



**Boost production  
year-round.**

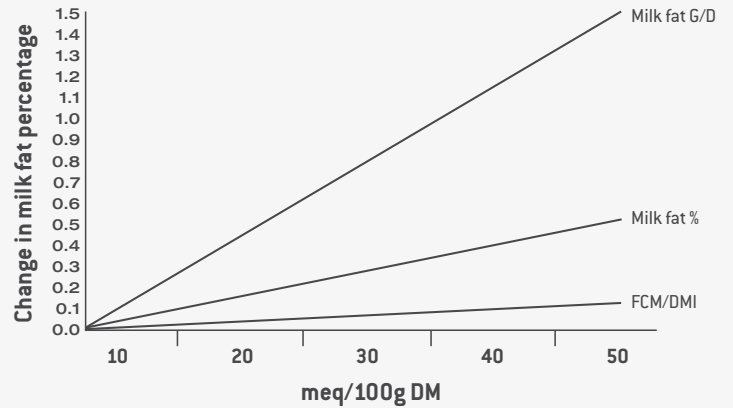


#ScienceHearted

At ARM & HAMMER™ we think big on a microscopic level to deliver safe feed and food solutions that drive business forward. We're your #ScienceHearted, local-and-global, animal and food production team.

# With suboptimal DCAD, you're missing out on milk fat.

For every 10-point shift in DCAD, you can expect a 0.10 increase in milk fat percentage as well as production efficiency improvement.<sup>1</sup>



## What if you could boost component production with the right source of potassium?



### SUPPORT MILK FAT PRODUCTION.

What if you could achieve your desired milk fat production no matter the temperature?



### INCREASE RATION STABILITY IN THE BUNK.

What if you could supply potassium without risk of adverse ration heating?



### IMPROVE ECM.

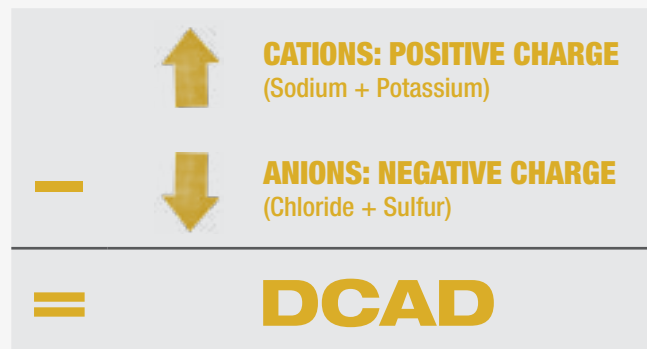
What if you could improve milk and component production?

## Only DCAD Plus™:

- ✓ Is research-proven to increase milk fat yield whether or not your cows exhibit symptoms of milk fat depression
- ✓ Supplies potassium (K) with low risk of ration heating
- ✓ Is stabilized via hydration of the product, unlike other forms of potassium carbonate

## Replace the K lost through production.

Research indicates most early-lactation and high-producing cows are potassium deficient even when fed at NRC levels<sup>2,3</sup>



## Got milk fat depression?

A common culprit is the variable amounts of fatty acids from feeds like DDGS, gluten and hominy. Cottonseed and other oilseeds, combined with increasing dietary starch and other fermentable feeds, can also contribute.

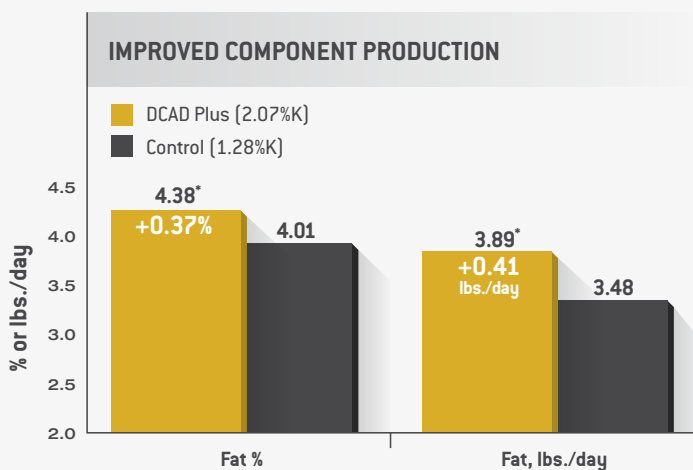
## Test forage DCAD.

Seasonality and climate can affect DCAD levels. Test forages often using wet chemistry analysis to ensure proper DCAD levels are being fed.

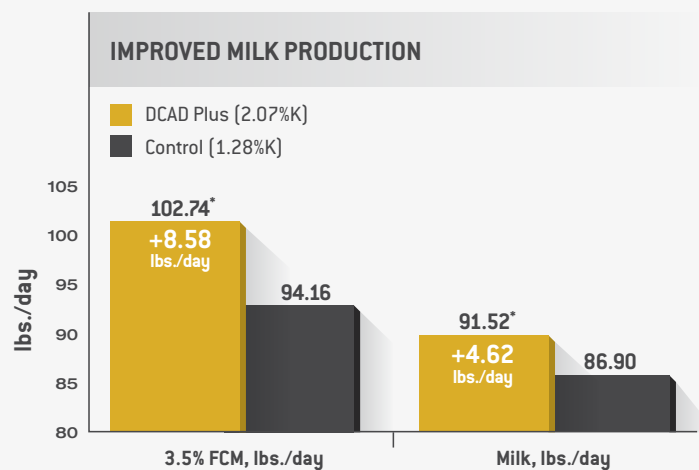
## More K. More milk and more fat.

University research<sup>4</sup> conducted on commercial Holsteins concluded that increasing K and DCAD in early-lactation diets resulted in high-producing cows improving milk and component production.

- +0.41 lbs./day improvement in butterfat levels
- Cows fed DCAD Plus™ outperformed the control group in percent and pounds of milk fat production
- +8.58 lbs./day improvement in FCM
- +4.62 lbs./day improvement in milk



\*Differences were significant ( $P < 0.05$ )



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## Navigating milk fat depression.

The rumen becomes acidic through highly fermentable carbohydrates, insufficient fiber or when a large quantity of unsaturated fatty acids are present. In this environment the rumen bacteria produce milk fat intermediates that can cause milk fat depression. Research has demonstrated feeding DCAD Plus positively influenced butterfat production even when feeding high-fat byproducts.<sup>5,6</sup>

## Recommended feeding rates.

**OPTIMUM DCAD RANGE FOR HIGH-PRODUCING COWS IS +35 TO +45 MEQ/100G DRY MATTER.**

1.) Analyze forages and byproduct commodity feeds known to vary in DCAD minerals (whey, molasses, etc.) for Na, K, Cl, S and Mg by wet chemistry. Remember that water can contribute additional minerals as well if your source is of questionable quality.	4.) Adjust DCAD to your target level by adding a sodium buffer (Sodium Bicarbonate or SQ-810™). Total dietary sodium can be raised to as much as 0.8% of the ration dry matter. This would add the rumen buffering required, as well as give you the ability to fine tune the DCAD <sup>1</sup>
2.) Remove as many chloride and sulfate salts as possible from the diet. This step alone will increase DCAD.	5.) Adjust dietary Mg such that the ratio between K and Mg is between 4:1 and 5:1.
3.) Add DCAD Plus to achieve a dietary K level of at least 1.7% of the total DM during nonheat stress periods, and to at least 2.0% just prior to and during heat stress periods of the year.	

*NOTE: For more details on formulating ration DCAD, ask your ARM & HAMMER™ representative about our How-To Sheets for balancing positive and negative DCAD diets.*



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## We're #ScienceHearted and we're here for you.

We're ever-curious farm kids turned nutritional innovators, microbial pioneers and food safety game changers. We use scientific research to unlock the power of nature to create products that focus on you, your animals and worldwide food security. To learn more about DCAD Plus™ ask your nutritionist, veterinarian or ARM & HAMMER™ representative or visit [AHfoodchain.com](http://AHfoodchain.com).

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- 1 Intake, milk production, ruminal, and feed efficiency responses to DCAD in lactating dairy cows. Marie E. Iwaniuk and Richard A. Erdman, Department of Animal and Avian Sciences, University of Maryland, USA. *J Dairy Sci* Vol. 97, Suppl. 1 Presented at the ADSA Joint Annual Meeting 2013.
- 2 Arm & Hammer Animal Nutrition. DCAD Nutrition for Dairy Cattle Research Summary. PC2063-1003, 2010.
- 3 Jarrett JP, Taylor MS, Nennich TD, Knowlton KF, Harrison J, Block E. Effect of dietary calcium and stage of lactation on potassium balance in lactating Holstein cows through 20 weeks of lactation. *The Professional Animal Scientist* 2012;28:502-506.
- 4 White R, Harrison J, Kincaid R, Block E, St-Pierre N. Effectiveness of potassium bicarbonate to increase dietary cation-anion difference in early lactation cows. *J Anim Sci* Vol. 86, E-Suppl. 2/*J Dairy Sci* 2008;91:Abstr. 106.
- 5 Jenkins TC, Bridges, Jr. WC, Harrison JH, Young KM. Addition of potassium carbonate to continuous cultures of mixed ruminal bacteria shifts volatile fatty acids and daily production of biohydrogenation intermediates. *J Dairy Sci* 2014;97:975-984.
- 6 Lamar KC, Weiss WP. Milk fat depression caused by feeding distillers grains and corn oil to dairy cows was partially alleviated by supplementing potassium carbonate. *J Anim Sci* 2013;91[Suppl.2]/*J Dairy Sci* 2013;96[Suppl.1] Abstr. 469. Presented at ASAS Joint Annual Meeting 2013.