

# WHAT DCAD LEVEL SHOULD I AIM FOR IN MY TRANSITION COW DIET?

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## Achieving a negative DCAD in your transition cow diet can be relatively simple once you know the base mineral levels in your diet. Dr. Elena Bonfante explains how...

The DCAD level is primarily determined by the mineral content of dietary feeds, but it can be adjusted through the addition of specific minerals. Without any targeted supplementation, the DCAD level is usually positive at around 20-30 mEq/100g dry matter.

So, if the natural DCAD dietary level is positive, why should we reduce it to a negative level before calving?

Research by Santos et al.<sup>1</sup> concluded that a negative DCAD diet during the dry period is the most effective strategy to prevent hypocalcemia, including both its clinical impacts (e.g., downer cows) and subclinical effects (difficult calving, retained placenta, metritis, displaced abomasum, lower intake, and milk production).



The starting point for any negative DCAD diet should be assessing the mineral levels in the forages as this will determine how much acidifying product is required. Typically, corn and cereal silages are low in positive cations (sodium and potassium) so will require less acidification than transition diets using grass silage, which can have variable levels of potassium especially.

Aim for a target DCAD level between -8 to -12 mEq/100g dry matter when feeding for 21 to 45 days. This range is considered effective in lowering blood pH enough to support calcium mobilization, without causing metabolic acidosis.

If you're operating a single dry cow group across the whole duration of the dry period (45 to 60 days) and only feed one diet during this time, negative DCAD diets can still be an effective strategy. In these diets, the recommended target DCAD is slightly lower at between -6 to -8 mEq per 100 grams of dry matter.

**A practical and affordable way to check the diet is achieving the desired negative DCAD level is to measure the urine pH of dry cows, which reliably reflects blood pH.** Aim for a urine pH between 6.0 and 6.8 in Holstein cows during the negative DCAD feeding period. If the urine pH is higher than 6.8, the diet may not be sufficiently acidified and more anions are required. If it is lower than 6.0, the acid load may be too high, risking palatability and feed intake issues, so reducing the anionic minerals is advisable. ■



**Elena Bonfante, DVM**, is a specialist in ruminant nutrition and holds a PhD in dynamic modeling. She currently operates as an independent consultant for dairy farms, supporting producers in enhancing herd performance through the optimization of forage quality, nutritional strategies, and herd management practices.

### Reference:

<sup>1</sup> Santos, J. E. P., Lean, I. J., Golder, H., & Block, E. (2019). Meta-analysis of the effects of prepartum dietary cation-anion difference on performance and health of dairy cows. *Journal of dairy science*, 102(3), 2134-2154.

**NEXT IN THE SERIES:** We'll discuss practical considerations for monitoring DCAD diets with urine pH.



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