Characterizing & Deploying Novel Disease-Resistant Peanut Cultivars in the Southeastern U.S.

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The Problem: Late Leaf Spot (LLS) in Peanut

- Pathogen: Nothopassalora personata

- Economic impact: 6–8 fungicide sprays/season = $100–$150/acre

- Breeding for genetic resistance can reduce input costs and protect yields

Project Objective

Evaluate fungicide regimes for three LLS-resistant peanut lines to:

- Reduce fungicide frequency and cost

- Maintain high yields and quality

- Help growers adopt resistant cultivars efficiently

Methods Summary

- Location: UF/IFAS NFREC, Marianna, FL

- Design: RCBD with split plots (3 reps)

- Varieties: FloRun 'T61', UF14x054-8-6-1-1, UF-SSD-19, & susceptible (Tif-CB7)

- Fungicide: Chlorothalonil @ 0.75 or 1.5 pt/ac

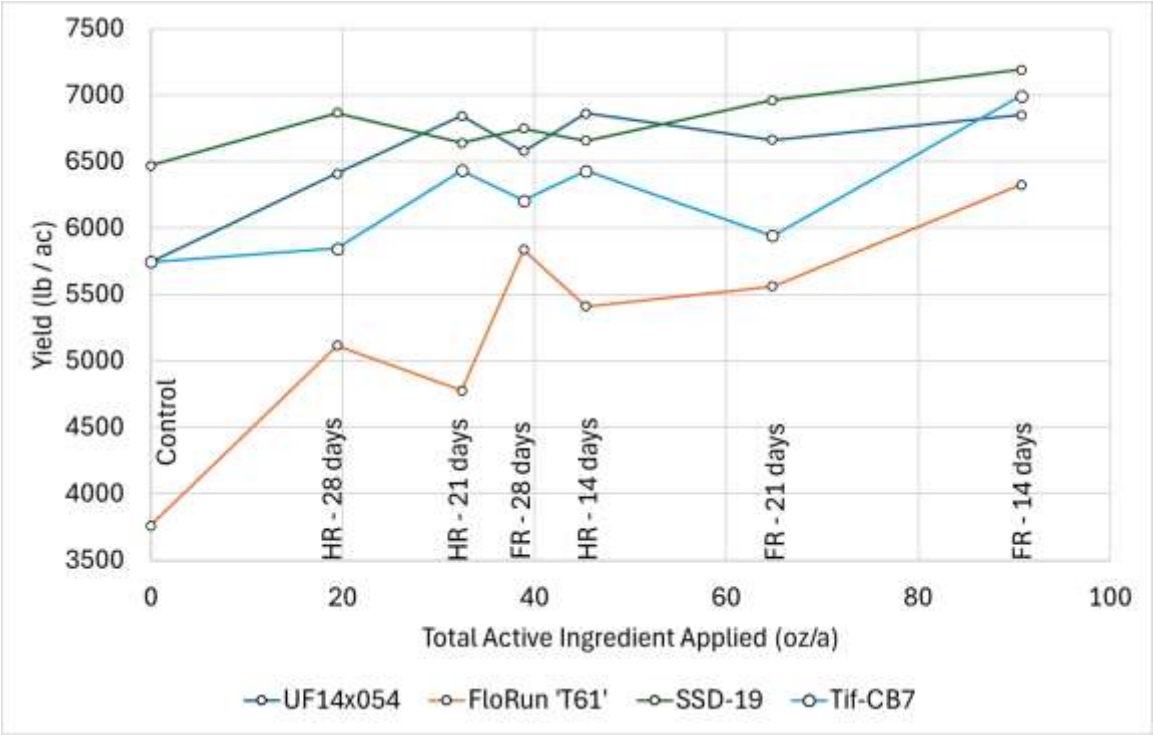
- Applied at 14-, 21-, and 28-day intervals + control

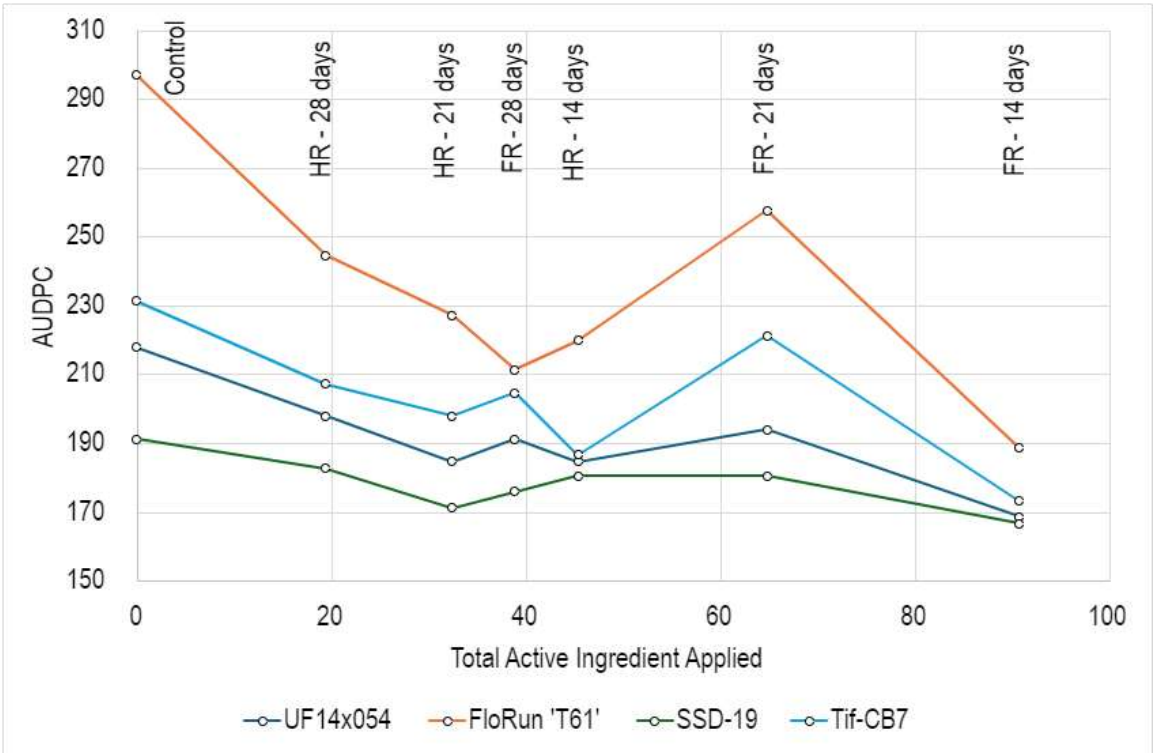
Key Findings

- UF-SSD-19 showed superior resistance: lower AUDPC and higher yields across all treatments

- Significant potential for reduced fungicide use in resistant cultivars

Variety x Treatment Interactions for AUDPC and Yield





Fungicide Response: No-Spray Control - FloRun 'T61' vs UF-SSD-19

Takeaways for Growers

- Genotypic resistance to LLS can:

- Cut fungicide use (rate & frequency)

- Maintain or boost yield

- UF-SSD-19 is especially promising for Southeastern U.S. peanut systems

Future Research

- Repeat trial in 2025

- Develop new resistant cultivars from top genotypes (F3 populations growing)

- Map resistance genes in UF-SSD-19