

Strategies to Control Weed Competition in Strips Planted to Rhizoma Peanut in Existing Bahiagrass Pastures

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Introduction

- Rhizoma peanut (*Arachis glabrata* Benth; RP) is an ideal candidate for sustainable forage-livestock systems in the southeastern USA. Nevertheless, high establishment costs have limited its use to hay production systems.
- The current experiment is one of a series designed to develop novel approaches for overcoming the barriers to successful growth of legumes in association with grasses in warm climates and to identify low-cost, long-term solutions to the problem of N limitation in low-input systems.



Objectives

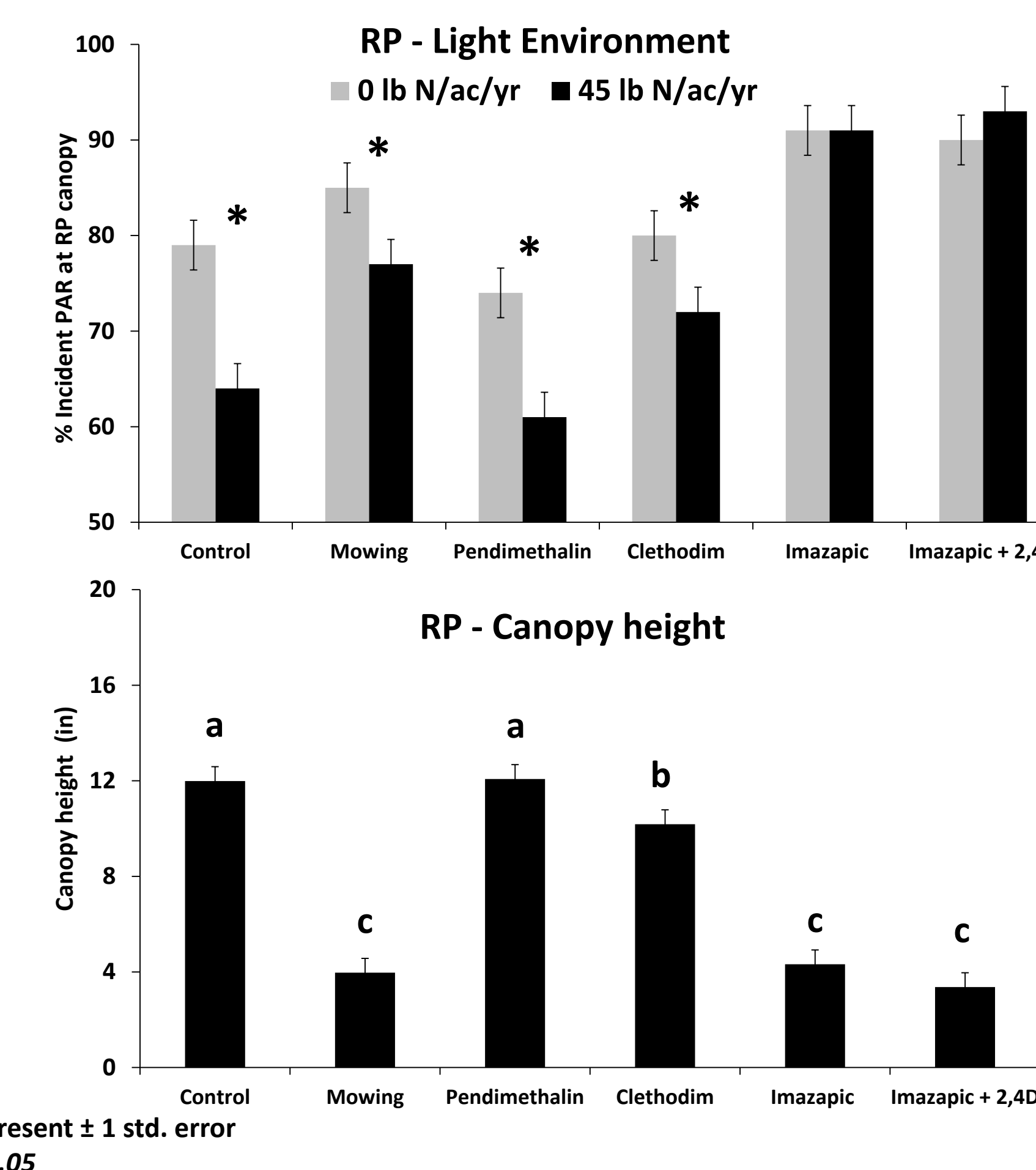
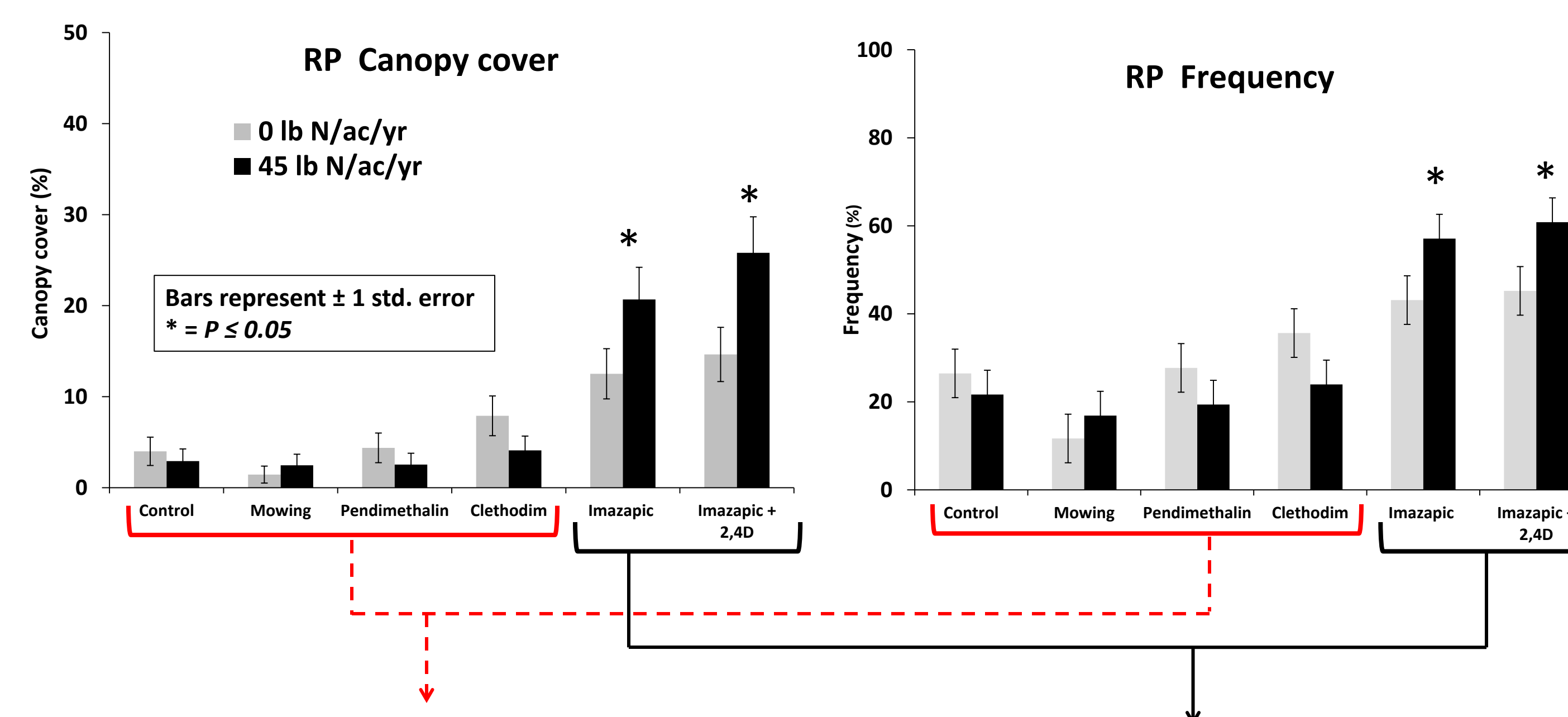
Using a strip-planting approach for establishing RP in existing bahiagrass pastures, the objectives were to determine:

- The effect of chemical and cultural management practices to control competition for nutrients and light from weeds growing in the strips planted to RP.
- The effect of N application on RP establishment and the interaction with management practices.

Materials and Methods

- The experiment was conducted for 2 years at Gainesville, FL.
- Treatments were the factorial combinations of:
 - ✓ Two N rates: 0 and 45 lb/ac/yr
Single application using NH_4NO_3 fertilizer after all herbicides were applied
 - ✓ Six competition-control strategies:
 - Chemical (4): Pendimethalin (1 qt/ac), Clethodim (12 fl oz/ac), Imazapic (4 fl oz/ac) and a mix of Imazapic (4 fl oz/ac) + 2,4-D amine (8 fl oz/ac)
 - Cultural (1): mowing every 28 d simulating a hay production system
 - Control (1): untreated

Results and Discussion



Conclusions and Implications

- Imazapic and Imazapic + 2,4-D provided superior control of competition to establishing RP resulting in greater incident PAR (photosynthetic active radiation) reaching the RP canopy and greater RP cover and frequency.
- Application of 45 lb N/ac/yr following herbicide treatment resulted in greater RP cover and frequency in treatments where weeds were controlled effectively (Imazapic and Imazapic + 2,4-D treatments).
- Strip planting RP in existing bahiagrass pastures is a viable option, but weed management to control competition for nutrients and light is critical to RP establishment success.

Acknowledgements

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