

— FEEDING TRIAL PERFORMANCE REPORT —

Background:

Previous to this study, a laboratory assay was conducted by Dr. George Fahey of the University of Illinois to determine the complex mannan content of the 3 mannan products evaluated in Stein's study. Fahey's assay showed that UltraMannan 120, Mannan B and UltraMannan 85 contained 121 mg, 99.5 mg and 84 mg, of complex mannan per gram of product, respectively.

Summary:

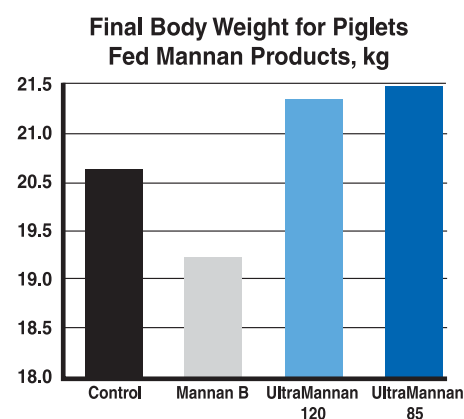
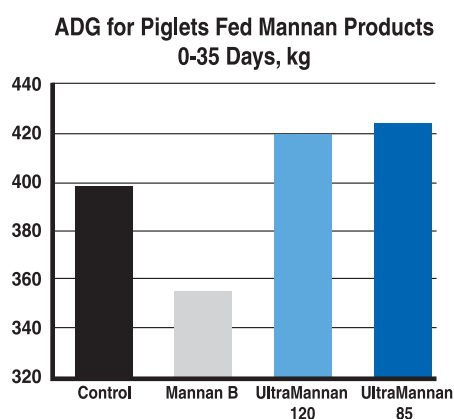
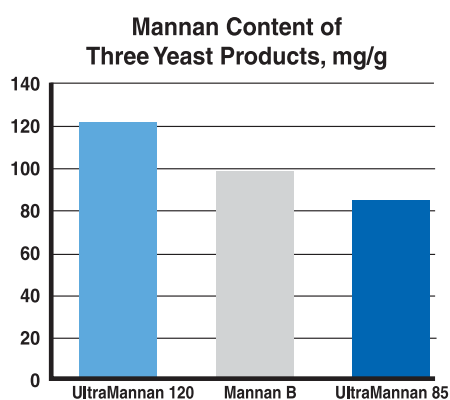
A 5-week study was conducted by Dr. Hans Stein of the University of Illinois to evaluate the effects of dietary mannan products on the growth performance of 20 day-old weanling pigs.

Diets supplemented with UltraMannan 120 and UltraMannan 85 significantly improved piglet growth performance compared to pigs fed diets containing the competitor's mannan product (Mannan B).

Methods and Materials:

A total of 96 pigs weaned at 20 days of age were assigned to one of four dietary treatments. All pigs were fed a Phase 1 diet day 0-14 post-weaning and Phase 2 diet day 15-35. All phase 1 diets contained 6% select menhaden fish meal, 20% dried whey powder, 29% soybean meal, about 40% corn and no plasma. In phase 2, the diets contained approximately 65% corn, 24% soybean meal, 6% fish meal and no whey powder or plasma. The control diet contained no mannan products. The remaining diets included one of three mannan products, included at various rates according to their mannan content, to equalize mannan content across treatments. Thus, UltraMannan 120, Mannan B and UltraMannan 85 were included at 0.24, 0.30 and 0.35% respectively. All diets were formulated to meet or exceed current NRC requirements.

Daily feed allotments was recorded, as well as, individual pig body weight (BW) on the day of weaning, at the end of phase 1 and at the end of the trial. At the conclusion of the experiment, average daily gain (ADG), average daily feed intake (ADFI) and gain to feed ratio (G:F) were calculated for each diet and period, with the pen being the experimental unit. Data were analyzed by ANOVA using the PROC MIXED procedure of SAS.



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Results and Discussion:

No differences were recorded in initial BW or day 14 BW. However, piglets fed diets containing UltraMannan 120 or UltraMannan 85 had a higher ($P<0.01$) final BW than piglets fed Mannan B. In addition, piglets fed dietary UltraMannan 120 or UltraMannan 85 tended ($P=0.10$) to have higher final BW than piglets fed the control diet.

ADG did not differ among treatments, day 0-14 post-weaning. But, day 15-35, piglets fed the diets containing either UltraMannan 120 or UltraMannan 85 had higher ($P<0.01$) ADG than piglets fed Mannan B. The pigs fed either UltraMannan product, tended to have higher ADG, day 15-35 and 0-35 ($P=0.07$ and 0.11 , respectively), than pigs fed the control diet.

ADFI of pigs fed either UltraMannan 120 or UltraMannan 85 day 15-35 and 0-35, tended ($P<0.06$) to be higher than the ADFI of the Mannan B fed pigs. Additionally, piglets fed either UltraMannan 120 or UltraMannan 85, day 15-35 and 0-35, tended ($P= <0.08$ and 0.09 , respectively) to have greater ADFI than piglets fed the control diet.

There were no treatment effects on G:F during any period during the trial and overall. In conclusion, in this experiment, pigs fed diets supplemented with UltraMannan 120 or UltraMannan 85 had significantly improved growth performance compared to pigs fed diets containing the competitor's mannan product and tended to have better performance than the pigs fed the control diet.

Table 2. Results from the experiment¹

Item	Diet:	Control	Mannan B	UltraMannan 120	UltraMannan 85	SEM	P-value, ANOVA	P-value, Control vs UltraMannans
Initial BW, kg		7.10	7.11	7.09	7.12	0.491	0.82	0.77
BW, d 14, kg		10.09	9.86	10.08	10.29	0.508	0.45	0.68
Final BW, kg		20.66 ^x	19.22 ^y	21.38 ^x	21.49 ^x	0.846	<0.01	0.10
ADG, d 0 – 14, g		214	197	214	226	13	0.44	0.70
ADG, d 15 – 35, g		529 ^x	468 ^y	566 ^x	561 ^x	26	<0.01	0.07
ADG, d 0 – 35, g		399 ^x	356 ^y	420 ^x	423 ^x	19	<0.01	0.11
ADFI, d 0 – 14, g		266	252	258	287	14	0.31	0.69
ADFI, d 15 - 35, g		861	814	957	948	48	0.06	0.08
ADFI, d 0 – 35, g		616	583	669	676	30	0.06	0.09
G:F, d 0 – 14, g/kg		797	780	832	796	33	0.66	0.64
G:F, d 14 – 35, g/kg		615	576	594	594	16	0.41	0.30
G:F, d 0 – 35, g/kg		647	613	631	627	15	0.47	0.34

¹ Data are means of 6 observations per treatment.

^{x, y} Means within a row lacking a common superscript letter differ ($P<0.01$)