

DON'T TAKE CHANCES WITH YOUR CALCIUM MANAGEMENT.

ABSORPTION
RETENTION
DEFICIENCY
METABOLISM
MOBILIZATION
PRODUCTIVITY
CULLING
PROFITABILITY

Calcium (Ca) management isn't easy and mismanagement has costly consequences.

- The high producing dairy cow makes major metabolic adjustments in the transition phase in order to support a profitable lactation
- During the transition, a dairy cow adjusts its metabolism to mobilize calcium from skeletal reserves and energy from adipose reserves
- These adjustments are needed in a timely fashion for the cow to up-regulate intake capacity and meet nutrient requirements for peak milk production in early lactation

The calcium gap

- A 500-kg dairy cow contains approximately 6 kg of Ca¹
- During the first 9 weeks of lactation a cow has a Ca deficit of 10 g/day.² This would result in a loss of around 10% of stored Ca that will not be regained
- While anionic salt programs have been introduced to help combat the calcium gap, even an effective anionic salt will result in approximately 4.5 g/day of calcium excreted in urine.³ Therefore, an anionic salt program alone may not be enough to close the gap.

FIRST
9
WEEKS

↓10
g/day
Ca

MANY COWS LEAVE THE HERD EARLY

25% LEAVE IN THE FIRST 60 DAYS

New Hy•D® for dairy: A new solution for calcium management

- Pure and proprietary vitamin D metabolite called 25-OH D3, and it works better than supplementing with vitamin D3 alone
- Unique mode of action eliminates the need for conversion in the liver, thus directly providing the main circulating form of vitamin D. This allows for faster, more consistent absorption
- The only form of 25-OH D3 studied in the Ca metabolism of dairy cows
- Proven around the world in multiple species

Hy•D nearly doubles calcium and phosphorus retention compared to control⁴

Calcium and Phosphorus Retention with and without Hy•D

		Hy•D	Control
Calcium (g/d)	Feed	66.4	65.7
	Feces	55.8	60.7
	Urine	2.5*	0.9
	Retained	8.1*	4.1
Phosphorus (g/d)	Feed	26.4	26.1
	Feces	17.2*	20.4
	Urine	1.1	0.9
	Retained	8.0*	4.9

*Means bearing an asterisk differ ($P < 0.05$)

Hy•D can make dietary cation anion difference (DCAD) programs more effective⁵

Milk Production Results

Effect of DCAD and source of vitamin D fed prepartum on performance in the first 49 d postpartum in Holstein cows				
	DCAD + 130 mEq/kg		DCAD - 130 mEq/kg	
	Vitamin D	Hy•D	Vitamin D	Hy•D
DM intake, kg/d	17.0	16.9	17.4	18.2
Milk yield, kg	31.3 ^b	35.2 ^a	31.6 ^b	34.8 ^a
3.5% FCM, kg	37.0 ^b	40.1 ^a	37.5 ^b	41.9 ^a
ECM, kg	35.6 ^b	38.6 ^{ab}	36.0 ^b	40.4 ^a
Fat, %	4.56 ^b	4.37 ^b	4.62 ^a	4.77 ^a
Fat yield, kg/d	1.43 ^b	1.53 ^b	1.46 ^b	1.66 ^a
Protein, %	3.16	3.10	3.14	3.25
Protein yield, kg/d	0.98 ^b	1.07 ^{ab}	0.97 ^b	1.11 ^a

^{ab}Means bearing different superscripts differ ($P < 0.07$)

Key points

- Transition and lactating dairy cows often experience a “calcium gap” preventing them from optimal production
- Hy•D allows for fast, consistent absorption of calcium and phosphorus
- Hy•D can make DCAD programs more effective

Hy•D® is a trademark of DSM Animal Nutrition and Health.

¹NRC, 2001. Nutrient Requirements of Dairy Cattle, 7th Rev. Ed. Wash D.C.

²Ellenberger, Newlander and Jones, 1931. Proc. Amer. Soc Anim Prod. Pg 120.

³Block, E. 1984. J. Dairy Sci. 67:2923-2948.

⁴McGrath, J., et al. Anionic salt supplementation and intra-rumen administration of 25 hydroxycholecalciferol increase urinary calcium excretion. 139-140.

⁵Martinez, N., et al. 2018. American Dairy Sci. Assoc. Univ. of Florida. DSM10-0631