

# Evaluation of Animal Performance and Economic Impact on Cool-Season Small Grain Monoculture Grazing

Anthony Cypher, Bret Rushing, John Clay Lyles

Coastal Plain Experiment Station, Mississippi State University, Newton, MS

## Introduction

Cool-season small grains have a reputation for producing high quality feedstuffs. They also possess the feeding versatility to be grazed or green-chopped. The varying capacity of these grasses to provide quantifiable dry matter directly affects animal performance and revenue.

This study was conducted to evaluate animal performance and economic impact on the grazing of three cool-season monocultures.



Figure 1: Cattle Grazing 'Bob' oats

## Methods

A grazing field trial was conducted in Newton, MS (2024-2025), comparing the three cool-season monocultures.

- Cereal Rye (*Secale cereale*, 'Elbon'; CR)
- Oats (*Avena sativa*, 'Bob'; OA)
- Triticale (*Triticosecale* Wittm. ex A. Camus, 'Tritical Gainer 154'; TR)

All treatments were no-till planted into a stale seedbed in the fall of 2024 at 100 lb/ac. Grazing was achieved using Angus cross-bred steers (468 ± 57 lb hd<sup>-1</sup>).

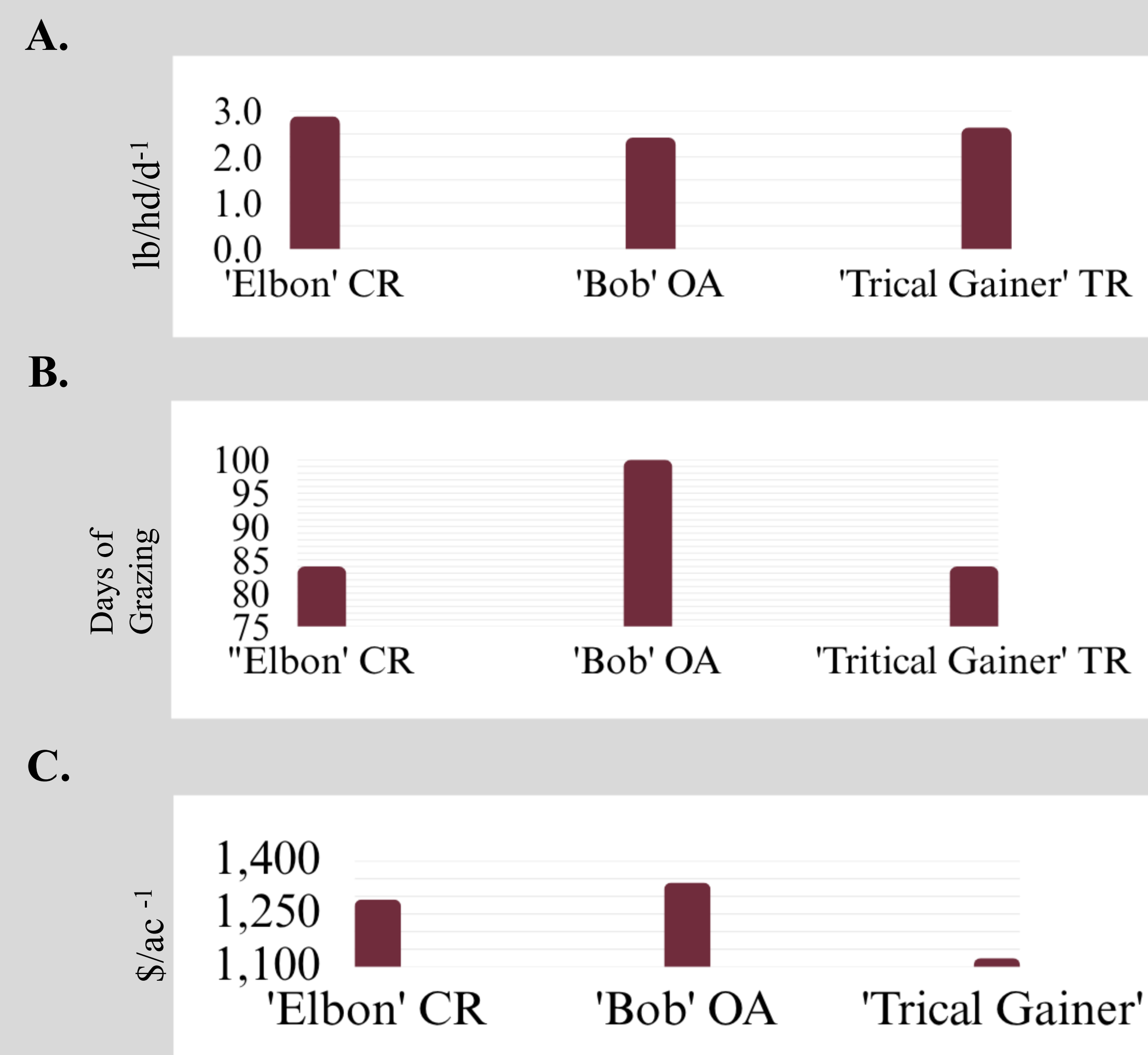
- Stocking rate of 1,000 lb live weight per acre
- Grazing initiated: forage height of 10 inches
- Grazing terminated: forage height of 4 inches
- Animals were weighed at the beginning and end of each grazing interval
- Grazing intervals of 28 days, dependent on forage availability

Table 1: Animal and economic performance of steers grazing at the experiment station in Newton, MS

Variable	Species		
	'Elbon' Cereal rye	'Bob' Oats	'Tritical Gainer 154' Triticale
ADG, lb hd d <sup>-1</sup>	2.88	2.42	2.64
GAIN, lb ac <sup>-1</sup>	484	486	445
Cost of gain, \$ lb <sup>-1</sup>	0.63	0.64	0.69
Net revenue, \$ ac <sup>-1</sup>	1291.09	1338.7	1125.15
Days grazing, d	84	100	84

## Results

- Grazing of monocultures can be economically profitable.
- All treatments resulted in net revenue over \$1000.
- All treatments resulted in ADG over 2.4 lbs per day.
- No significant differences were observed between the variables of each species



Graph Description: Average daily gain (A.), days of grazing (B.), net revenue (C.), of steers grazing in Newton, by species.



Figure 2: Steer grazing post-freeze conditions of 'Bob' oats

## Conclusion

- Grazing days were based on environmental conditions. See figure 2 to view the effects of a freeze on OA.
- Future research should focus on biodiversity. Small grain mixes could allow for increased grazing days, and in turn allow for increased revenue.
- Varietal development should also be a future focus. TR, being an improved hybrid variety, did not substantially outperform traditional varieties.