THE EFFECT OF FEEDING A-MAX™ YEAST CULTURE ON PERFORMANCE OF HIGH-PRODUCING DAIRY COWS IN SUMMER HEAT STRESS.

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Introduction: Yeast and yeast culture additives have been used in ruminant nutrition to manipulate rumen fermentation and, therefore, production response. The response in milk production to yeast culture additives is usually in the 2 to 3 lb. range; however, very few studies have found this level of difference to be significant. In addition, it has been suggested that yeast culture may improve production and reproductive performance during hot weather.

Objective: The objective of this study was to determine the effect of feeding yeast culture to early-lactation cows exposed to heat stress on productive performance.

Materials and Methods: Multiparous Holstein cows (723) from two California dairies were blocked by parity and previous lactation milk yield and randomly assigned to one of two treatments: 1) control diet (no yeast, n = 361) or 2) A-Max™ n = 362). They were fed from 20 to 140 days in milk. The study was conducted from May to December so that cows would be calving during the hot months of the year. Group intakes were measured daily and milk production components were measured every two weeks. Blood was sampled on a subset of 120 cows at 58 and 100 days DIM.

Results: There's no effective treatment on dry matter intake; however, milk production was increased by 1.2 kg (2.6 lb)/cow/d. Fat-corrected milk was increased by .6 kg. Fat percentage was reduced by 1/10th %; however, yield was not affected. This reduction was thought to be a dilution effect from the increased milk yield. Milk protein, solids-not-fat or lactose percentage was not affected; however, yield components were all increased. There was no effect on plasma glucose or NEFA; however, lameness scores were lower for cows receiving A-Max. There was no effect of A-Max on reproductive performance during the period the study was conducted.

Conclusion: Cows receiving A-Max yeast in hot ambient temperatures increased milk production by 1.2 kg (2.6 lb) with a .047/cow/day reduction in fat percentage but not yield. No other percentages were affected, however milk component yields were increased. The addition of A-Max had a positive affect on foot health.

Economics:

Benefit: Milk: 2.64 lb of increase milk @ $15.00/cwt = $.402/cow/day
Protein: .01% increase = $.05/cwt or $.047/cow/day
Fat: .1% reduction = $.10/cwt or $.094/cow/day
Cost of product = $.05/cow/day

NET BENEFIT= $.305/cow/day or Return on Investment of 6.1:1

Results Tables:

Table 1. Effect of feeding A-Max™ concentration on lactation performance of multiparous dairy cows under heat stress.

	Control	Yeast	SEM	*P*
Pens, N	3	3	_	_
DM intake, kg/d	27.4	27.2	1.07	NS
Cows, N	361	362		
Milk, kg	42.2	43.4	0.37	0.02
Milk fat				
%	3.58	3.48	0.02	0.001
Yield, kg/d	1.505	1.501	0.013	NS
Milk protein				
%	2.83	2.81	0.01	NS
Yield, kg/d	1.188	1.215	0.009	0.05
Milk SNF				
%	8.59	8.59	0.02	NS
Yield, kg/d	3.583	3.678	0.034	0.05
Milk lactose				
%	4.83	4.84	0.01	NS
Yield, kg/d	2.016	2.074	0.020	0.04

Table 2. Effect of feeding A-Max on lameness in multiparous dairy cows under heat stress.

	Control	Yeast	SEM	*P*
Lameness, N	349	356	_	_
Incidence	18.6	14.9	_	NS
Median score[2]	2.3	2.2	0.07	0.10

[1] NEFA = nonesterified fatty acids.
[2] Locomotion score on a scale of 1 to 15 according to Sprecher et al. (1997).

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