

AMINOPLUS

AMINOPLUS[®] Performance Proven in Independent Research

F.A.R.M.E. Institute Study

Objective: To compare milk production of high producing cows fed commercially available bypass soy products. The bypass soy products compared were AminoPlus, bypass expeller soybean meal (EXPSBM), and non-enzymatically browned soybean meal (NESBM). Cows, grouped to equalize parity, milk production and days in milk, were housed in a cold freestall and provided a TMR fed ad libitum (adjusted for approximately 2-5% daily refusal) for the 8 week study. Rations, equalized for crude protein (CP), undegraded intake protein (UIP), energy and forage content, were balanced to meet current NRC standards. Rations were formulated to contain 18% CP, 37% UIP, 39% non-fiber carbohydrate (NFC), 5% fat, and 0.79 Mcal/ lb NE_L.

Ration Composition

<u>Ingredients</u>	<u>AminoPlus</u>	<u>NESBM</u>	<u>EXPSBM</u>
	-----(% of ration on dry matter basis)-----		
Corn Silage	31.06	30.99	30.85
Alfalfa Silage	7.42	7.41	7.05
Grass Silage	13.36	13.33	13.39
Hay	2.06	2.06	2.06
Whole Cottonseed	6.07	6.13	5.63
Corn meal	24.78	24.83	25.55
Soybean meal, 48%	4.93	5.11	3.49
Corn gluten meal	0.79	0.69	0.80
Optigen	0.53	0.49	0.58
Blood meal	0.33	0.33	0.36
Urea	0.21	0.25	0.21
Tallow	0.52	0.61	0.47
Megalac	0.37	0.43	0.38
Vitamin/mineral premix	3.37	3.41	3.40
AminoPlus	4.19	--	--
NESBM	--	3.92	--
EXPSBM	--	--	5.79

Actual and Least Square Milk Production Data

	<u>AminoPlus</u>	<u>NESBM</u>	<u>EXPSBM</u>
<u>All cows</u>			
Actual Milk, lb/day	72.1	68.5	70.0
LS Milk, lb/day ¹	73.8 ^a	71.7 ^b	74.7 ^a
<u>Less than 60 DIM at start of trial</u>			
Actual Milk, lb/day	76.5	68.9	72.4
LS Milk, lb/day ¹	72.2 ^c	68.7 ^d	69.7 ^{cd}
<u>Less than 90 DIM at start of trial</u>			
Actual Milk, lb/day	75.5	69.4	73.0
LS Milk, lb/day ¹	72.9 ^a	70.2 ^b	71.9 ^{ab}
<u>Less than 120 DIM at start of trial</u>			
Actual Milk, lb/day	75.1	69.8	74.0
LS Milk, lb/day ¹	74.7 ^a	71.9 ^b	73.6 ^a

¹ covariate terms used for testing effect of treatment were lactation number, week of lactation trial start and ME305

^{a,b} values within a row without a common superscript differ (P<.05).

^{c,d} values within a row without a common superscript differ (P<.10).

Milk Component Data (LS Means)¹

	<u>AminoPlus</u>	<u>NESBM</u>	<u>EXPSBM</u>
<u>All cows</u>			
Protein, %	3.09 ^b	3.14 ^a	3.07 ^b
Fat, %	3.46 ^c	3.26 ^d	3.36 ^{cd}
Protein, lb/day	2.21	2.14	2.14
Fat, lb/day	2.44 ^a	2.20 ^b	2.41 ^a
<u>Less than 120 DIM at start of trial</u>			
Protein, %	2.87	2.93	2.87
Fat, %	3.61 ^a	3.05 ^b	3.17 ^b
Protein, lb/day	2.18	2.13	2.16
Fat, lb/day	2.66 ^a	2.17 ^b	2.48 ^a
<u>Less than 150 DIM at start of trial</u>			
Protein, %	2.96 ^{ab}	3.01 ^a	2.91 ^b
Fat, %	3.53 ^a	3.15 ^b	3.21 ^{ab}
Protein, lb/day	2.24	2.21	2.16
Fat, lb/day	2.59 ^a	2.27 ^b	2.50 ^{ab}

¹ covariate terms used for testing effect of treatment were lactation number, week of lactation at trial start and component test at trail start

^{a,b} values within a row without a common superscript differ (P<.05).

^{c,d} values within a row without a common superscript differ (P<.10).

AminoPlus fed cows produced more actual milk of higher fat content than cows fed either of the competitive bypass soy products. Least square mean milk production data for AminoPlus was greater than those cows fed the NESBM and similar to those cows fed the EXPSBM treatments. Using the least square means for milk and percent milk fat to estimate 3.5% FCM would result in values of 73.3, 68.9, and 73.0 lbs per day for the AminoPlus, NESBM, and EXPSBM treatments, respectively. The enhanced milk production occurred even though the rations were formulated to similar nutrient densities. The quantity of milk protein produced daily, while numerically higher for the AminoPlus treatment, was similar across treatments.