

# Effect of replacing soybean meal with dried distillers grains in meat goat diets



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## Introduction

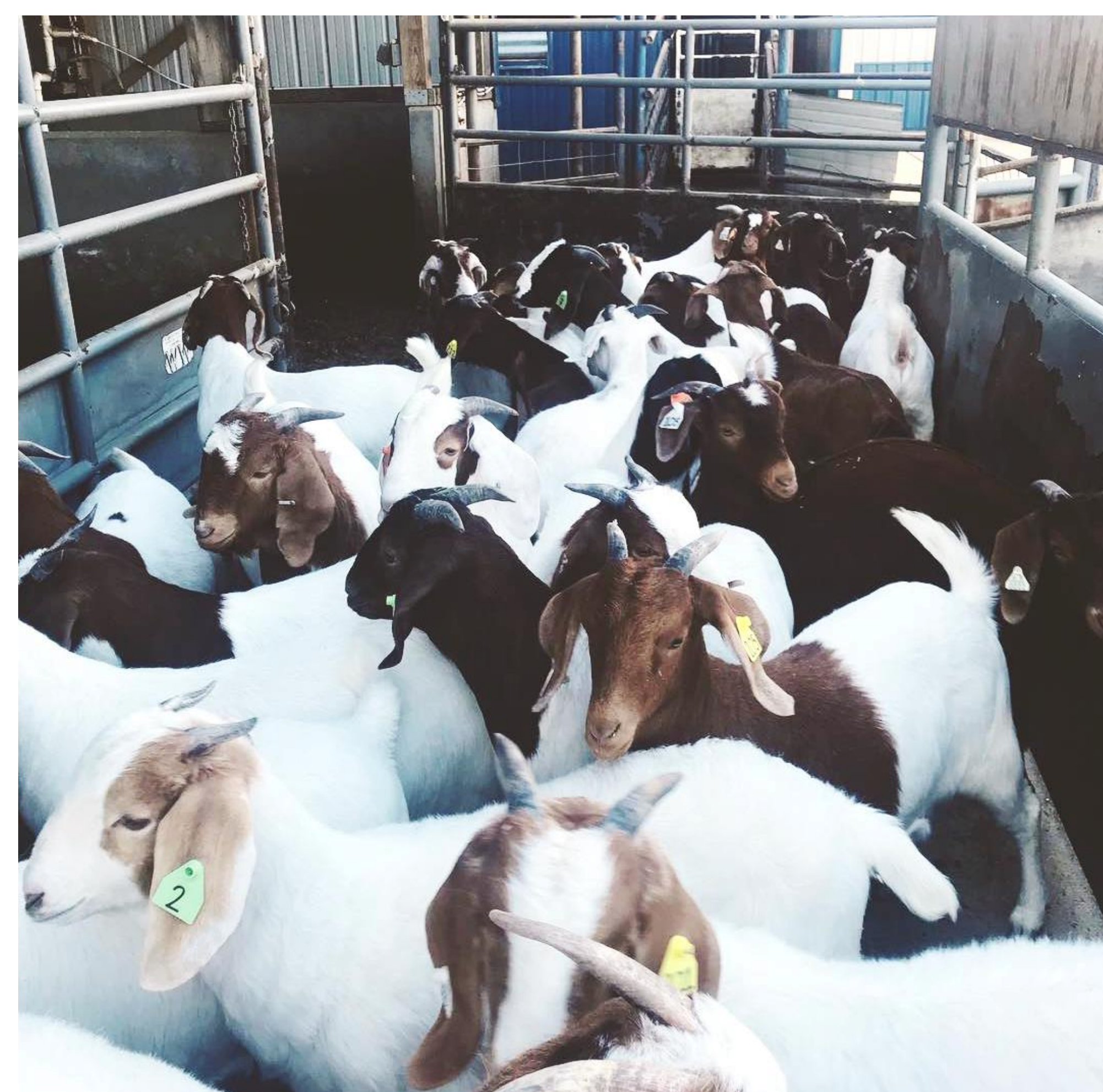
- The inventory of market goats in the country is quickly rising with United States goat production having increased by 211% in the last 15 years resulting in a huge opportunity for applied research.
- With nutrition accounting for more than 65% of production costs, it is the basis of a profitable livestock operation.
- Unfortunately, goat nutrition has received limited attention and their requirements have often been extrapolated from other species (cattle and sheep) due to a lack of information.
- More specifically, there is very limited data available regarding the role of feeding dried distillers grains with solubles (DDGS) to goats and the profit potential associated with the inclusion of the highly available, relatively inexpensive protein source.
- With the per protein unit cost advantage of DDGS over SBM being \$1.86, DDGS would clearly price into goat diets (October 26, 2017 U.S. Grains Council Report).
- However, there is insufficient data for goat producers or small ruminant nutritionists to base recommendations for potential inclusion of DDGS in a diet.

## Objective

- To evaluate the efficacy of dried distillers grains with solubles as a replacement for soybean meal in a Boer goat diets

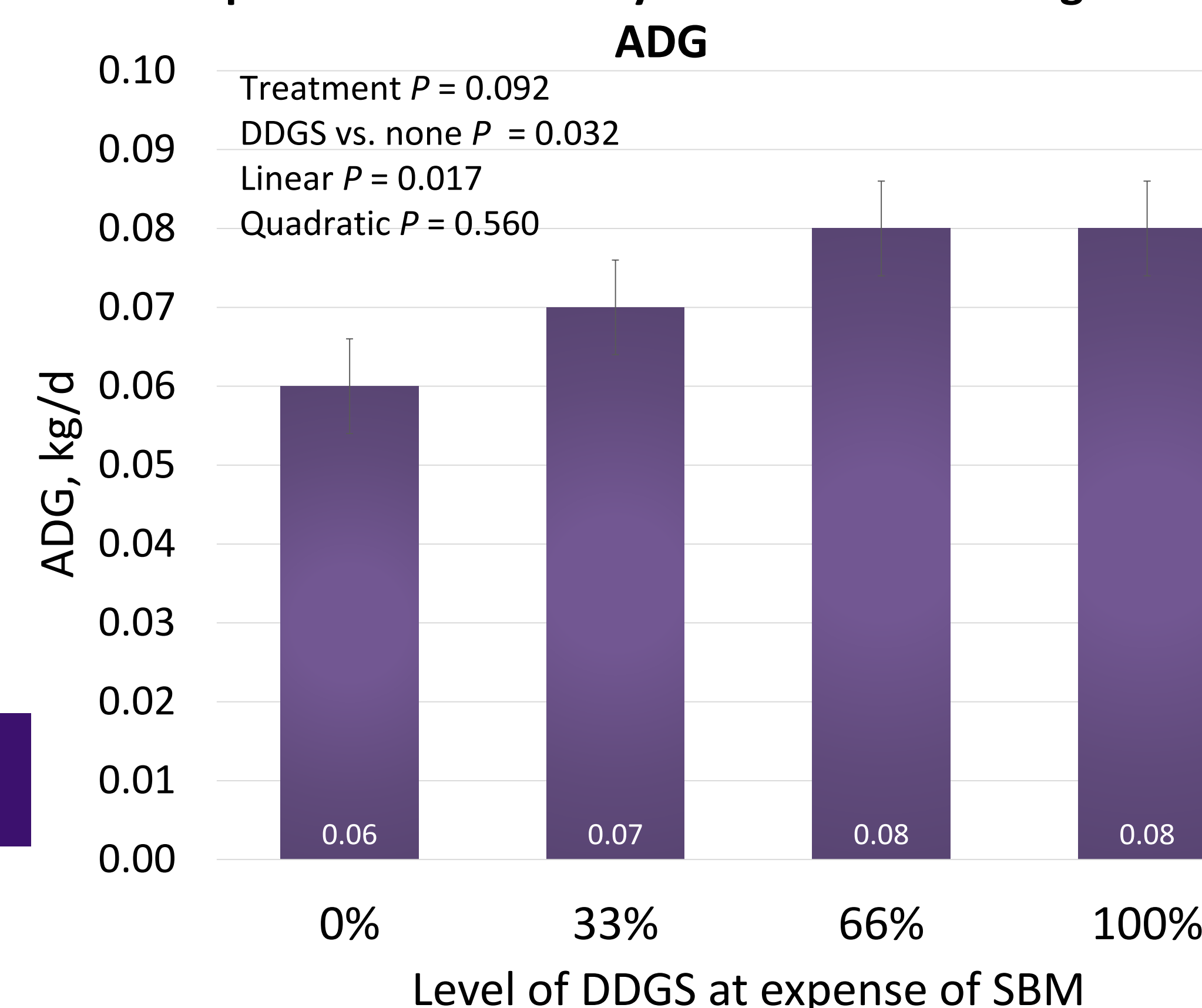
## Methods

- Forty-eight Boer-influenced meat goat kids (approximately 70 d of age and initially 28.2kg) were used in a completely randomized design to determine the efficacy of DDGS as a replacement for SBM in a Boer goat diet.
- Animals were housed at the Kansas State University Sheep and Meat Goat Center with 3 kids per pen (4 pens per treatment).
- Pens were allotted into one of four experimental diets:
  - 0% SBM replaced by DDGS
  - 33% SBM replaced by DDGS
  - 66% SBM replaced by DDGS
  - 100% SBM replaced by DDGS
- All diets were pelleted at the Kansas State University feed mill with pellets formulated to contain roughage so no supplemental forage was required.
- Crude protein, digestible energy, Ca, and P were held constant, while crude fat and crude fiber were allowed to float.
- Following a 14 d step up period, diets were fed for 46 d with goats and feeders weighed weekly to determine ADG, ADFI and G:F.
- Two goats per pen were randomly selected and slaughtered at a USDA-inspected facility.
- Carcass data was collected on all goats slaughtered including HCW, carcass yield, loin eye area, loin eye depth, back fat depth and body wall thickness.
- Data was analyzed using the GLIMMIX procedure of SAS with pen as the experimental unit and 0.05 as the alpha value.

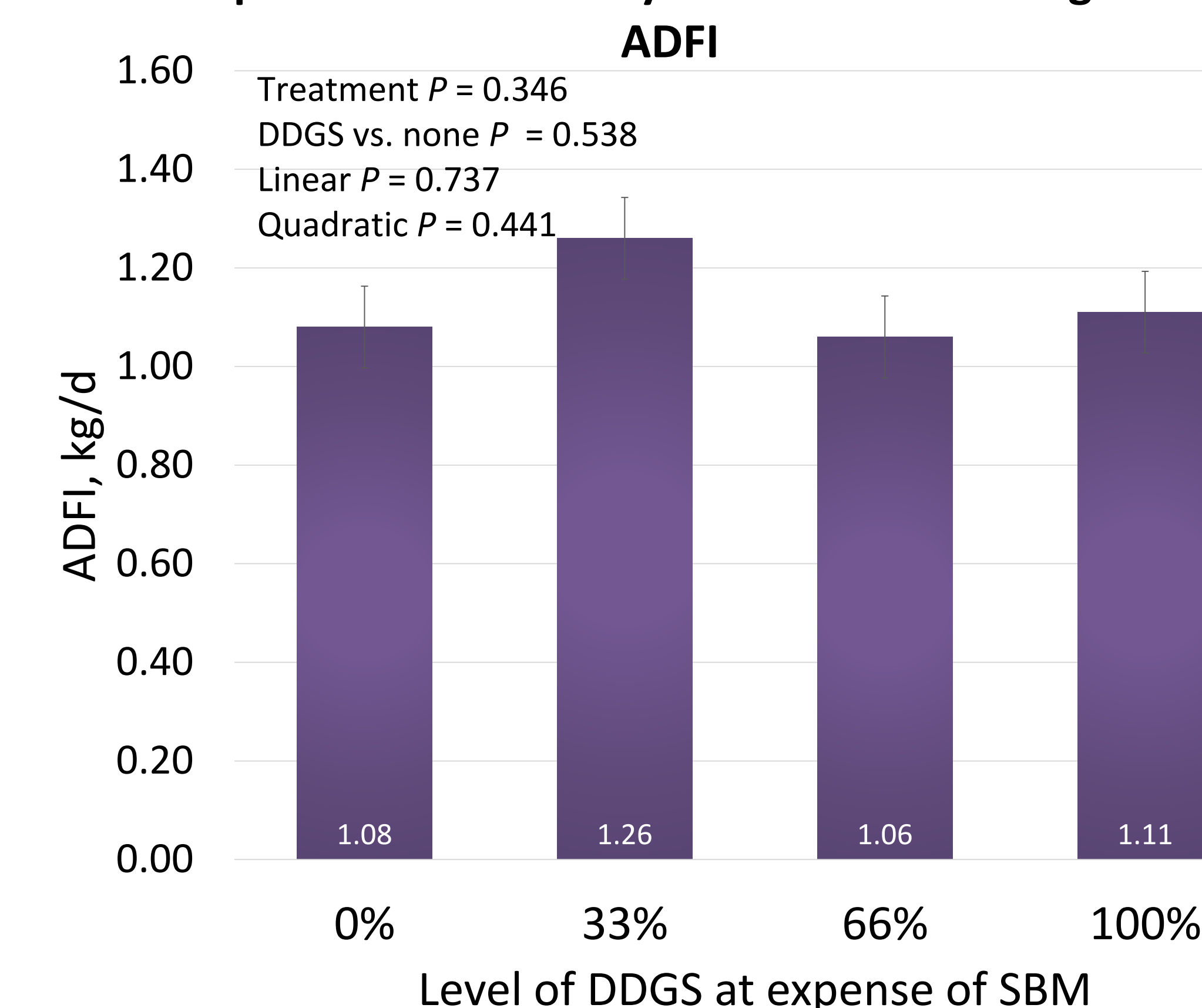


## Results

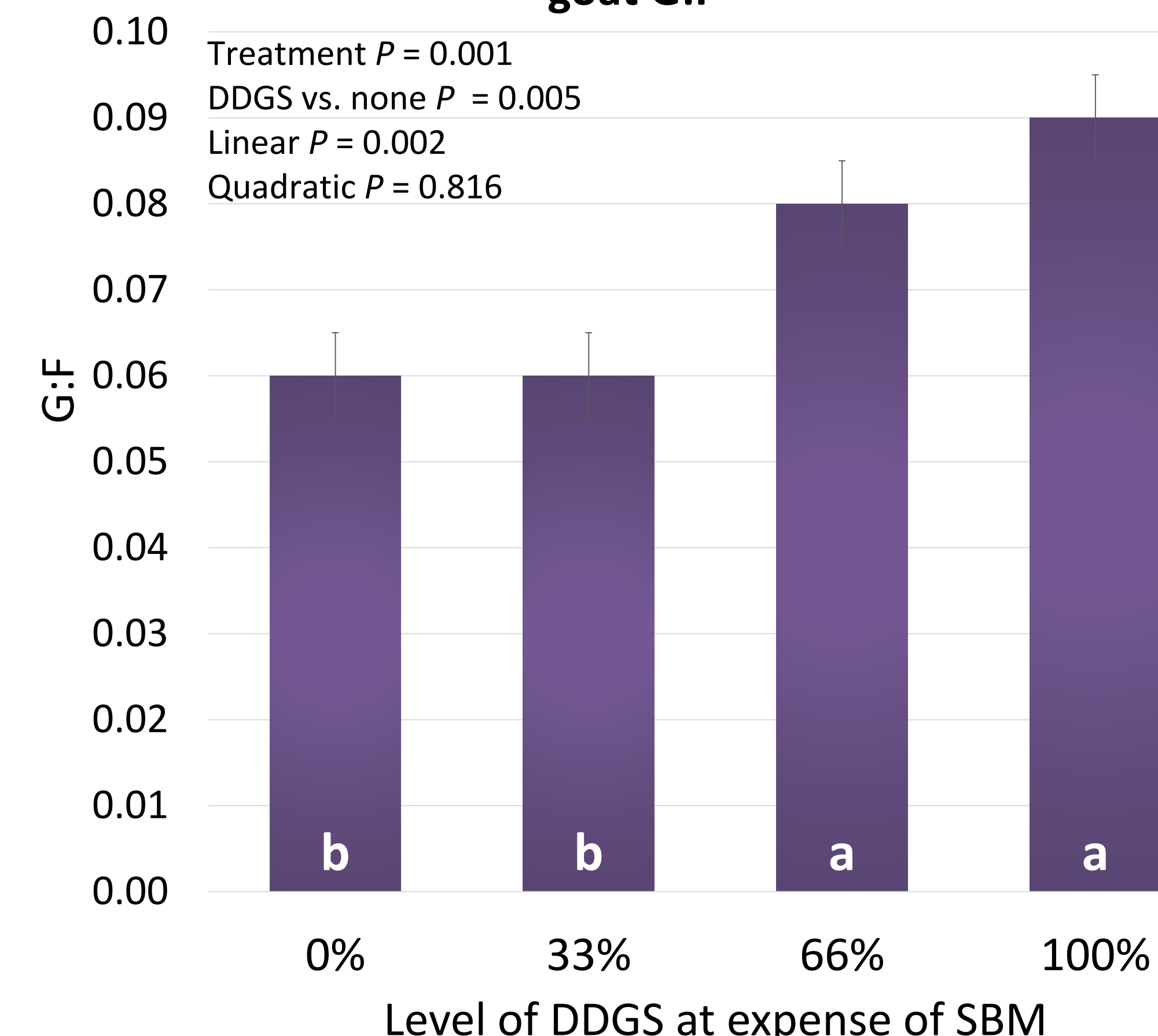
### Impact of DDGS vs. Soybean Meal on Boer goat



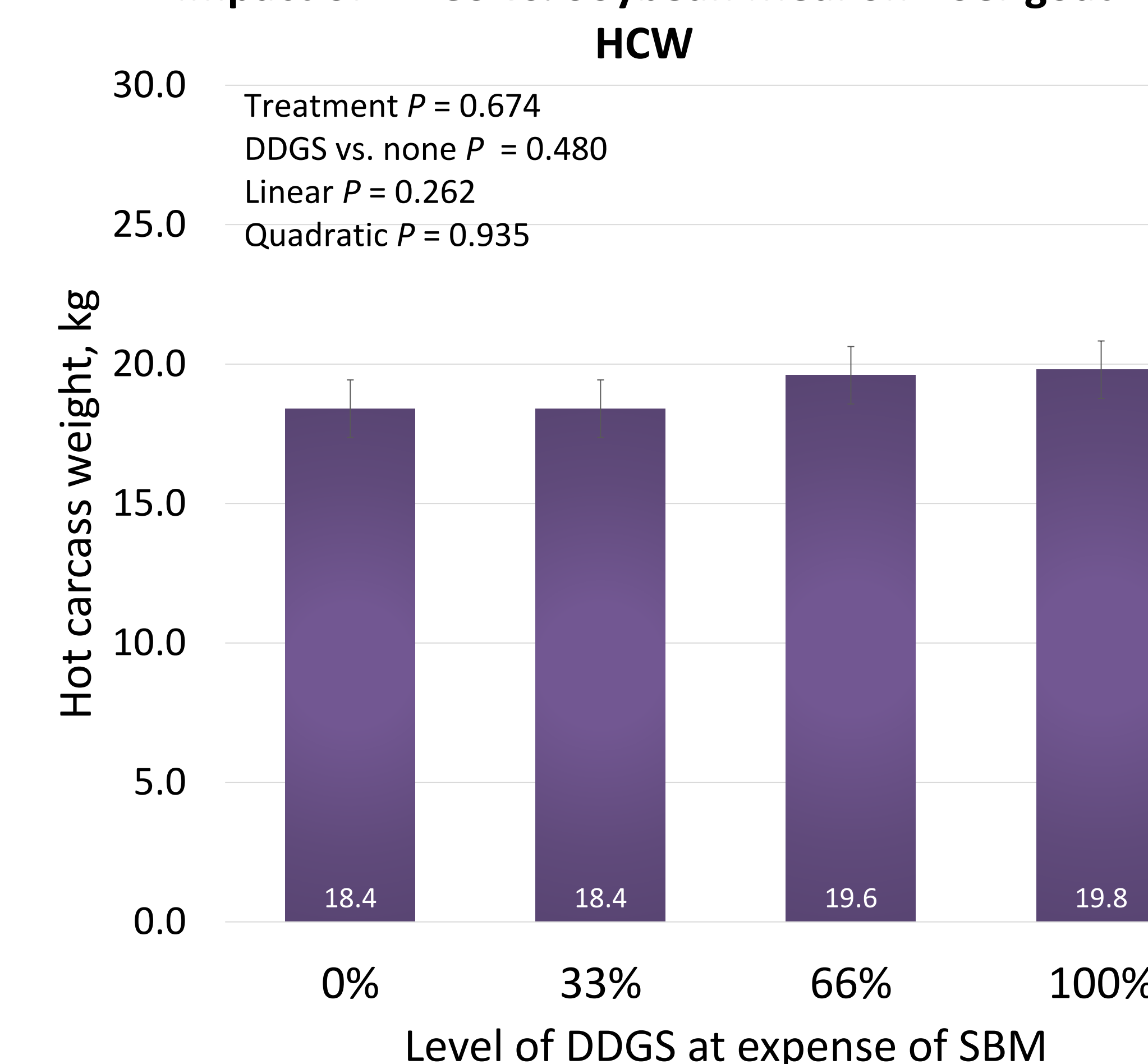
### Impact of DDGS vs. Soybean Meal on Boer goat



### Impact of DDGS vs. Soybean Meal on Boer goat G:F



### Impact of DDGS vs. Soybean Meal on Boer goat



## Conclusion

- DDGS increased ( $P < 0.0001$ ) overall G:F but not overall ADG or ADFI ( $P > 0.10$ ). This was due to a linear improvement ( $P < 0.2$ ) in overall ADG and G:F with increasing DDGS.
- Overall, the greatest feed efficiency was observed at goats fed either 66% or 100% of SBM replaced by DDGS compared to those fed 0% or 33% of SBM replaced by DDGS.
- There was no evidence of effect ( $P > 0.10$ ) on carcass measurements.
- In summary, including DDGS in replacement of SBM in Boer goat diets did not impact ADG, ADFI or carcass measurements but did improve G:F.