

# TECHNICAL BULLETIN

## DAIRY



## BENEFITS OF QLF AND NUTRITEK FOR TRANSITION DAIRY COWS AT PARAMOUNT DAIRY

### Introduction:

QLF molasses-based liquid supplements and Diamond V NutriTek have been shown to increase dry matter intake and milk yield in transition cows. In addition, NutriTek contains bioactive metabolite compounds, including antioxidants and polyphenols. These antioxidants and polyphenols may enhance the immunity of transition cows and help them better cope with metabolic stress and inflammation. Anytime stress can be reduced on cows in the transition period, it is a good thing. Using QLF liquid supplements to disperse NutriTek throughout the TMR will lead to less sorting and a more consistent intake of NutriTek by transition cows. The result should be a synergistic impact of QLF liquid supplements and NutriTek on transition cow performance. In summer 2016 a research trial at Paramount Dairy in Michigan evaluated if QLF and NutriTek can impact cow performance during the transition period.

### Experimental Protocols:

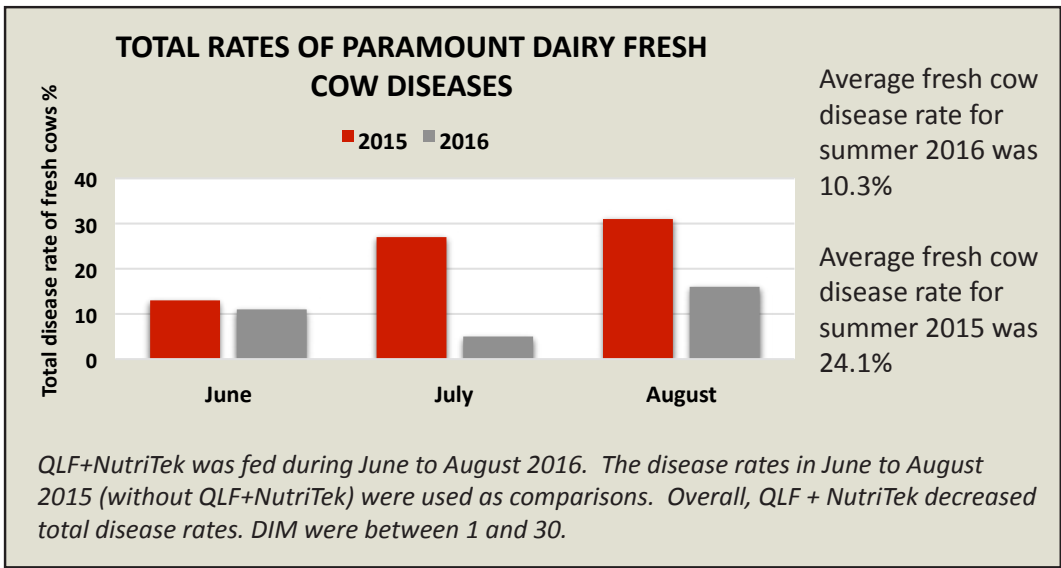
Paramount Dairy located at Caro, MI with a herd size of 1500 cows is a conventional operation. This farm participated in the research trial between March and August 2016. A QLF liquid supplement was formulated to supply 19 g of NutriTek when fed at 5 lbs. on an as fed basis. The liquid supplement contains 6% crude protein and 27% sugar on an as-fed basis. On Paramount Dairy, close-up dry cow and fresh cow rations were formulated to contain 5 lbs. as fed of the QLF supplement with NutriTek. Treatments were provided from d -21 to 30 relative to calving. Milk yield and close-up cow dry matter intake was measured pre-QLF (3 months, March – May, 2016) and during the QLF+NutriTek period (3 months, June – August, 2016). Fresh cow disease cases were compared with those cases recorded during the same months (June – August) of last year. Data was analyzed using SAS 9.4.

### Results: Paramount Dairy

Fresh cow milk yield averaged 1 lb. higher during the QLF+NutriTek period (86.3 lbs./d; from 5/25/16 to 8/31/16) compared with the pre-QLF period (85.3 lbs./d; from 3/1/16 to 5/24/16). Cows on this farm experienced severe heat stress in the summer 2016, and QLF and NutriTek likely helped the cows maintain milk yield. Dry matter intake was similar for pre-fresh cows between the pre-QLF and QLF periods, and fresh cow intake was slightly decreased during the treatment period compared with pre-QLF period. This could be due to summer heat stress. Nevertheless, cows maintained milk yield with slightly less intake during the QLF+NutriTek treatment, which increased feed efficiency by 10% (1.62 vs 1.78 Milk/DMI). Rumination was increased by 20 min per day for fresh cows, suggesting better rumen and cow health.

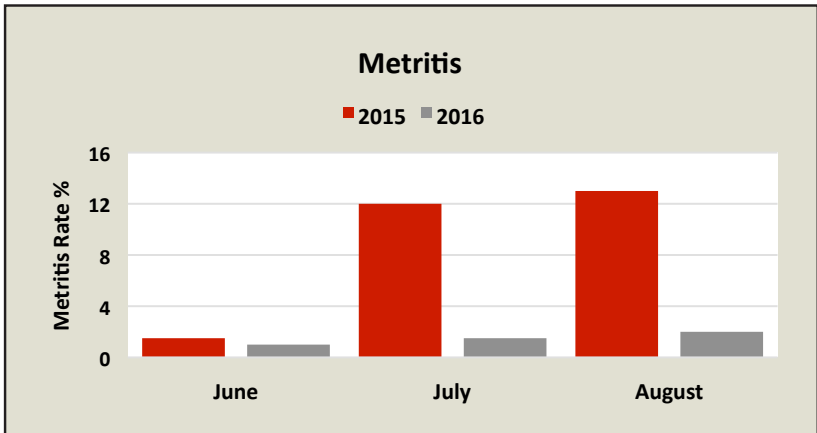
More importantly, compared with last summer, cows had dramatically decreased incidence of health disorders this summer when QLF+NutriTek was included in the ration. Despite much more severe heat stress this year compared with last year, the total fresh cow diseases of the herd decreased from 24.1% for summer 2015 to 10.3% for summer 2016. Specifically, cows had decreased metritis (8.7% vs. 1.3% for 2015 vs. 2016), DA (3.6% vs. 2.1% for 2015 vs. 2016), and other metabolic issues.

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**Economic Analysis:**

Does it pay to feed QLF+NutriTek during the transition period? Cow health data from Paramount Dairy showed that QLF + NutriTek generated a 3.85 return on investment, which was a saving of \$25,978 for every 1000 cows. Feeding QLF and NutriTek generated a highly positive return on investment for the dairy. More



importantly, these positive impacts on start-up lactation should continue to carry over throughout the entire lactation and provide long-term positive returns.

**Conclusions:** Feeding QLF supplements with NutriTek to transition cows decreased incidence of fresh cow diseases. Economic analysis showed that feeding QLF and NutriTek is an effective transition period supplementation strategy and can generate highly positive returns on investment.

#### Does it pay to feed QLF + NutriTek during the Transition Period Based on Reduction in Death Loss, Metritis and DA?

Close-up period = 21 days, Post-fresh period = 30 days  
Cost of NutriTek=\$0.15/cow/day

	No QLF + NutriTek	QLF+NutriTek	Cost/Cow, \$
Pre-Fresh Diet, \$/Day	4.04	4.26	(0.22x21)=\$4.62
Lactating Cow Diet, \$/Day	6.69	6.84	(0.15x30/)= \$4.50
Total Cost, \$/Cow			\$9.12
Cost to Feed 1,000 Transition Cows, \$			\$9,120
Reduction in Metritis per 1,000 Cows		74 less	(74x\$304) = \$22,498
Reduction in DA per 1,000 Cows		15 less	(15x\$340) = \$5,100
Reduction in Death Loss/1,000 Cows		3 less	(3x\$2500)=\$7,500
Return on Investment			(35,098/\$9,120) = 3.85:1