Peanut Response to Valor and Dual Magnum Under High Moisture Conditions

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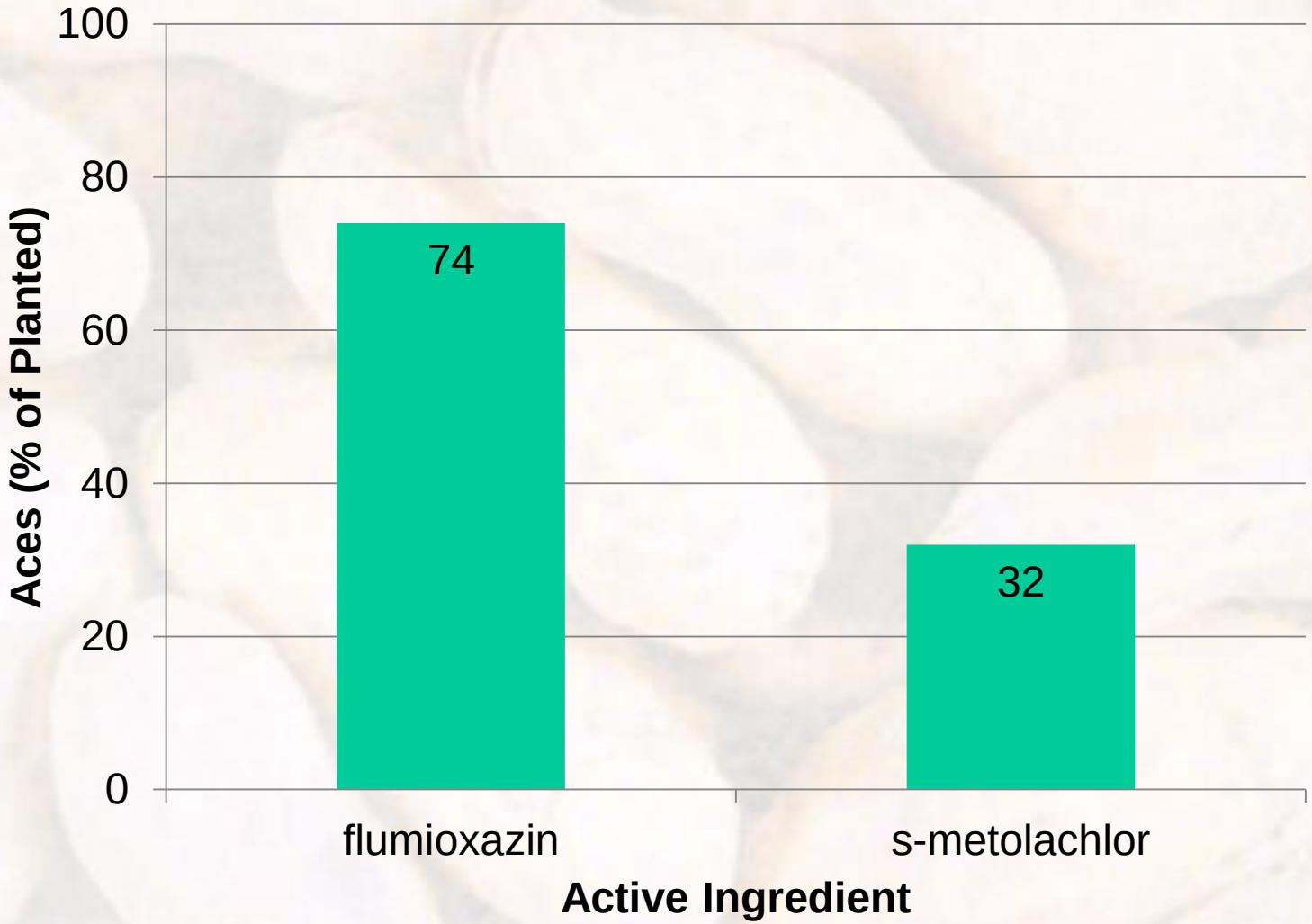
APRES
American Peanut Research and Education Society

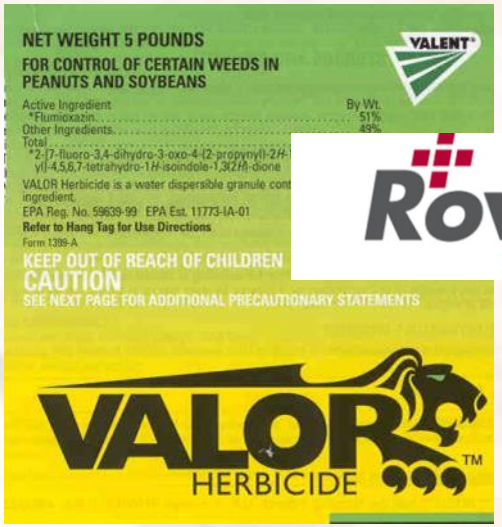
Valor and Dual Magnum Use in Georgia Peanuts - 2018



NASS
May 2019

Valor History

- Patent filed in 1984
- First US registration 2001
- Exclusive use ended 2011
- Minor use extension till 2014
- Generics allowed in 2015



Rowel HERBICIDE

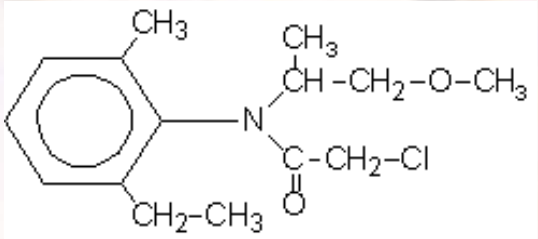
VALOR HERBICIDE EZ

Panther SC

RedEagle Flumioxazin 51% WDG

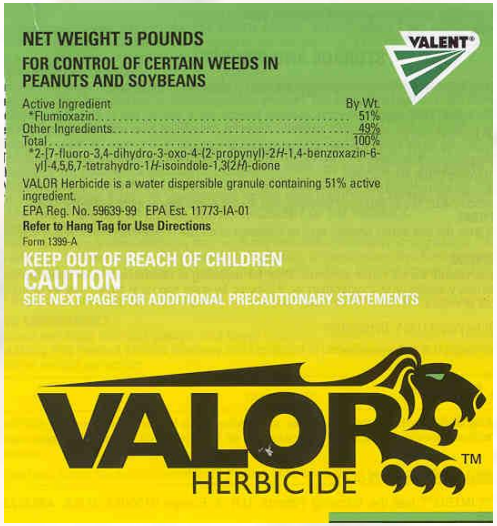
Brief History of Metolachlor (Dual)

- 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 stopped selling “old” metolachlor in 1999, phased out completely by 2001.
  - *Novartis + AstraZeneca became Syngenta in 2000*
- Generic companies started producing “old” metolachlor in 2003 (i.e. 50/50 mix of R + S isomer).



Objective

- Evaluate peanut response to preemergence applications of Valor and Dual Magnum under high moisture conditions.



Materials and Methods

- UGA Ponder Farm
  - ***Ty Ty, GA***
- small-plot trials
  - ***6' X 25'***
- 4 replications
- Factorial design (3 X 4)
  - ***Valor SX 51WG***
    - ***0, 3, 6 oz/A***
  - ***Dual Magnum 7.62EC***
    - ***0, 16, 21, 42 oz/A***
- Weed-free
  - ***Strongarm + Prowl H_20***
- GA-06G (twin-row)
  - ***June 28, 2017***
  - ***April 30, 2018***
- ANOVA
  - ***Tukey's HSD (P=0.10)***
- population, biomass, j-rooting, yield (2018)

PE-67-17 – June 29 - Irrigation

Rainfall/Irrigation

2017

Time (DAP)	Rain (in)	Irrigation (in)	Total (in)
0-7	0.53	3.76	4.29
8-14	0.38	0.0	0.38
15-21	1.25	0.50	1.75
22-30	0.5	1.0	1.50
Total			**7.92**

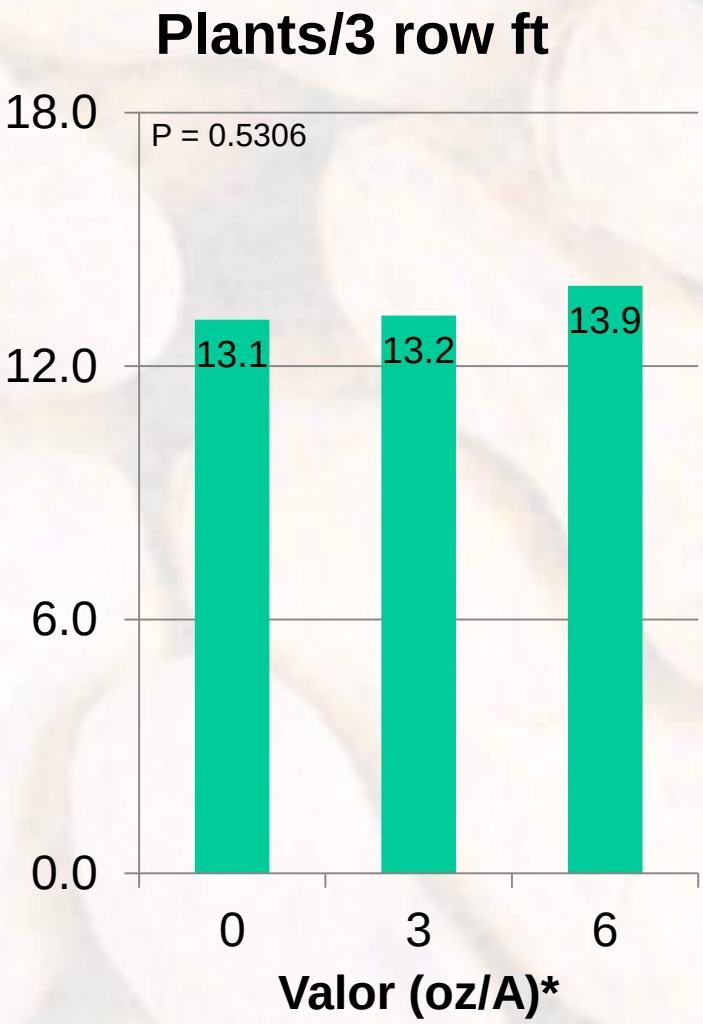
2018

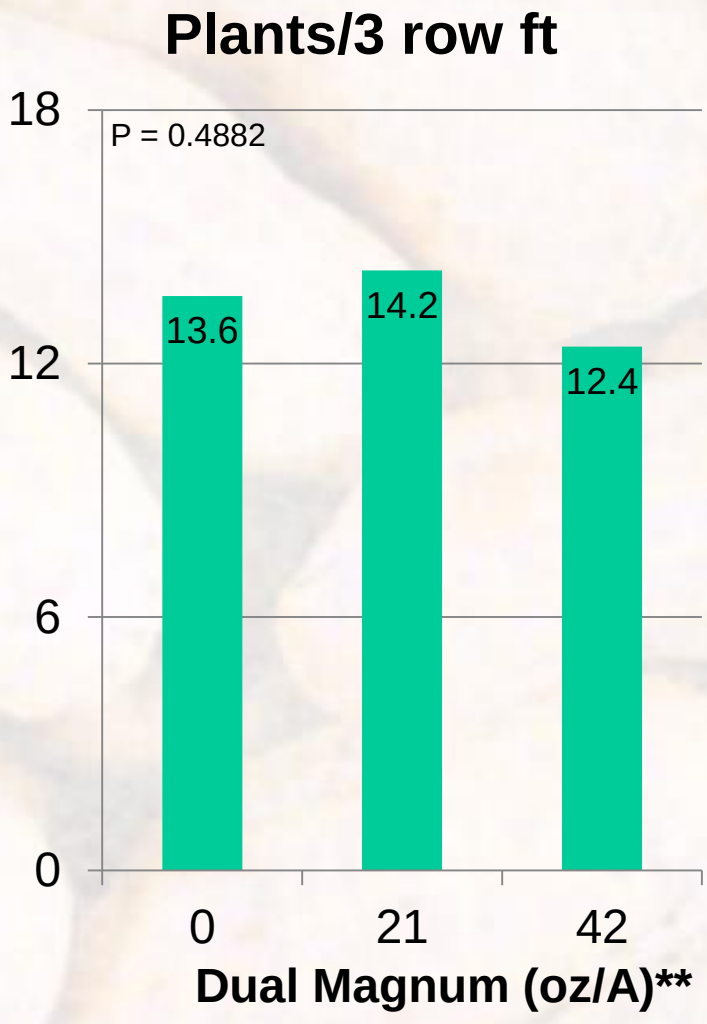
Time (DAP)	Rain (in)	Irrigation (in)	Total (in)
0-7	0.0	5.34	5.34
8-14	1.06	0.0	1.06
15-21	1.56	0.0	1.56
22-30	3.36	0.0	3.36
Total			**11.32**

Destructive Harvest – (19-21 DAT)

Results

Valor and Dual Magnum Effects on Peanut Plant Population - High Moisture Conditions - 2017

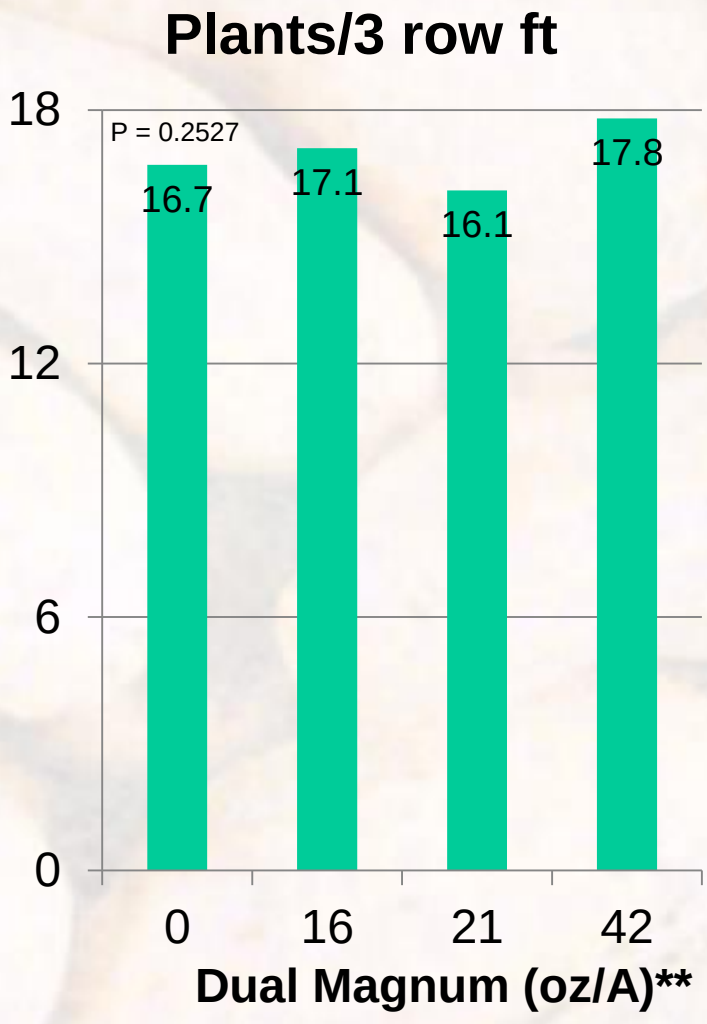




*averaged over 3 Dual Magnum rates
**averaged over 3 Valor rates

PE-67-17
21 DAT
No interactions

Valor and Dual Magnum Effects on Peanut Plant Population - High Moisture Conditions - 2018



PE-09-18
19 DAT
No interactions

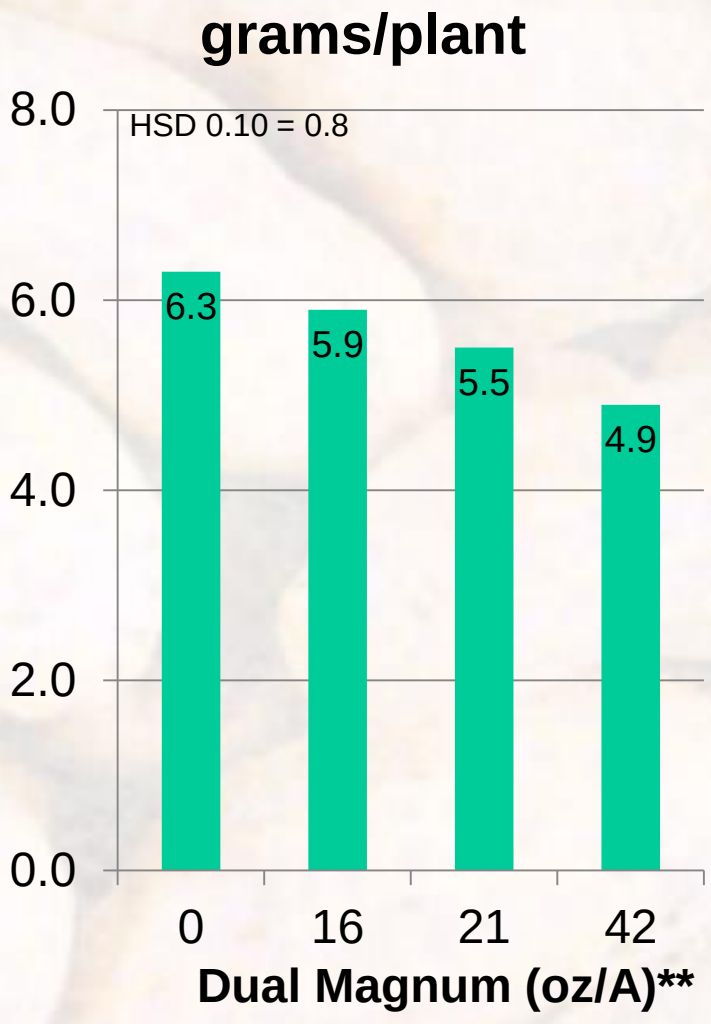
*averaged over 4 Dual Magnum rates
**averaged over 3 Valor rates

Valor and Dual Magnum Effects on Peanut Whole Plant Biomass - High Moisture Conditions - 2017

*averaged over 3 Dual Magnum rates
**averaged over 3 Valor rates

PE-67-17
July 19
21 DAT
No interactions

Valor and Dual Magnum Effects on Peanut Whole Plant Biomass - High Moisture Conditions - 2018

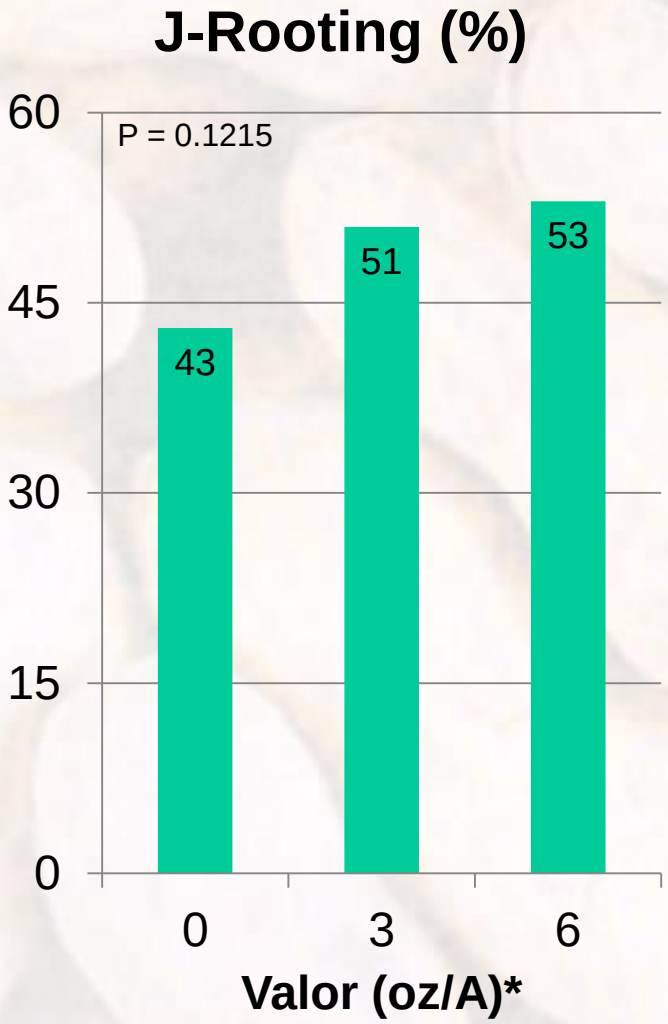


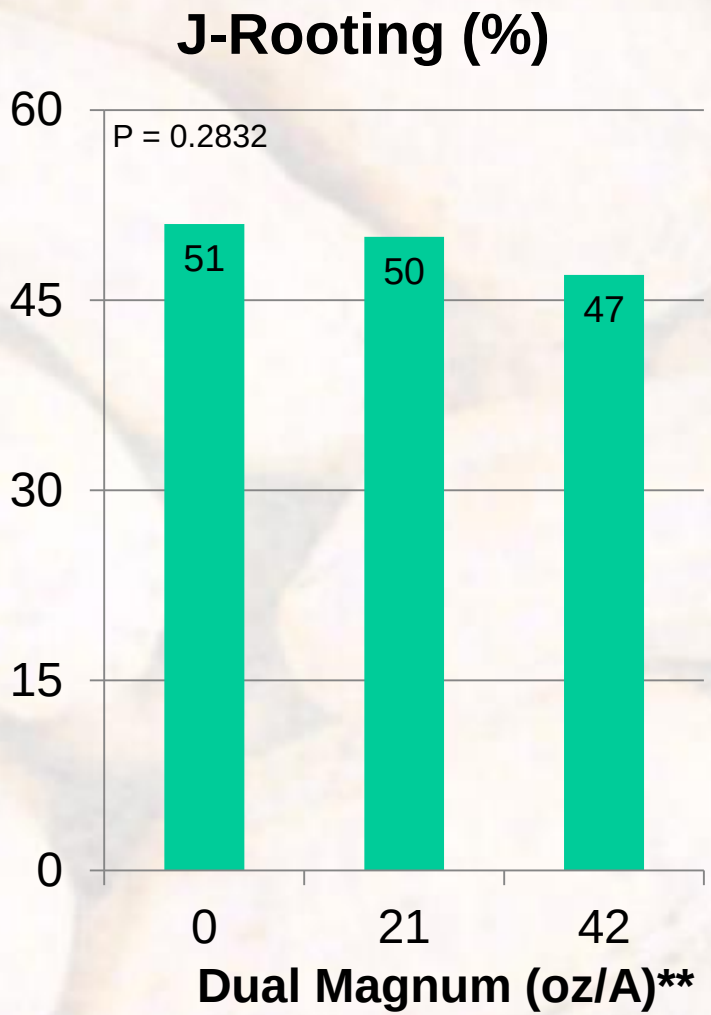
*averaged over 4 Dual Magnum rates
**averaged over 3 Valor rates

PE-09-18
May 21
19 DAT
No interactions

Peanut J-Rooting

Valor and Dual Magnum Effects on Peanut J-Rooting - High Moisture Conditions - 2017





*averaged over 3 Dual Magnum rates
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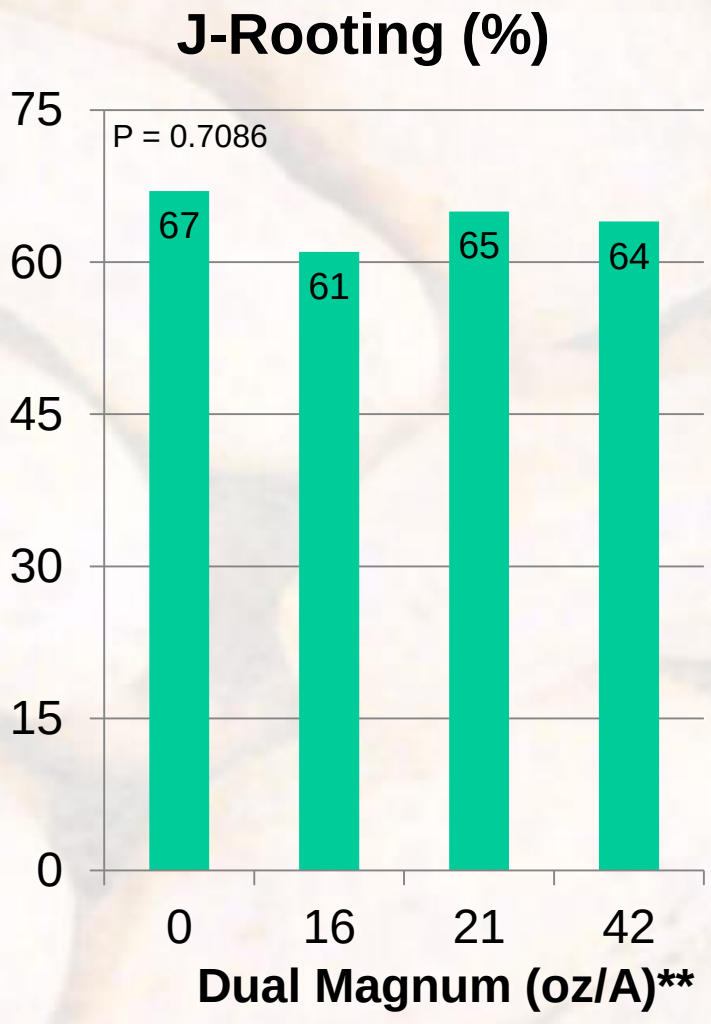
PE-67-17
July 19
21 DAT
No interactions

Valor and Dual Magnum Effects on Peanut J-Rooting - High Moisture Conditions - 2018



*averaged over 4 Dual Magnum rates
**averaged over 3 Valor rates

PE-09-18
May 21
19 DAT
No interactions

Peanut Response to Valor + Dual Magnum - 2018

NTC

Valor @ 3 oz/A + Dual Magnum @ 16 oz/A
PRE

PE-09-18
July 24
83 DAT

Peanut Response to Dual Magnum - 2018

NTC

Dual Magnum 7.62EC
16 oz/A
PRE

PE-09-18
July 24
83 DAT

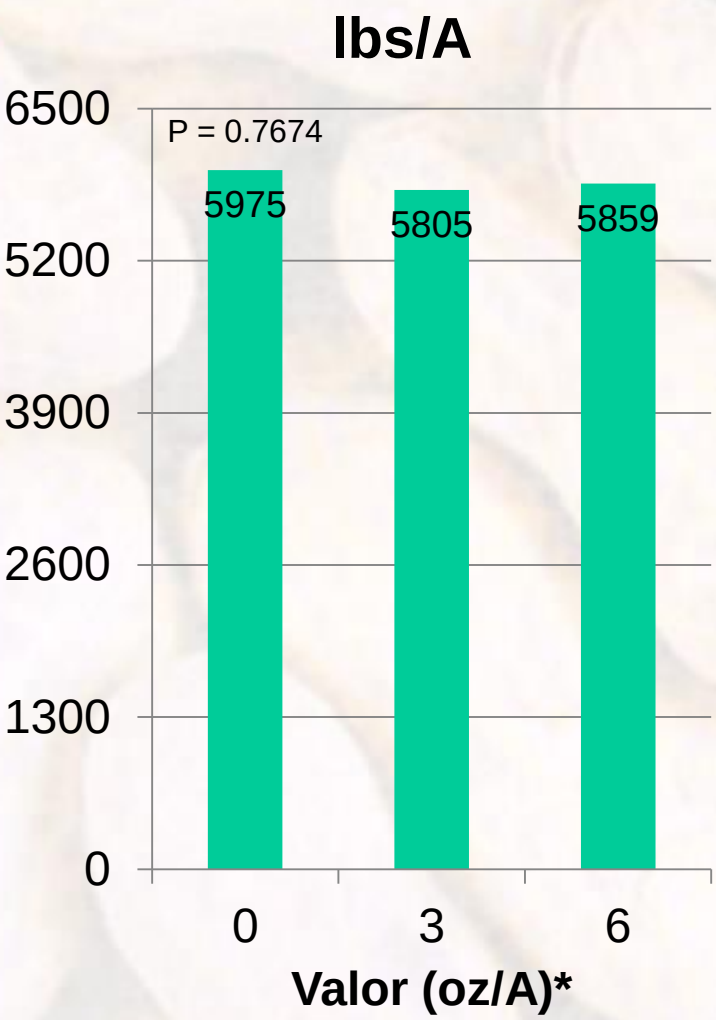
Peanut Response to Dual Magnum - 2018

NTC

Dual Magnum 7.62EC
42 oz/A
PRE

PE-09-18
July 24
83 DAT

Valor and Dual Magnum Effects on Peanut Yield - High Moisture Conditions - 2018



*averaged over 4 Dual Magnum rates
**averaged over 3 Valor rates

PE-09-18
Weed-free
No interactions

Valor/Dual Magnum High Moisture *Summary*

- No interactions between Valor and Dual Magnum
- No effect on peanut density/population
- No effect on peanut J-rooting
- Valor and Dual reduced early season peanut biomass (stunting)
  - *Valor: 3 oz/A (2.3-11.3%); 6 oz/A = (16.1-27.9%)*
  - *Dual Magnum: 16 oz/A (6.3%); 21 oz/A (12.7-19.6%); 42 oz/A (22.2-28.3%)*
- Valor @ 3 or 6 oz/A had no effect on peanut 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*

Future Research

- Study repeated in 2019 (8.3” in 1st 30 days)

- Preliminary results thus far:
  - *No interactions between Valor and Dual Magnum*
  - *No effect on peanut density/population*
  - *Early season biomass reduced*
    - *Valor: 3 oz/A = 9%, 6 oz/A = 27%*
    - *Dual Magnum: 16 oz/A = 12.5%, 21 oz/A = 16%, 42 oz/A = 25%*
  - *Valor had no effect on J-Rooting*
  - *Dual Magnum @ 16 or 21 oz/A had no effect on J-Rooting but @ 42 oz/A increased J-Rooting (14%+)*

Peanut J-Rooting

No Valor or Dual

PE-07-19
May 23
21 DAP

Questions/Comments