

# Impact of Varying Protein Sources and Chloride Inclusion on Feedlot Goat Growth and Carcass Traits

A.P. Gauthier, R.J. Sorensen, A.R. Crane, J.L. Lattimer, and C.K. Jones



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

## Introduction

- About 63% of red meat consumed worldwide comes from goats.
- 1.5 million pounds of goat meat is imported into the United States every week, with demand steadily increasing.
- There is limited research on the effects of different protein sources on goat growth and carcass quality.
- SoyPlus and SoyChlor are soybean-based products rapidly gaining popularity in the feed industry.

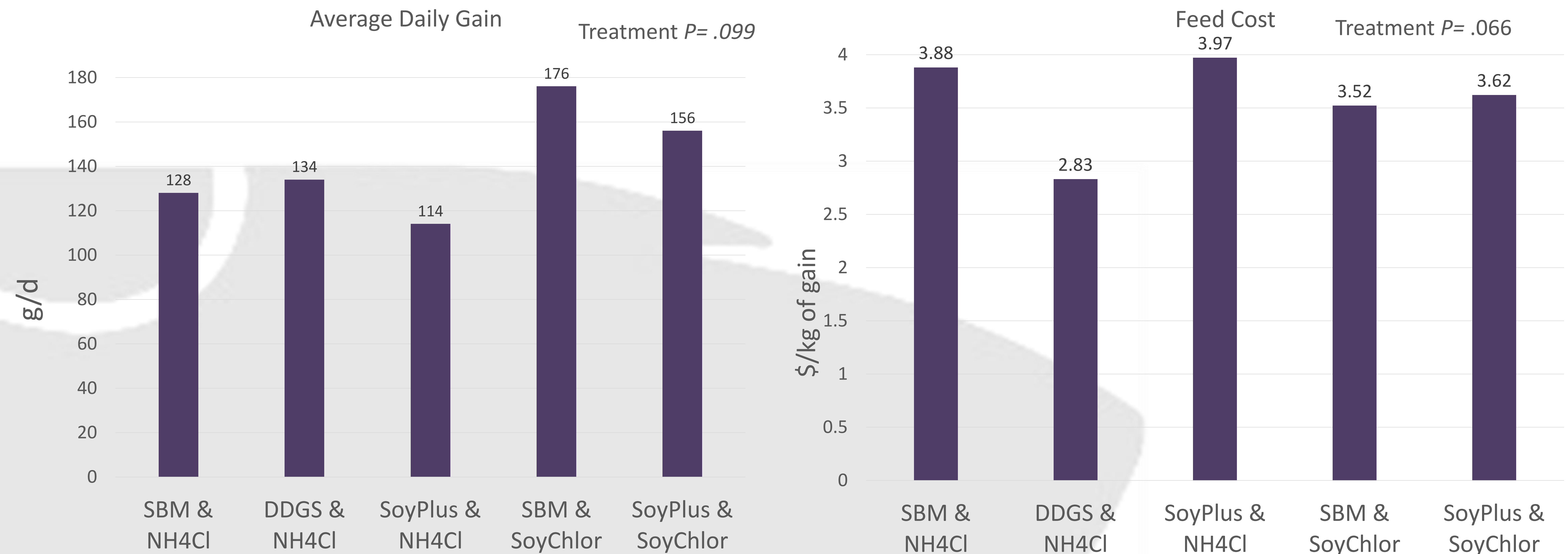
## Objective

- To evaluate the effects of varying protein sources and chloride sources in boer goat diets and evaluate their impacts on growth and carcass quality.

## Experimental Procedures

- 75 feedlot Boer goats, approx. 50 lbs. starting weight, were divided randomly into pens of 3 with 5 pens per treatment.
- Treatments consisted of:
  - 1) 18.7% SBM with 0.75% NH4Cl
  - 2) 34.4% DDGS with 0.75% NH4Cl
  - 3) 22.0% SoyPlus with 0.75% NH4Cl
  - 4) 17.2% SBM with 4.83% SoyChlor
  - 5) 20.0% SoyPlus with 4.83% SoyChlor
- For two weeks, goats were accustomed to a standard diet before beginning trial diets.
- The goats were fed their treatment diet for 42d after the starter diets were complete.
- The goats had continual access to feed and the weight of any feed added was recorded.
- The goats and their feeders were weighed weekly.
- ADG, ADFI, and G:F were calculated at the end of the experiment.
- Carcass traits were calculated at the end of the experiment.

## Experimental Period Results



## Carcass Trait Results

Protein source:	SBM		DDGS		SoyPlus		SEM	Treatment	P =				
	NH4Cl	NH4Cl	NH4Cl	NH4Cl	SoyChlor	SoyChlor			SBM vs. DDGS	SBM vs. SoyPlus	DDGS vs. SoyPlus	NH4Cl vs. SoyChlor	
n =	10	10	10	10	10	10							
Hot carcass weight, kg	15.6	14.5	13.1	16.4	14.7	14.7	1.09	0.264	0.252	0.058	0.672	0.231	
Carcass yield, %	50.7	49.4	48.3	50.7	49.6	49.6	1.11	0.519	0.344	0.122	0.742	0.504	
Loin eye area, cm <sup>2</sup>	10.8 <sup>a</sup>	9.4 <sup>ab</sup>	9.5 <sup>ab</sup>	11.4 <sup>a</sup>	8.8 <sup>b</sup>	8.8 <sup>b</sup>	0.66	0.046	0.040	0.005	0.781	0.750	
Loin eye depth, cm	2.6	2.4	2.4	2.6	2.3	2.3	0.11	0.135	0.120	0.021	0.719	0.778	
Backfat depth, mm	0.9	1.2	1.0	1.1	1.2	1.2	0.17	0.710	0.379	0.513	0.727	0.461	
Body wall thickness, cm	1.5	1.6	1.5	1.7	1.5	1.5	0.13	0.756	0.928	0.515	0.534	0.437	

## Conclusions

- Overall there was no significant change ( $P > 0.05$ ) in the ADG between the five treatments.
- DDGS are shown to be the most cost-effective choice when compared to the other protein sources.
- Carcasses fed SBM had greater carcass traits compared to other protein sources.

## Acknowledgements

This project was sponsored by Dairy Nutrition Plus, creators and distributors of SoyPlus and SoyChlor. We also would like to acknowledge Joe Hubbard and the employees at the Kansas State University Sheep and Meat Goat Center.