

# Pollinators / Cover Crops / Sustainability

A large field of zinnia flowers in various colors including pink, orange, and white, growing densely together. The flowers are in full bloom, and the green foliage is visible between them. The background shows a continuation of the field under a clear sky.

Taylor Randell Singleton  
*Extension Sustainability Specialist*



# Pollinator Habitat on the Farm

- Impact on day-to-day life:
  - 30% of world's food is pollinated
  - 130 fruits and vegetable plants
  - 1 in 3 bites of food
- Why should you care???
  - Pollinators support \$18-27 billion in US crop yields annually
  - Habitat also supports predators/parasitoids



# Pollinator Habitat on the Farm

- Implications for pesticide stewardship
  - Supporting endangered/listed/sensitive species
  - Promoting biodiversity
  - Mitigation for runoff/erosion
- Indirect ROI.....hard to quantify
  - Don't directly increase yield, etc.
  - Extra expense to install/maintain





# Support @ National/State Level

- NRCS funding to install habitat/benefit pollinators on working farms
  - 30+ cost-share programs
- Habitat installation
- Field borders
- Riparian buffers
- Filter strips
- Native grasslands





# NRCS Programs

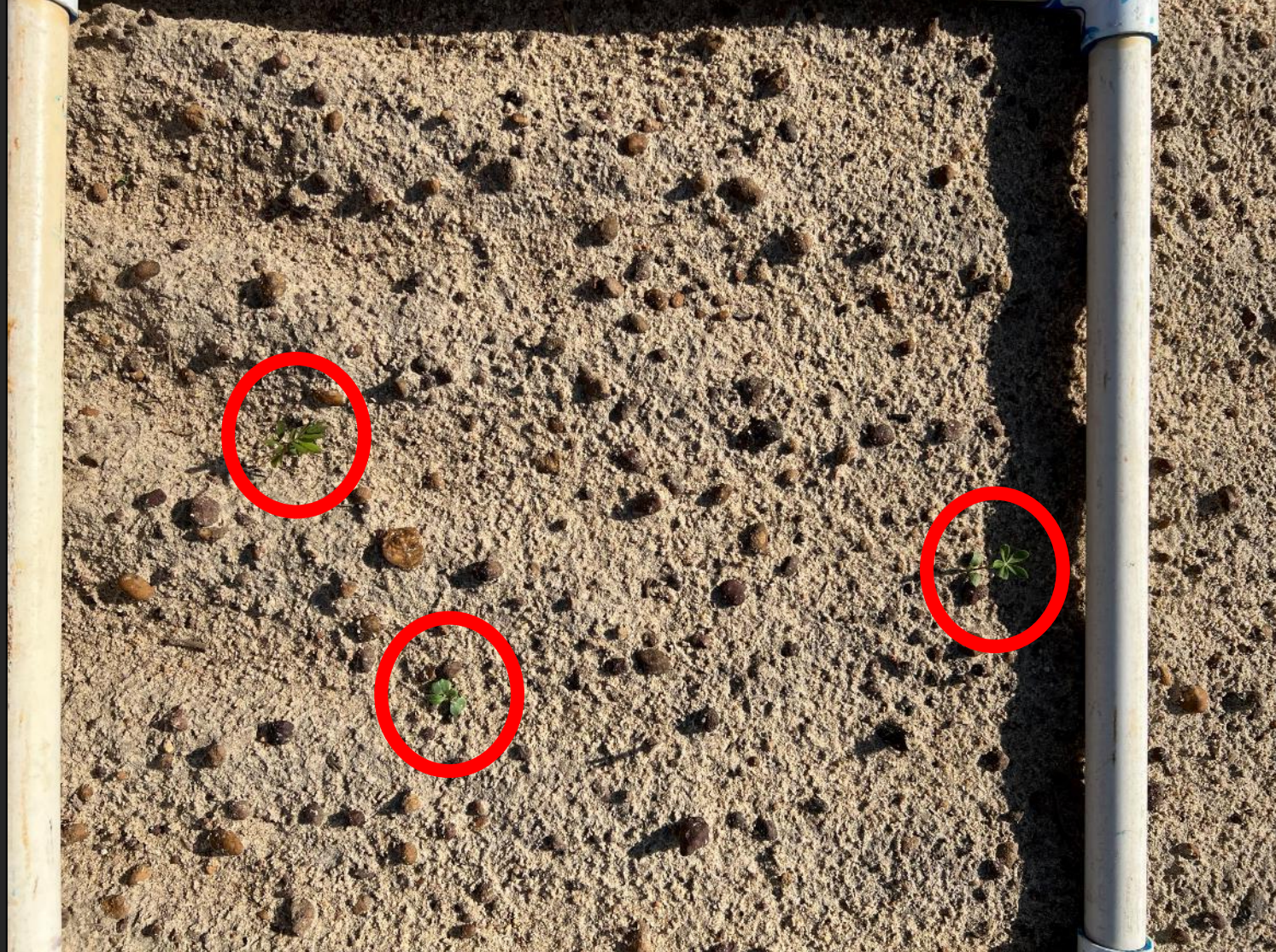
- Georgia state standards:
  - 9 broadleaves (flowering)
  - 1 native grass
- Challenging to implement
  - Low emergence
  - Not competitive
  - Extensive weed pressure



***How to control weeds in pollinator sites??***



# Year 1 = disaster





# Switch Focus → Commercialized Annuals

---

- Start with commercialized annuals, add in natives after establishment
  - Fast growing
  - Hardy
  - Herbicide tolerance?*
- Focus on PRE herbicides, screen for tolerance across wide range of products
  - Zinnia, cosmo, marigold, Mexican sunflower



# Screening for Everything (PRE)

- Alite
- Axiom
- Brake
- Cadre
- Caparol
- Command
- Dacthal
- Devrinol
- Dual Magnum
- Eptam
- Goal
- Prowl
- Pursuit
- Reflex
- Spartan
- Staple
- Treflan
- Valor
- Warrant





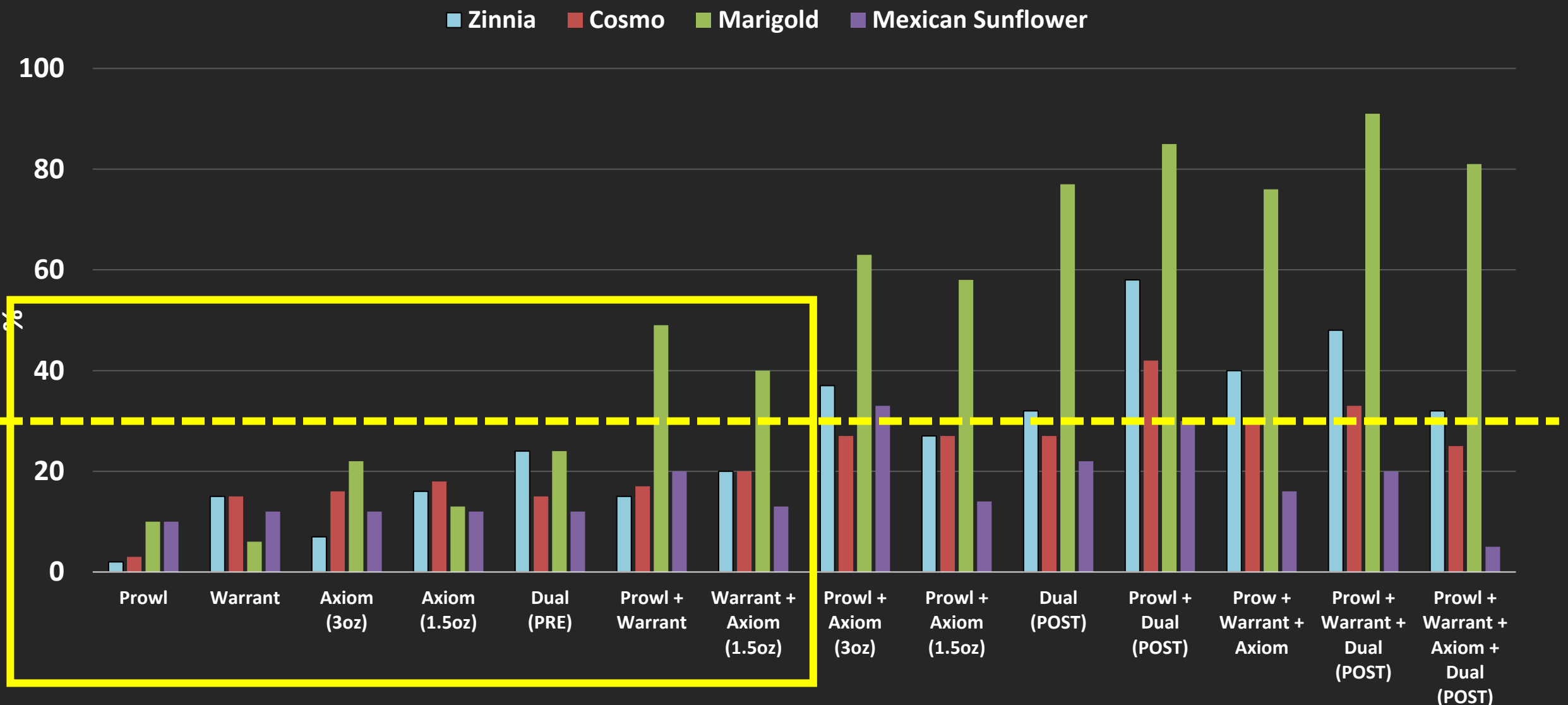
# Screening for Everything (PRE)

<b><i>YES</i></b>	<b><i>NO</i></b>	<b><i>MAYBE</i></b> <i>(adjust rate)</i>
Dachtal Devrinol Prowl Treflan	Alite Brake Cadre Caparol Command Eptam Goal Pursuit Reflex Spartan Staple Valor	Axiom Dual Magnum Warrant





# Creating a Systems Approach to Weed Control\*

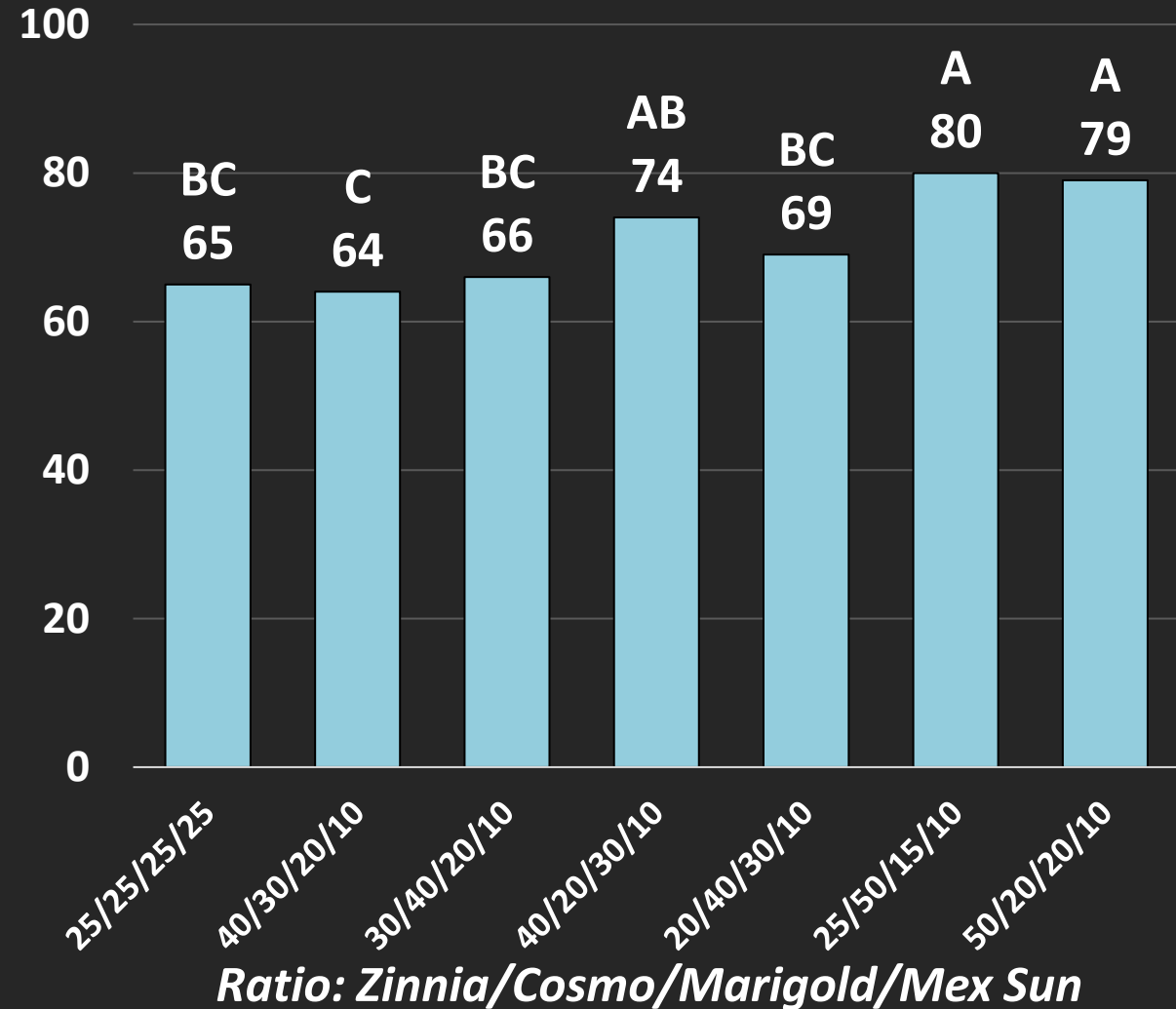
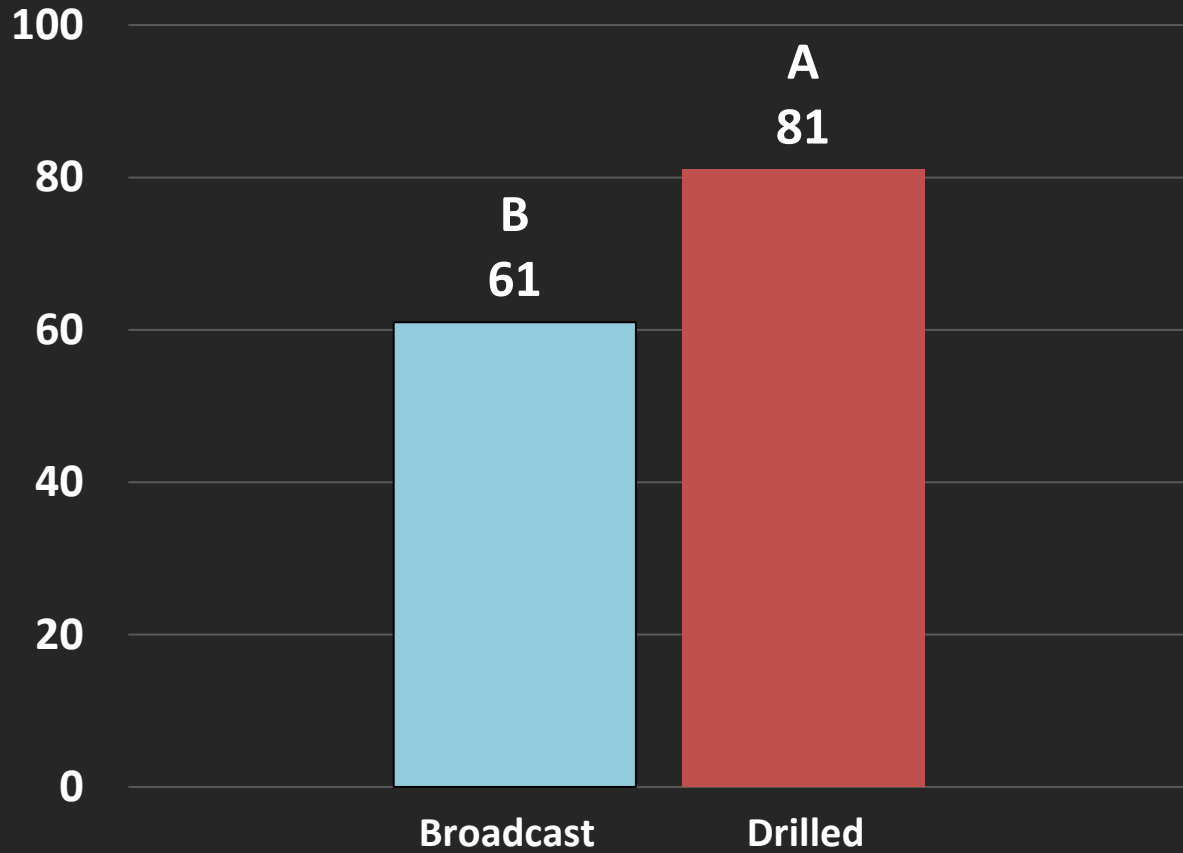


\*Fall 2024 – 1 location; 3 reps



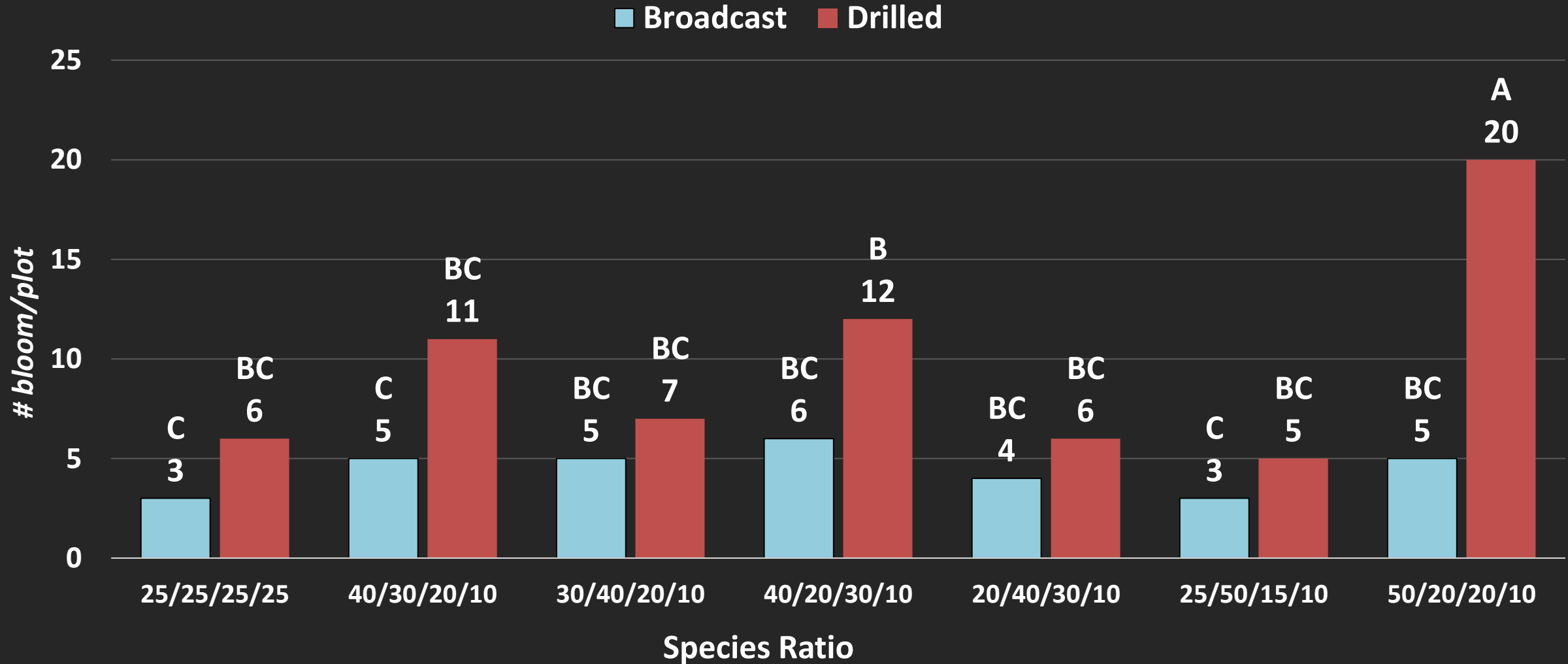
# Understanding Planting Method

*Ground Coverage (%)*





# Planting Method Influences Bloom



# UGA vs NRCS

## 2 species “mixes”

- UGA mix:
  - Zinnia, Cosmo, Marigold, Mexican sunflower
- NRCS mix:
  - 9 broadleaves
    - Lanceleaf coreopsis, perennial lupine, lemon mint, sensitive pea, annual Indian blanket, slender lespedeza, showy goldenrod, greyheaded coneflower, starry rosinweed
  - 1 grass
    - Yellow Indiangrass

## 3 herbicide programs

- NTC, PRE treflan, POST cadre (NRCS only)





# NRCS Mixture – Site 1

Flwr1-24

51 DAP



No herbicide



PRE: treflan  
POST: none



PRE: none  
POST: cadre



# UGA Mixtures – Site 1

*Ratios = Zinnia/Cosmo/Marigold/Mexican sunflower*

Flwr1-24

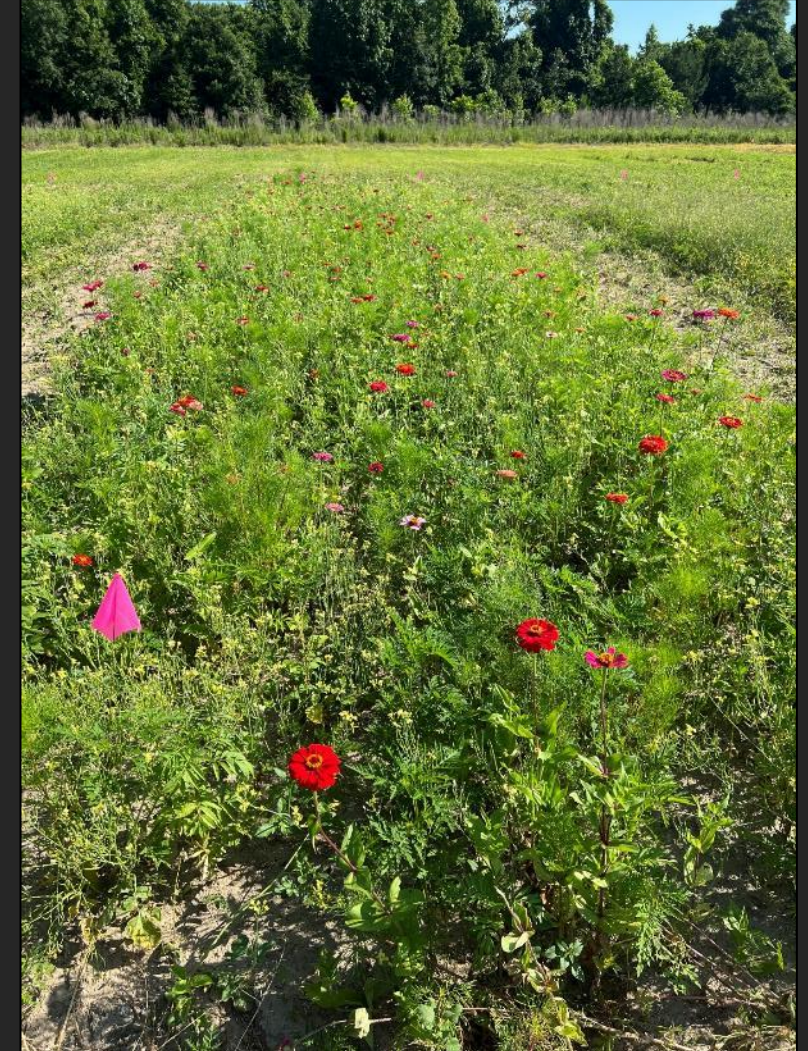
51 DAP



25/25/25/25



40/30/20/10  
"low" seeding rate



40/30/20/10  
"high" seeding rate



# NRCS Mixture – Site 2

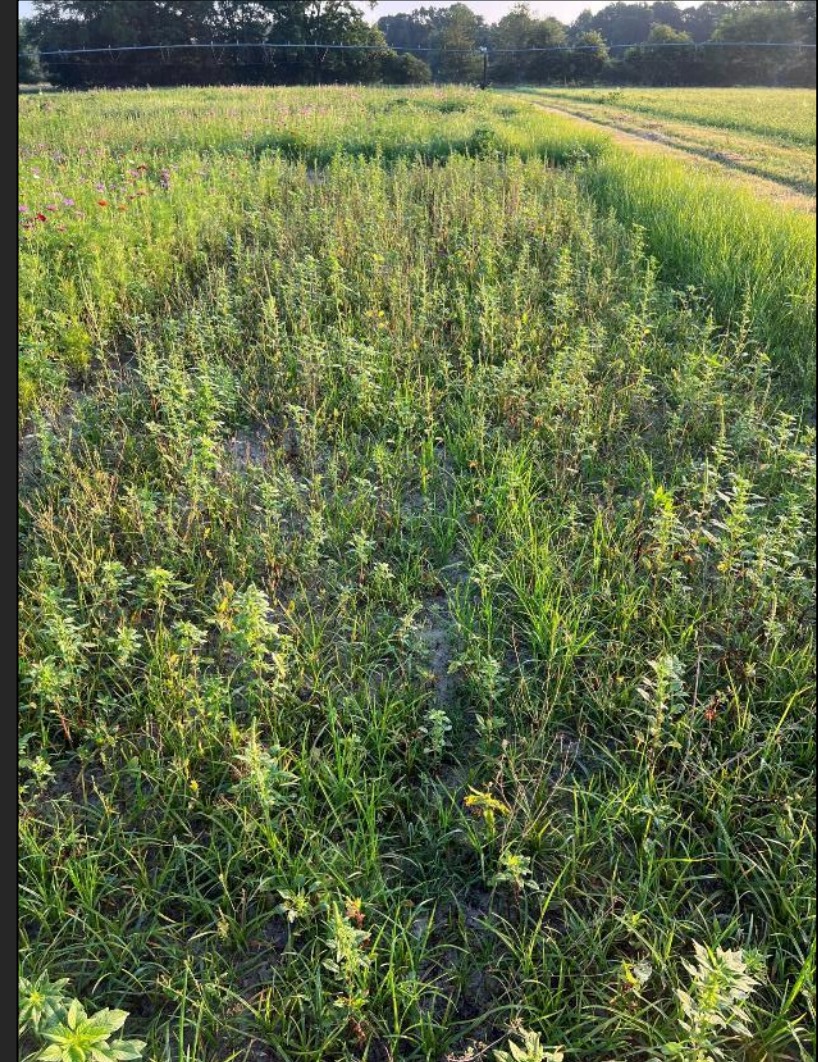
Flwr2-24  
Ponder Farm  
51 DAP



No herbicide



PRE: treflan  
POST: none



PRE: none  
POST: cadre



# UGA Mixtures – Site 2

*Ratios = Zinnia/Cosmo/Marigold/Mexican sunflower*

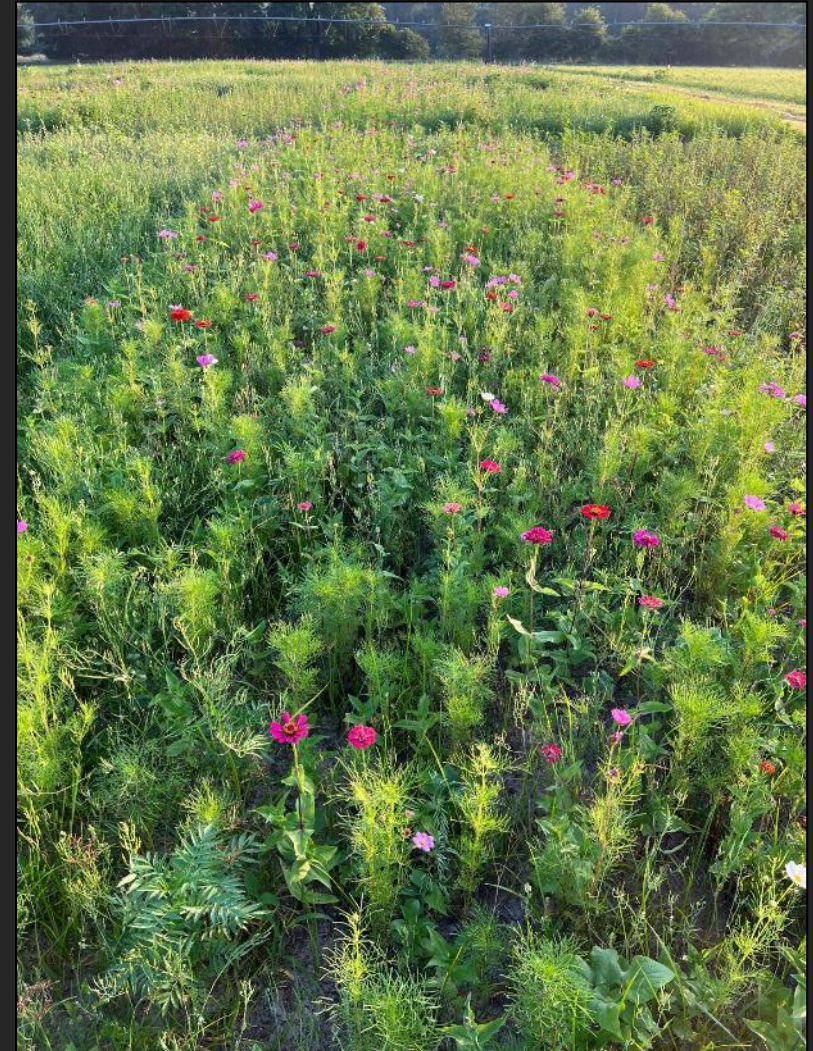
Flwr2-24  
Ponder Farm  
51 DAP



25/25/25/25



40/30/20/10  
"low" seeding rate



40/30/20/10  
"high" seeding rate



# Cover Crop Survey

- Please fill out my survey!!!
  - Research directions
  - New/updated resources
  - Information delivery to you
  - Cost share/incentive programs

**You can leave on the table, put in the box, paper airplane to the front.....please just fill it out! 😊**



# What's Important?

---

- Variety/cultivar specific to different areas of GA
- Seeding rates
  - How low can we go?
  - Broadcast vs drilled
  - Rates between cultivars
- Spreading before cash crop harvest
- Timing windows (i.e. cover after corn, etc.)
- Quantify intangible benefits
- ECONOMICS \$\$\$\$\$\$\$\$\$\$



# Warm Season Species Evaluation

Species	Broadcast Rate (lb/a)
NTC – Fallow	0
Sunn Hemp	50
Buckwheat	90
Cowpea	80
Proso Millet	25
Foxtail Millet	25
Browntop Millet	25
Japanese Millet	12
Pearl Millet	12
Teff	12
Sudangrass	25
Sorghum-Sudangrass	25

- What warm-season covers are suitable?
- Row crop or vegetable?
- Throw it out and water in?

## Data Evaluated

- Ground coverage
- Weed suppression
- Biomass accumulated
- Heat tolerance
- Height



# Warm Season Species Evaluation



Fallow



Sunn hemp



Buckwheat



Cowpea



Proso millet



Foxtail millet



Browntop millet



Japanese millet



Pearl millet



Teff



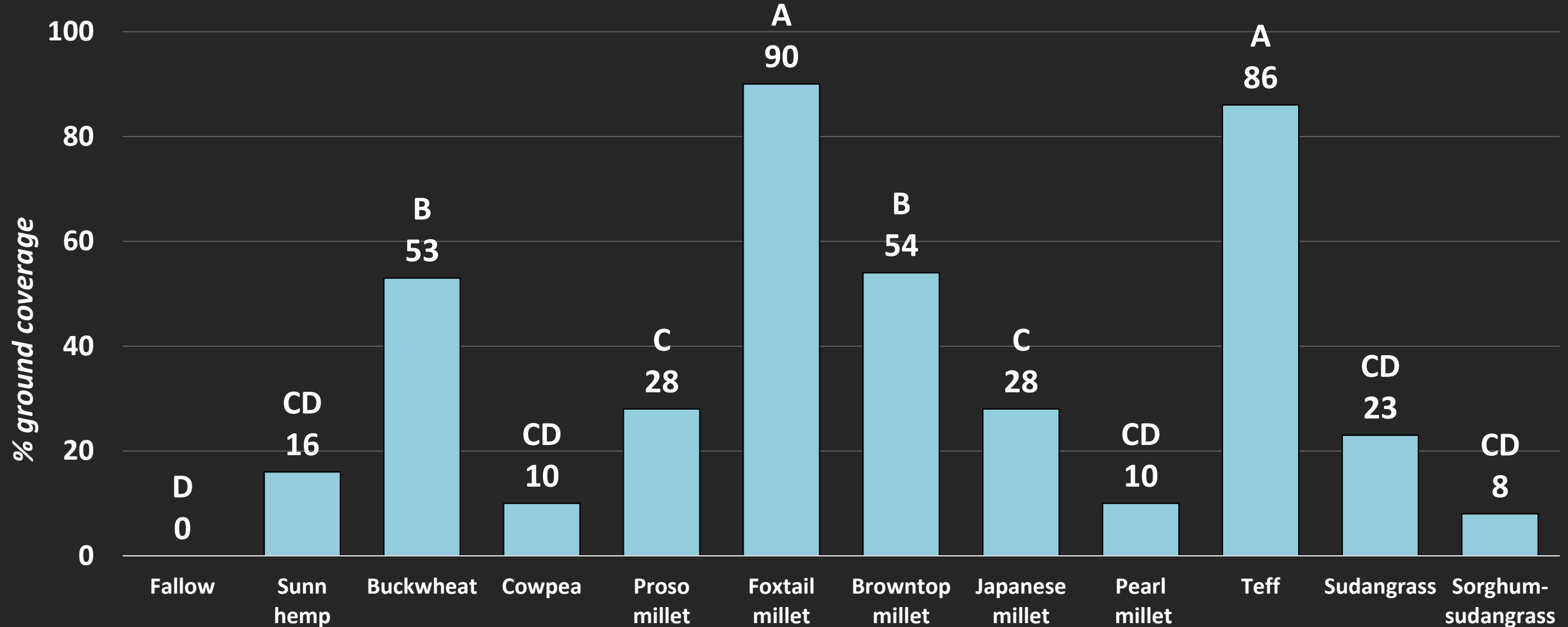
Sudangrass



Sorghum-Sudangrass



# Warm Season Species Evaluation – 36 DAP



# Cool Season Species Evaluation

Small Grains	Legumes	Brassicas	Commercial Mixes	Homemade Mixes
Rye – Wrens abruzzo Rye – FL 401 Oats – Horizon 720 Oats – Coker 227	Crimson clover – Dixie Crimson clover – AU Sunrise Vetch – AU Merit Vetch – Purple bounty Balansa clover - Fixation	Radish – Daikon tillage	Mixon Seed – ReVive <i>(Horizon oats, wrens                      Abruzzi rye, Cahaba                      vetch, Trical 342                      triticale, tillage radish)</i>	Rye ( <i>wrens abr.</i> ) + Vetch <i>(AU merit)</i>
			SE AgriSeeds – On Time <i>(Oats, rye, sorghum-                      sudan, crimson clover,                      vetch, buckwheat,                      sunflower, radish)</i>	Rye ( <i>wrens abr.</i> ) + Crimson clover ( <i>Dixie</i> )
				Rye ( <i>wrens abr.</i> ) + Oats <i>(Coker 227) + Crimson                      clover (Dixie)</i>

- Planted w/ grain drill
- Nov. 4 & Dec. 5
- GCTA meeting/field day in Feb



# Small Grains



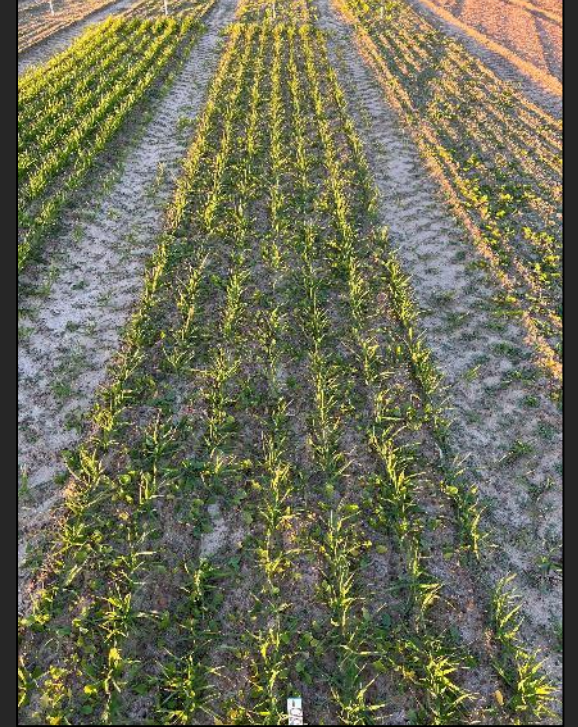
**Rye – Wrens Abruzzi**  
**75 lb/A**



**Rye – FL 401**  
**75 lb/A**



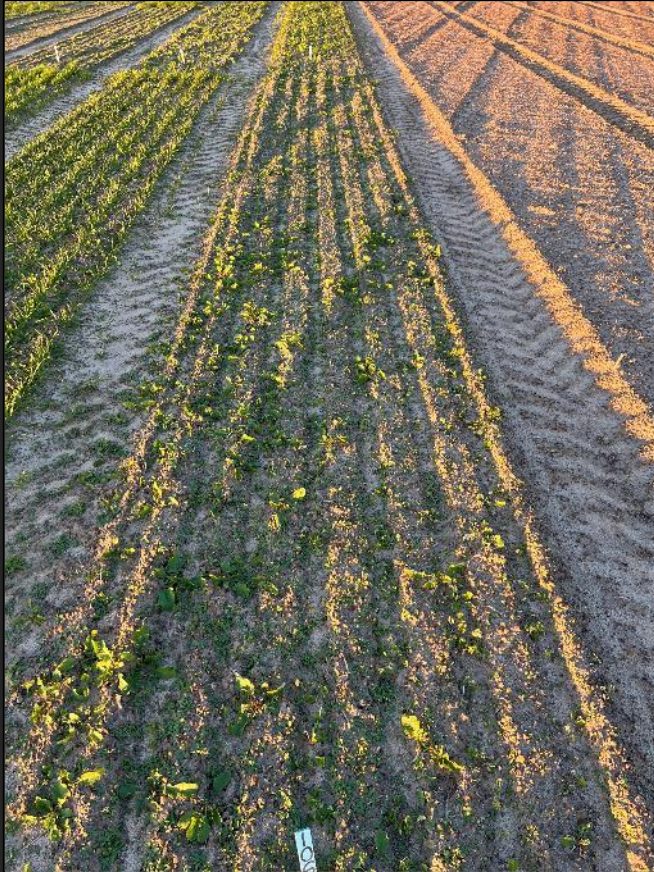
**Oats – Horizon (FL) 720**  
**75 lb/A**



**Oats – Coker 227**  
**75 lb/A**



# Clovers



**Crimson Clover – AU Sunrise**  
**12 lb/A**



**Crimson Clover – Dixie**  
**12 lb/A**



**Balansa Clover – Fixation**  
**12 lb/A**



# Vetch / Radish



**Vetch – AU Merit**  
**12 lb/A**



**Radish – Daikon Tillage**  
**10 lb/A**



# Commercial Pre-Mixes



**Mixon Seed – ReVive Cotton**  
**40 lb/A**



**Southeast Agriseeds – On**  
**Time Mix**  
**40 lb/A**



# “Homemade” Mixes



**Rye (Wrens Abruzzi) – 60 lb/A  
Vetch (AU Merit) – 8 lb/A**



**Rye (Wrens Abruzzi) – 60 lb/A  
Crimson clover (Dixie) – 8 lb/A**



**Rye (Wrens Abruzzi) – 30 lb/A  
Oats (Horizon 720) – 30 lb/A  
Crimson Clover (Dixie) – 5 lb/A**



# Small Grain Seeding Rates

- Compare seeding rates by cultivar
  - *Cereal rye*
    - Wrens Abruzzi
    - FL 401
  - *Oats*
    - Coker 227
    - Horizon (FL) 720
- Biomass accumulation, ground coverage, stand, ECONOMICS \$\$\$

Broadcast Rate (lb/a)
100
75
50
40
30
20



# Small Grain Seeding Rates - Rye

*Wrens Abruzzi*



100 lb/A



75 lb/A



50 lb/A



40 lb/A



30 lb/A



20 lb/A

*FL 401*



100 lb/A



75 lb/A



50 lb/A



40 lb/A



30 lb/A



20 lb/A



# Small Grain Seeding Rates - Oats

*Coker 227*



100 lb/A



75 lb/A



50 lb/A



40 lb/A



30 lb/A



20 lb/A

*Horizon (FL) 720*



100 lb/A



75 lb/A



50 lb/A



40 lb/A



30 lb/A



20 lb/A



# Cover Crop Mixtures – NRCS Standards

Single Species	2-way mix	3-way mix	4-way mix	5-way mix
Rye	Rye + Clover	Rye + Clover + Vetch	Rye + Oats + Clover + Radish	Rye + Oats + Clover + Radish + Turnip
Clover	Rye + Vetch			Rye + Oats + Vetch + Clover + Radish

- Following NRCS standards
  - Rates, planting dates, mix composition
- Biomass accumulation, ground coverage, stand, ECONOMICS \$\$\$, cotton growth/yield



# Cover Crops in Plasticulture





# Money for Growers Floating Around

- Climate-Smart Commodities Grant
  - \$3.1 billion for 141 project in US
  - Cost-share, assistance, grants, etc.
  - Projects 1-5 yrs
- NRCS funding
  - Oversubscribed
  - IRA ('23-'27) will add additional \$19.5 billion
  - EQUIP, CSP, Ag Conservation easement, etc.





# Cost-Share/Incentive Programs – Cover Crops

Updated: 11/21/2024

## Cover Crop Incentive / Cost Share Programs

*\*Always note enrollment dates, deadlines, and terms, agreements, duration, and availability of funding!!!*

Organization	Program	Summary	Specifics (approximate \$)	Contact for enrollment	Link
NRCS	Environmental Quality Incentive Program (EQUIP)	Financial assistance for new practice adoption	Funding based on ranking of application and determination of how the project will help address national, state, and local natural resource priorities. See local NRCS office for specific program details and funding amounts.	Local NRCS office	<a href="https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives/georgia/environmental-quality-incentives">https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives/georgia/environmental-quality-incentives</a>
	Conservation Stewardship Program (CSP)	Financial assistance for enhancing and/or maintaing exisiting conservation efforts	Can include funding for annual projects or supplemental payments or improving on existing practices. See local NRCS office for specific program details and funding amounts.	Local NRCS office	<a href="https://www.nrcs.usda.gov/programs-initiatives/csp-conservation-stewardship-program/georgia/conservation-stewardship-program">https://www.nrcs.usda.gov/programs-initiatives/csp-conservation-stewardship-program/georgia/conservation-stewardship-program</a>
U.S. Cotton Trust Protocol	USDA Climate Smart Cotton (CSC)	Financial assisance for managment and practice changes, primarily through the addition of cover crops and reduced tillage. Growers must be enrolled in the U.S. Cotton trust protocol or committed to enrolling in the next growing season	<i>Two levels available:</i> <b>Level 1</b> - \$5/acre (up to 706 aces) for enrolling <b>Level 2</b> - up to \$45/acre for 3 years for implementing climate smart practice changes	Maryn Findley mfindley@cotton.org	U.S. Cotton Trust Protocol: <a href="https://trustuscotton.org/">https://trustuscotton.org/</a>  USDA Climate Smart Cotton: <a href="https://trustuscotton.org/climate-smart-cotton-program/">https://trustuscotton.org/climate-smart-cotton-program/</a>
ADM	ADM re:generations	Incentives to support incorportaing regenerative farming practices into farming operations.	<i>Three options available:</i> <b>USDA-Climate Smart Commodities payment</b> - \$25/acre <b>ADM/USDA/Partners payment</b> - \$15/acre <i>For both, must work with FSA/NRCS/USDA, have cotton or peanuts in the rotation. Peanuts must be delivered to a Golden Peanut location.</i> <b>Funded by ADM and partners</b> - \$10/acre <i>Previous cover crop practice allowed on the field. Can be in other federally funded program. Must have cotton, peanuts, or soybeans in rotation. Peanuts must be delived to a Golden Peanut location.</i>	Emmanuel Bankston emmanuel.bankston@goldenpeanut.com (504)-905-9200	ADM re:generations: <a href="https://admadvantage.com/regen/programs/#section-8">https://admadvantage.com/regen/programs/#section-8</a>  Southeast incentives: <a href="https://admadvantage.com/wp-content/uploads/2024/07/SOUTHEAST-Incentive-Information-Sheet.pdf">https://admadvantage.com/wp-content/uploads/2024/07/SOUTHEAST-Incentive-Information-Sheet.pdf</a>
	ADM re:generations National Black Growers Council (NBGC) Incentives	Support the production and marketing of climate-smart commodities through incentives and technical support to farmers in implementing regenerative agriculture practices. Must be a memembr of NBGC to qualify	<b>USDA-Climate Smart Commodities payment</b> - \$25/acre <b>ADM/USDA/Partners payment</b> - \$15/acre <i>For both, must work with FSA/NRCS/USDA and not already be enrolled in federally funded program. Must have corn, peanuts, cotton, or soybeans in the rotation.</i>		<a href="https://nationalblackgrowerscouncil.com/climate-smart-grants/">https://nationalblackgrowerscouncil.com/climate-smart-grants/</a>
	Land O'Lakes	<b>*Not specifically for cover crops.</b> Financial incentive for growers who made the transition to strip/no-till before 2015. The program includes data collection and selected soil sampling.	<b>Farmer incentive</b> - \$25/acre <i>Crops include corn, soybeans, cotton, wheat. Strip/no-till must have been adopted before 2015 and must appear five or more times between 2019-2025 .</i>	<a href="https://www.truterraag.com/enroll">https://www.truterraag.com/enroll</a>	<a href="https://www.truterraag.com/getmedia/8b7a4445-5578-4ca4-bc8e-720b715cfbab/2025-TT-USDA-Early-Adopter-R2-Tech-sheet_VFL1024.pdf?ext=.pdf">https://www.truterraag.com/getmedia/8b7a4445-5578-4ca4-bc8e-720b715cfbab/2025-TT-USDA-Early-Adopter-R2-Tech-sheet_VFL1024.pdf?ext=.pdf</a>
Bayer CropScience	ForeGround Bayer Carbon Program	Financial incentive for promoting soil health and protection biodiversity by implementing regenerative practices. Contract terms between 5-20 years.	<i>Three options available:</i> <b>Early adoption &amp; Historical Practices Payment</b> - \$48/acre <i>Fields with a practice change</i> <b>Regenerative agriculture practices</b> - \$6/acre <i>No-till/strip-till or cover crop practices</i>	<a href="https://lp.bayerforground.com/carbon-program-eligibility-expert?_gl=1*8wg46g*_gcl_aw*=RONMLiE3MzlxMzY5NDcuRUFIYUIRb2JDaE1UNnUyOS1anJpUU1WNG5OX0FCMy1N0knRUFBWUFTQ">https://lp.bayerforground.com/carbon-program-eligibility-expert?_gl=1*8wg46g*_gcl_aw*=RONMLiE3MzlxMzY5NDcuRUFIYUIRb2JDaE1UNnUyOS1anJpUU1WNG5OX0FCMy1N0knRUFBWUFTQ</a>	<a href="https://bayerforground.com/carbon-initiative#:~:text=The%20Bayer%20Carbon%20Program%20provides,till%20or%20cover%20crop%20practices.">https://bayerforground.com/carbon-initiative#:~:text=The%20Bayer%20Carbon%20Program%20provides,till%20or%20cover%20crop%20practices.</a>
Accelerating Appalachia	Building Soil, Building Equity (BSBE) Farmer Fund	5-year program to incentive farmers to transition towards conservation, climate smart practices within Central/Southern Appalachia and the rural Southeast. In Georgia, this program in available in northern counties; see website for complete list	<i>Four types of incentives:</i> <b>Implementation incentive</b> - funding to help cover/offset cost of implementing new climate smart farming practices, including cover crops <b>Drawdown incentive</b> - incentive for increases in organic matter and soil carbon following implementation in new practice <b>Participation incentive</b> - annual funding to support soil sampling and continued reporting <b>Travel incentive</b> - travel/lodging for attedence at BSBE-sponsored field days/events	Joe Schroeder Farm Program Officer  <a href="mailto:hello@acceleratingappalachia.org">hello@acceleratingappalachia.org</a>	<a href="https://acceleratingappalachia.org/building-soil-building-equity/">https://acceleratingappalachia.org/building-soil-building-equity/</a>



# US Cotton Trust Protocol / Climate Smart Cotton

\*Part of USDA Climate Smart Commodities grant

## PROGRAM SUMMARY FOR GROWERS

Climate Smart Program Levels	Level 1: U.S. Cotton Trust Protocol Membership	Level 2: Implement a Climate Smart Practice Change	Level 3: Carbon Inset Payment
Financial Support	USCTP pays Growers \$5/A for up to 706 acres	USCTP pays Growers a maximum \$45/A for up to acres for 3 years	Grower able to sale carbon inset in the market, cost negotiated
Farmer Requirements	<ol style="list-style-type: none"><li>1. Complete Trust Protocol enrollment and data entry</li><li>2. Participate in 3<sup>rd</sup> party verification if selected</li><li>3. Upload cotton bales to Protocol Platform</li><li>4. Explore feasibility of new CSA practice adoption</li></ol>	<ol style="list-style-type: none"><li>1. Adopt new CSA practice</li><li>2. Participate in soil health target setting</li><li>3. Quantify GHG emissions with COMET modeling on all practice change acres</li><li>4. Verify new practice adoption</li><li>5. Meet Level 1 requirements</li></ol>	<ol style="list-style-type: none"><li>1. Contract for carbon inset sale</li><li>2. Agree to measure, monitor, report, and verify procedures</li><li>3. Soil sample all fields</li><li>4. Meet Level 1 and 2 requirements</li></ol>
Required at All Levels	<ol style="list-style-type: none"><li>1. Meet Highly Erodible Land (HEL) and Wetland Compliance (WC) requirements.</li><li>2. Identify practices in each enrolled field that are already receiving funding from USDA program(s) and attest that enrolled field(s) will not have multiple sources of USDA funding for the same practice on the same land.</li></ol>		

## Enrollment

Jan-April 2025

- Can enroll self
- Enroll @ gin
- Contact Maryn

## Contact

Maryn Findley

352-805-3907

[mfindley@cotton.org](mailto:mfindley@cotton.org)

[www.trustUScotton.org](http://www.trustUScotton.org)



# Sustainable U.S. Peanuts Initiative

**\*NOT Part of USDA Climate Smart Commodities grant**

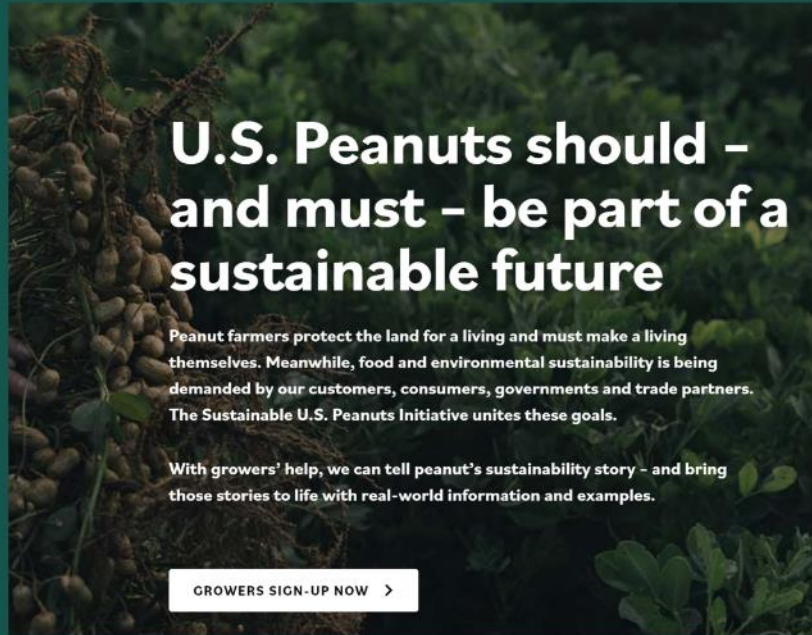
A platform to track the environmental footprint of peanuts

Provides growers environmental metrics based on production information

Data is nationally aggregated for all participants- individual results are confidential to the grower

Supported by all steps of the supply chain

Aligned with the US Cotton Trust Protocol for participation efficiency



[www.sustainableuspeanuts.org](http://www.sustainableuspeanuts.org)

## Enrollment

July 2024-April 2025

- Self enrollment
- Enrollment day @ buying point?

## Contact

Allie Randell

386-209-2951

[arandell@peanutusa.com](mailto:arandell@peanutusa.com)

[www.sustainableUSpeanuts.org](http://www.sustainableUSpeanuts.org)





UNIVERSITY OF GEORGIA  
EXTENSION

**Thank you!**