

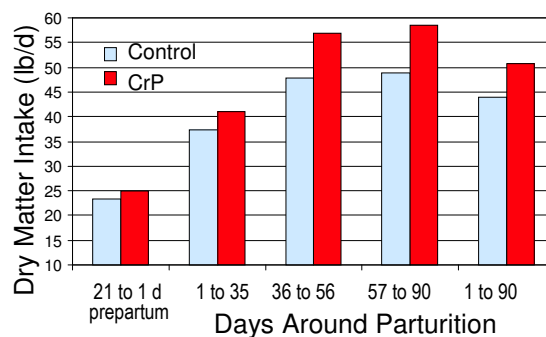
## The Effect of Insulin Sensitivity on Dry Matter Intake (DMI)

Dry matter intake (DMI) can drop up to 30 percent as a transition cow approaches calving.<sup>1</sup> Prior to parturition, tissue sensitivity to insulin decreases in response to the repartitioning of glucose supply, ultimately causing a mobilization of body reserves (non-esterified fatty acids) to compensate for lost energy. The mobilization of body reserves increases leptin, a hormone responsible for controlling feed intake, causing a consistent suppression of feed intake and insulin insensitivity.<sup>2</sup> The lack of essential nutrients from suppressed feed intake contributes to poor health, and reduces reproductive efficiency and milk production.

**Chromium Propionate** is a highly bioavailable chromium source, shown to improve insulin sensitivity and promote glucose uptake. Greater sensitivity of tissues to insulin likely increases clearance of glucose from the blood sooner, partitioning more energy to body reserves and decreasing the interval between meals.<sup>2</sup>

### What is the value of **increasing DMI** during the transition period?

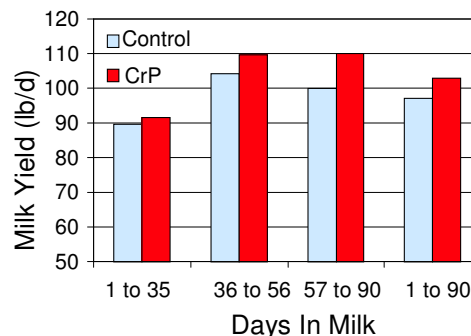
- An increase in DMI will limit the amount of energy a cow has to borrow from body reserves, leading to more optimal production.
- Adequate and increased dry matter intake will guarantee delivery of essential nutrients in a ration, which is critical during the transition period.



**Figure 1.** Dry matter intake of cows fed chromium from KemTRACE® Chromium Propionate (published data).<sup>3</sup>

### What is the effect of DMI on **milk production**?

- Dry matter intake will drive the reinstatement of a positive energy balance, which is critical for milk production.
- An increase in DMI will typically equate to greater milk production.  
**Value:** 1 pound of DMI = 2 pounds of milk.<sup>4</sup>



**Figure 2.** Milk production of cows fed chromium from KemTRACE® Chromium Propionate (published data).<sup>3</sup>



## References

1. Hutjens, M.F. Transition Cow Feeding Strategies. 1998.
2. Allen, M.S. and B.J. Bradford. Nutritional Control of Feed Intake in Dairy Cattle. 2009.
3. McNamara, J., F. Valdez. 2005 J Dairy Sci. 88:2498-2507.
4. Hutjens, M.F. Feeding Challenges with Today's Milk Price.