

Evaluating Impacts of OmniGen-AF on Feed Intake, Milk Yield and composition.



Shane Newton, Caio Takiya, Barry Bradford, Luís Mendonça, Lindsey Hulbert, and Jodi McGill, Kansas State University

Department of Animal Sciences and Industry, Kansas State University, Manhattan, KS; Department of Diagnostic Medicine/Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan, KS; (Phibro Animal Health, Teaneck, NJ)

Introduction

- During the transition from pregnancy to full milk, dairy cows are the most at risk for suppressed immune systems.
- Omnigen is a feed additive product that is promoted as giving better immune responses to dairy cattle during the transition from pregnancy to full milk production.

Objective

- To evaluate and determine the responses of OmniGen-AF on feed intake, and milk yield and composition

Materials and Methods

- 30 Pre-partum Holstein cows
- Completely randomized block design
- Treatments
 - Control
 - OmniGen-AF (56 g/head per d) mixed into the top third of the TMR and distributed evenly across feedings
- Dry cows will be allowed ad libitum access to the designated treatment rations through an electronically-gated feeding system with one cow assigned per gate.
- After calving, cows will be moved to a tie-stall facility containing individual feed bunks suspended from load cells, and the bunk weight will be monitored continuously by a computer. Feed consumption and meal patterns will be recorded individually in both feeding systems
- Cows will be milked three times daily in a milking parlor. Milk samples will be collected at each milking on 3 days each week (from week 1 to 7 of lactation) and will be analyzed for concentrations of fat, true protein, lactose, and somatic cells by Heart of America DHIA.
- Data were analyzed using mixed models to account for treatment, parity, time, and their interactions, and significance was declared at $P < 0.05$.

Results and Discussion

- Twenty of the thirty cows were analyzed, and no significant effects were detected for feed intake, milk yield, or change body weight over the treatment period
- Milk protein was the only performance variable affected by treatment; Omnigen increased milk protein concentration relative to control (2.84 vs. $2.64 \pm 0.09\%$, $P < 0.01$).

Results (continued)

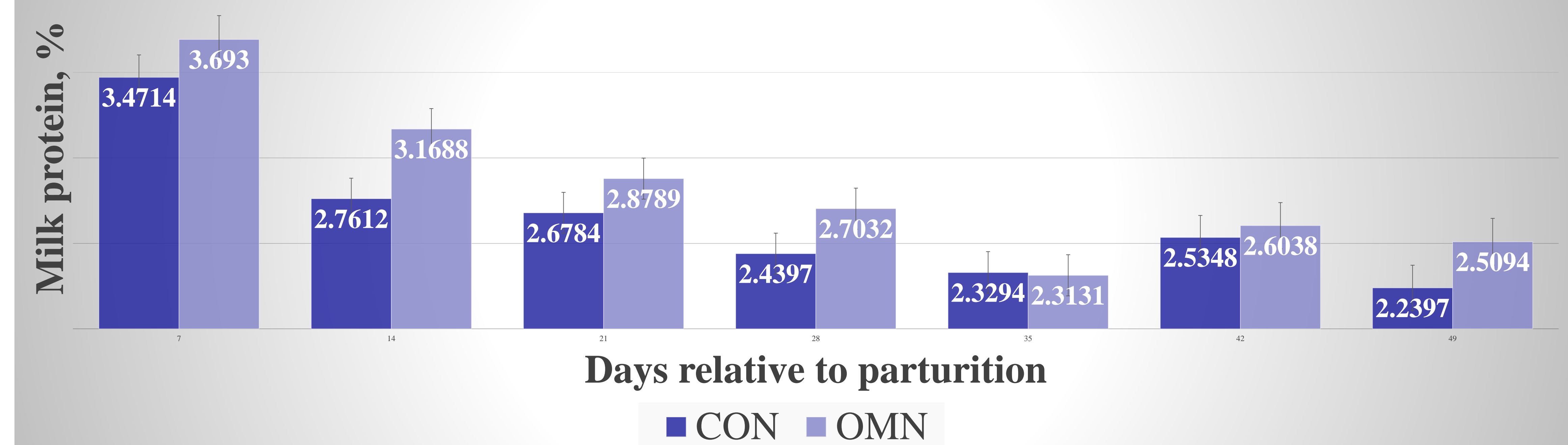


Table 1. Performance of cows (n=20, 49 d) fed an immunomodulatory feed additive during the dry period and early lactation (Mean±SE)

Item	Treatment ¹		P-value ²		
	CON	OMN	Treatment	Time	Treatment × Time
Feed intake (as-fed), kg/d	38.9±2.0	40.8±2.0	0.480	<.0001	0.605
Milk yield, kg/d	44.5±2.0	46.7±2.0	0.425	<.0001	0.461
Fat, kg/d	1.74±0.09	1.84±0.09	0.259	0.0322	0.608
Protein, kg/d	1.15±0.08	1.27±0.08	0.207	0.0107	0.310
Lactose, kg/d	2.08±0.12	2.11±0.12	0.788	<.0001	0.509
Solids non-fat, kg/d	3.62±0.23	3.82±0.23	0.453	<.0001	0.643
SCC linear score ³	2.11±0.39	1.73±0.39	0.420	0.0029	0.385
Fat, %	4.04±0.15	4.15±0.15	0.376	<.0001	0.527
Protein, %	2.64±0.09	2.84±0.09	0.005	<.0001	0.241
Lactose, %	4.77±0.09	4.72±0.09	0.335	0.0038	0.591
Solids non-fat, %	8.34±0.18	8.47±0.18	0.160	0.0005	0.220
Milk urea nitrogen, mg/dL	12.0±0.43	12.3±0.43	0.500	0.0381	0.911
Energy-corrected milk ⁴ , kg/d	44.8±2.17	47.7±2.18	0.224	0.0031	0.868
3.5% Fat-corrected milk ⁵ , kg/d	47.3±2.15	49.9±2.17	0.257	0.0013	0.756
Body weight, kg	616±21.6	606±21.6	0.577	<.0001	0.826
Body condition score, 1-5	2.66±0.09	2.73±0.09	0.416	<.0001	0.258

Conclusions

- In conclusion, feeding Omnigen during the transition to lactation increased milk protein concentration, but no other productivity responses were observed in this relatively small cohort.