

Dried distiller's grains with solubles ability to replace soybean meal in Boer goat diets

G. N. Gilliam, A. R. Crane, J. M. Lattimer, & C. K. Jones



Department of Animal Sciences and Industry, Kansas State University, Manhattan

Introduction

- Nutrition plays the biggest role on growth and carcass performance
- Feed costs are generally the largest expense associated with raising livestock
- There is little data available to Boer goat producers relating to nutrition and growth performance
- Dried distillers grains with solubles (DDGS) currently cost \$0.05/lb, while soybean meal (SBM) costs \$0.20/lb

Objectives

- To determine if DDGS can effectively replace SBM in a growing Boer goat diet
- Provide the producer with more information regarding Boer goat nutrition
- Analyze differences in growth and carcass performance from including DDGS in the diet

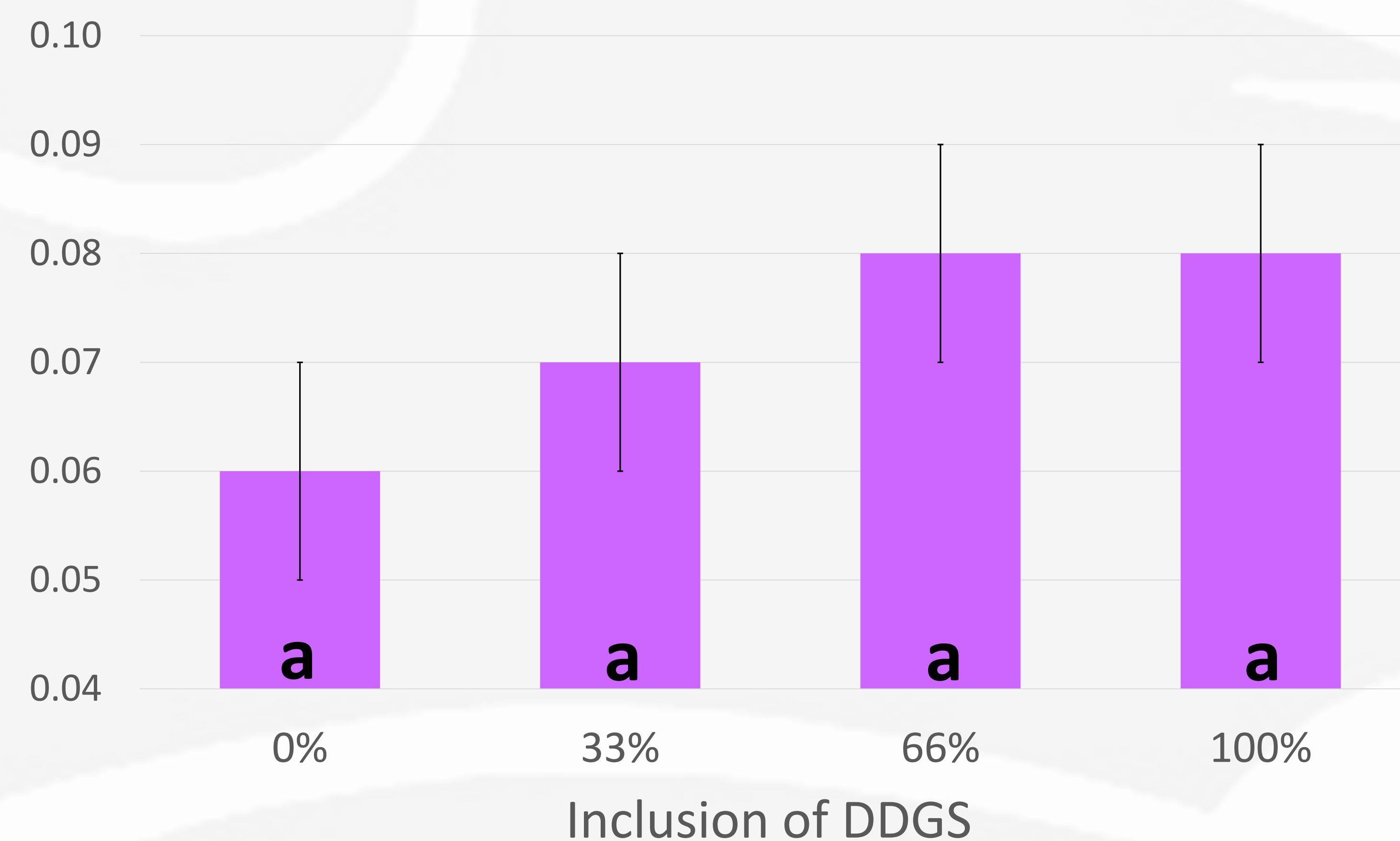
Experimental Procedures

- 48 Boer goat kids weighing 28.2-28.4 kg were placed on a 14 day step-up diet prior to the experiment
- Pens were set up in a completely randomized design with 4 pens per treatment and 3 goats per pen
- 4 treatments with varying levels of DDGS inclusion were fed to the goats for 47 days
- Treatments were: 1) 0% DDGS, 2) 33% DDGS, 3) 66% DDGS, 4) 100% DDGS in place of SBM
- Goats, feeders, and daily feed added was weighed weekly to calculate ADG, ADFI, and G:F
- 2 goats per pen were slaughtered at a USDA inspected facility following the experiment
- Carcass data was collected following slaughter to determine hot carcass weight, loin eye area, back fat depth, and body wall thickness.
- Data was analyzed using the GLIMMIX procedure of SAS with an alpha value of 0.05.

Experimental period results of DDGS vs SBM

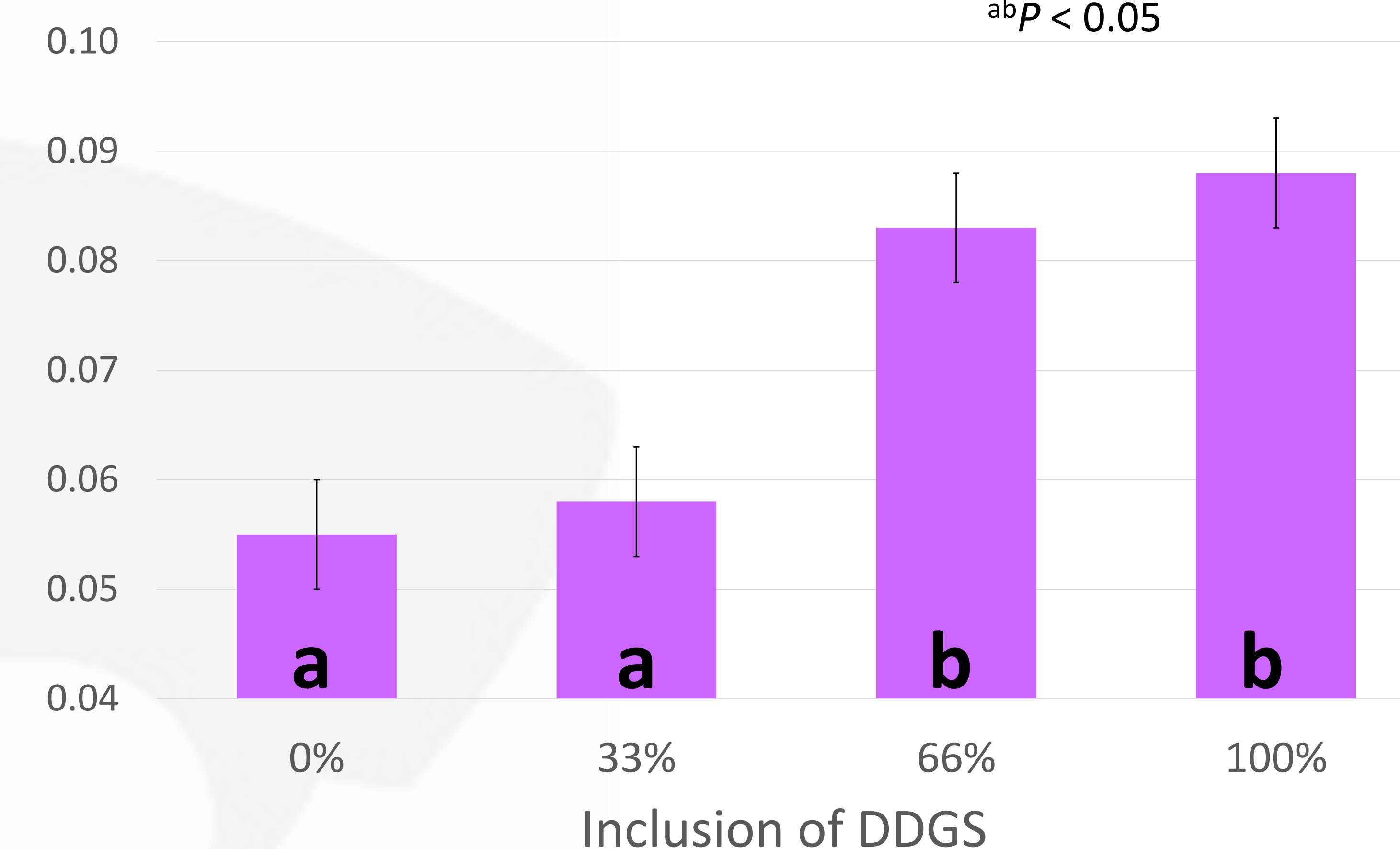
ADG D 0-47

Treatment $P = 0.092$
 DDGS vs none $P = 0.032$
 Linear $P = 0.017$
 Quadratic $P = 0.560$



G:F D 0-47

Treatment $P = 0.001$
 DDGS vs none $P = 0.005$
 Linear $P = 0.002$
 Quadratic $P = 0.816$
 $^{ab}P < 0.05$



Cost of including DDGS vs SBM

Ingredient	Cost/lb	DDGS Inclusion in place of SBM, %				Cost, \$/ton			
		Trt1	Trt2	Trt3	Trt4	Trt1	Trt2	Trt3	Trt4
Corn	\$0.05	0.00	10.30	20.50	31.05	0.00	9.79	19.48	29.50
SBM, 48%	\$0.20	15.45	10.26	5.12	0.00	63.34	42.07	21.01	0.00
Corn	\$0.06	52.75	51.17	49.61	48.31	68.20	66.16	64.14	62.46
SBHulls	\$0.06	25.93	22.61	19.31	15.04	32.41	28.26	24.14	18.80
Total	-	100.0	100.0	100.0	100.0	\$163.95	\$146.28	\$128.77	\$110.76

Conclusions

- G:F was the only factor that showed a significant difference ($P < 0.001$) with the inclusion of DDGS, replacing SBM
- The highest G:F ratio was seen in the inclusion of 100% DDGS
- ADFI and ADG overall showed no signs of change during the experiment ($P > 0.05$)
- ADG did show a significant difference ($P < 0.032$) when comparing the 0% to 100% of DDGS included in the diet
- There was no significant difference ($P > 0.05$) found when analyzing HCW, LEA, back fat depth, and body wall thickness
- HCW increased from 18.4 to 19.8 kg when comparing 0% to 100% DDGS included
- DDGS can effectively replace up to 100% of SBM in a growing Boer goat diet
- Replacing 100% of SBM with DDGS in the diet can save the producer \$53.19/ton in feed costs