EVALUATION OF FALL STOCKER CALVES GRAZING ALFALFA INTERSEEDED INTO TWO BERMUDAGRASS BASES

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Introduction

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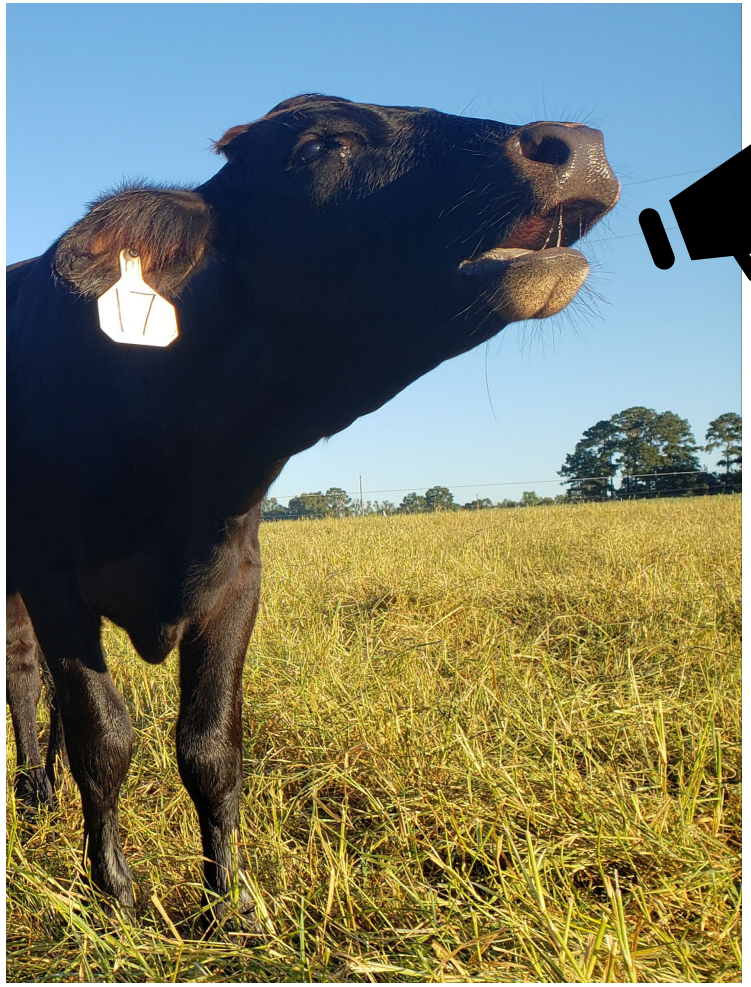
Benefits of Interseeding Alfalfa



N Fixation

High Quality Forage

Wildlife Benefits

Stand Diversity

Palatability

Deep Root System

Alfalfa improves bermudagrass grazing

- Study location: Tifton, GA
- Objective: Evaluate agronomic performance of ABG, BG, or BG+N stands in grazing systems
- ABG mixtures have higher crude protein and TDN
- ABG had higher seasonal LWG ha^{-1} and stocking rate (kg BW ha^{-1})
- ABG had the greatest estimated revenue

Photo Credit: Shauni Nichols

Burt et al 2022

Stockpiling Alfalfa Bermudagrass Mixtures

- Study locations: Tifton, GA and Shorter, AL
- Objective: Compare 5 different harvest timings on stockpiled ABG
- ABG stockpiled for 10+ weeks has reduced nutritive value
- ABG stockpiled for < 6 weeks has reduced herbage accumulation

Vasco et al 2023

Grazing ABG with differing BG cultivar

- Study Location: Tifton, GA
- Objective: Optimize the harvest strategies of utilizing ABG mixtures
- Cut, Graze, or Cut and Graze treatments on two BG cultivars
- Cut and Graze treatment optimized the use of the mixture
  - Improved nutritive value
  - Maintain alfalfa stand density
  - Distributes economic and production risk across the season

Photo Credit: Dr. Lisa Baxter

Burt et al 2024a,b (in press)

Key Take-Aways

- Optimize ABG stand performance:
  - 28 days of rest between grazing events
  - Dual use management
  - Shorter grazing intervals
  - September grazing initiation fills a seasonal forage gap
  - Earlier grazing initiation improves forage quality

Photo Credit: Dr. Lisa Baxter

Burt et al 2024a,b (in press)

Objective

To evaluate the use of a four-day grazing rotation and the associated impacts on (1) animal performance of stocker calves and (2) stand performance of the forage base when strategically grazed during the fall in a dual-use (cut and graze) system.

Study Design

Study location: Tifton, GA

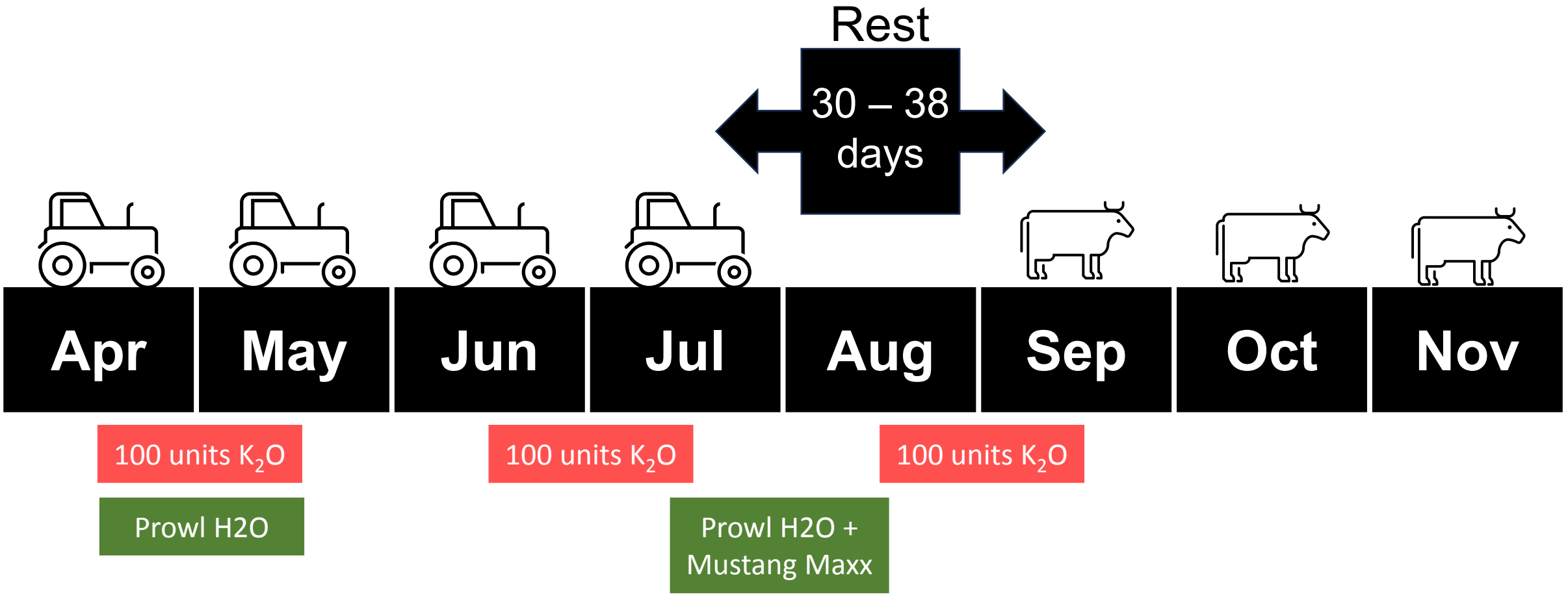
Year 1: September to November 2022

Year 2: September to November 2023

Randomized Complete Block Design

- Two bermudagrass cultivars interseeded with Bulldog 805 alfalfa in fall 2019
  - ‘Russell’ (Rus+A)
  - ‘Tifton 85’ (T85+A)

Study Design



Grazing Management

- 1 ha. paddocks divided into 8 subsections
- Temporary electric fencing with portable water, mineral, and shade
- Put-and-take grazing
- Estimated forage targets were:
  - 3% BW intake
  - 75% utilization efficiency
  - 1:1 forage allowance

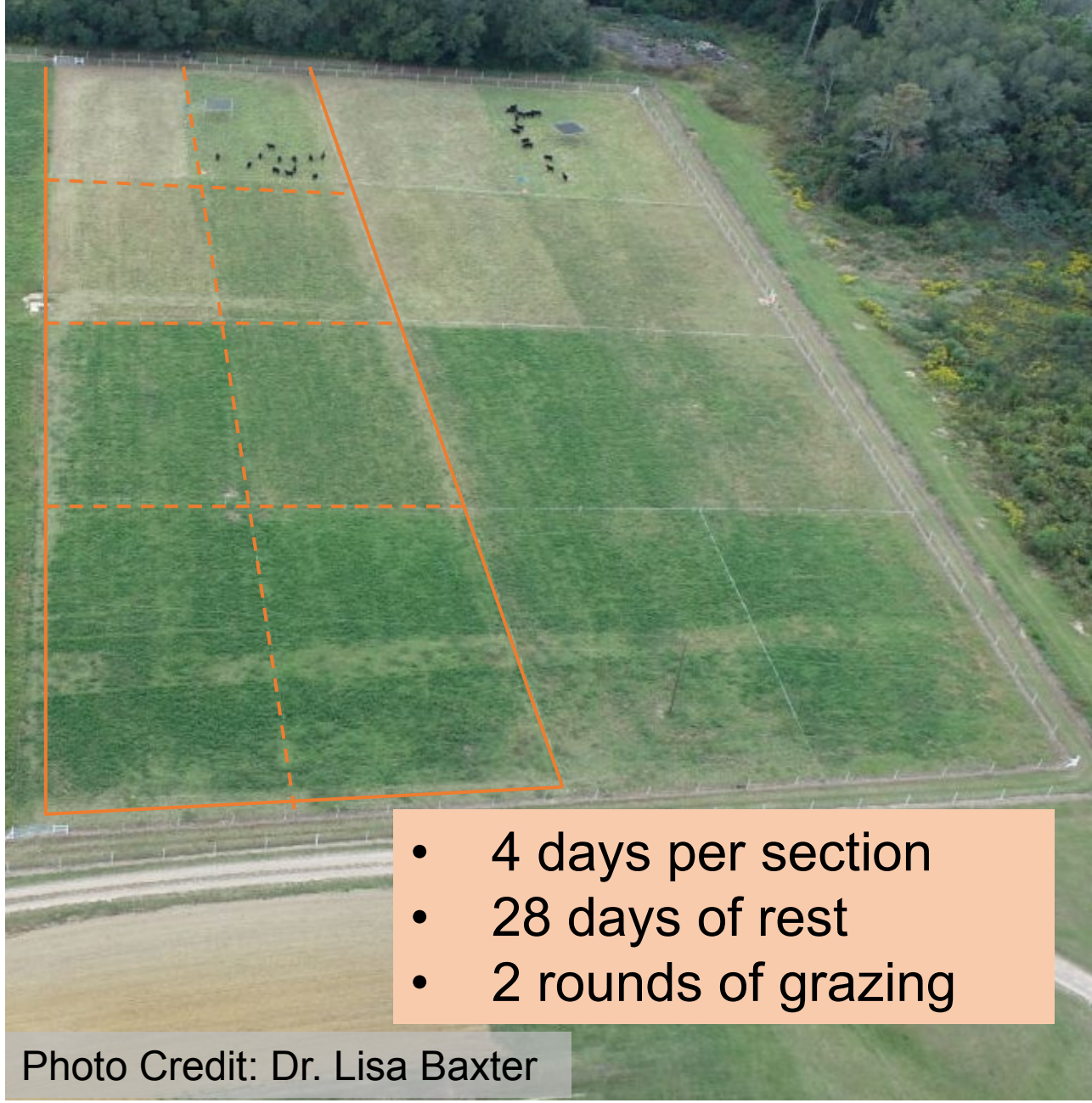
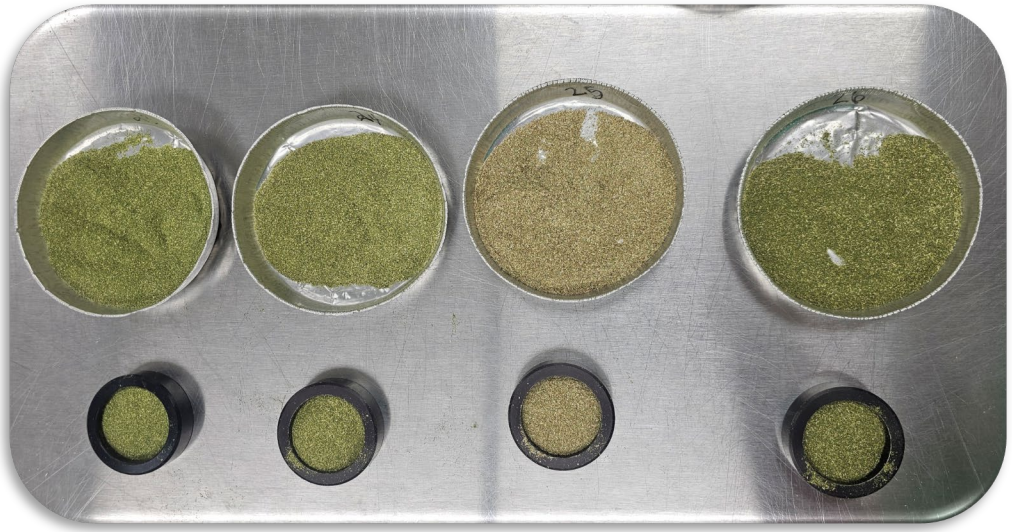


Photo Credit: Dr. Lisa Baxter

Forage Collection and Analysis

- Forage Collection:
  - 0.1m^2 quadrats
  - Pre and Post Grazing
- Evaluated for:
  - Forage Mass
  - Botanical Composition
  - Nutritive Value (Pre-graze)



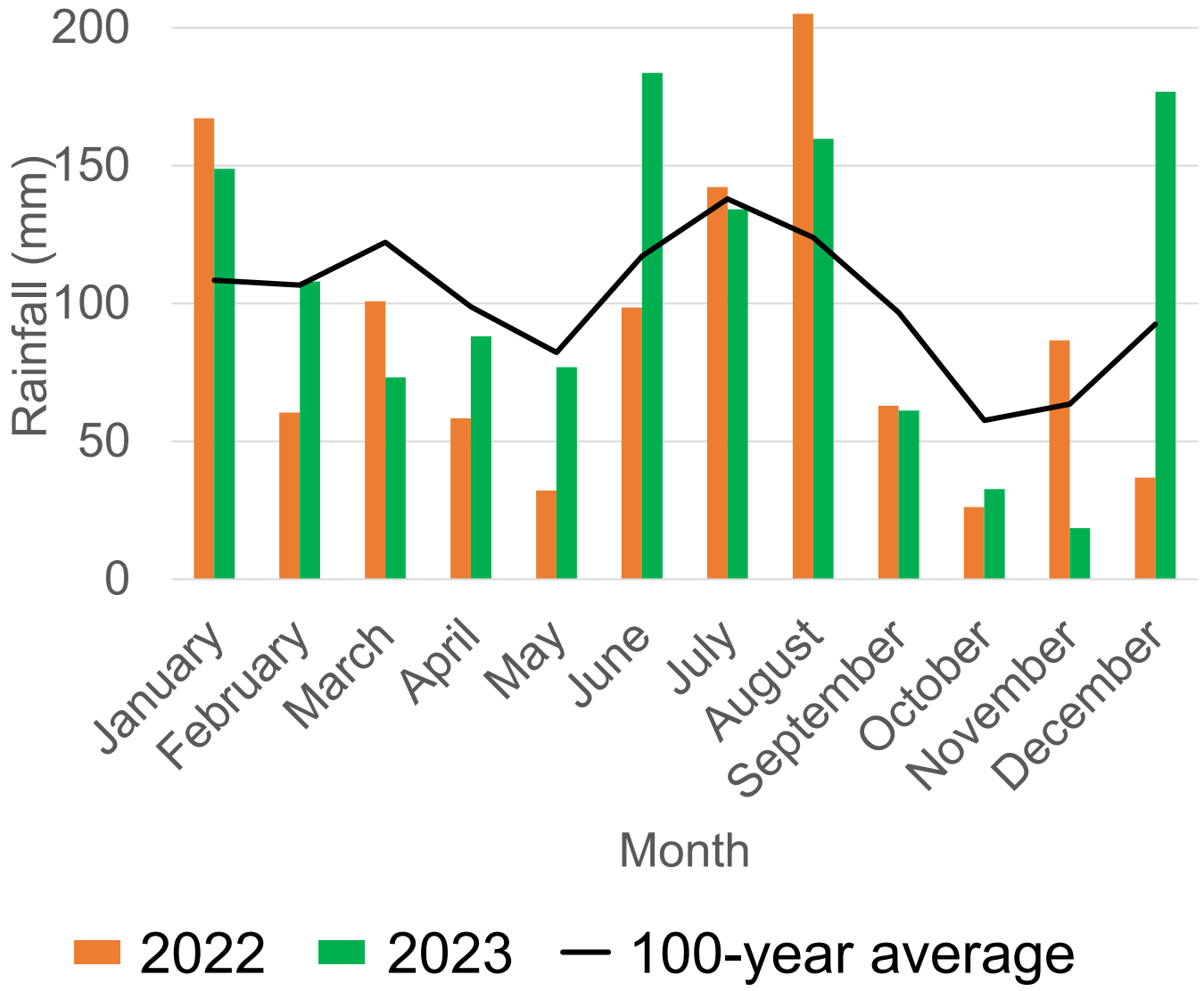
Statistical Analysis

- Statistical analysis was conducted using the PROC MIXED procedure of SAS 9.4 (Cary, NC)
- Fixed Effects = Bermudagrass Cultivar and Grazing Period
- By = Year
- Random Effects = Block
- Ran with REPEATED measures
- Significance defined at $\alpha \leq 0.05$

Results

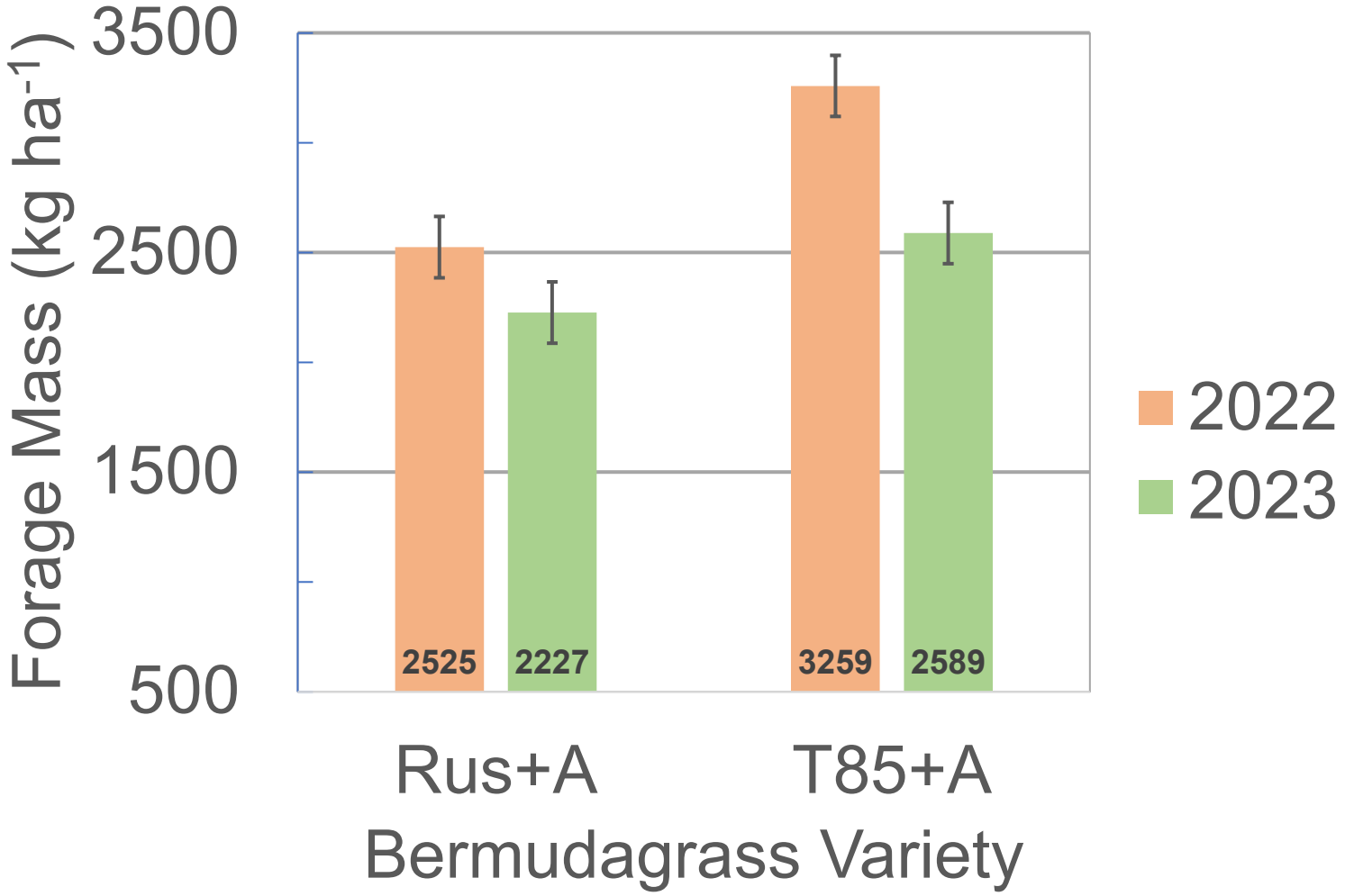
Weather

- Air temperatures were similar to 100-year average
- Less rainfall during grazing compared to the 100-year average
  - Year 1: 89 mm
  - Year 2: 94 mm



Forage Performance

- Grazing Days
  - Year 1: 62
  - Year 2: 56

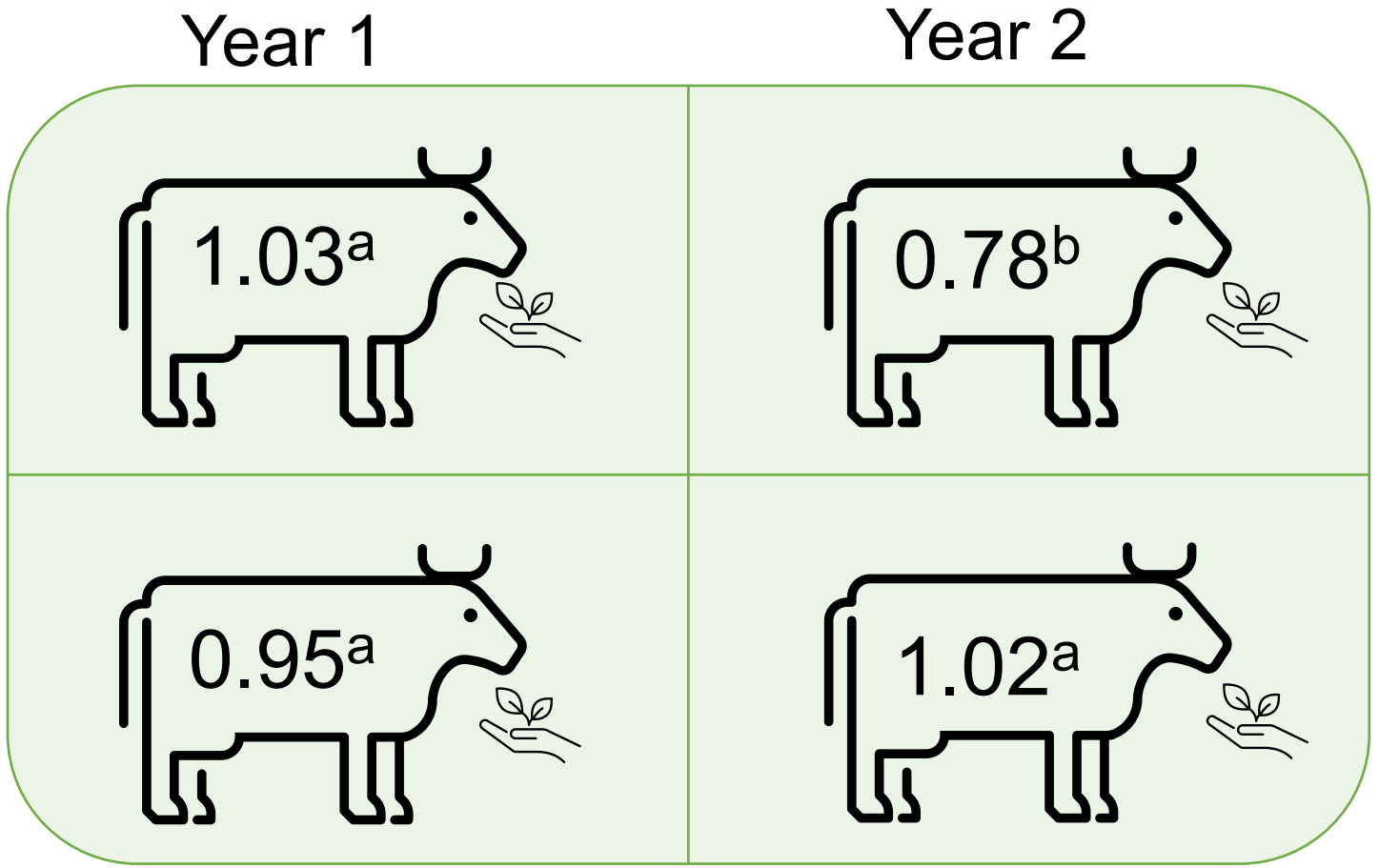


Std. Error: Differences within year

Forage Allowance

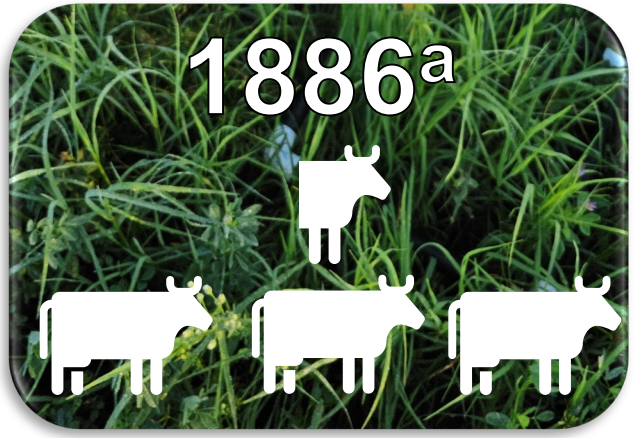
Forage allowance (kg DM kg^{-1} liveweight)

Goal: 1 kg DM kg^{-1} LW



Letters represent differences within year

Stocking Rate (kg ha^{-1})

	Year 1	Year 2
Rus+A		
T85+A		

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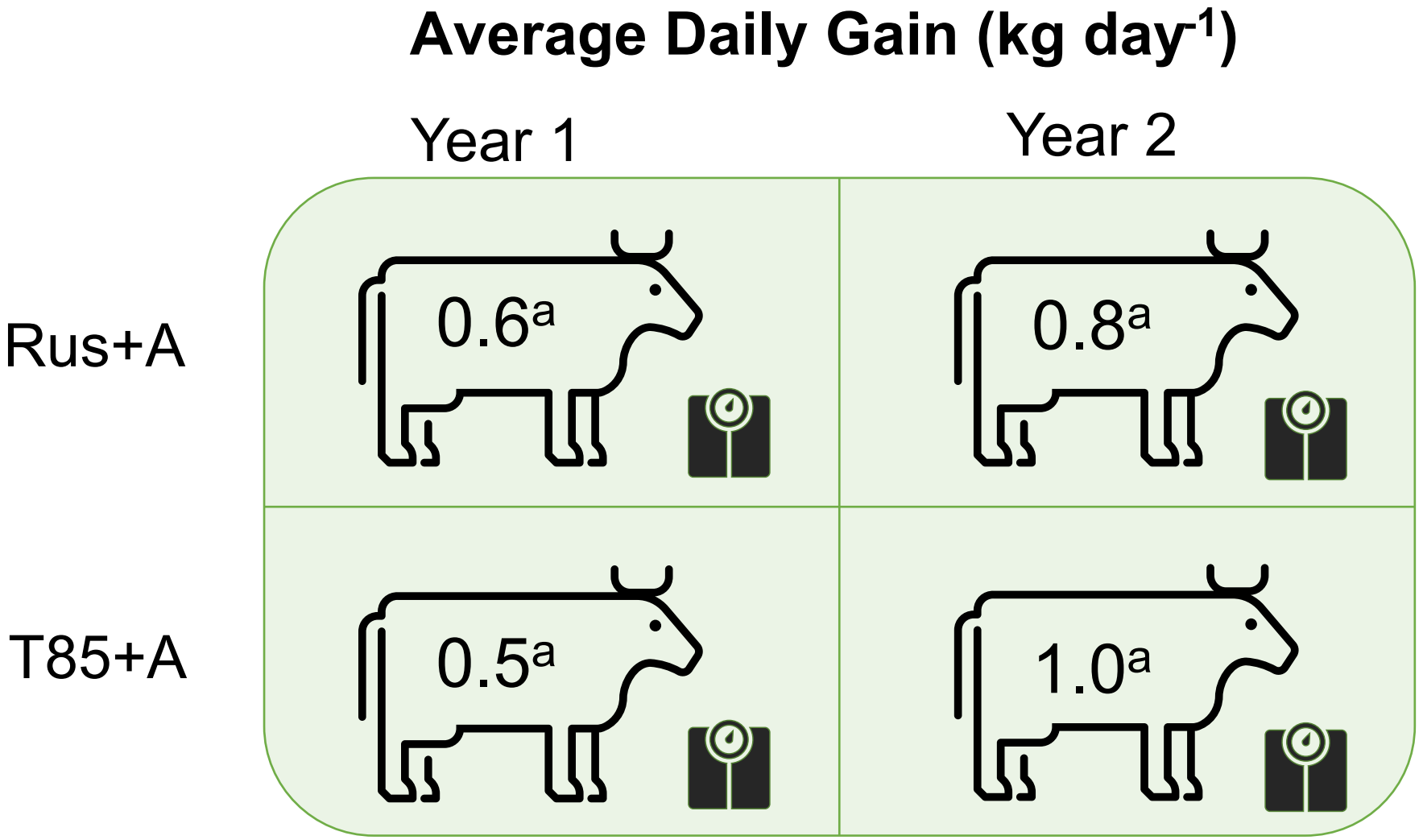
Average Daily Gain



Letters represent differences within year

Liveweight Gain (kg ha^{-1})

	Year 1	Year 2
Rus+A	83^{a}	152^{a}
T85+A	118^{b}	195^{b}

Letters represent differences within year

Forage Quality

Cultivar	Crude Protein (%)	NDF (%)	TDN (%)
	Year 1		
Rus+A	18[a]	50[a]	62
T85+A	16[b]	56[b]	62
	Year 2		
Rus+A	21[a]	44[a]	80
T85+A	17[b]	55[b]	80

Letters denote significance between rows within a column within a year

Botanical Composition

Cultivar	% Alfalfa	% Bermudagrass
Rus+A	56[a]	43[a]
T85+A	36[b]	62[b]

Letters denote significance between rows within a column

Conclusions

The bermudagrass base in an ABG mixture affects forage mass and grazing management decisions should be adjusted accordingly.

Timing of grazing initiation can affect overall forage mass, stocking rates, and animal performance. Mature forage loses nutritional value and lodging can occur.

Alfalfa will grow in south Georgia, and it can extend the grazing season of a bermudagrass stand. Cows love it!

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