

Preference grazing evaluation of new forage varieties, and the effect of animal temperament on grazing behaviour

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Introduction

In Western Canada forage breeders are not required to test new forage varieties under grazing conditions prior to registration and sale. As such, little is known about these new forage varieties' persistence under grazing, or the animal responses to them.

Objectives

- 1) Assess the performance and persistence of new legume and grass varieties under intensive grazing conditions.
- 2) Determine the effects of animal temperament on grazing behaviour.
- 3) Characterize forage preference of the grazing animals.

Materials and Methods

Six forages were established in monoculture and binary mixtures (Figure 5) at the Livestock and Forage Centre of Excellence (Saskatchewan, Canada). Forages were seeded in randomized adjacent 0.3 ha (21 × 125 m) strips within each of three, 5 ha paddocks (Figure 1). Steers were characterized as bold or shy before grazing (Figures 2, 3).



Figure 1. Drone image of trial steers grazing the randomized adjacent forage strips.



Figure 2. Novel object testing to determine boldness of trial steers.

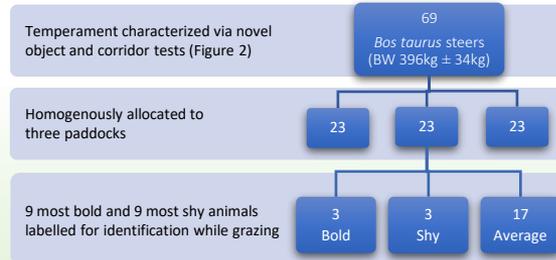


Figure 3. Temperament characterization and distribution of steers prior to grazing.

The grazing period was 19 d, from July 27 to August 15, 2019, with observations made during the first six days. Observers recorded animal placement within a paddock, as well as instantaneous behaviours.

Forage preference was determined based upon the number of animals grazing each forage type every 30 min for 2 h in the morning and 2 h in the evening.

Results and Discussion

Forage yield did not differ ($P > 0.05$) between grass and legume components of monocultures or binary forage mixtures (1255 kg ha⁻¹ ± 277 kg ha⁻¹).

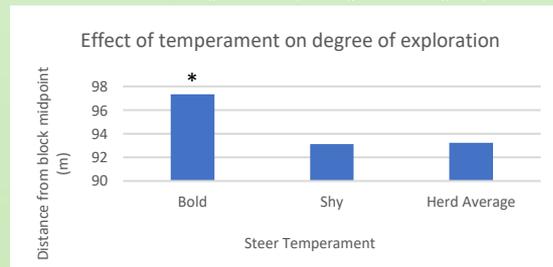


Figure 4. Effect of steer temperament on the average distance steers travelled lengthwise from the block midpoint. * = $P < 0.0001$.

Forage preference

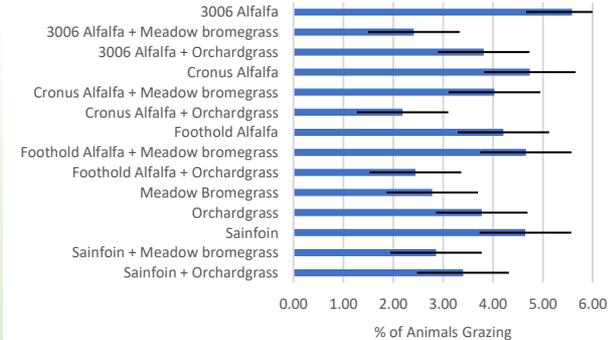


Figure 5. Forage preference of the grazing steers; the number of animals grazing did not differ between forage treatments ($P > 0.05$).

Conclusions

Preliminary results indicate that grazing behaviour was primarily influenced by individual animal temperament rather than forage performance or preference. Further research into the effect of animal temperament on grazing behaviour is needed to confirm whether boldly tempered animals make more effective use of pasture space than shy animals.

Acknowledgements

Funding provided by the Government of Saskatchewan Agriculture Development Fund and University of Saskatchewan Devolved Scholarship.

Seed donors Pickseed Canada Inc., Brett-Young Seeds Ltd., Northstar Seed Ltd., and Performance Seed.

Research technicians Leah Pearce and Dr. Daal Damiran, volunteers and LFCE staff.