

Leaf Area Index as an Indicator of Forage Production Potential

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Introduction

- Bahiagrass (*Paspalum notatum* Flugge) produces abundant, low quality forage.
- Rhizoma peanut (*Arachis glabrata* Benth) fixes atmospheric nitrogen and yields forage of high nutritive value.
- Defoliation by cattle reduces pasture canopy with consequences for forage nutritive value and pasture growth potential.

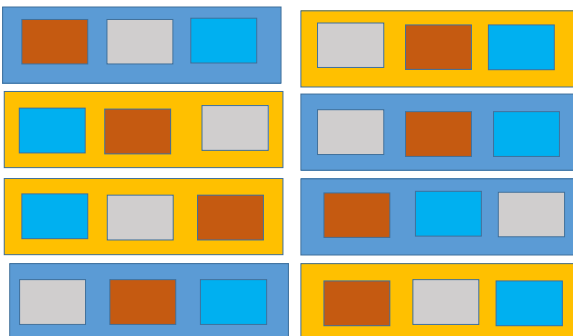
Objectives

- To examine the effect of legume inclusion and defoliation on forage supply.
- To evaluate leaf area index (LAI) as an indicator of forage production.

Materials and Methods

- May-November 2020
- UF/IFAS Beef Research Unit near Gainesville, FL, USA
- Pasture composition
 - bahiagrass
 - mixed bahiagrass + rhizoma peanut
- Treatments: Defoliation
 - defoliated; defoliated + manure; undefoliated
- Data collection:
 - Monthly biomass
 - Weekly LAI readings

Figure 1. Experimental design



Results & Discussion

- Inclusion of rhizoma peanut and defoliation increased total forage production (Fig. 2).
- Within defoliated treatments, a linear relationship was found between total forage production and both mean and maximum LAI (Fig. 3).

Figure 2.
Total forage production

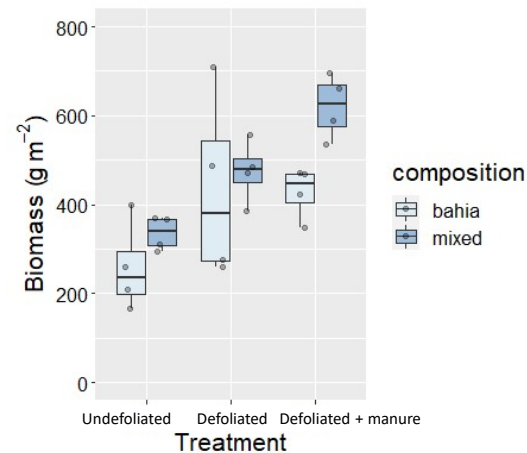
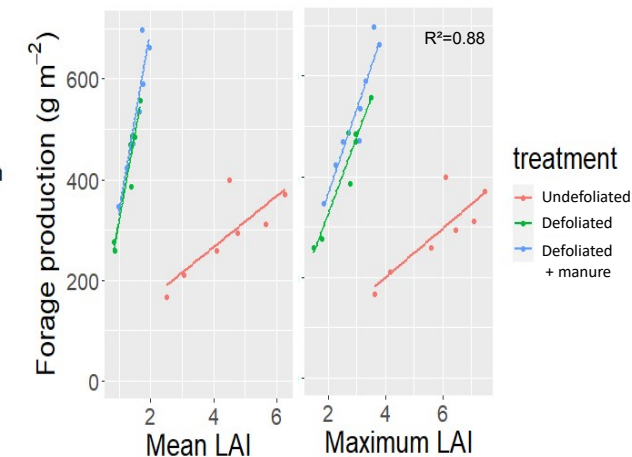


Figure 3.
Forage Production & Leaf Area Index



Conclusions

- Legume inclusion and defoliation increased forage production.
- Further research is necessary to determine whether manipulation of LAI proves a useful management tool to optimize pasture productivity.
- The relationship between LAI and forage quality must be included when considering the animal performance aspect of a grazing system.
 - For example, balancing the decline in forage crude protein content as the LAI and interval between grazing events increases.