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INTRODUCTION

Florida has ~400 thousand hectares of field and row crops, and 95% of these row crop lands are fallow during the winter.

Fallow land	Establishing cover crops
<ul style="list-style-type: none"> • Soil erosion (wind and runoff) • Nutrient losses • Nitrogen leaching (eutrophication of water bodies - contamination of drinking water) • Weed encroachment - use of chemical products 	<ul style="list-style-type: none"> • Control weeds pressure • Represents a forage source for livestock production • Improves soil health, helps reduce soil particle and nutrient losses

OBJECTIVE

✓ The objective of this study was to evaluate early planting of cover crops using either drone- or tractor-broadcasting.

✓ Specific objectives were to quantify herbage ground cover and accumulation, light interception, and leaf area index (LAI).

METHODOLOGY

- Treatments were arranged in an RCBD and included a combination of:

Spreading method	Planting times
Tractor	Before peanut harvest
Drone	After peanut harvest

- Planting seeding rate was 169 kg ha⁻¹ of RAM oats (*Avena sativa* L.)

Activities	
September 10 th , 2025	First seeding
September 24 rd , 2025	Second seeding
September 12 th , 2025	Peanuts digging
September 15 th , 2025	Peanuts collection
October 15 th , 2025	Application of 280 kg N ha ⁻¹ (20-10-20)

- Sampling was conducted bi-weekly.
- Herbage was measured using the double sampling technique.
- Canopy interception and LAI were measured using the ACCUPAR LP-80 ceptometer.



Figure 1. Broadcasting of seeds by tractor (A), drone (B) before the harvest of the peanuts. Digging of the peanuts (C) at the experimental area.

RESULTS/FINDINGS

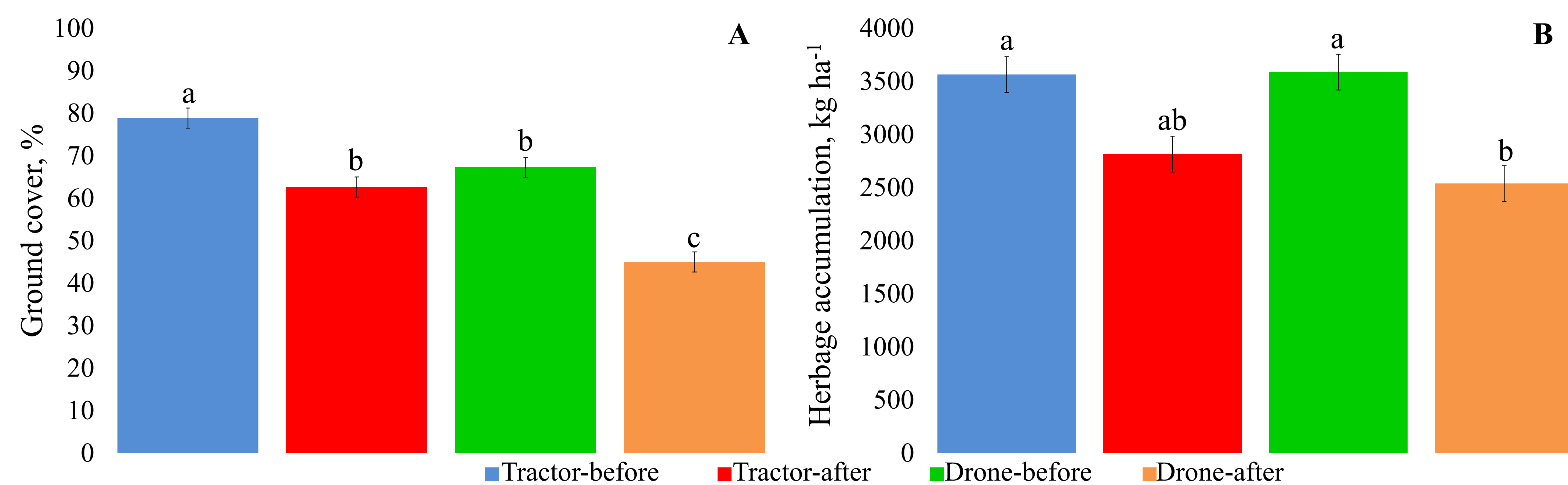


Figure 2 and 3. Treatment effect for ground cover ($P < 0.01$; SE = 2.37%) and treatment effect for herbage accumulation ($P = 0.01$; SE = 211 kg ha⁻¹).

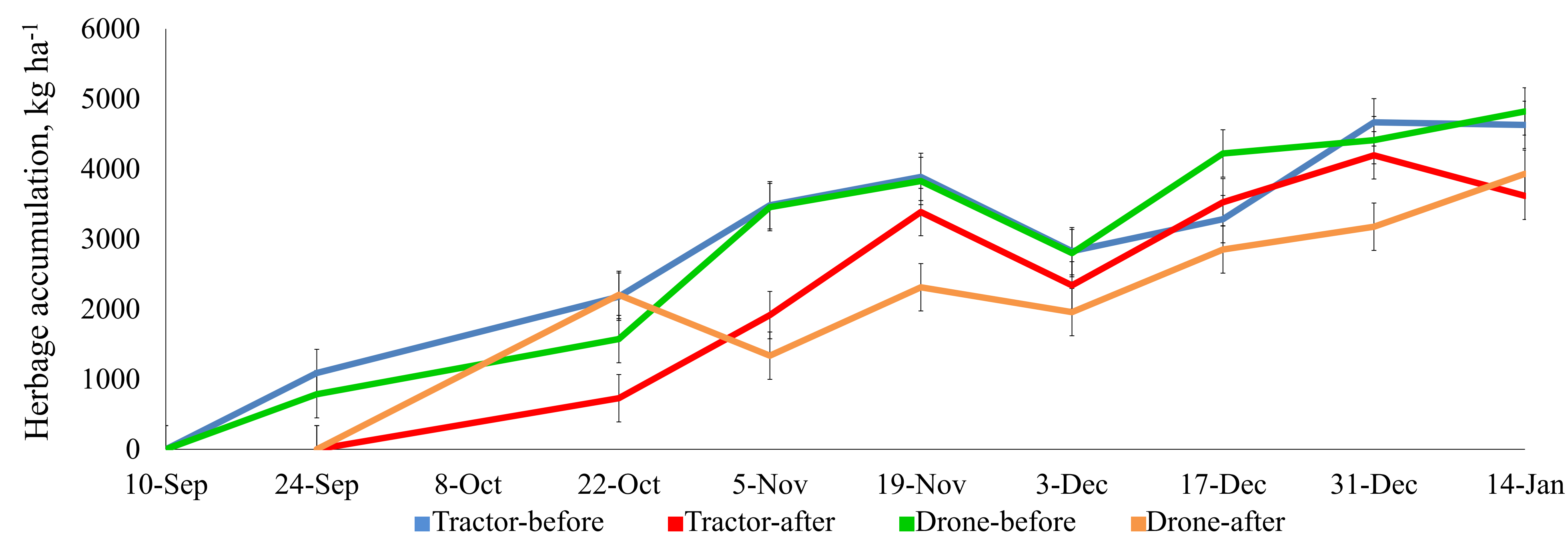


Figure 4. Evolution of the herbage accumulation between treatments throughout the season ($P = 0.12$; SE = 379 kg ha⁻¹).



Figure 5. Evolution of cover crops throughout the growing season.

CONCLUSION

- ✓ Broadcasting inter-seeding oats into standing peanut fields resulted in more successful establishment than when oats are seeded after the peanut is dug and harvested.
- ✓ Considering the average cost of each planting method (tractor \$11.5 and drone \$20), and resulting in similar herbage accumulation, both practices would be an option for early cover crop establishment. However, the drone application will cost more, with a percentage increase of around 74% compared with the tractor application.
- ✓ Still, drones could play a role in areas/timing of difficult access to crop fields (e.g., slope too high, wet fields).