

Grazing Management Affects Performance of Strip-Planted Rhizoma Peanut in Bahiagrass Pasture

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Introduction

Planting rhizoma peanut (*Arachis glabrata* Benth.; RP) in strips into existing bahiagrass (*Paspalum notatum* Flüggé) pastures may reduce establishment costs and expand use of RP in low-input grazed grasslands in the Gulf Coast Region. It has been suggested that RP requires two years to become fully established prior to initiating regular defoliation; nevertheless there are no data on grazing effects during the year after planting. The objectives were to investigate grazing management effects during the year after planting, and the interaction of year **of** planting and year **after** planting defoliation management on RP spread and canopy cover when strip-planted into bahiagrass.



Materials and Methods

Treatments:

Year of planting (Y1) defoliation strategies:

1) Control (no herbicide, no mowing); **2)** hay (mowing every 28 d to 10-cm stubble height); **3)** rotational stocking (every 28 d), and **4)** simulated continuous stocking to 15-cm bahiagrass stubble height.

Year after planting (Y2) grazing treatments:

1) Simulated continuous stocking (SC); **2)** rotational stocking every 28 d (RS-28), and **3)** rotational stocking every 42 d (RS-42). All treatments were grazed to 15-cm bahiagrass stubble height.

Results and Discussion

Spread: There was no interaction of Y1 by Y2 treatments on spread.

Regardless of Year 2 defoliation method, spread of RP from the planted strip into the adjacent bahiagrass was ~30 cm for plots that in Y1 were managed using control and hay treatments compared with grazing (Fig. 1). Rows of RP closest to the bahiagrass were lost in grazed plots after two years of defoliation.

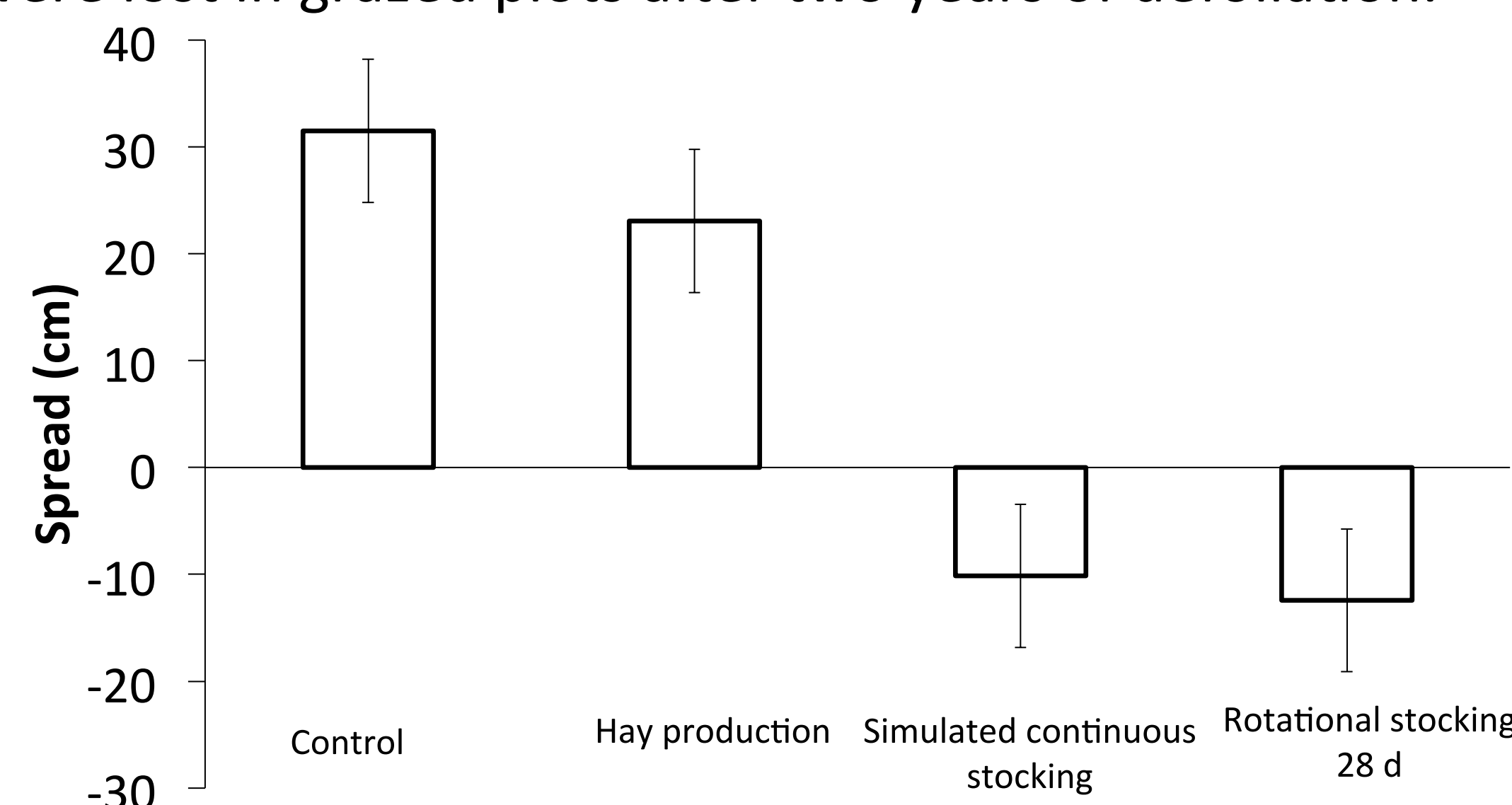


Figure 1. Spread of strip-planted rhizoma peanut (RP) in two-year-old plots as a function of defoliation strategy during the year of planting. Spread is the distance from the outer row of planted RP to the farthest point in Year 2 where identifiable above-ground RP plant parts were found. Error bars represent treatment means (n = 18) ± one standard error

Canopy cover: There was no interaction of Y1 by Y2 treatments. Grazing pastures in Y2 reduced RP canopy cover relative to that observed at the end of Y1 (Fig. 2). Canopy cover of RP was greater season-long in plots that were managed as control and hay in Y1 compared with grazed plots. Canopy cover in Y1 control and hay decreased from ~16 to ~10% from mid- to late-season and leveled off at ~3% by mid-season in grazed plots. Lenient grazing in Y2, like RS-42 in this experiment, allowed for greater canopy cover by mid-season compared with continuous stocking and RS-28; nevertheless, RP canopy cover in Y2 grazing treatments was not different by late-season.

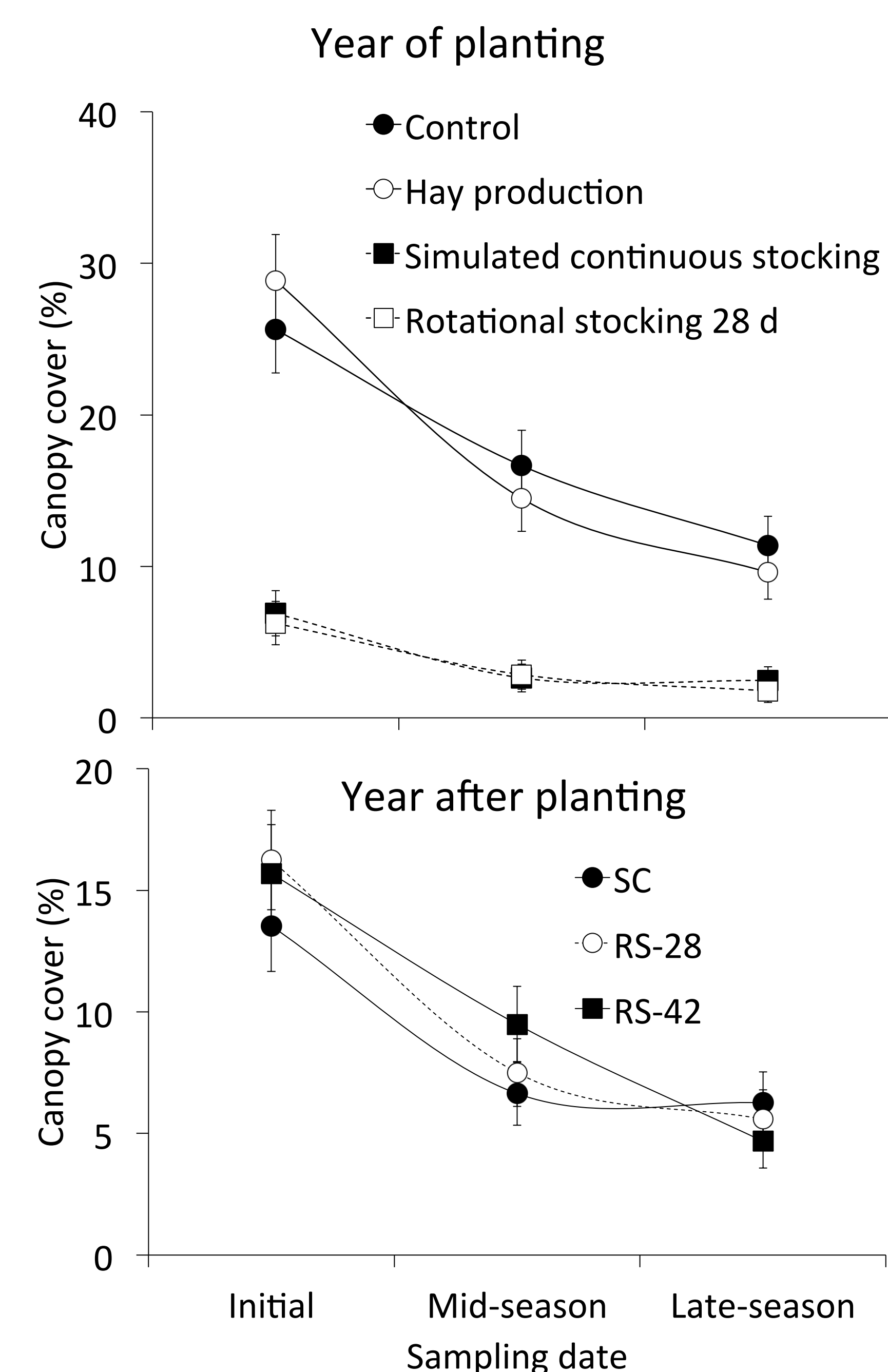


Figure 2. Canopy cover of strip-planted rhizoma peanut (RP) in two-year-old strips as a function of defoliation strategy during the year of planting (n = 18) and grazing management (n = 24) in the year after planting. Initial, mid- and late-season dates correspond to June, August, and October, respectively. SC = simulated continuous stocking; RS-28 = rotational stocking every 28 d; and RS-42 = rotational stocking every 42 days. Error bars represent treatment means ± one standard error.

Conclusions and Implications

- Grazing during the year after planting can override the benefits of defoliation management in the year of planting due to continued selective grazing by the animals for the newly planted RP strip.
- If strip-planted RP is to be grazed during the first 2 yr after planting, grazing management should focus on strategies targeted to the strip planted to RP as opposed to the bahiagrass component of the pasture.
- Once RP is established and has spread to grow intermingled with other forage species, grazing of the mixture is possible, as RP has been observed to persist for over 30 yr in combination with several grass species including bahiagrass.