Peanut Weed Control Update - 2019

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Georgia Rainfall Totals (inches)
April 1 – September 1

<table>
<thead>
<tr>
<th>City</th>
<th>2018</th>
<th>1981-2010</th>
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<tbody>
<tr>
<td>Atapulgus</td>
<td>32.24</td>
<td>29.36</td>
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<tr>
<td>Baxley</td>
<td>29.83</td>
<td>29.87</td>
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<tr>
<td>Cairo</td>
<td>35.49</td>
<td>22.42</td>
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<tr>
<td>Dublin</td>
<td>25.42</td>
<td>20.03</td>
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<tr>
<td>Elberton</td>
<td>38.42</td>
<td>17.71</td>
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<tr>
<td>Midville</td>
<td>17.71</td>
<td>22.67</td>
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<tr>
<td>Rome</td>
<td>19.50</td>
<td>22.52</td>
</tr>
<tr>
<td>Statesboro</td>
<td>22.52</td>
<td>22.18</td>
</tr>
<tr>
<td>Tifton</td>
<td>31.17</td>
<td>19.12</td>
</tr>
<tr>
<td>Vienna</td>
<td>25.36</td>
<td>19.53</td>
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Source: UGA Weather Network
Is this glyphosate?

5900+ lbs/A
Which treatment do you prefer?

Peanut Yield (lbs/A)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6884</td>
</tr>
<tr>
<td>8</td>
<td>6827</td>
</tr>
<tr>
<td>15</td>
<td>6599</td>
</tr>
</tbody>
</table>

LSD (P = 0.10) = 481
THSD (P = 0.10) = 974
Peanut Weed Control

*Integrated Program Approach*

- **Tillage**
- **Rye Cover Crop**
- **Irrigation**
- **Twin Rows**
- **Herbicides**
- **Hand-Weeding**
The Peanut Herbicide Toolbox
23 Active ingredients

• **PPI/PRE**
  Sonalan
  Prowl/Pendimax
  Dual Magnum/Generics
  Outlook/Propel
  Pursuit
  Spartan Charge
  Solicam
  Strongarm
  Valor
  Zidua

• **POST**
  Aim (Harvest Aid)
  Gramoxone
  Inteon/Firestorm/Parazone
  Basagran
  Ultra Blazer
  Cadre/Impose
  Classic
  Cobra
  ET (harvest aid)
  Fusilade
  Poast/Poast Plus
  Pursuit
  Select/Arrow/Trigger
  Storm
  2,4-DB
Peanut Weed Control – 2018
Valor/Cadre Program

- Prowl H₂O 3.8Sc @ 32 oz/A (PRE)
- Valor SX 51WG @ 3.0 oz/A (PRE)
- Strongarm 84WG @ 0.45 oz/A (PRE)
- Cadre 2AS @ 4 oz/A (38 DAP)
- Dual Magnum 7.62EC @ 16 oz/A (38 DAP)

PE-15-18
July 17
71 DAP
Peanut Weed Control – 2018
Gramoxone/Cadre Program

Prowl H₂O 3.8SC @ 32 oz/A (PRE)
Gramoxone 2SL @ 12 oz/A (16 DAP)
Storm 4SL @ 16 oz/A (16 DAP)
Dual Magnum 7.62EC @ 4 oz/A (16 DAP)
Cadre 2AS @ 4 oz/A (38 DAP)
Dual Magnum 7.62EC @ 16 oz/A (38 DAP)
What do the top Georgia peanut growers do?

2017 Georgia Peanut Achievement Club Winners

- 15 growers
- **6249 lb/A average yield**
  - GA State Avg. = 4380 lb/A
- 100% - irrigated
- 67% - bottom plow
- 86% - twin rows
- **Herbicides**
  - 53% - Sonalan
  - 93% - Valor
  - 20% - Dual
  - 73% - Cadre
  - 53% - 2,4-DB
  - 47% - Prowl
  - 40% - Strongarm
- 9.1 MPH and 12.2 GPA (avg.)
Weed Wiper
Randolph County – August 20, 2018
Other Topics of Interest

- Future
  - Anthem Flex (pyroxasulfone + carfentrazone)
  - Brake (fluridone)

- Valor Formulations
- Valor/Dual Magnum Combos in High Moisture
- Auxin Nozzles
- Dicamba
- Tropical spiderwort /Benghal Dayflower
Anthem Flex in Peanut

- FMC
- Anthem Flex 4SE
  - carfentrazone (0.267 lb/gal)
  - pyroxasulfone (3.733 lbs/gal)
- Testing since 2012
- **POST only!**
- Increase in crop injury mostly due to carfentrazone
- 3 oz/A + NIS
  - 0.0063 lb ai/A – carfentrazone
    - Aim 2EC @ 0.4 oz/A
  - 0.0875 lbs ai/A – pyroxasulfone
    - Zidua 85WG @ 1.65 oz/A
Weed Control in Peanut with Anthem Flex - 2018

NTC

Prowl H₂O @ 32 oz/A – PRE
Gramoxone @ 12 oz/A - 16 DAP
Storm @ 16 oz/A - 16 DAP
Dual Magnum @ 16 oz/A - 16 DAP
Cadre @ 4 oz/A - 38 DAP
Dual Magnum @ 16 oz/A - 38 DAP

PE-15-18
July 17
71 DAP

Prowl H₂O @ 32 oz/A – PRE
Gramoxone @ 12 oz/A - 16 DAP
Storm @ 16 oz/A - 16 DAP
Anthem Flex @ 3 oz/A - 16 DAP
Induce @ 0.25% v/v

Prowl H₂O @ 32 oz/A – PRE
Gramoxone @ 12 oz/A - 16 DAP
Storm @ 16 oz/A - 16 DAP
Anthem Flex @ 3 oz/A - 38 DAP
Induce @ 0.25% v/v
Gramoxone + Storm + Anthem Flex

PE-02-15
May 19
1 DAT
Brake (fluridone) vs. Valor - 2018

NTC

Prowl H₂₀ @ 32 oz/A (PRE)
Valor SX @ 3 oz/A (PRE)
Cadre @ 4 oz/A (POST)
Dual Magnum @ 16 oz/A (POST)
2,4-DB @ 16 oz/A (POST)

Prowl H₂₀ @ 32 oz/A (PRE)
Brake 1.2L @ 16 oz/A (PRE)
Cadre @ 4 oz/A (POST)
Dual Magnum @ 16 oz/A (POST)
2,4-DB @ 16 oz/A (POST)

PE-12-18
July 17
5 weeks after POST
Flumioxazin Formulations
Valor Formulation Test - 2018
(3 oz/A + Prowl H₂O @ 32 oz/A)

Valor SX
Red Eagle
Valor EZ
Panther SC
NTC

PE-06-18
June 18
42 DAP
13.55” (R + I)
Brief History of Metolachlor

- Synthesized by Ciba-Geigy in 1972
  - 50/50% mixture of R + S isomers
- Registered for corn in 1977
- Registered for peanut in 1980 (February)
- S-metolachlor registered for use in 1997 (Novartis)
  - 12/88% mix of R + S isomers
    - Patent expiration
    - EPA Reduced Risk Pesticide Program
  - Novartis + AstraZeneca became Syngenta in 2000
- Generic companies started producing “old” metolachlor in 2003 (i.e. 50/50 mix of R + S isomer).
## Early Metolachlor/Peanut Research Results

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Journal</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Cardina and Swann</td>
<td>1988</td>
<td>Peanut Sci. 15:57-60</td>
<td>Emergence and growth delayed from PPI applications when rainfall or irrigation followed application. No effect on yield at labeled rates. 3X rate reduced yield (11-15%)</td>
</tr>
<tr>
<td>Wehtje et al.</td>
<td>1988</td>
<td>Peanut Sci. 15:53-56</td>
<td>Across all years, a 2-fold safety factor existed between maximum labeled rate and injury rate.</td>
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<tr>
<td>Johnson et al.</td>
<td>1993</td>
<td>Peanut Sci. 20:17-20</td>
<td>Split applications of metolachlor (PPI + VE) had no effect on yield.</td>
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<tr>
<td>Johnson et al.</td>
<td>1994</td>
<td>Peanut Sci. 21:126-129</td>
<td>PPI, VE, and PPI + VE applications had no effect on yield.</td>
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</table>

What about high moisture conditions and tank-mixes with Valor?
Valor/Dual High Moisture Test - 2018

11.315” OF TOTAL IRRIGATION/RAINFALL IN FIRST 30 DAYS AFTER APPLICATION
Peanut Response to Valor + Dual Magnum - 2018

11.315” OF TOTAL IRRIGATION/RAIN FALL IN FIRST 30 DAYS AFTER APPLICATION

NTC

Valor @ 3 oz/A + Dual Magnum @ 16 oz/A PRE
Valor/Dual Magnum High Moisture Results - 2018

• No interactions between Valor and Dual Magnum

• No effect on J-rooting

• Valor and Dual reduced early season peanut biomass (stunting)

• Valor @ 3 or 6 oz/A had no effect on yield

• Dual Magnum reduced peanut yields under these high moisture conditions.
  - 16 oz/A = 4.2% loss
  - 21 oz/A = 5.4% loss
  - 42 oz/A = 10.8% loss
VMD for common nozzle types

11002DG
VMD_{50} = 322 (M)

AIXR 11002
VMD_{50} = 402 (C)

TTI 02
VMD_{50} = 524 (XC)
Objective:

- Compare the field performance of auxin nozzles to flat fan nozzles in commercial peanut fields.
Methodology

- 3 commercial peanut fields
- Plot size
  - Sprayer width X field length
- 3-4 replications
- 2 nozzle types
- All agri-chemicals
- ANOVA
- Tukey’s HSD (P=0.10)
Bulloch County Nozzle Test - 2018

03/23/2017
JD 4630
15 GPA
25 PSI
12.6 MPH
90' boom length
15” nozzle spacing
32”-34” boom height
Miller County Nozzle - 2018

JD4030
110 ft boom
20” nozzle
10 MPH
25 PSI
10 GPA
Pierce County Nozzle Test - 2018

03/22/2017
JD 4730
16 GPA
21-23 PSI
11.6 MPH
100' boom length
15' nozzle spacing
28' boom height
## 2018 Nozzle Tests
### Pesticides/Fertilizers Applied

<table>
<thead>
<tr>
<th>County</th>
<th>Herbicide</th>
<th>Fungicide</th>
<th>Insecticide</th>
<th>Other</th>
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<tr>
<td>Bulloch</td>
<td>Valor</td>
<td>Alto</td>
<td>Bifenthrin</td>
<td>Boron PegPower</td>
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<td>Strongarm</td>
<td>Bravo</td>
<td>Dimilin</td>
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<td>Acumen</td>
<td>Elatus</td>
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<td></td>
<td>Gramoxone</td>
<td>Folicur</td>
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<td>Storm</td>
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<td>Dual Magnum 2,4-DB</td>
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<td>Bravo</td>
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<td>FullBor Micropak PegPower</td>
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<td>Dual Magnum 2,4-DB</td>
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Yield Data

Miller Co.
October 3

6 rows (18’) X 1000’ (0.413 acres/rep) – Bulloch/Miller
6 rows (18’) X Field Length (0.680-0.735 acres/rep) - Pierce
Pierce County Nozzle Test
September 19, 2018

TTI-11006VP-C
Nozzle Tests - Summary

- No differences in weed, insect, disease control observed except for 3-CAH in Miller Co.
- No differences in peanut yield
- Growers liked auxin nozzles and plan to expand use in 2019
Nozzle Tests Thoughts

- TTI60 will likely not be registered for dicamba
- Growers who historically have less than ideal pest control should not take a chance on coverage
- Timing is important!
Off-Target Dicamba/Peanuts
Dicamba/Peanuts – I (Epinasty)
Dicamba/Peanuts – II
(leaf strapping)
Dicamba/Peanuts – III (leaf roll)
Peanut Response to Xtendimax + Glyphosate (1/50th X) - 2018
Applied 30 + 60 + 90 DAP

PE-03-18
August 16
108 DAP
Peanut yield (lbs/A) as influenced by dicamba + glyphosate applied at 1/50th X rates.

THSD (P=0.10) = NS
CV = 4.8
Peanuts/Dicamba Summary

- No tolerance is currently established
- Peanut injury dependent upon rate and time of event
- Drift rates or volatility rates (1/50thX and lower) will cause symptomology but should not reduce yields
- Pay attention!
Pay Attention to Detail!
Tropical Spiderwort (a.k.a. Bengal Dayflower) Control in Peanut

- Tillage (moldboard plow)
- Twin Rows (+8%)

- **2 applications of Dual Magnum**
  - PRE or EPOST or POST?

- Gramoxone, Cadre, Strongarm, Basagran
  - POST
Questions/Comments