

Grazing Management Affects Ecoturf Rhizoma Peanut Forage Performance

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Introduction

- Ecoturf rhizoma peanut (RP) is a decumbent germplasm that achieves rapid ground cover following planting and shows potential for use in pastures.
- Optimal grazing management of Ecoturf is not known.



Objective

To determine the effect of length of regrowth interval (RI) and post-grazing stubble height (SH) on productivity, leaf dynamics, botanical composition, and root-rhizome mass of Ecoturf RP.

Materials and Methods

- **Location:** Gainesville, FL from June-October 2015
- **Treatments/Design:** Factorial combinations of three RI and two SH in three replicates of a completely randomized design:
 - o RI - 1, 4, and 7 wk
 - o SH- 4 and 8 cm
- **Response Variables:** Herbage accumulation (HA), RP root-rhizome mass, RP proportion in the sward, and post-grazing RP leaf mass.



Results

Herbage Accumulation:

- HA greater for 4- than 8-cm SH (HA; 9.1 vs. 6.5 Mg ha⁻¹) (Fig 1-a)
- HA greater for 1- than 7-wk RI (HA, 8.9 vs. 7.0 Mg ha⁻¹), but 4- and 7-wk RI treatments did not differ (Fig 1-b)

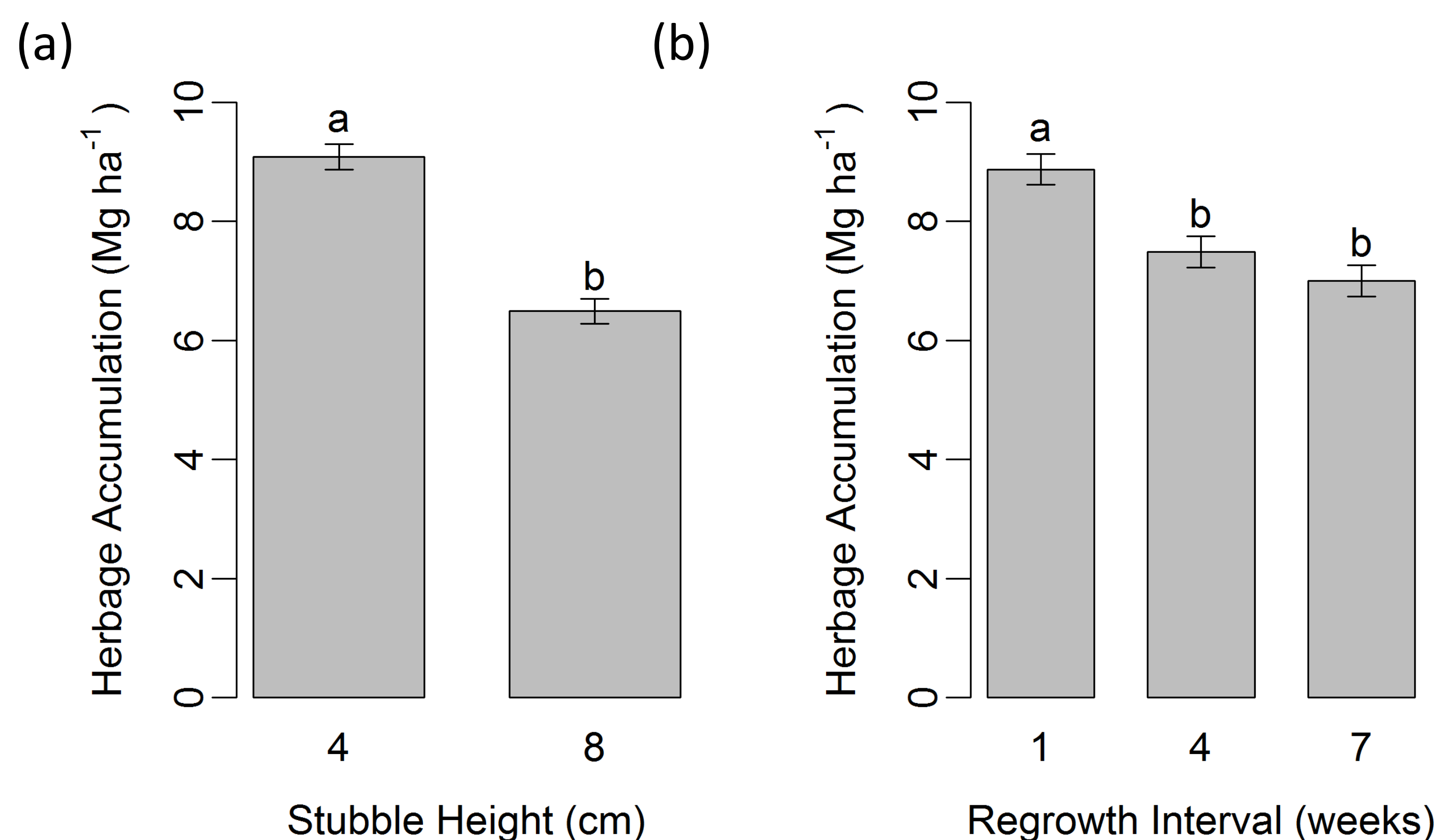


Figure 1: Ecoturf RP herbage accumulation as affected by SH (a) and RI (b) during the 2015 grazing season. (p<0.05)

Root-Rhizome Mass and RP Proportion in Herbage Mass

- After 1st year of grazing:
 - Root-rhizome mass (22.0 vs. 18.5 Mg ha⁻¹; Fig. 2a) and proportion of RP in pre-grazing herbage mass (93 vs 86%; Fig. 2b) were greater for 8- than 4-cm SH.

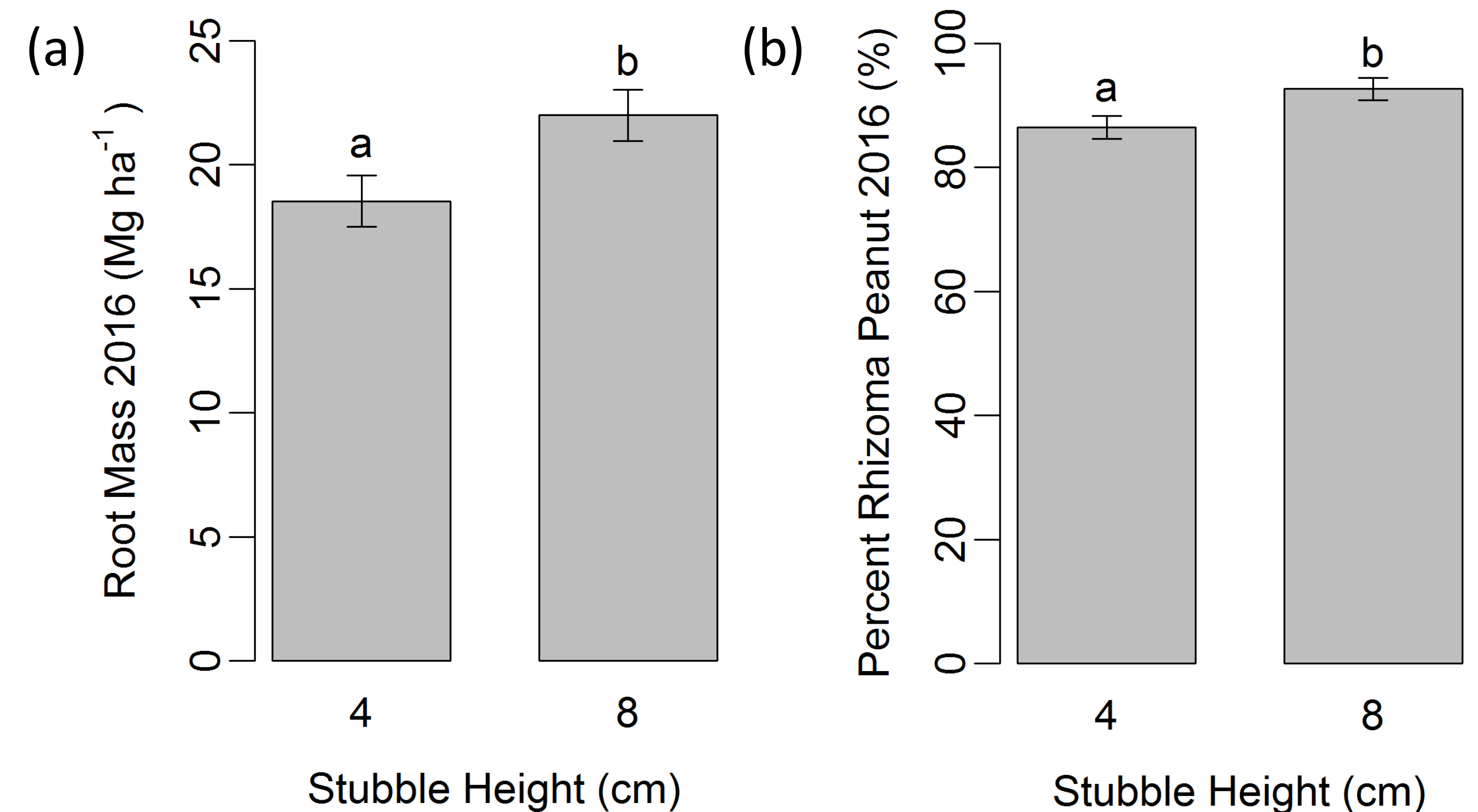


Figure 2: Post-grazing stubble height effects on RP root-rhizome mass and RP proportion in pre-grazing herbage mass after 1 yr of grazing

Post-Grazing RP Leaf Mass

- There was SH x RI interaction for post-grazing leaf mass (LM).
- When SH was 4 cm, the 1-wk RI had greater post-grazing LM than the 7-wk RI (106 vs. 55 g m⁻²; Fig. 3a), but with an 8-cm SH the 7-wk RI had greater post-grazing LM than the 1-wk (165 vs 125 g m⁻²; Fig 3b).

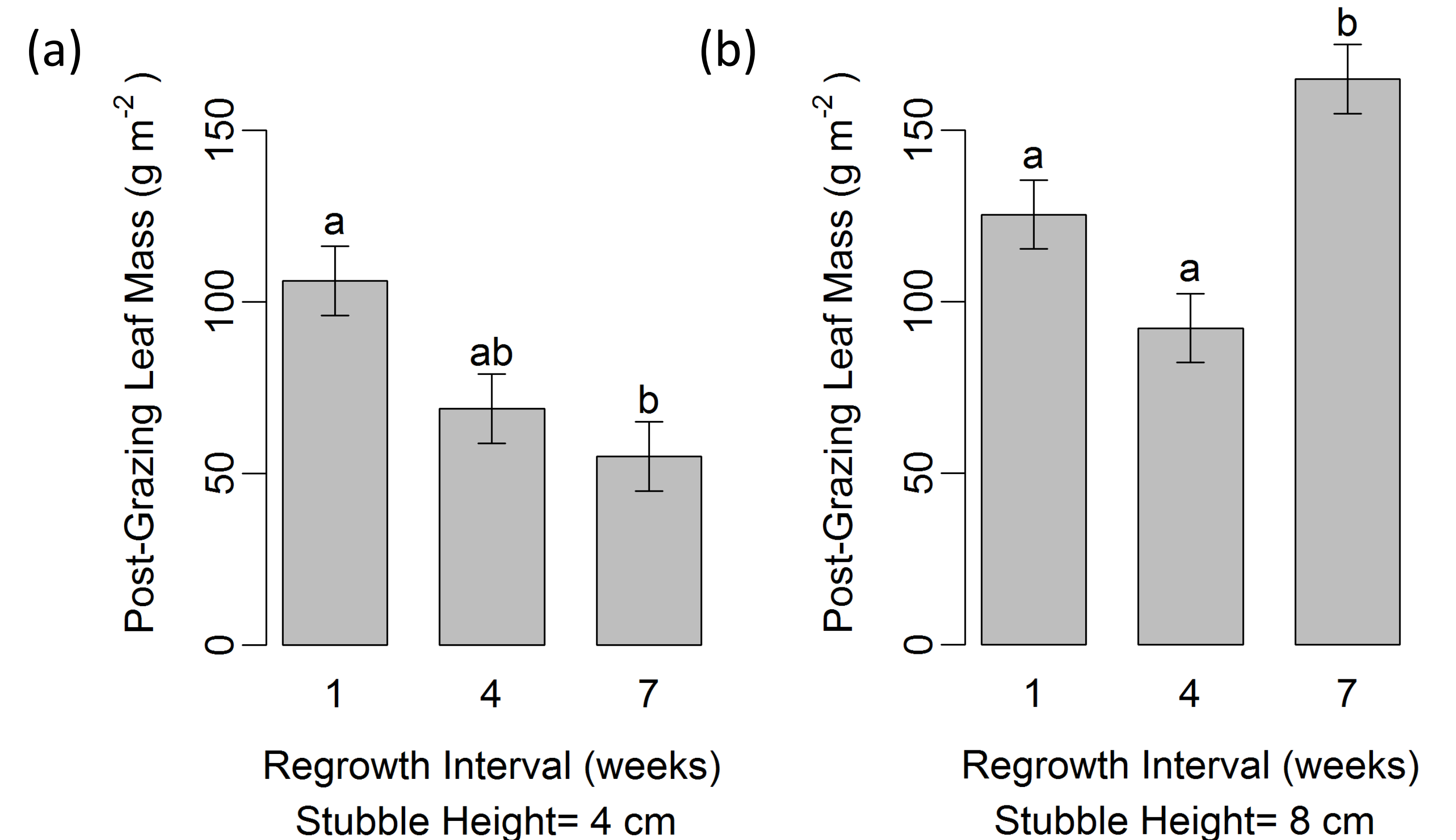


Figure 3: Ecoturf post-grazing leaf mass as affected by regrowth interval when post-grazing stubble height was 4 or 8 cm

Discussion/Conclusions

In the first year of grazing:

- Herbage accumulation was greater for more frequently and intensively grazed treatments due in part to Ecoturf's decumbent growth habit which protected leaf mass for regrowth.
- In contrast, RP proportion in the sward and root-rhizome mass were favored by taller post-grazing height.

Key questions for Year 2:

- Will productivity advantages associated with close, frequent grazing be sustained due to the decumbent growth habit of Ecoturf?
- Or will this type of grazing result in depletion of reserves and compromise future productivity and persistence?

