactation and can't be avoided BUT the effects of it on the cow can be minimized.

2. Ruminal pH remained constant until 1 day before calving compared to 5 days before calving for the unsupplemented cows. Stable ruminal pH would be expected to assist constant feed intake, which in turn promotes stable ruminal pH. Keeping the drop in
Any management practice that maximizes feed intake before calving will reduce the cow's reliance on body fat and protein stores to fuel the lactation.

3. Feed intake on average 17% higher (note the similarity to the before calving situation) for the first 3 weeks of lactation.

4. Blood indicators of energy status in a pattern that confirmed significantly reduced levels of body fat mobilization (measured by NEFA, Non-Esterified Fatty Acids), more thorough use of the fatty acids that were released and so reducing the risk of ketosis (measured by BHBA, B-hydroxybutyrate) and, increased levels of glucose and insulin confirming the use of dietary carbohydrate to fuel the lactation.

It would be reasonable to expect the supplemented cows to be in a better energy balance prior to mating due to their higher feed intake and reduced loss of body condition.

It is important to note that the dramatic depression in feed intake close to calving is to be expected and can't be avoided so there will always be some mobilization of body reserves to make up the deficit. However, the recovery from this can be assisted allowing cows to regain potential feed intake and maximize milk production without depleting body reserves before mating.

The direct-fed microbial product used in this experiment contained a yeast (Saccharomyces cerevisiae) and bacteria (Enterococcus faecium) both of which are contained in Performance Bovine Direct Fed Microbial Powder and, was fed to the trial cows at a strength (Colony Forming Units) similar to that recommended by Performance.