



2018 Peanut Weed Control Update

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UNIVERSITY OF
GEORGIA

College of Agricultural &
Environmental Sciences



Not a good way to start out!





Peanut Weed Control – 2017

Valor/Cadre Program



NTC



Prowl H₂O 3.8CS @ 32 oz/A (PRE)
Valor SX 51WG @ 3 oz/A (PRE)
Strongarm 84WG @ 0.225 oz/A (PRE)
Cadre 2AS @ 4 oz/A (38 DAP)
2,4-DB 1.75SL @ 18 oz/A (38 DAP)
Dual Magnum 7.62EC @ 16 oz/A (38 DAP)

PE-19-17
July 31
84 DAP



Peanut Weed Control – 2017

Valor/Cobra Program



NTC

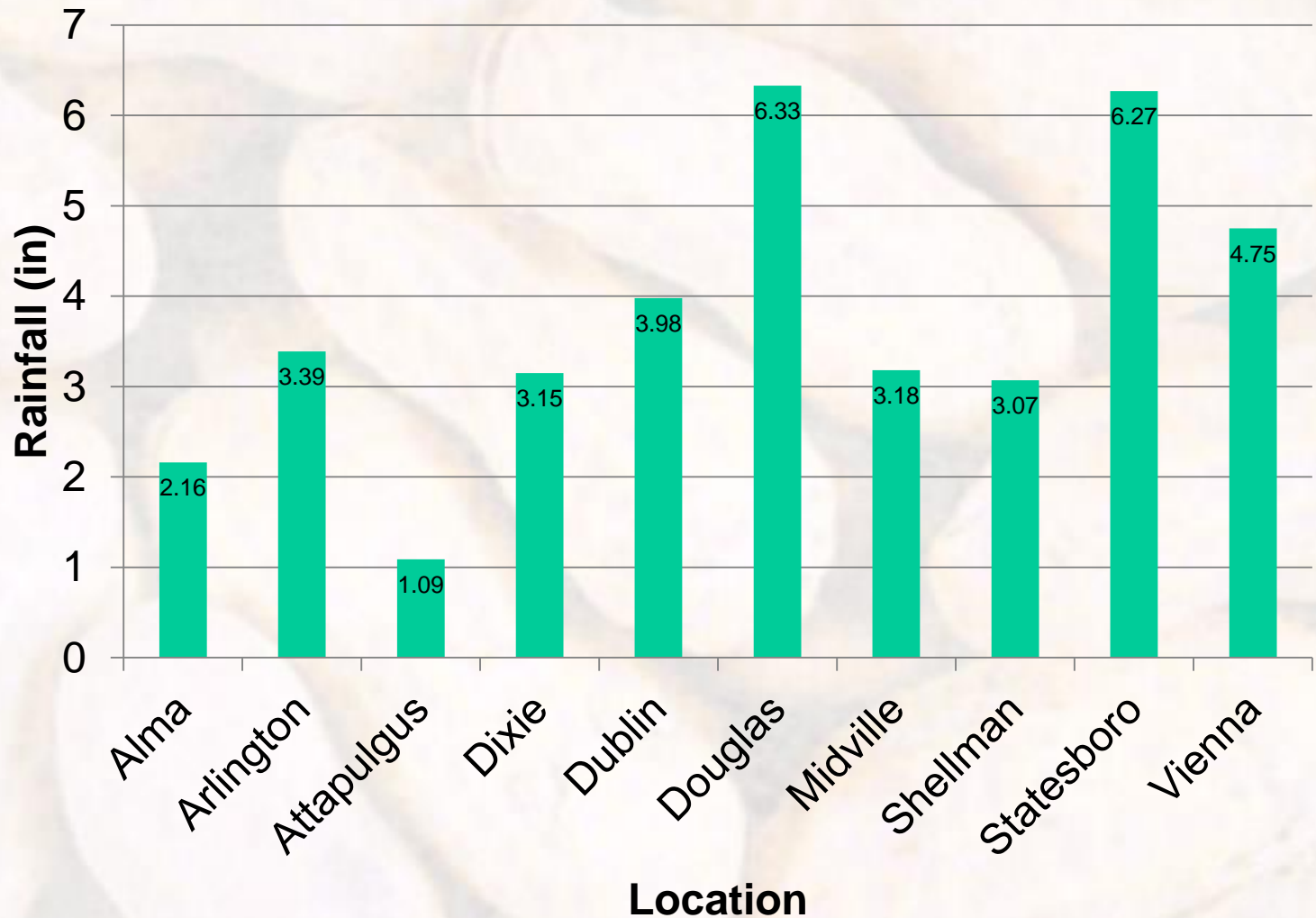


Prowl H₂O 3.8CS @ 32 oz/A (PRE)
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PE-19-17
July 31
84 DAP



Rainfall Totals - May 20-May 24, 2017





Valor Injury @ (6 oz/A) 16 DAT

PD: May 5

Rainfall Events:

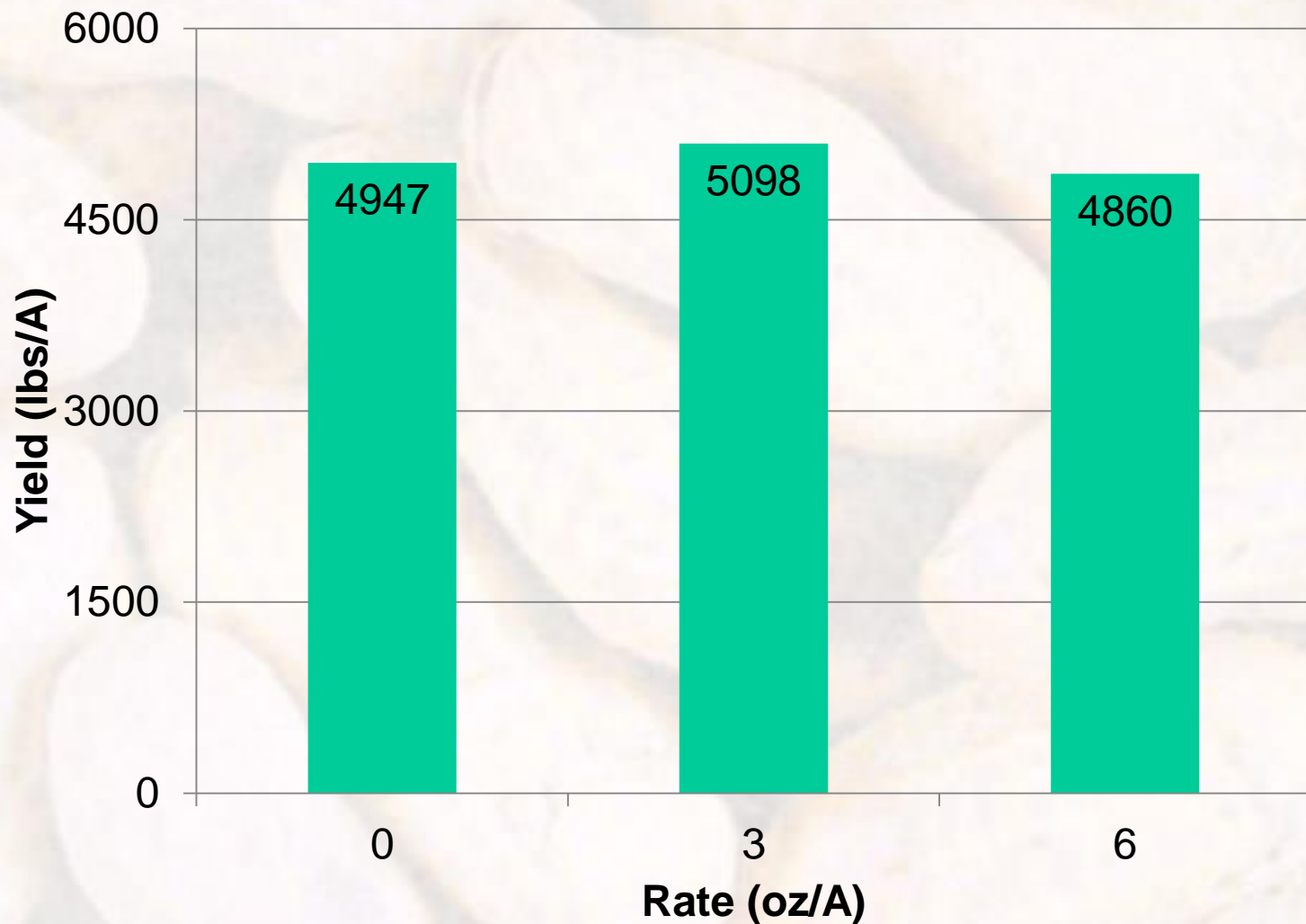
- May 5 = 0.04"
- May 14 = 0.56"
- May 15 = 0.16"
- May 16 = 0.01"
- May 17 = 0.51"
- May 20 = 0.07"
- May 21 = 0.59"
- May 22 = 0.58"
- May 23 = 0.24"
- May 24 = 0.13"
- May 25 = 0.20"
- May 26 = 0.89"
- May 28 = 0.05"
- June 3 = 0.08"
- June 4 = 0.56"
- June 5 = 0.77"

30 day rainfall
total from planting = 5.44"



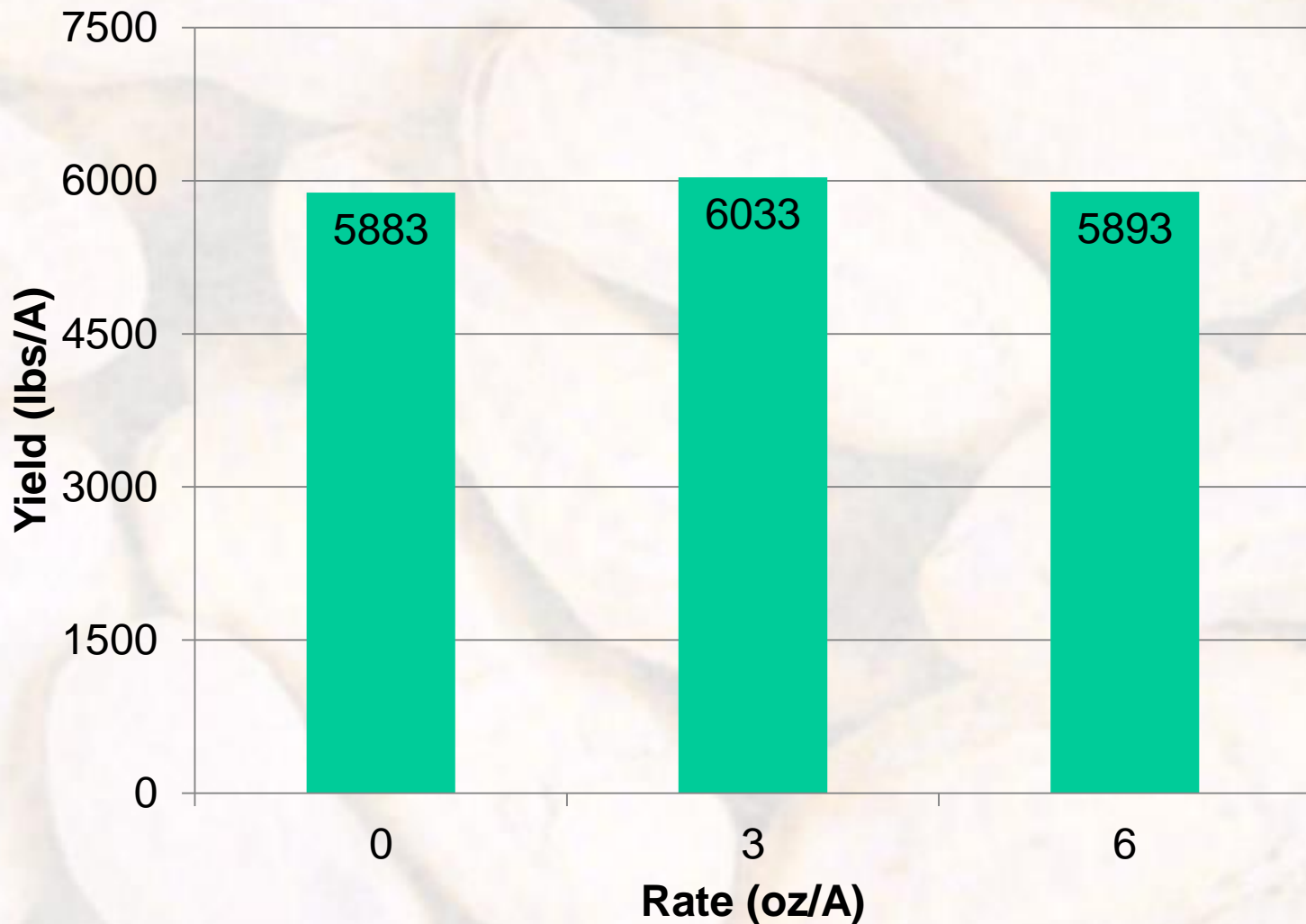


Peanut Yield Response to Valor 51WG - 2009





Peanut Yield Response to Valor 51WG - 2013



PE-14-13
GA-06G
Averaged over 3 planting dates (April 16, April 29, May 13)
Weed-free

P=0.4015



Peanut Weed Control – 2017

Gramoxone/Cadre Program



PE-10-17
August 16
106 DAP

NTC

Prowl H₂O 3.8SC @ 32 oz/A (PRE)
Gramoxone 2SL @ 12 oz/A (15 DAP)
Storm 4SL @ 16 oz/A (15 DAP)
Dual Magnum 7.62EC @ 4 oz/A (15 DAP)
Cadre 2AS @ 4 oz/A (42 DAP)
2,4-DB 1.75SL @ 18 oz/A (42 DAP)
Dual Magnum 7.62EC @ 16 oz/A (42 DAP)



Peanut Weed Control – 2017

Gramoxone/Cobra Program



NTC



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PE-10-17
August 16
106 DAP



Paraquat Concerns

- Using higher paraquat rates without a safener and/or later in the peanut life cycle puts you at more risk for potential yield loss, especially in high yielding irrigated fields or dryland fields!

Gramoxone[®] SL 2.0

Firestorm[®]

HELMQUAT 3SL

PARAZONE[®]



Gramoxone 2SL @ 14 oz/A
Warrant 3ME @ 48 oz/A
3 DAT



Gramoxone 2SL @ 12 oz/A + Storm 4SL @ 16 oz/A + Dual Magnum 7.62EC @ 16 oz/A – 14 DAT

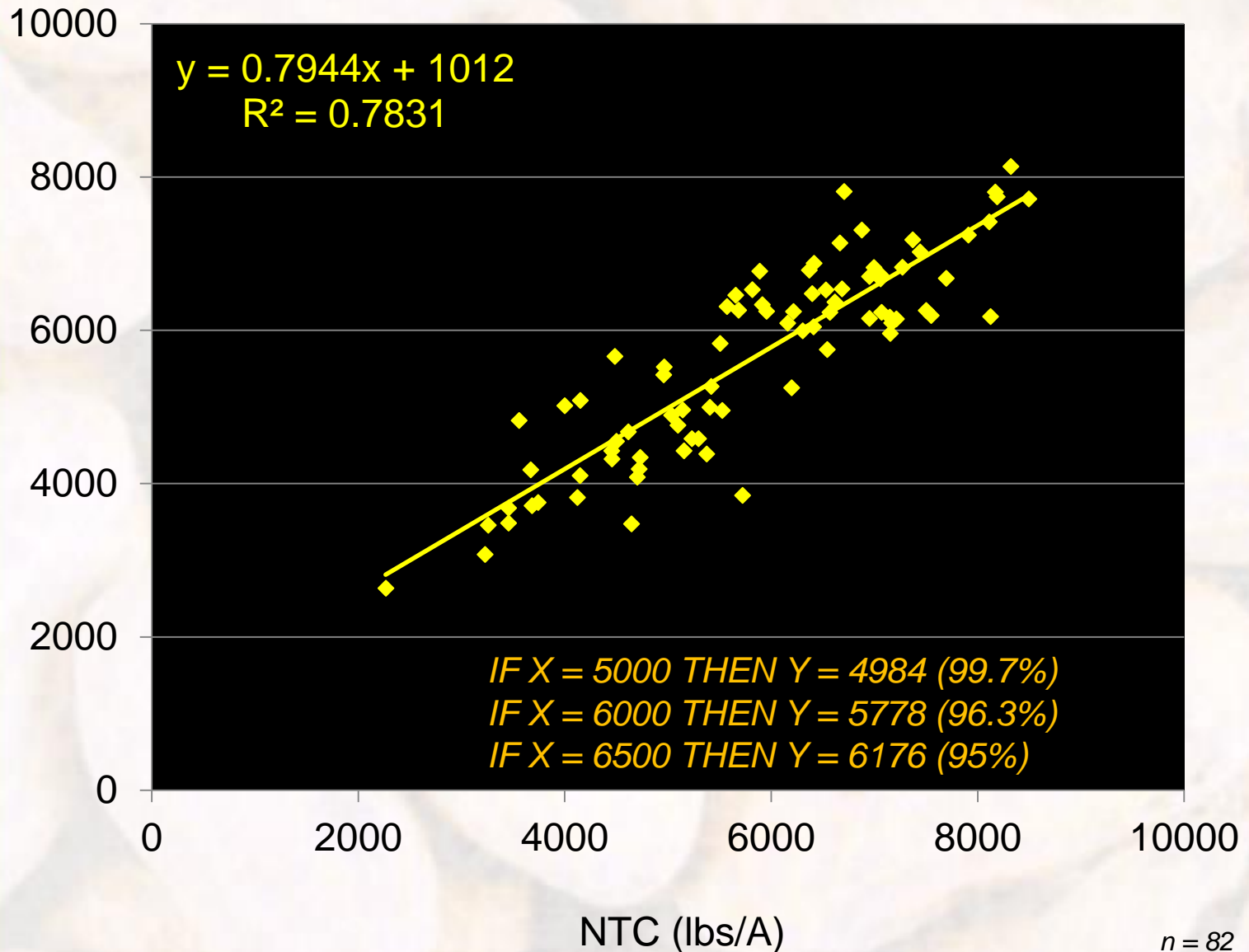


PE-18-17
May 30
15 GPA
3.5 MPH
11002DG nozzles



A Comparison of Irrigated Weed-Free Peanut Yields Between NTC and Gramoxone 2SL (12 oz/A) + Storm 4SL (16 oz/A) + Dual Magnum 7.62EC (16-21 oz/A) Treatments in Georgia, 2011-2017.

G + S + DM
(lbs/A)



- PEA01-11 (GA-06G)
- PEA01-12 (GA-06G)
- PE-20-11 (GA-06G)
- PE-01-12 (GA-06G)
- PE-17-12 (GA-06G)
- PE-02-13 (GA-06G)
- PE-02B-13 (GA-09B)
- PE-12-13 (GA-06G)
- PE-13-13 (GA-06G)
- PE-06-14 (GA-06G)
- PE-06-14 (GA-09B)
- PE-08-14 (GA-12Y)
- PE-15-15 (GA-12Y)
- PE-16-15 (GA-13M)
- PE-06-16 (GA-12Y)
- PE-20-16 (GA-06G)
- PE-21-17 (GA-16HO)



Strongarm*

For Broadleaf Weed Control in Peanuts

Active Ingredients:

diclosulam: N-(2,6-dichlorophenyl)- 5-ethoxy-7-fluoro[1,2,4]triazolo- [1,5-c]pyrimidine-2-sulfonamide ...	84%
Inert Ingredients	16%
Total.....	100%

Contains 0.84 pounds of active ingredient per pound of product.

U.S. Patent No. 5,163,995

Keep Out of Reach of Children

CAUTION PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Refer to back panel of bag for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-288

EPA Est. 46275-IL-2
900-006954 / 00128019

*Trademark of Dow AgroSciences LLC
Dow AgroSciences LLC •
Indianapolis, IN 46268 U.S.A.

Herbicide

Net Wt **[5 x (2 x 0.45 oz)]** water soluble packets

2017 Strongarm Packaging

One case contains 4 foil overpacks
(18 ounces of product)



One foil Overpack contains
10 PVA packets
(4.5 ounces of product)



1 PVA packet
(0.45 ounces of product)



1 case = 40 acres



2018 Strongarm Case pack: 12 x 1 lb

Pallet configuration: 1-layer, 10 cases per pallet.



12 x 1 lb case pack using natural bottles
(35.6 acres/bottle)
(426.7 acres/case)
(4267 acres/pallet)





Flumioxazin Formulations

NET WEIGHT 5 POUNDS

FOR CONTROL OF CERTAIN WEEDS IN PEANUTS AND SOYBEANS

VALENT

Active Ingredient	By Wt.
* Flumioxazin	51%
Other Ingredients	49%
Total	100%

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

VALOR Herbicide is a water dispersible granule containing 51% active ingredient.

EPA Reg. No. 59639-99 EPA Est. 11773-IA-01

Refer to Hang Tag for Use Directions

Form 1329-A

KEEP OUT OF REACH OF CHILDREN

CAUTION

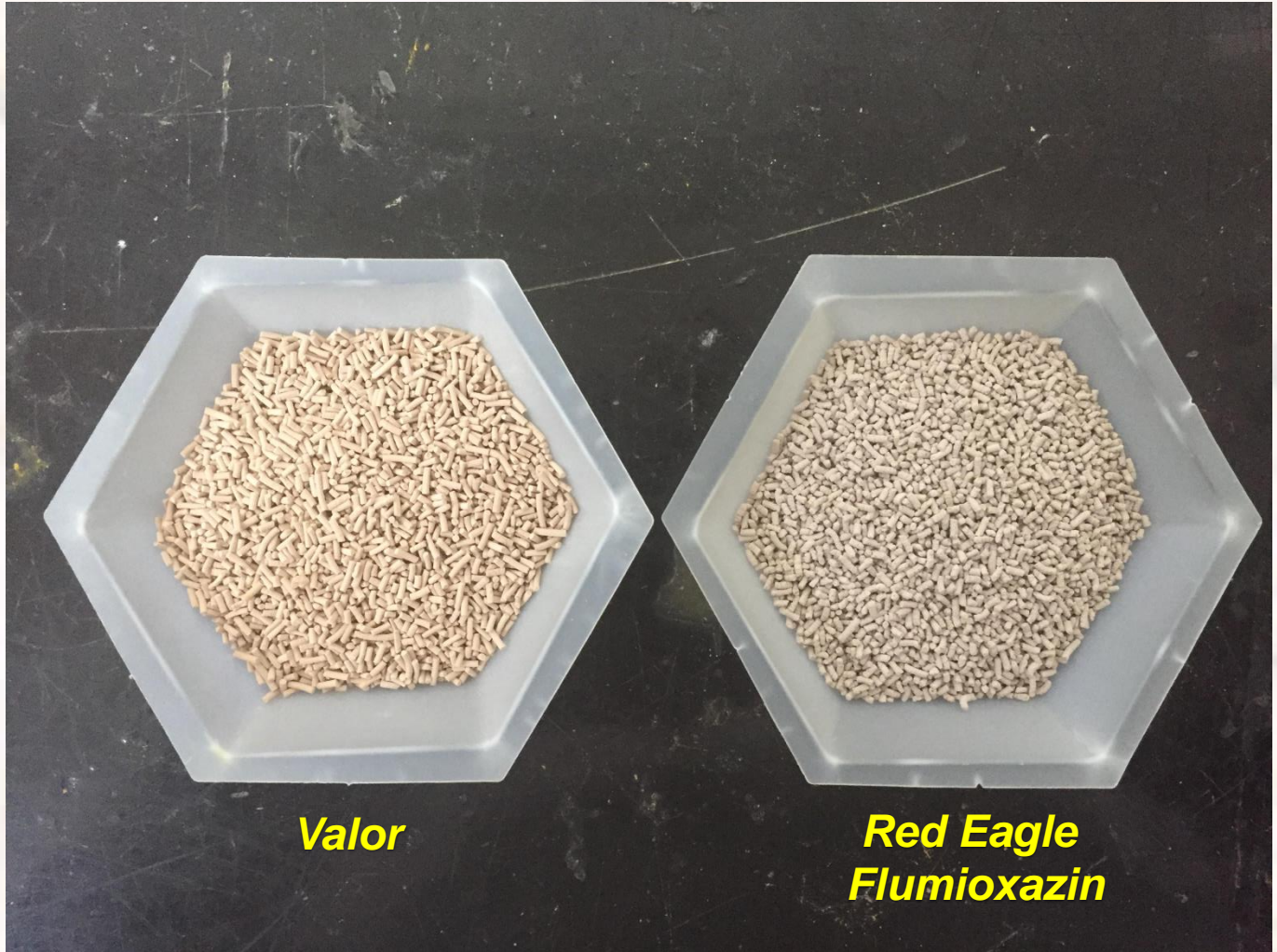
SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS

VALOR™
HERBICIDE





Valor SX vs. Red Eagle Flumioxazin





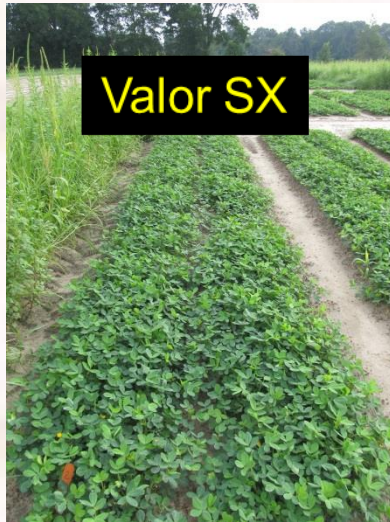
Liquid vs. Dry Flumioxazin





Flumioxazin Formulation Test – 2017

3 oz/A



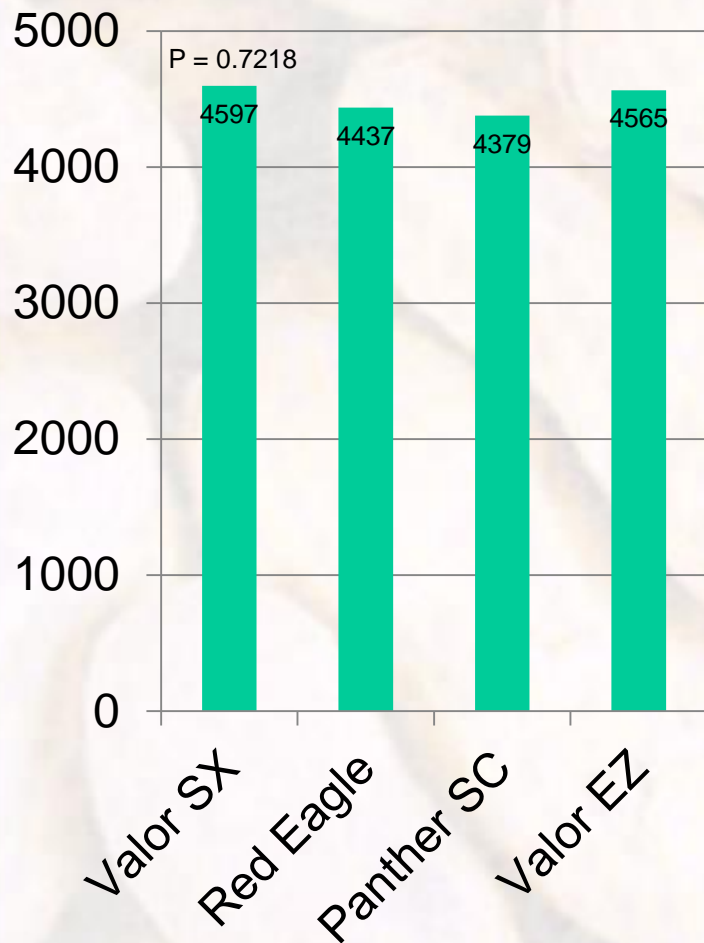
PE-20A-17
June 28
65 DAP

**All treatments included Prowl H₂O (PRE) fb Cadre + Dual Magnum + 2,4-DB (32 DAP)*

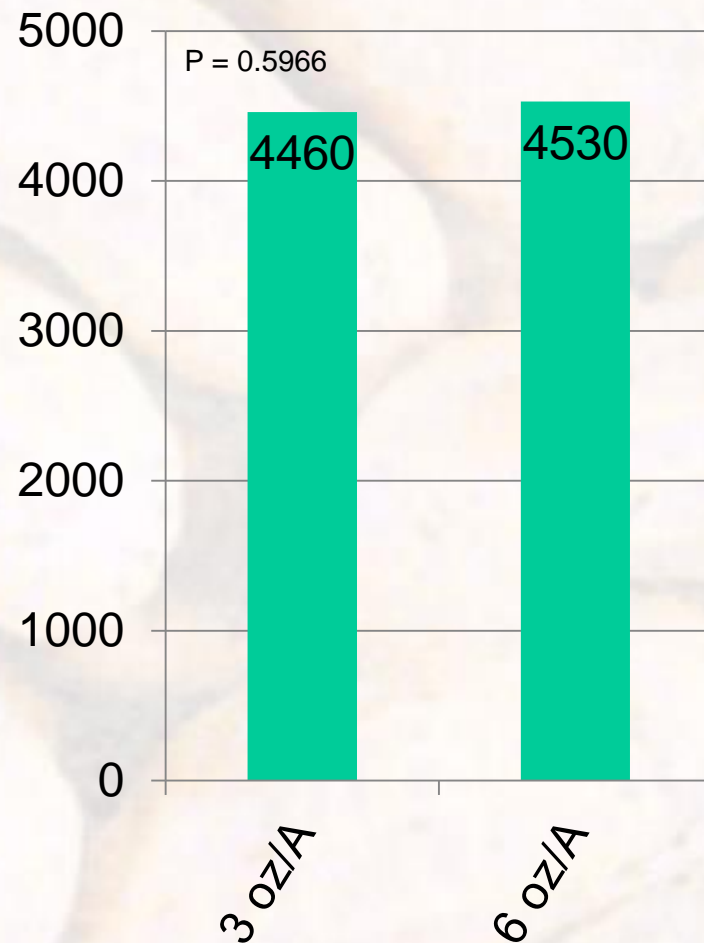


Peanut Yield

lbs/A



lbs/A





Dual Magnum/High Moisture/Peanuts

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PULL HERE TO OPEN ►

GROUP 15 HERBICIDE

 **Dual Magnum**[®]
Herbicide

syngenta.

For weed control in corn; cotton; grasses grown for seed; horseradish; peanuts; beans, peas, and lentils; potatoes; pumpkin; rhubarb; safflowers; sugar beets; sunflowers; sweet, grain or forage sorghum; soybean; soybean, immature seed; and tomatoes

Active Ingredient:

S-metolachlor (CAS No. 87392-12-9) 83.7%

Other Ingredients: 16.3%

Total: 100.0%

Dual Magnum is formulated as an Emulsifiable Concentrate (EC).
Dual Magnum contains 7.62 lb of active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-816 EPA Est. 070989-IA-001

Product of Switzerland
Formulated in the USA

SCP 816A-L1W 0715
4059017

2.5 gallons
Net Contents

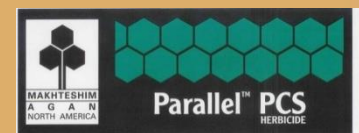


- Applied PRE under high moisture conditions
- Questions?
 - Crop injury
 - J-rooting
 - Yield loss



Brief History of Metolachlor

- Metolachlor synthesized by Ciba-Geigy in 1972
 - *50/50% mixture of R + S isomers*
- Registered for corn in 1977
 - Dual 8E
- Registered for peanut in 1980 (February)
- Ciba + Sandoz = Novartis (1996)
- S-metolachlor registered for use in 1997 (Novartis)
 - *12/88% mix of R + S isomers*
 - *Patent expiration*
 - *EPA Reduced Risk Pesticide Program*
 - *Dual Magnum 7.62EC (+ safener)*
- 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).





Metolachlor/Peanut Research Results

<i>Author (s)</i>	<i>Year</i>	<i>Journal</i>	<i>Results</i>
Cardina and Swann	1988	Peanut Sci. 15:57-60	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%)
Wehtje et al.	1988	Peanut Sci. 15:53-56	Across all years, a 2-fold safety factor existed between maximum labeled rate and injury rate.
Johnson et al.	1993	Peanut Sci. 20:17-20	Split applications of metolachlor (PPI + VE) had no effect on yield.
Johnson et al.	1994	Peanut Sci. 21:126-129	PPI, VE, and PPI + VE applications had no effect on yield.
Prostko and Grey	2011-2012	unpublished	No effect on yield when applied PPI, PRE or EPOST (4 weed-free trials)



PE-67-17 – June 29 - Irrigation

Planted: June 28

Rainfall/Irrigation:

June 28-July 5 = 4.29"

July 6-12 = 0.375"

July 13-19 = 1.75"

July 20-31 = 2.25"





Destructive Harvest – July 19 (21 DAT)





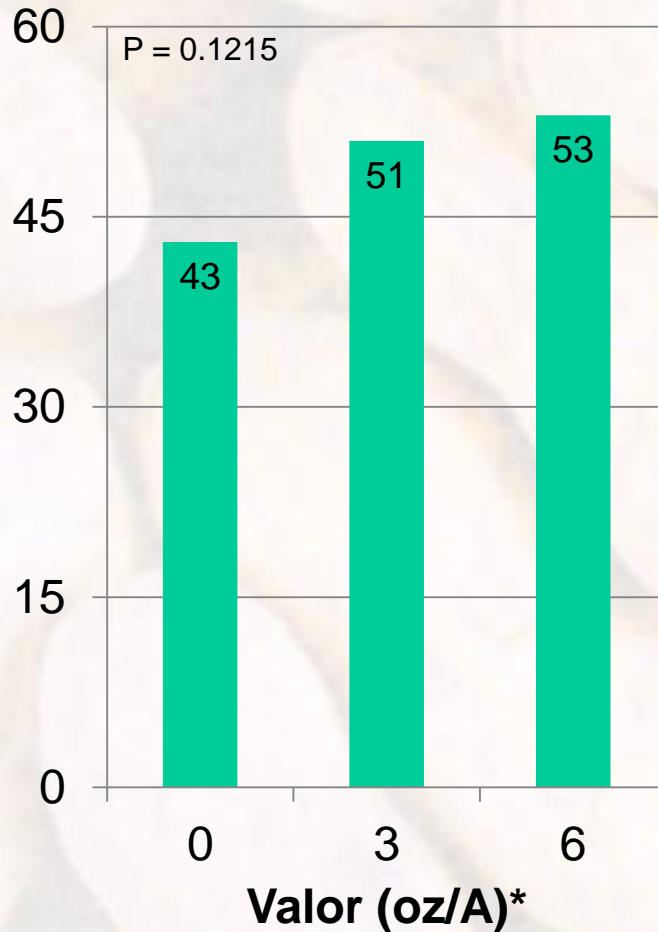
Results

- PRE applied Dual Magnum under high moisture conditions (~8.4" rainfall/irrigation within 30 DAP)
 - *had no effect on peanut emergence, population, or J-rooting*
 - *increased peanut stunting*
 - 21 oz/A = +9-16%
 - 42 oz/A = +22-25%
 - *Yield?*

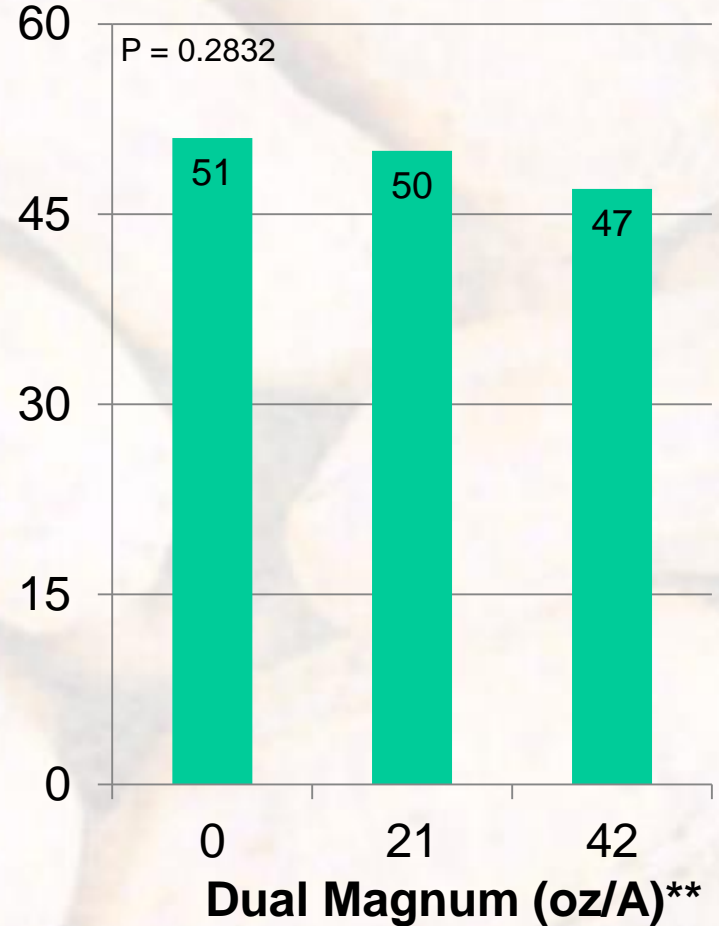


Valor and Dual Magnum Effects on Peanut J-Rooting - High Moisture Conditions

J-Rooting (%)



J-Rooting (%)



PE-67-17
21 DAT
No interactions

*averaged over 3 Dual Magnum rates

**averaged over 3 Valor rates



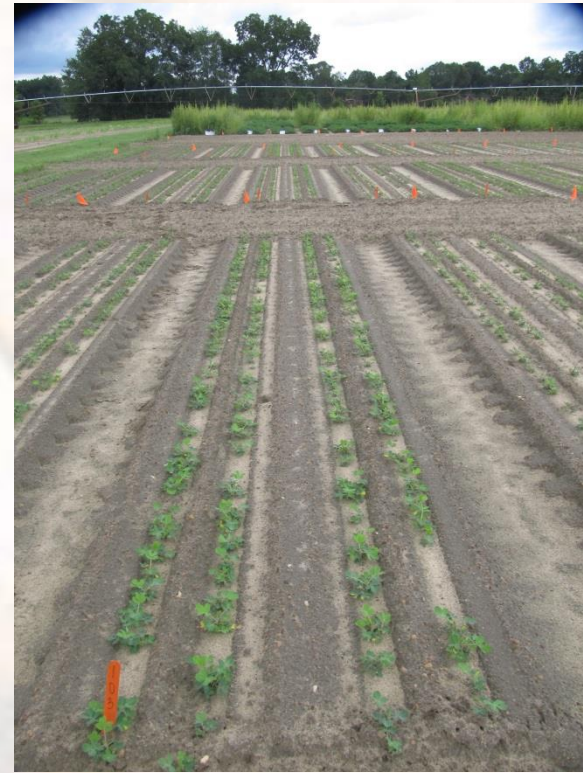
Valor and Dual Magnum Effects on Peanut Plant Stunting - High Moisture Conditions



Valor SX 51 WG @ 3 oz/A
Dual Magnum 7.62EC @ 21 oz/A



Valor SX 51WG @ 3 oz/A
Dual Magnum 7.62EC @ 42 oz/A



Valor SX 51WG @ 3 oz/A



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



Valor SX 51 WG @ 3 oz/A
Dual Magnum 7.62EC @ 21 oz/A



Valor SX 51WG @ 3 oz/A
Dual Magnum 7.62EC @ 42 oz/A



Valor SX 51WG @ 3 oz/A



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



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Valor SX 51WG @ 3 oz/A
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Valor SX 51WG @ 3 oz/A



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



Valor SX 51 WG @ 3 oz/A
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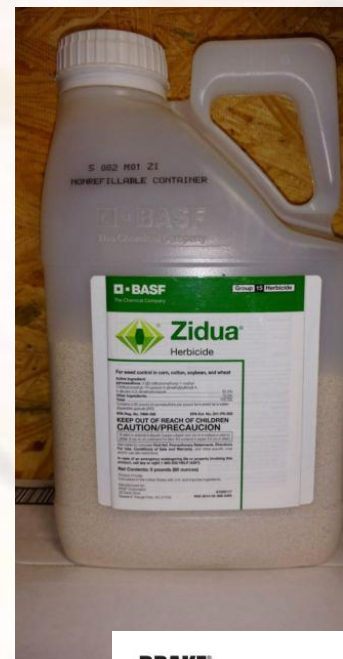
Valor SX 51WG @ 3 oz/A
Dual Magnum 7.62EC @ 42 oz/A

Valor SX 51WG @ 3 oz/A



New Stuff

- Zidua (pyroxasulfone) gets a peanut label in 2017.
- Brake (fluridone) in the pipeline.
- Nothing after that???



BRAKE[®]

SPECIMEN GROUP 14 HERBICIDE

Preemergent herbicide for use as a cotton to corn crop

Active ingredient: fluridone 10.75%
 Inert ingredients 89.25%
 Total 100%

Equipment to 1.2 pounds fluridone per gallon.

**KEEP OUT OF REACH OF CHILDREN
 DANGER/PELIGRO**

Caution: Causes irreversible eye damage. Do not get in eyes or on clothing. Avoid if it rains. Avoid breathing spray mist. Prolonged or repeatedly repeated skin contact may cause allergic reactions in some individuals. Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

WASH WELL BEFORE USE

Refer to inside of label booklet for additional Precautionary Information and Directions for Use including Storage and Disposal.

NOTICE: Read the label label and apply this only according to label directions. Before buying or using this product, read Warranty, Disclaimers and Mitigation statements inside label booklet. If terms are unacceptable, return all stock, unopened.

Application Chemical: Do not mix or store with food, feeds, drugs or clothing.

First Aid

If in eyes:

- Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

If swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not get anything to an unconscious person.

If inhaled:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Probable mucous membrane may recontaminate the site of contact.

WHLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor for treatment advice. In cases of emergency, call poison health or the environment involving this product, call **1-800-555-5655**.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**Keep Out of Reach of Children
 DANGER/PELIGRO**

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators and other handlers must wear:

- Protective eyewear.
- Long-sleeved shirt and long pants; and
- Shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/laundering PPE. If no such instructions or directions are given, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.243(b)(4)-(6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

Users should:

- Wash hands thoroughly after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial use only. Toxic to fish and other aquatic organisms. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Do not apply when weather conditions favor drift from target area.

Groundwater Advisory

This product may penetrate and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is considered to have a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of herbicide from runoff water and sediments. While at least 0.5 inches of rainfall or irrigation is recommended after application, runoff of this product should be avoided and will be reduced by avoiding applications when runoff-producing rainfall is expected to occur within 48 hours.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

DO NOT apply this product to any crop that is not listed on the label or other printing, either directly or through drift. Only protect handlers may be in the area during application or until the requirements specified on your State or label. Consult the agency responsible for pesticide regulation. Empty spray drift to non-target species does not occur.

Keep containers closed to avoid spills and contamination.



Zidua vs. Dual in Peanut - 2017



NTC



Prowl H₂O @ 32 oz/A – PRE

Gramoxone 2SL @ 12 oz/A – 154 DAP
Storm SL @ 16 oz/A – 15 DAP
Zidua 85WG @ 2.0 oz/A – 15 DAP
NIS @ 0.25% v/v – 15 DAP

Cadre 2AS @ 4 oz/A – 36 DAP
2,4-DB 1.75SL @ 18 oz/A – 36 DAP
Zidua 85WG @ 2.0 oz/A – 36 DAP
COC @ 1% v/v – 36 DAP



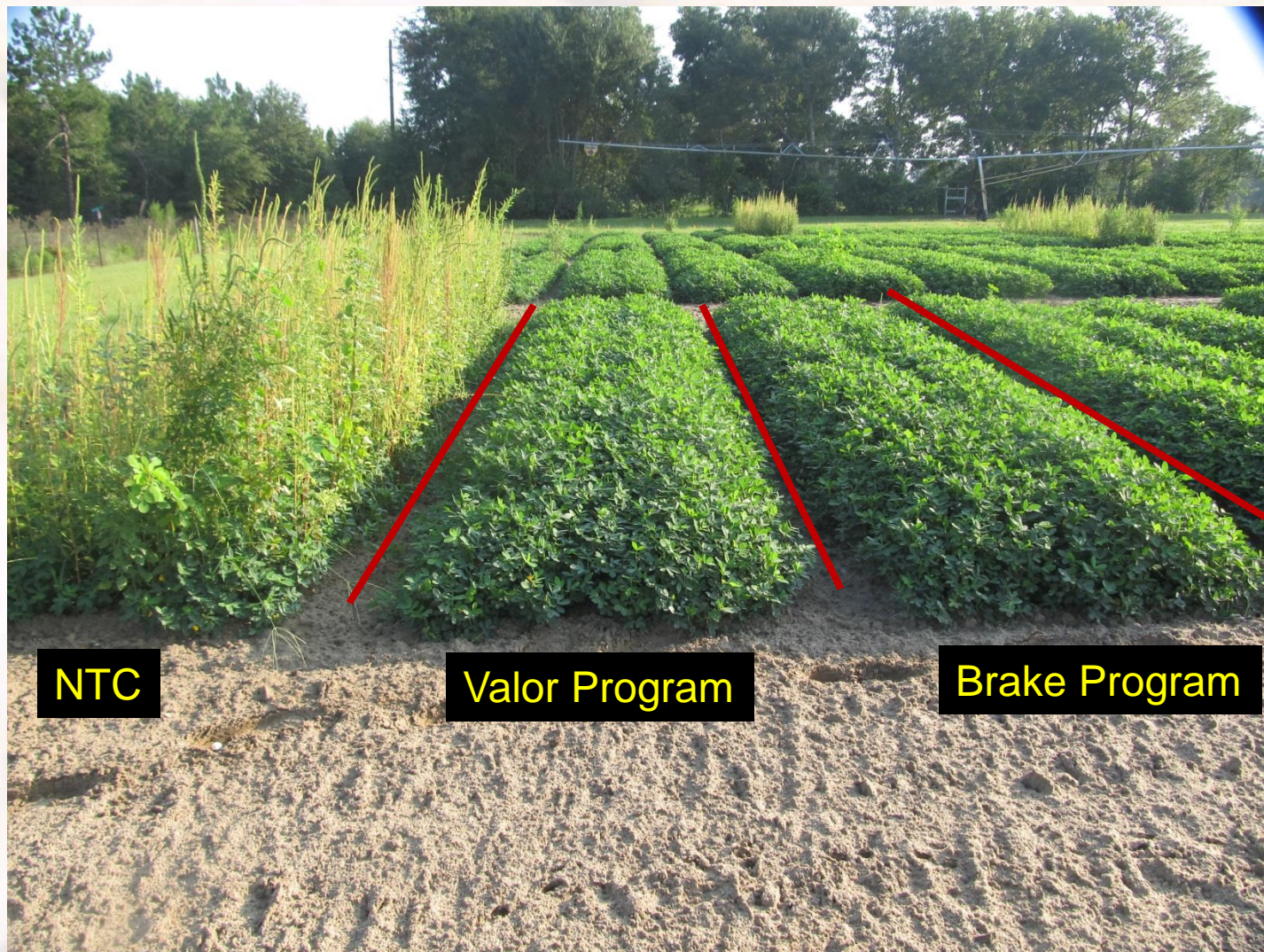
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Cadre 2AS @ 4 oz/A – 36 DAP
2,4-DB 1.75SL @ 18 oz/A – 36 DAP
Dual Magnum 7.62EC @ 16 oz/A – 36 DAP

PE-10-17
August 16
106 DAP

Brake vs. Valor Programs* - 2017



NTC

Valor Program

Brake Program

PE-07-17
July 28
94 DAP

**Both programs also included Prowl H₂O (PRE) and Cadre + Dual Magnum + 2,4-DB (36 DAP)*



Brake/Peanut Injury



PE-07-17
May 15
20 DAP

Avoid The Oopsies!





Oops!



Applied 60 DAP
15 GPA
11am

Valor 2 oz
Cadre 2 oz
2,4-DB 16 oz
Bravo 16 oz

Pic @ 10 dat



Another Oops!



September 14, 2017
32 DAT (122 DAP)
Tide Hexar 2SL
14.5 oz/A + COC

Glyphosate/Peanut - 2017



Bulloch County



Early County



Dry MnSO_4 + 2,4-DB

Day 1- Mixed
in 700-800
Gallons of
water – no
problems

Day 2 - Mixed
in less than
100 gallons of
water – Big
Mess



Dr. Alan York
NCSU
July 2017



What do the top Georgia peanut growers do?

2016 Georgia Peanut Achievement Club Winners

- 14 growers
- **6266 lb/A average yield**
 - GA State Avg. = 3900 lb/A
- 14/14 – irrigated (100%)
- 10/14 - bottom plow (71%)
- 11/13 - twin rows (85%)
- Herbicides
 - **8/14 – Sonalan (57%)**
 - **12/14 - Valor (86%)**
 - 3/14 - Dual (21%)
 - **12/14 - Cadre (86%)**
 - **9/14 - 2,4-DB (64%)**
 - 4/14 – Prowl (29%)
 - 5/14 – Strongarm (36%)



Questions?
eprostk@uga.edu
www.gaweed.com

