

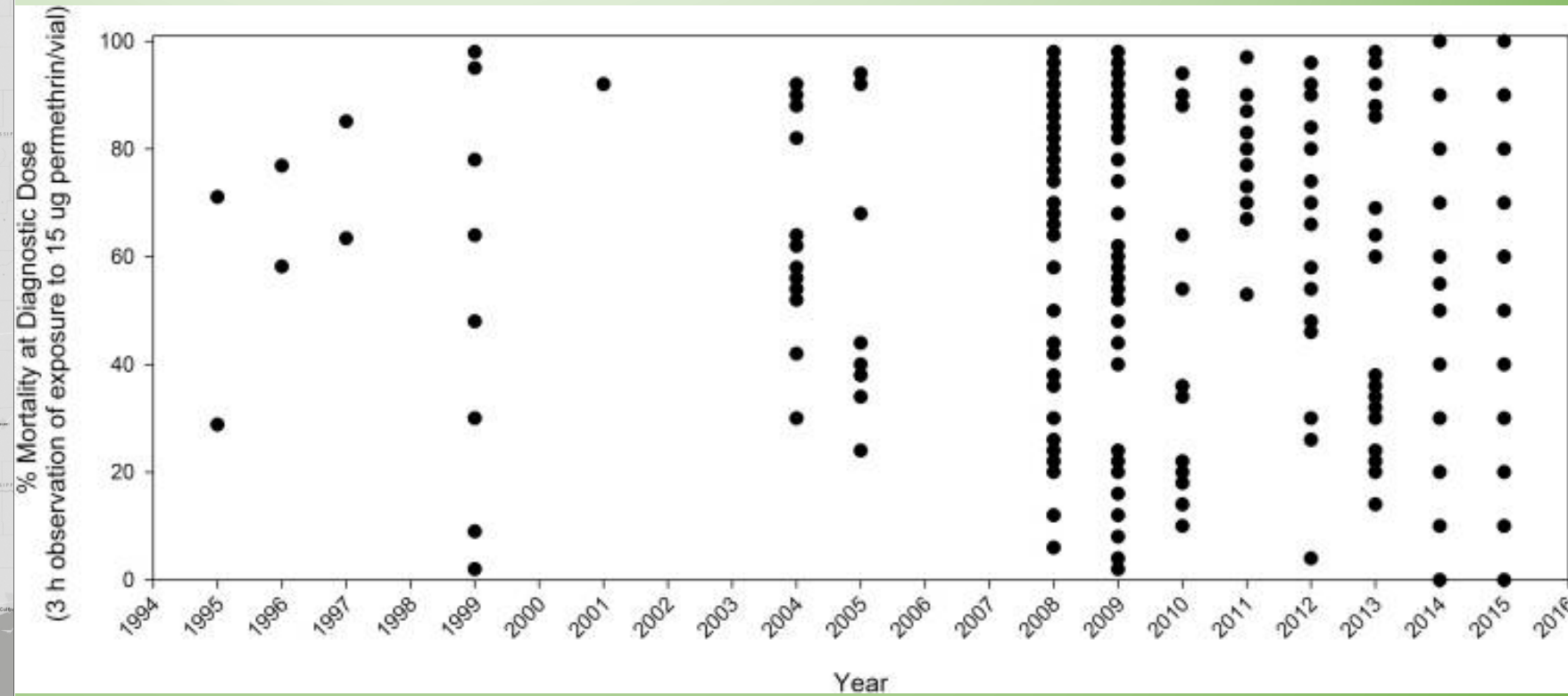
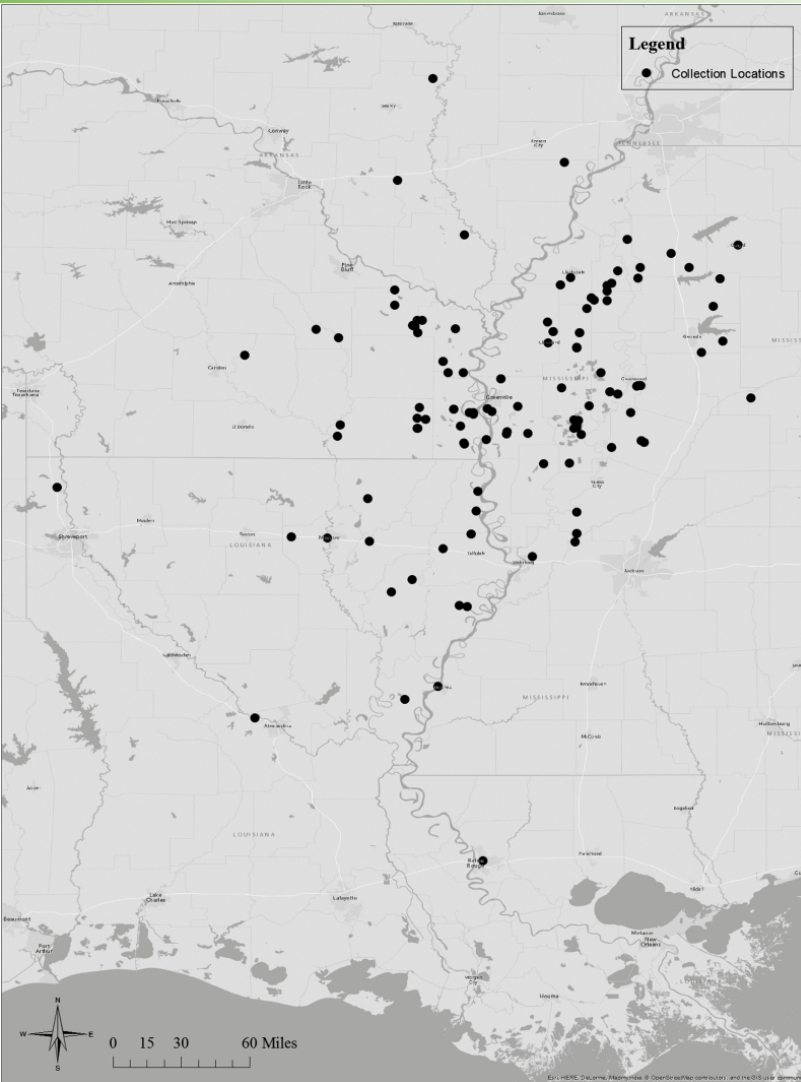
Insecticide Performance for Tarnished Plant Bug in Cotton



Variability in Plant Bug Susceptibility to Pyrethroids

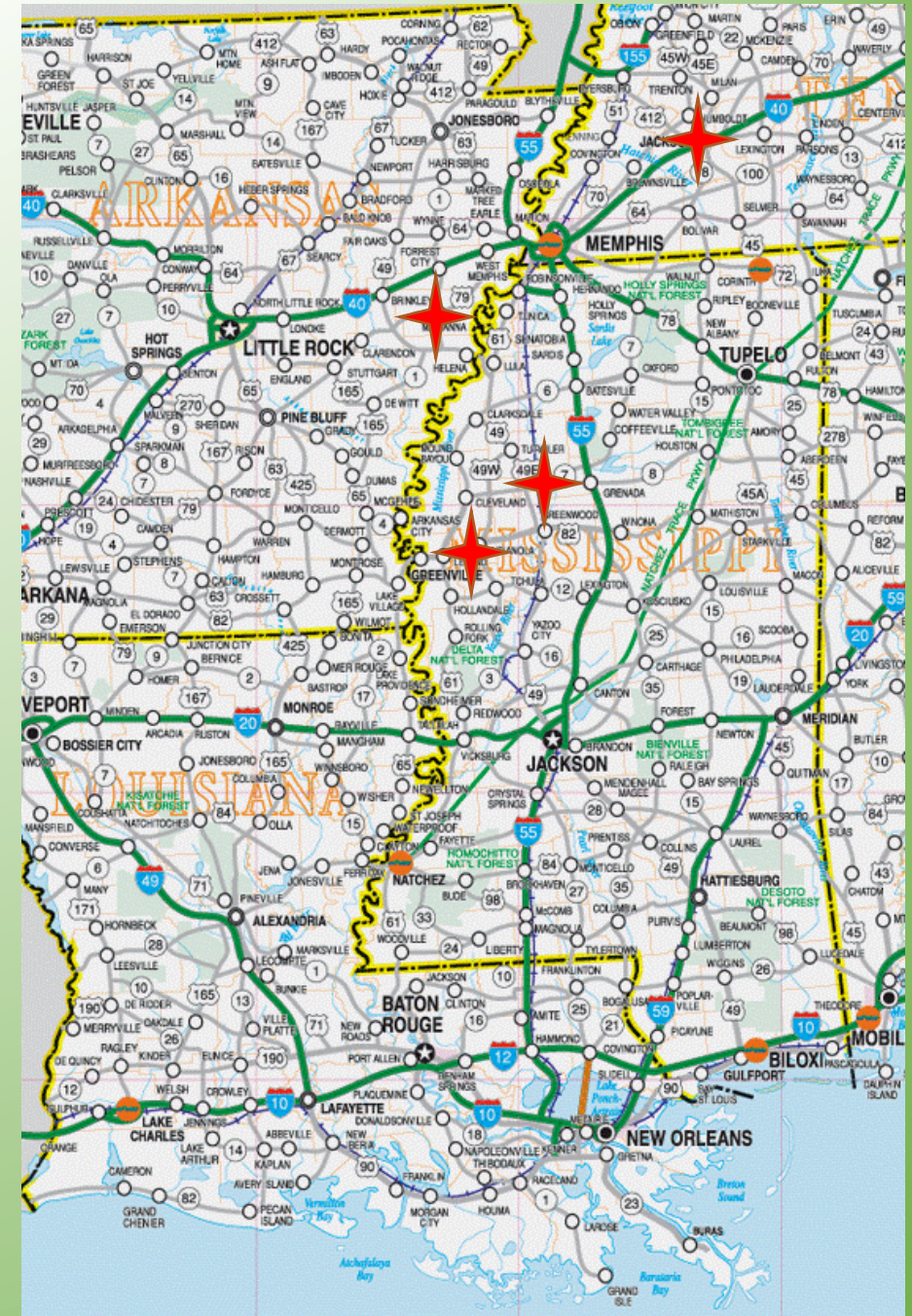
Patterns of Tarnished Plant Bug (Hemiptera: Miridae) Resistance to Pyrethroid Insecticides in the Lower Mississippi Delta for 2008-2015: Linkage to Pyrethroid Use and Cotton Insect Management

Parys KA, Luttrell RG, Snodgrass GL, Portilla MR

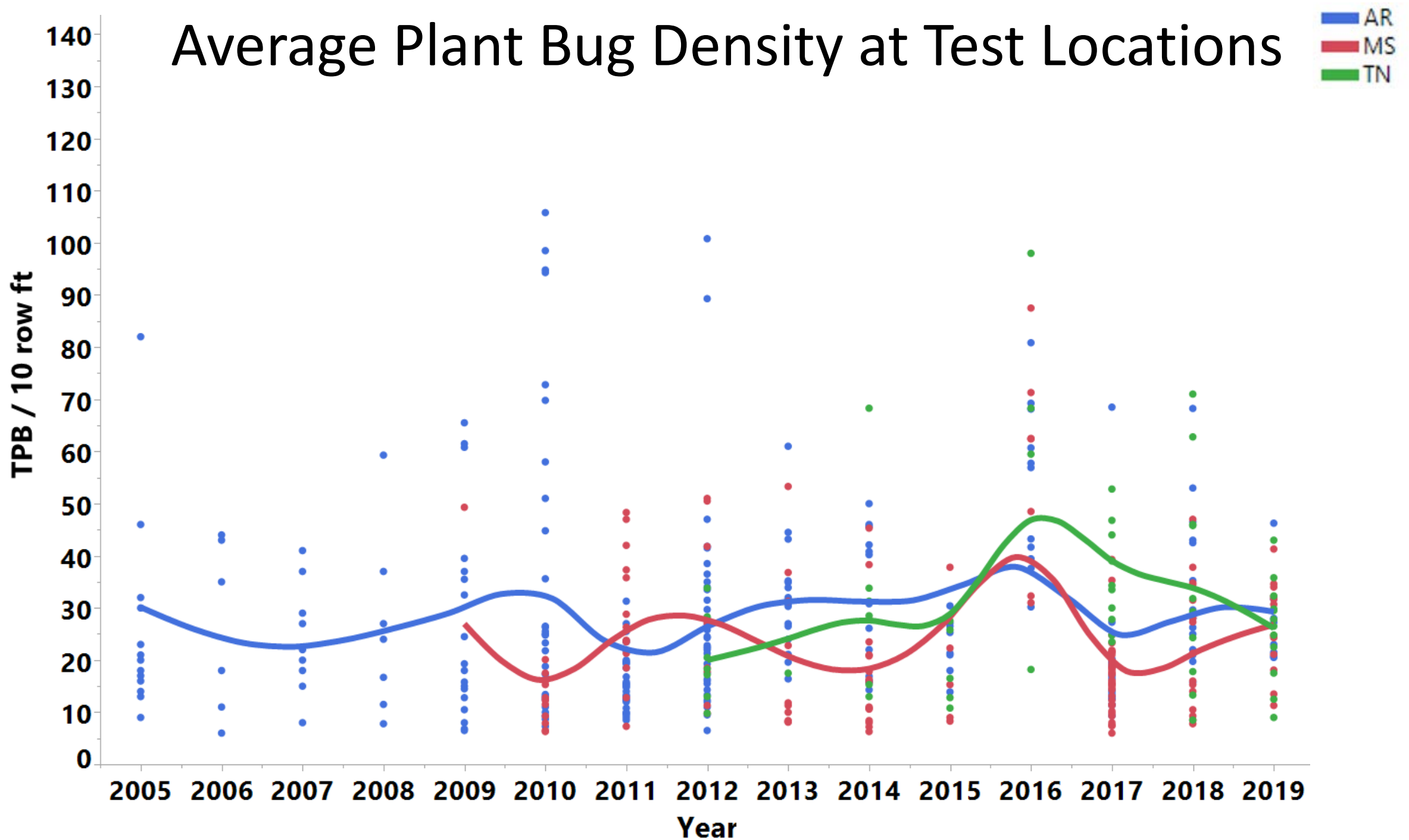


MSEWG Plant Bug Efficacy Trials

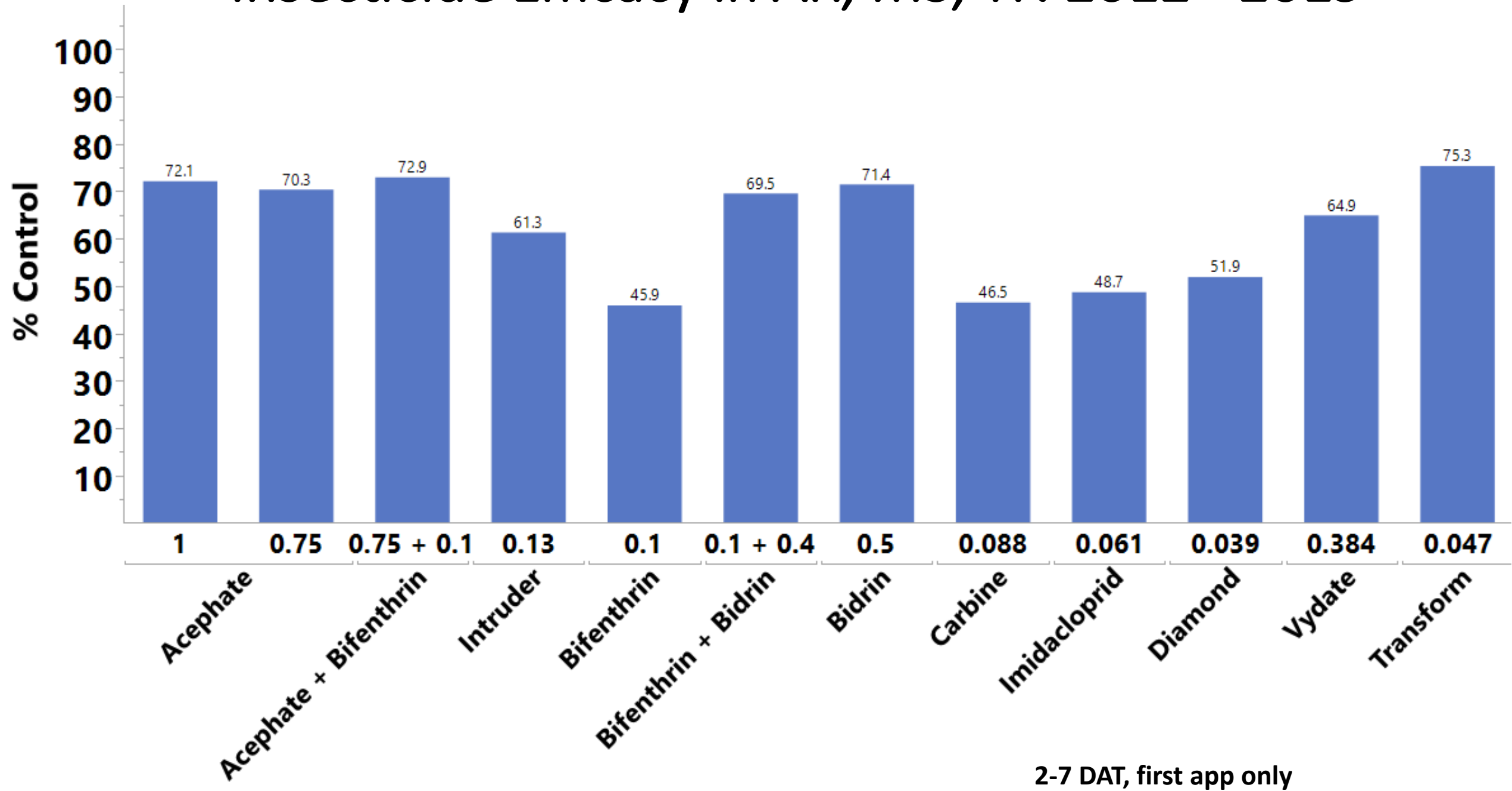
- Data from 232 efficacy trials
- 4 Locations
 - Marianna, AR 2005 - 2019
 - Glendora, MS 2013 -2019
 - Stoneville, MS 2008 - 2019
 - Jackson, TN 2012- 2019
- All applications 10 GPA by ground



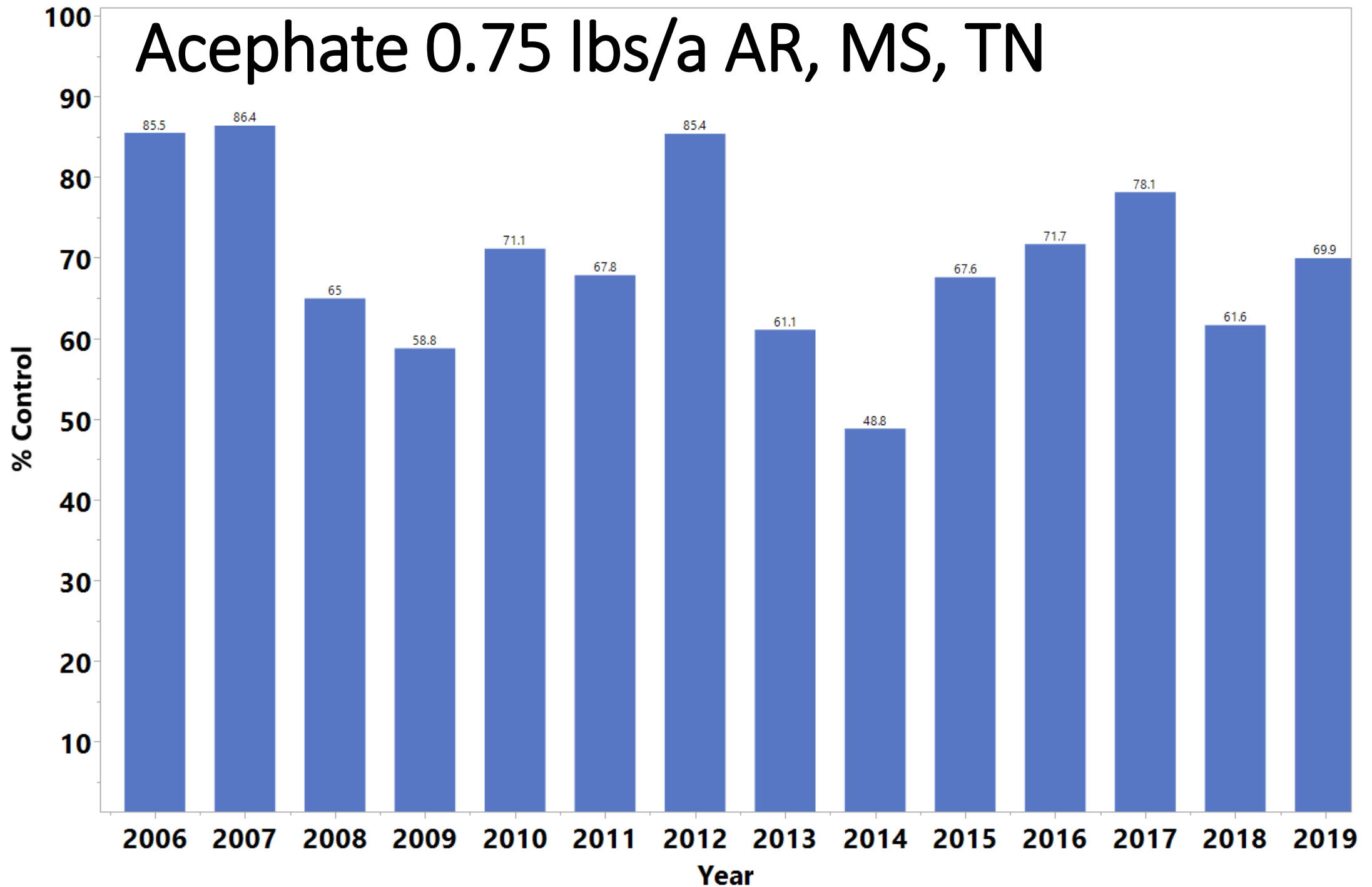
Average Plant Bug Density at Test Locations



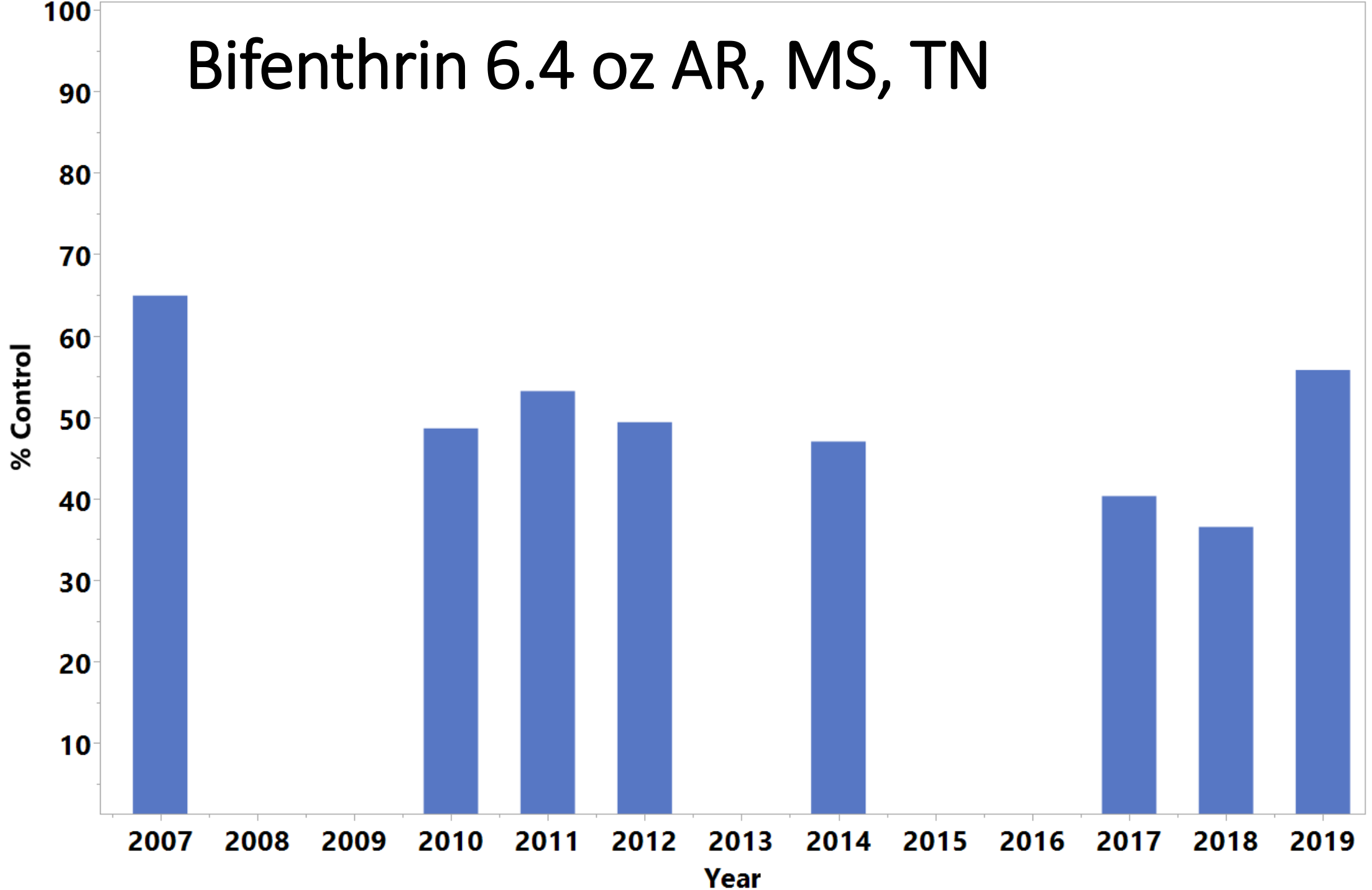
Insecticide Efficacy in AR, MS, TN 2012 - 2019



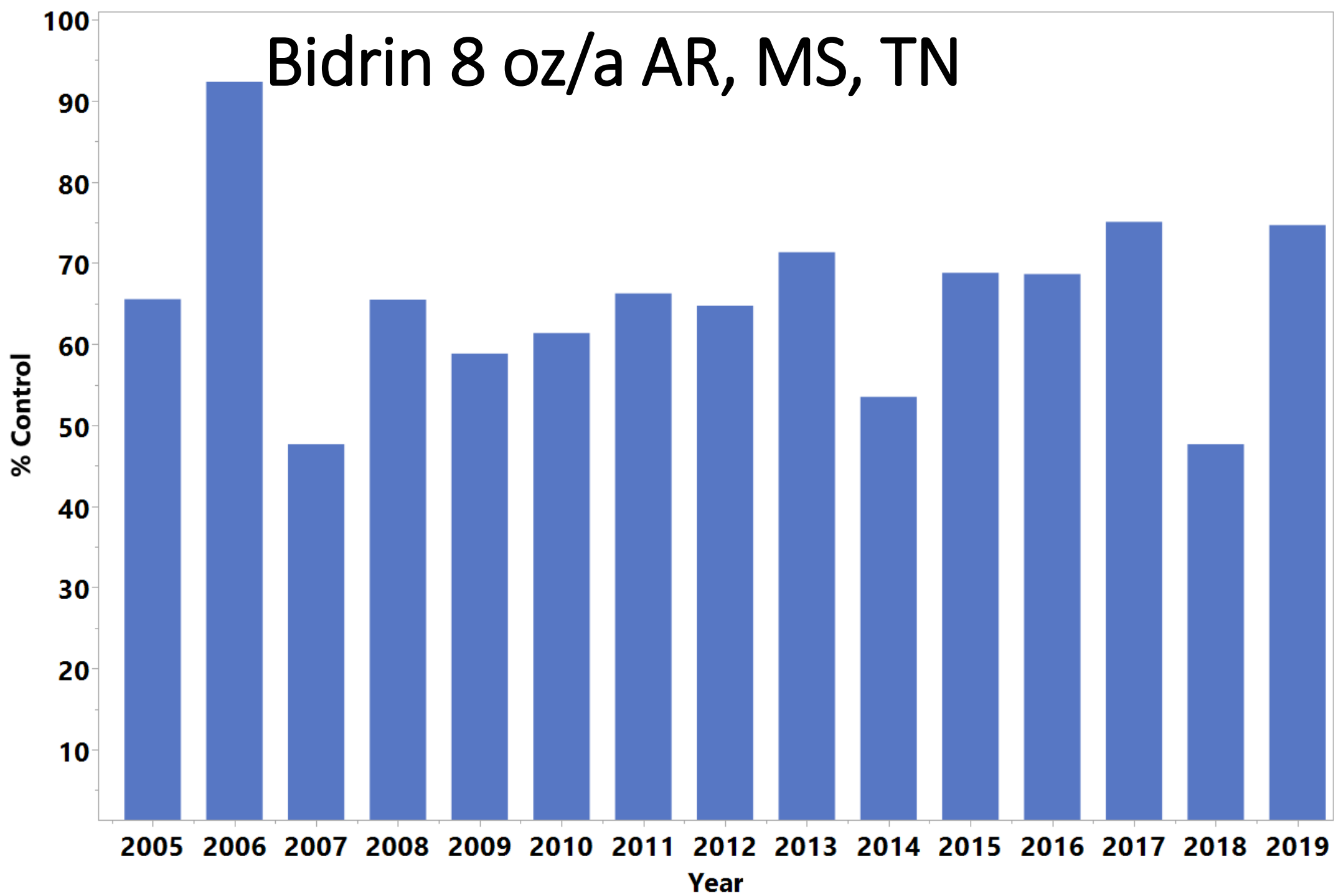
Acephate 0.75 lbs/a AR, MS, TN



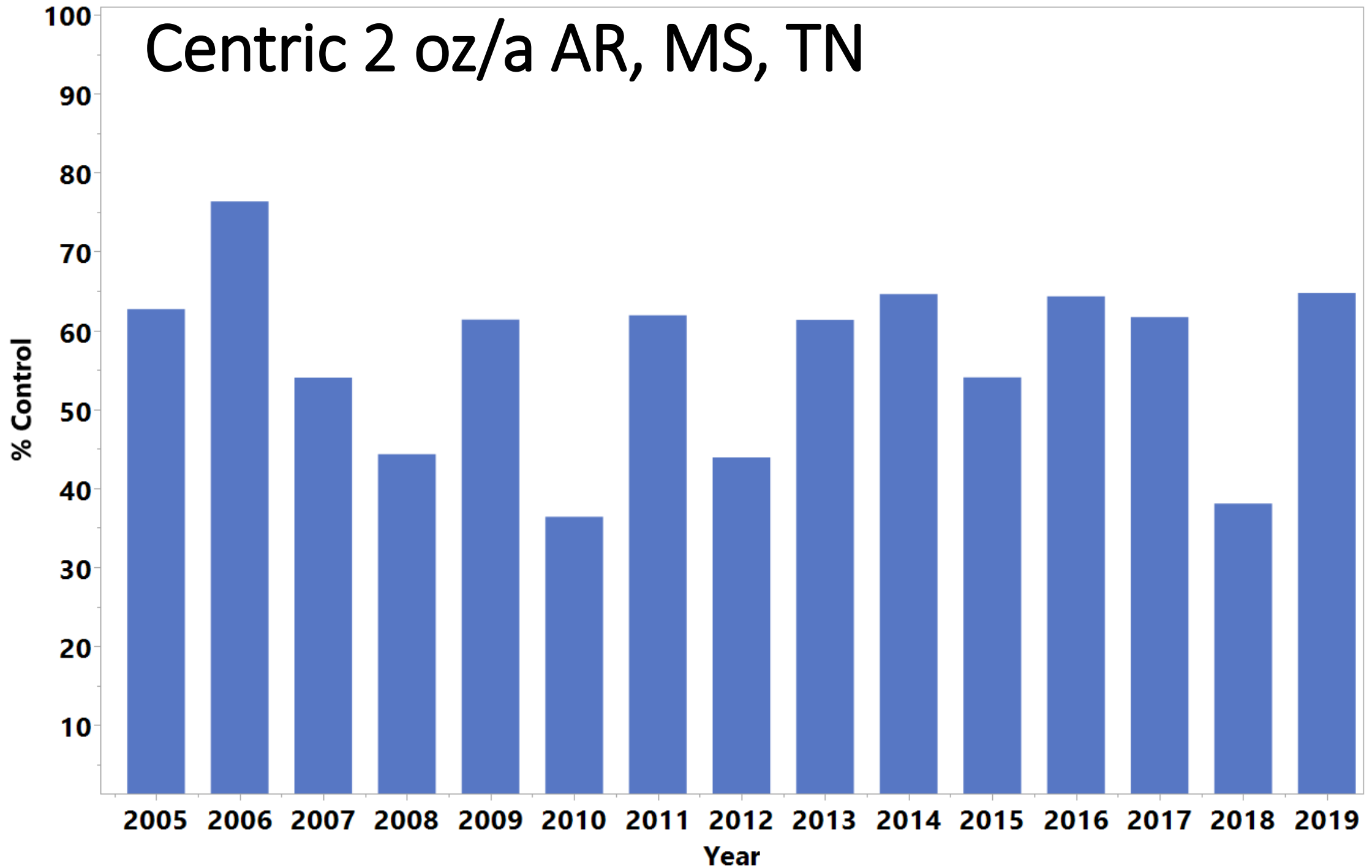
Bifenthrin 6.4 oz AR, MS, TN



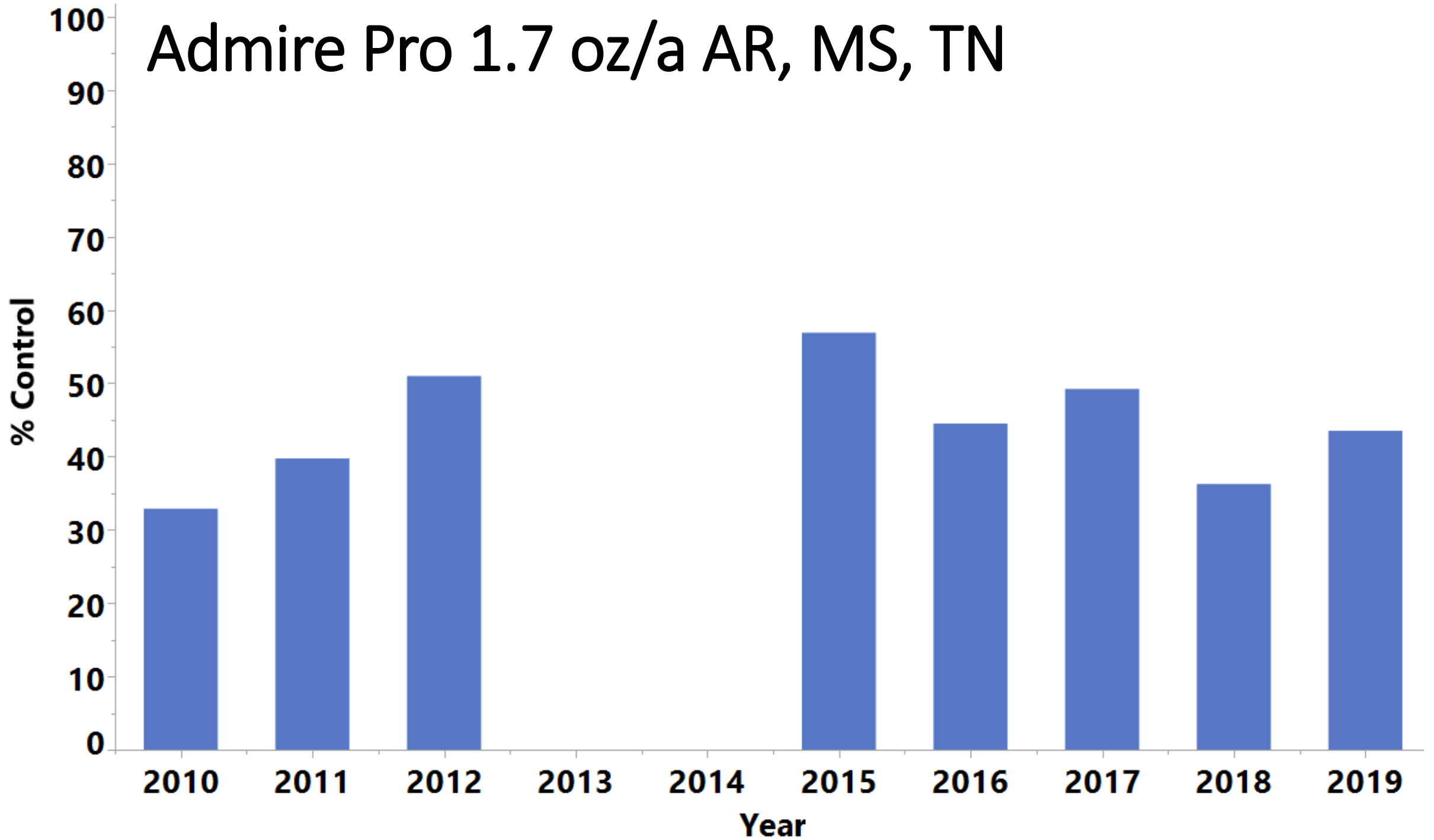
Bidrin 8 oz/a AR, MS, TN



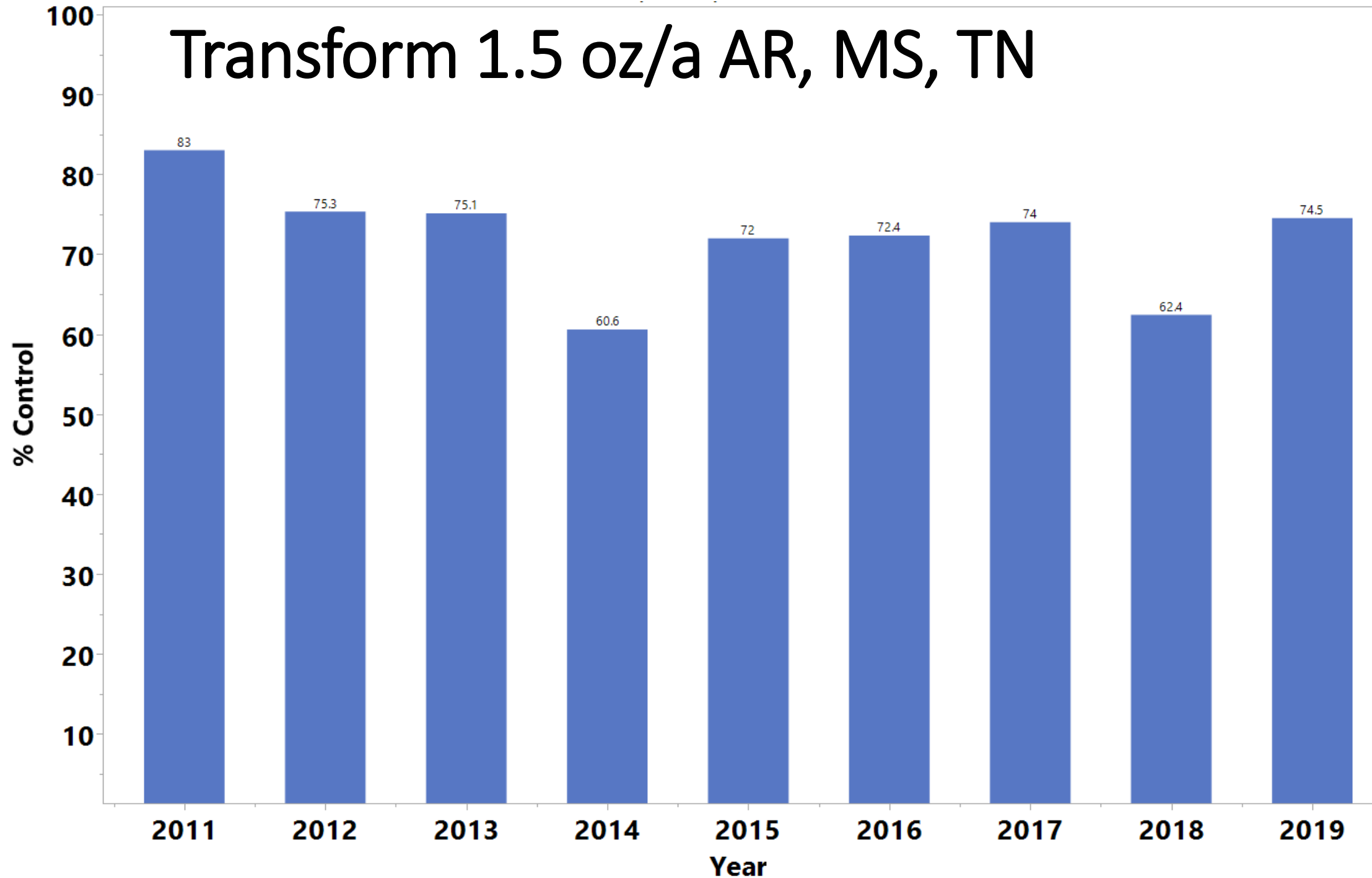
Centric 2 oz/a AR, MS, TN



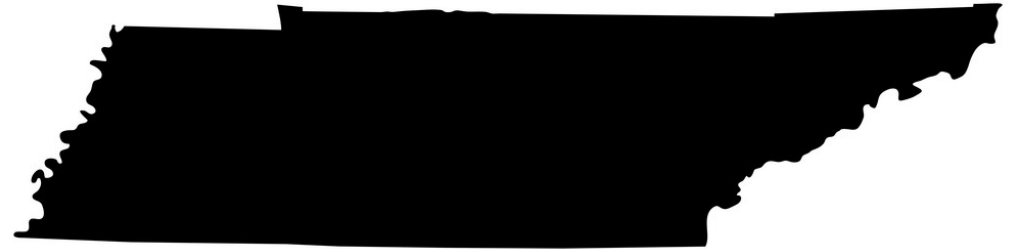
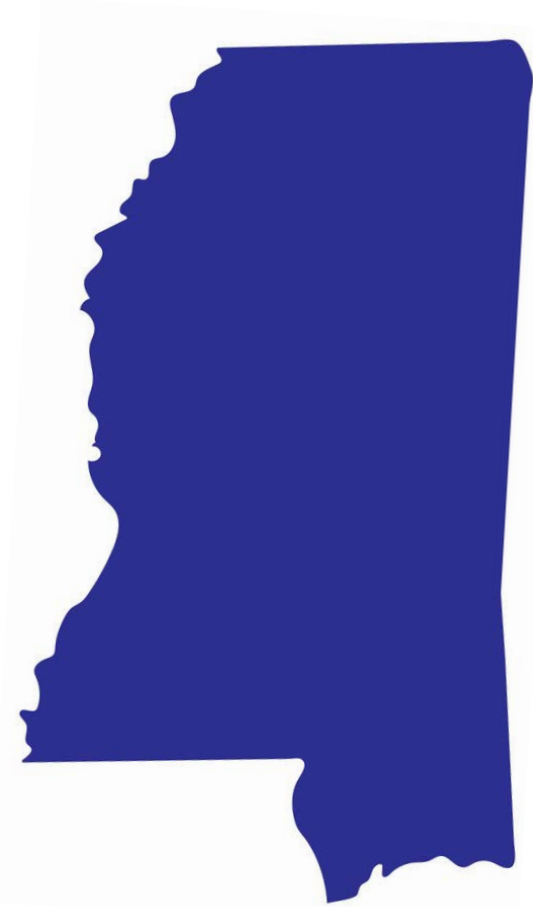
Admire Pro 1.7 oz/a AR, MS, TN



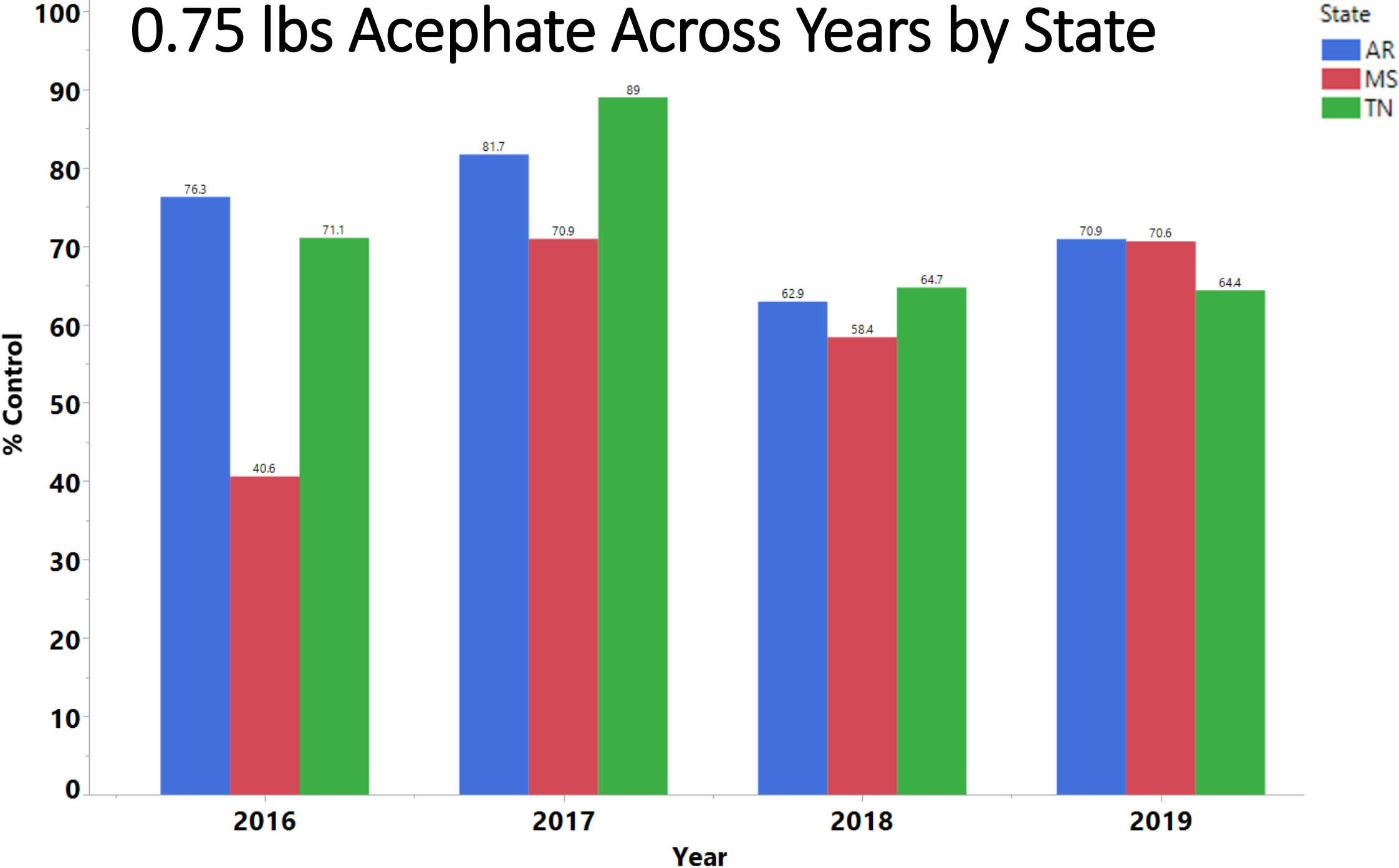
Transform 1.5 oz/a AR, MS, TN



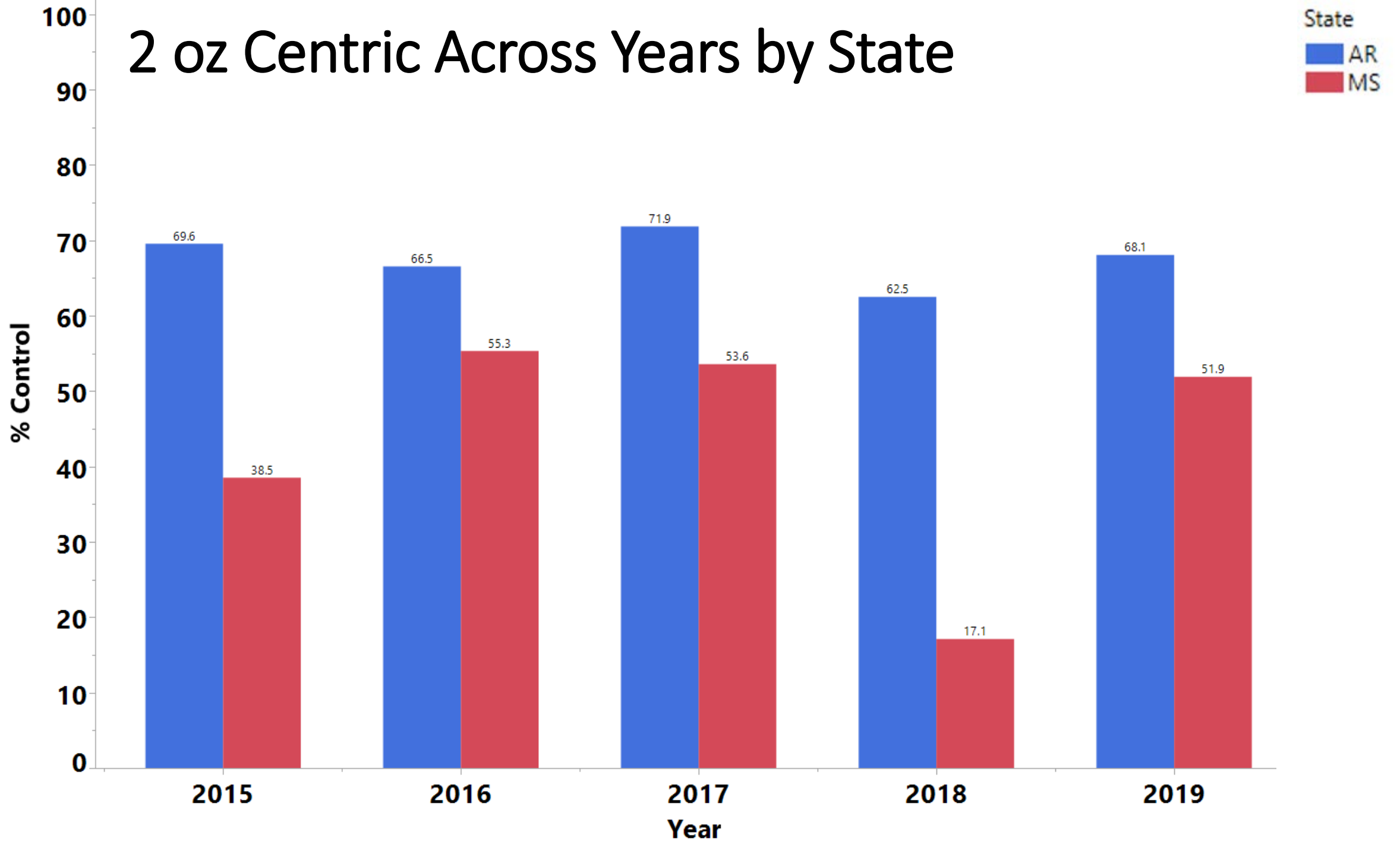
Who has the tougher plant bugs?



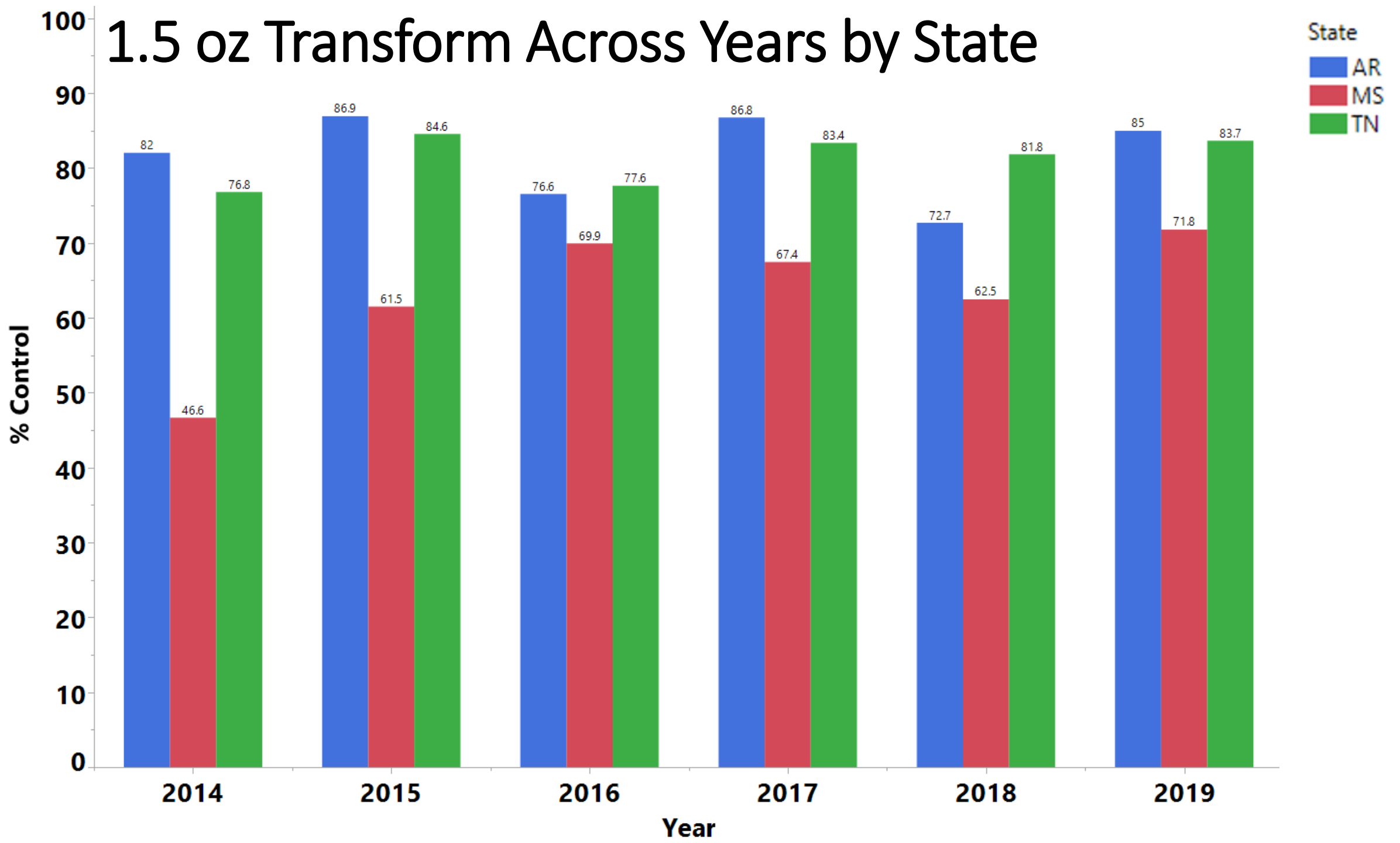
0.75 lbs Acephate Across Years by State



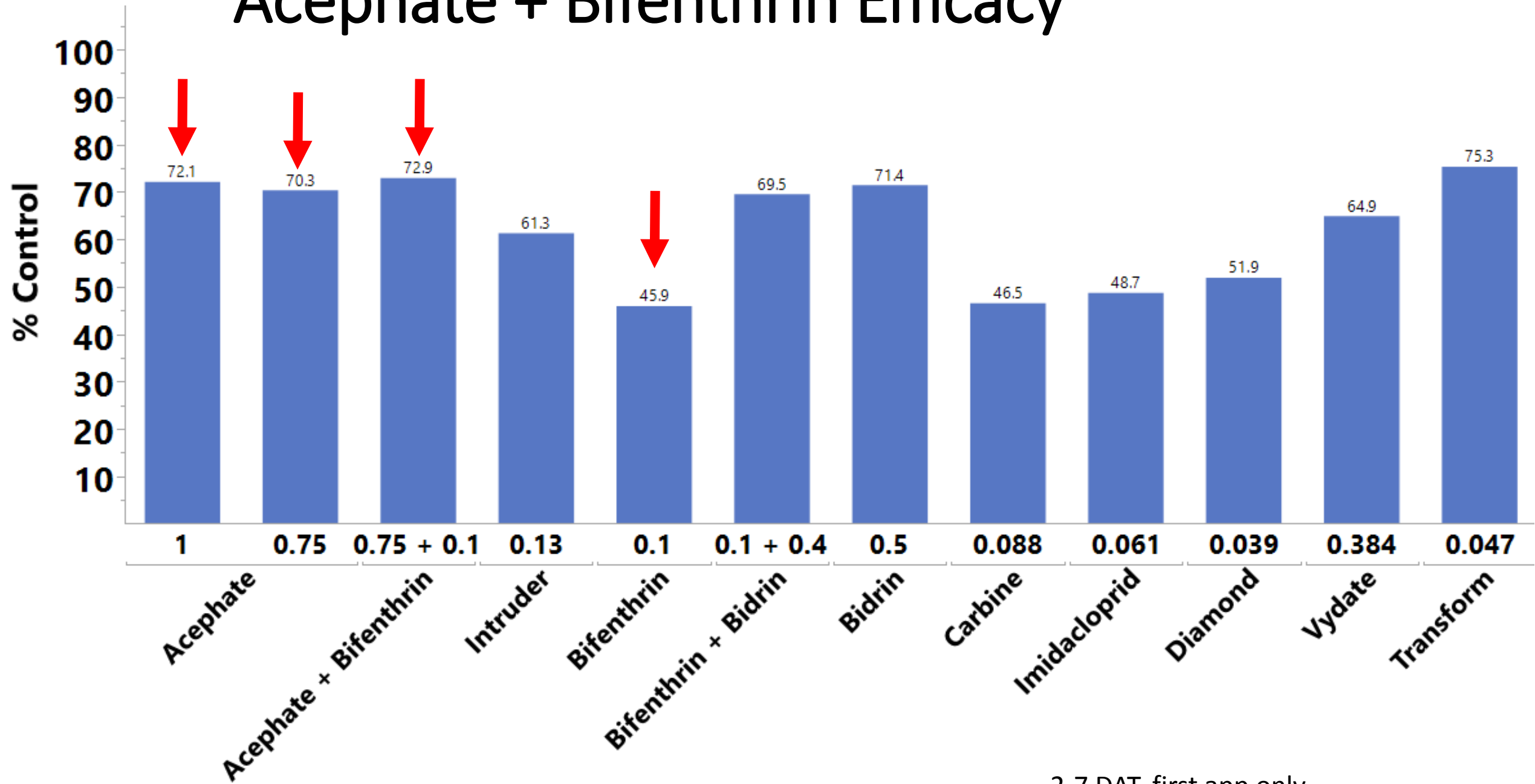
2 oz Centric Across Years by State



1.5 oz Transform Across Years by State

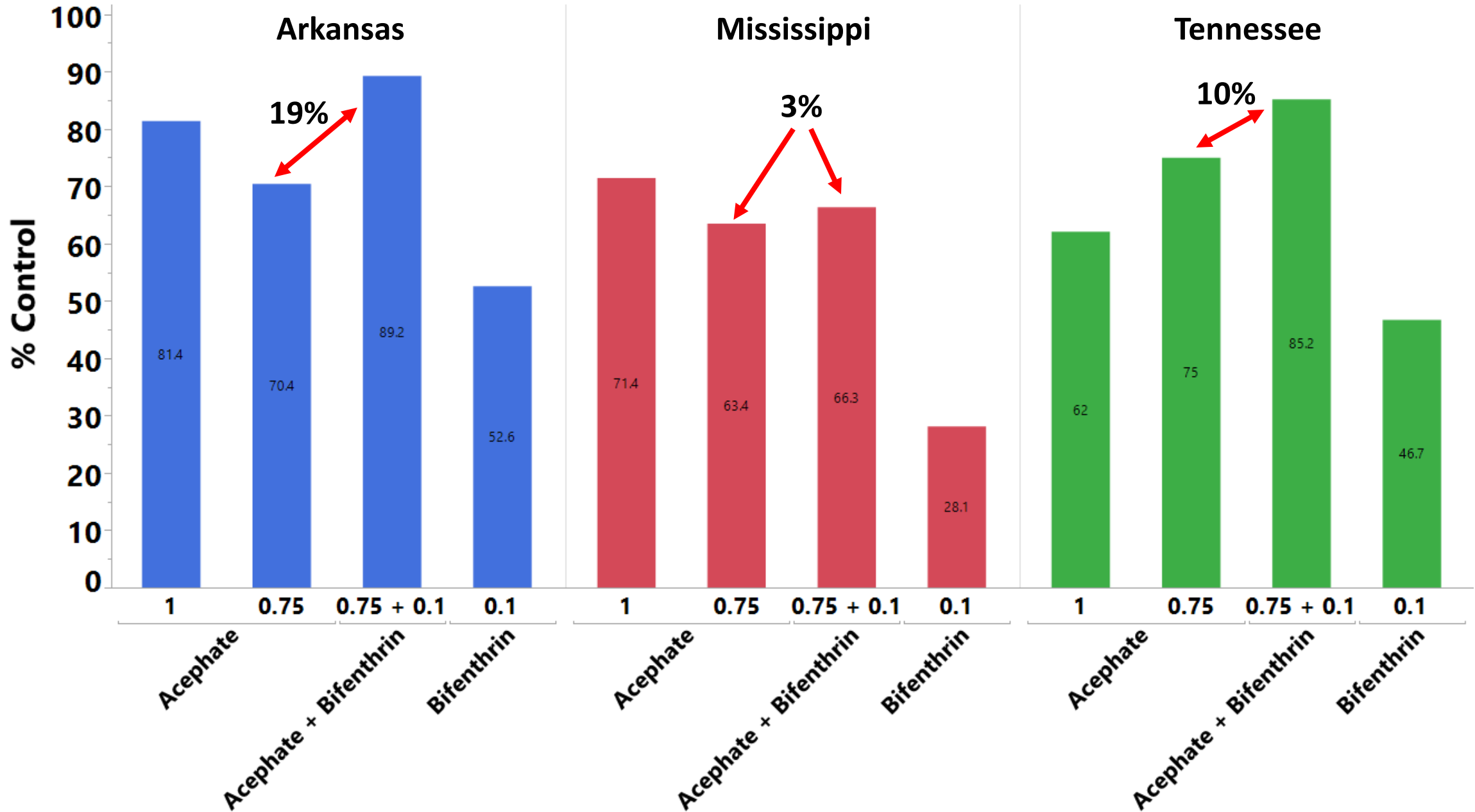


Acephate + Bifenthrin Efficacy

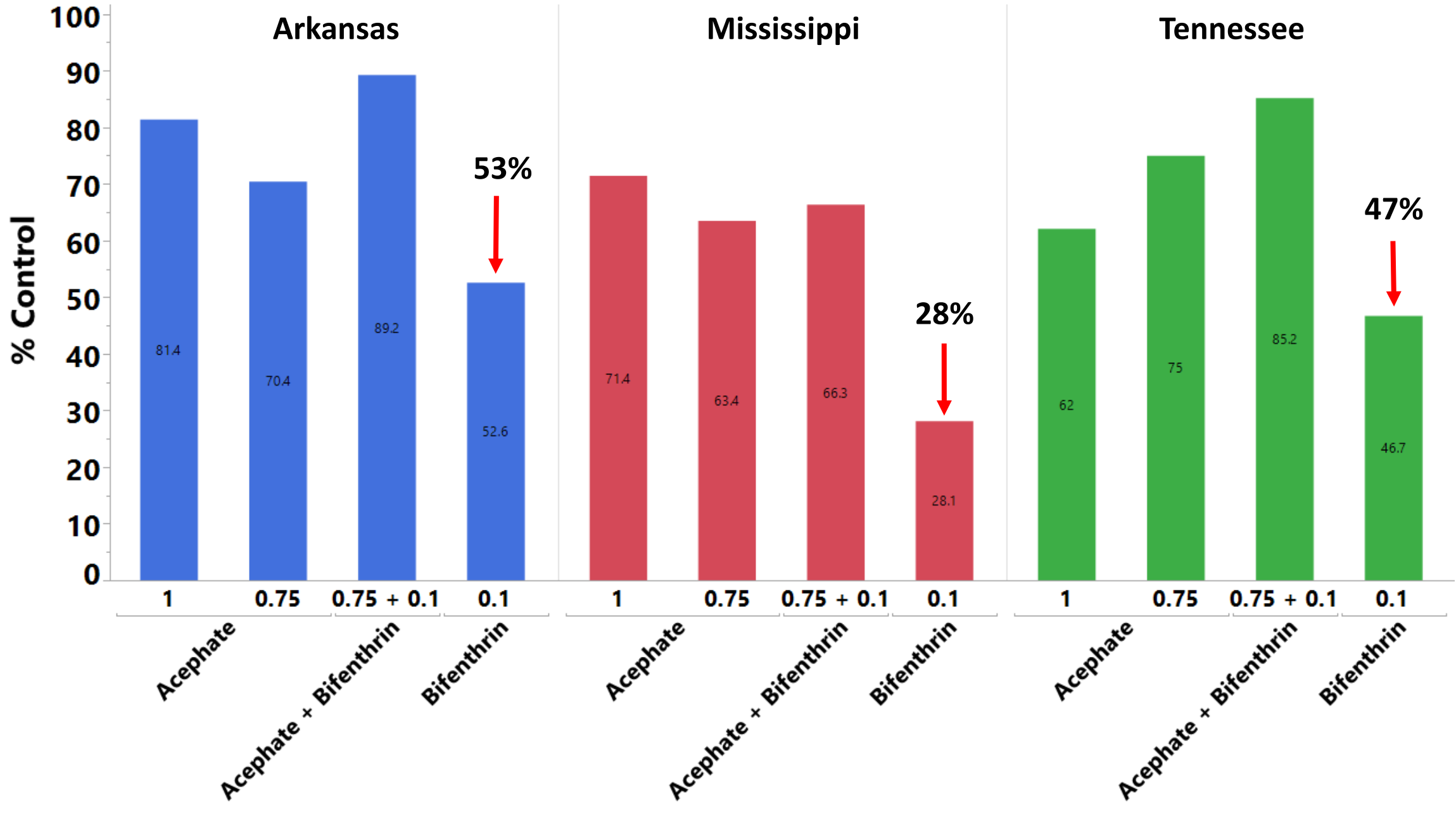


2-7 DAT, first app only

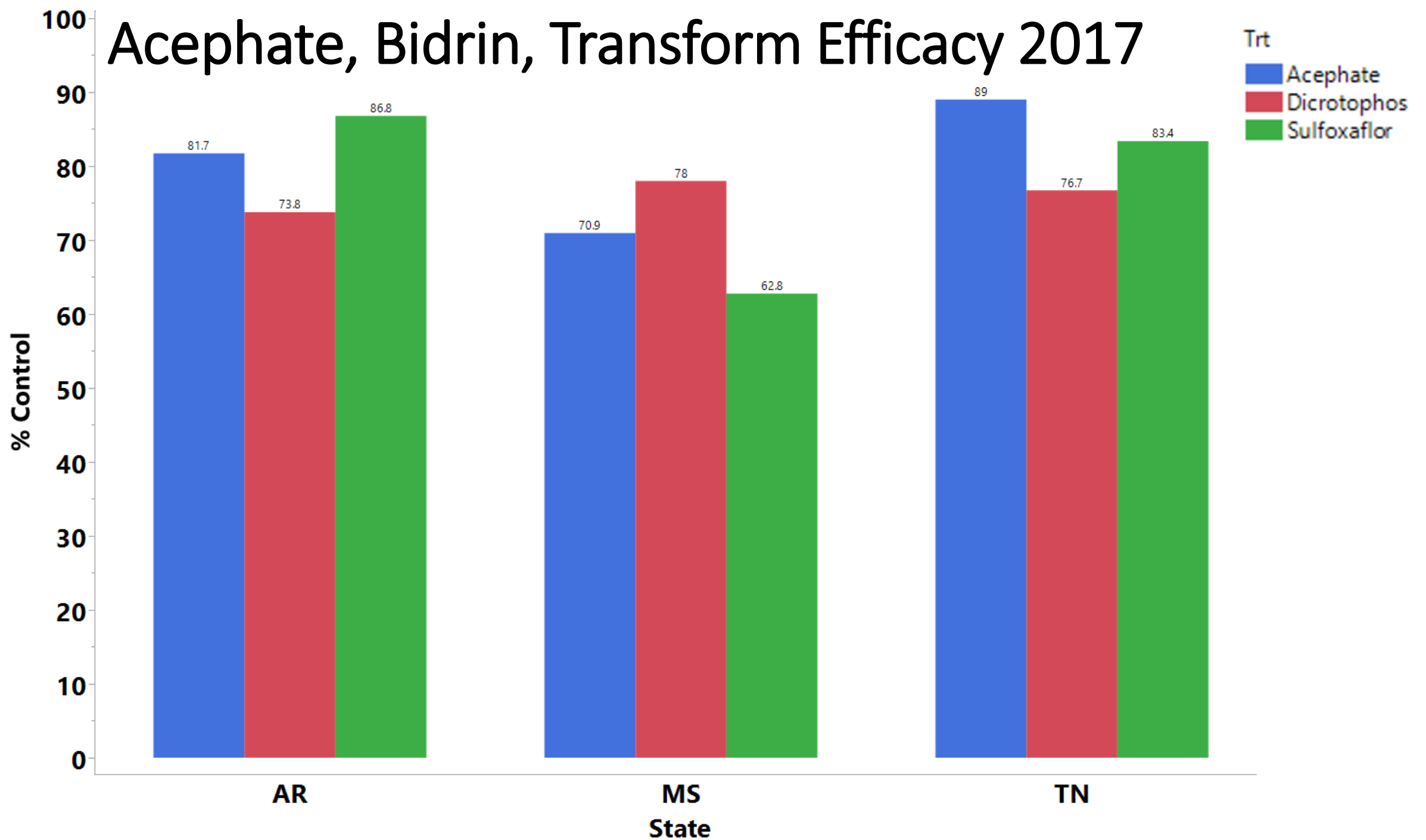
Acephate Bifenthrin, Variation Between States



Acephate Bifenthrin, Variation Between States



Acephate, Bidrin, Transform Efficacy 2017



Bidrin

Tends to not flair
mites and aphids

Acephate

Some moth
control
Cheaper

Both

OP's
Comparable
plant bug control

Acephate vs Dicrotophos by Year in AR

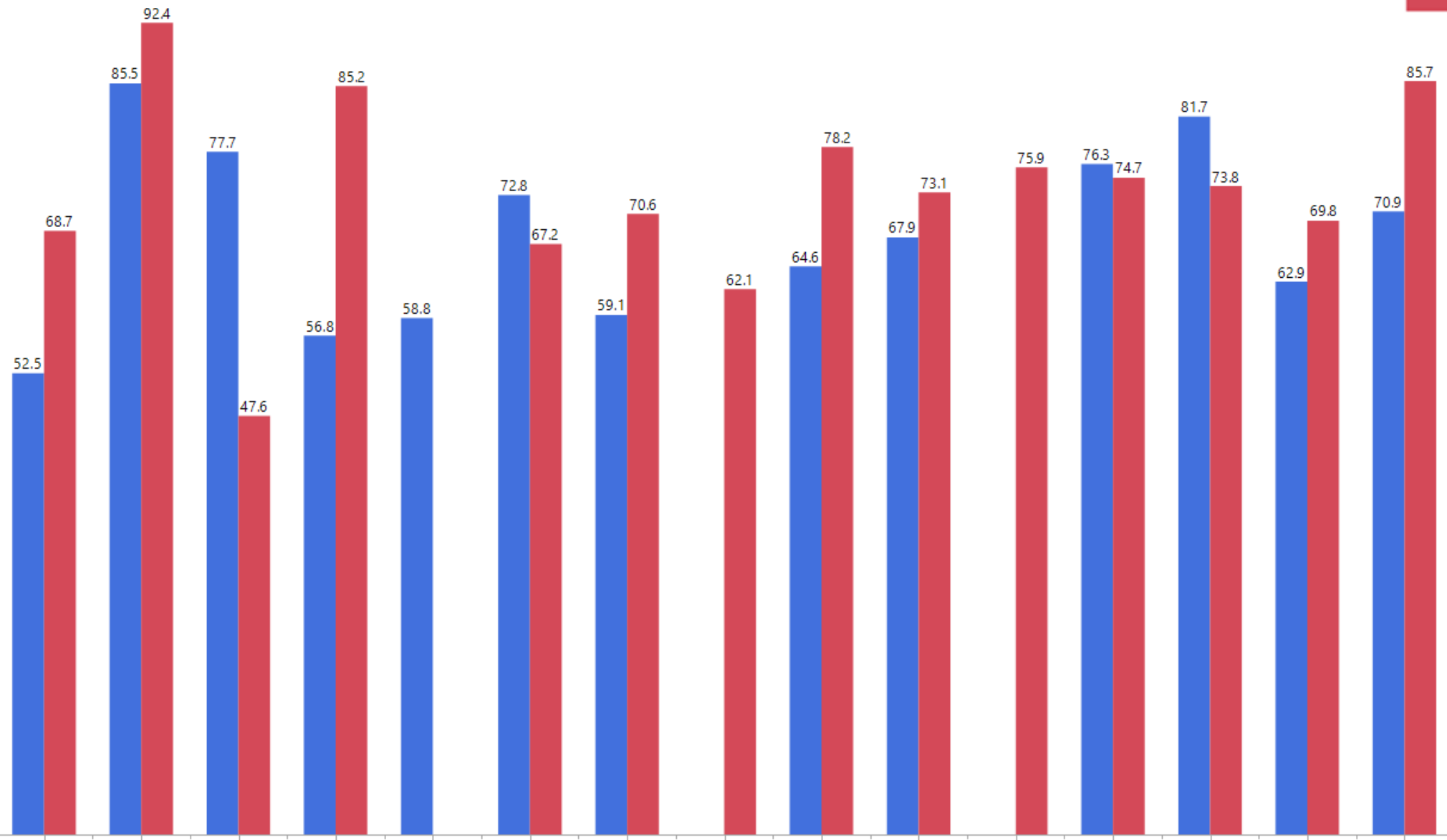
Trt
Acephate
Dicrotophos

% Control

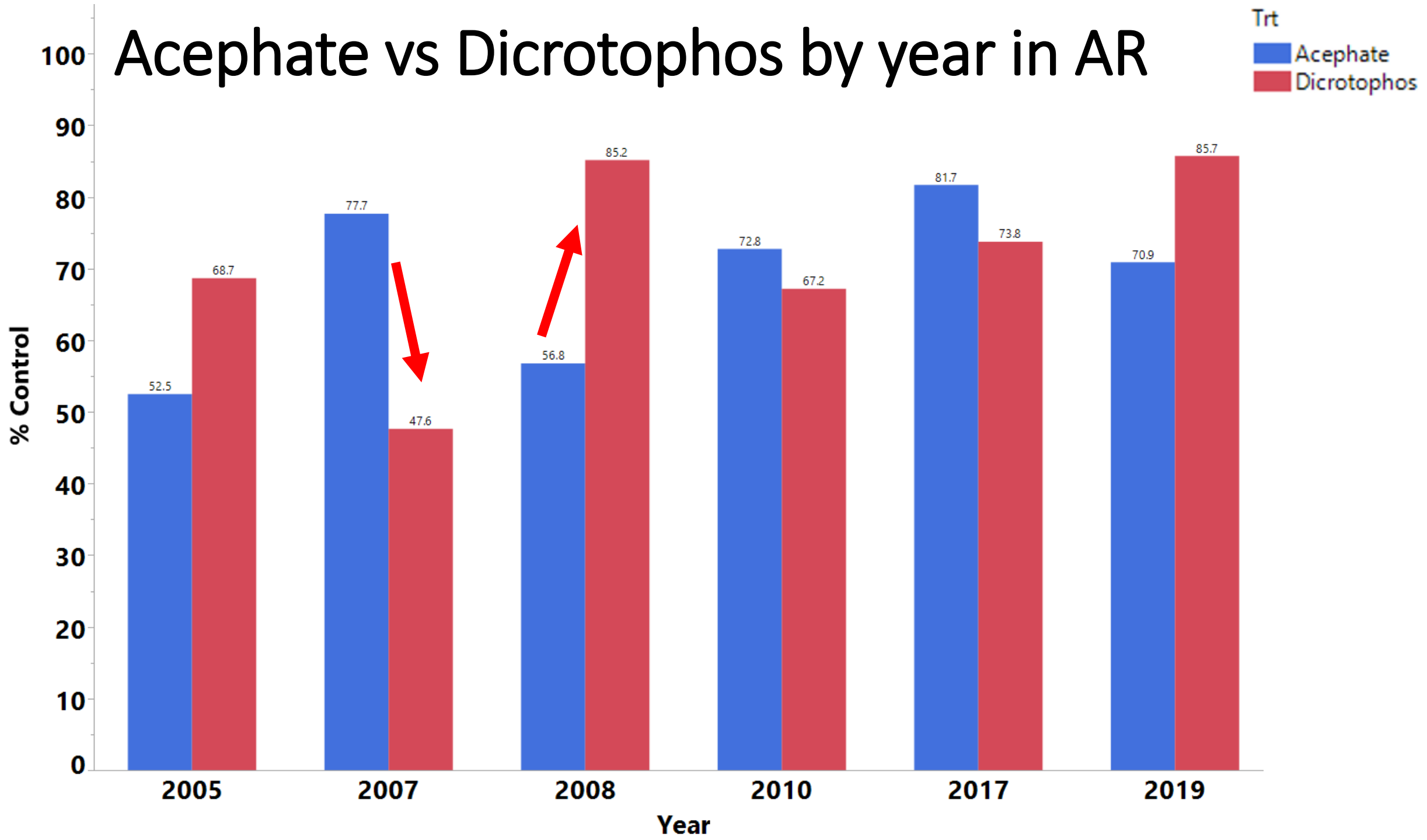
100
90
80
70
60
50
40
30
20
10
0

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

Year



Acephate vs Dicrotophos by year in AR





ADMIRE[®] PRO[™]

SYSTEMIC PROTECTANT

Net Contents:

1 GAL. 12 OZ. (140 FL. OZ.)

GROUP 4A INSECTICIDE

For uses in pest management and maintenance of plant health.

ACTIVE INGREDIENT:
Imidacloprid, 1-[(6-Chloro-3-pyridinyl)methyl]-
N-nitro-2-imidazolidinimine 42.8%
OTHER INGREDIENTS: 57.2%
TOTAL: 100.0%

EPA Reg. No. 264-827

Contains 4.6 pounds of active ingredient per gallon or 550 grams AI/liter.

SHAKE WELL BEFORE USING

STOP - Read the label before use
KEEP OUT OF REACH
OF CHILDREN
CAUTION

FOR ADDITIONAL PRECAUTIONARY STATEMENTS: See Inside Booklet.

For **MEDICAL** And **TRANSPORTATION** Emergencies
ONLY Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information Call
1-866-99BAYER (1-866-992-2937)

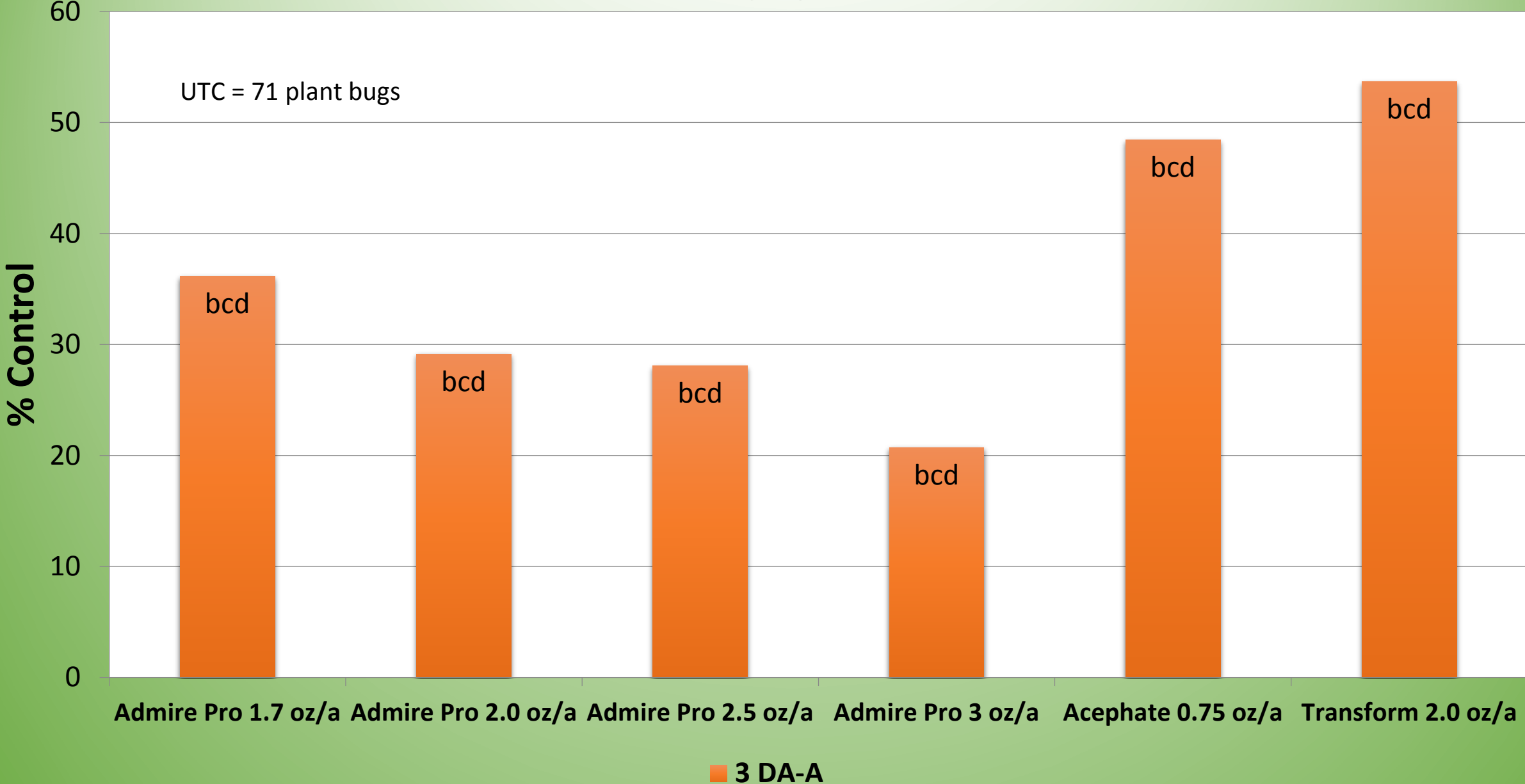
Produced for:
Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
ADMIRE is a registered trademark of Bayer.
©2013 Bayer CropScience
Product of China

131212D 12/13
US79554567D

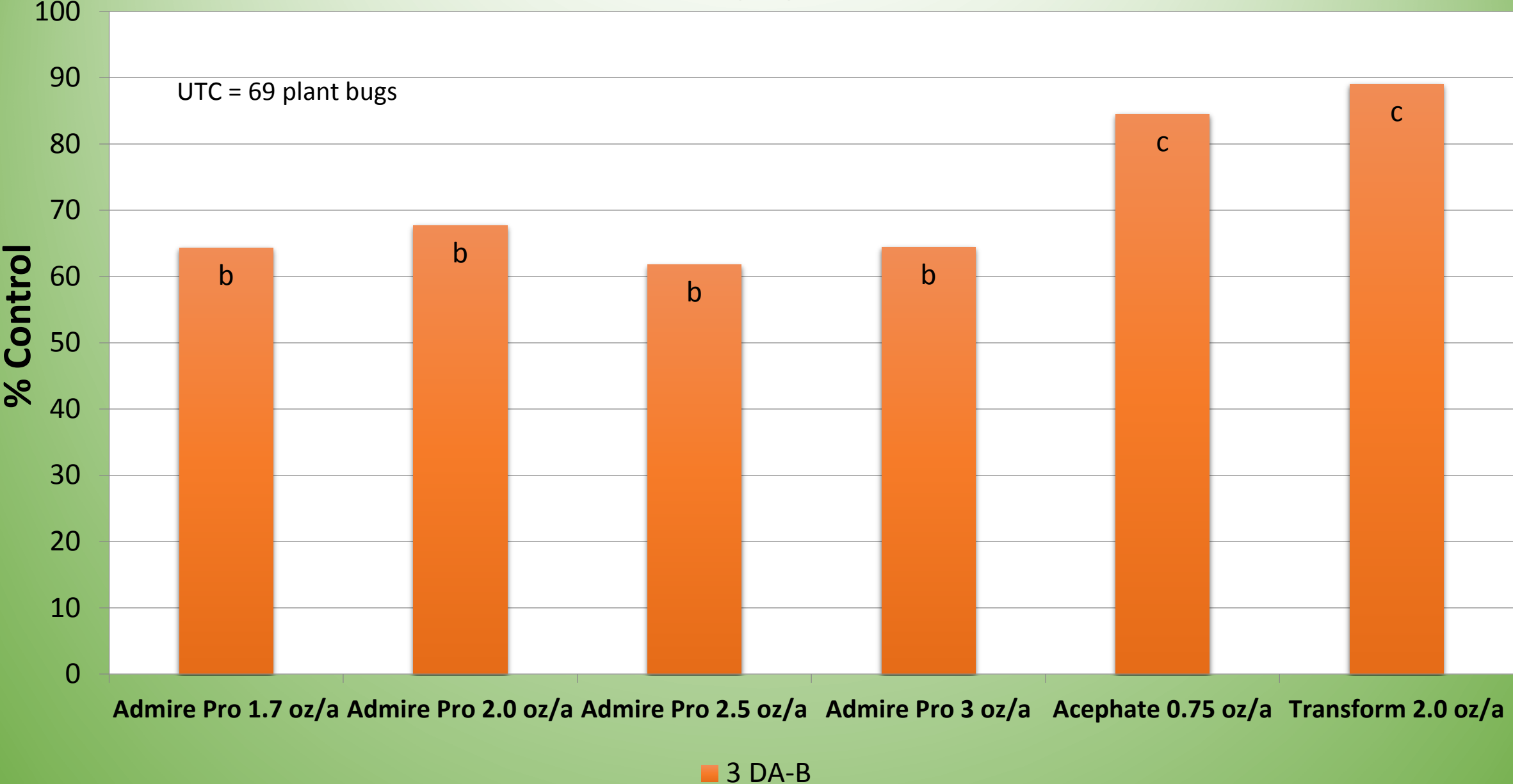
COTTON – FOLIAR

Pests Controlled	Rate fluid ounces/Acre
Cotton aphid Cotton fleahopper Bandedwinged whitefly Plant bugs (excludes <i>Lygus hesperus</i>)	Green stink bug Southern green stink bug Bollworm/Budworm (ovicidal effect)
0.9 – 1.7	
Pests Suppressed	
Lygus bug (<i>Lygus hesperus</i>) Whiteflies (other than Bandedwinged whitefly)	1.3 – 1.7
Cotton – Foliar Applications Apply ADMIRE PRO SYSTEMIC PROTECTANT through properly calibrated ground or aerial application equipment.	
Cotton – Foliar Application Restrictions Pre-Harvest Interval (PHI): 14 days Minimum interval between foliar applications: 7 days Maximum foliar applied ADMIRE PRO SYSTEMIC PROTECTANT allowed per year: 8.7 fluid ounces/Acre (0.31 lb AI/Acre) Regardless of formulation or method of application, apply no more than 0.5 lb active ingredient per acre per year, including seed treatment, soil and foliar uses. Do not graze treated fields after any application of ADMIRE PRO SYSTEMIC PROTECTANT. Please see Resistance Management section of this label.	

Rate Study of Admire Pro for Control of Tarnished Plant Bugs, 2016

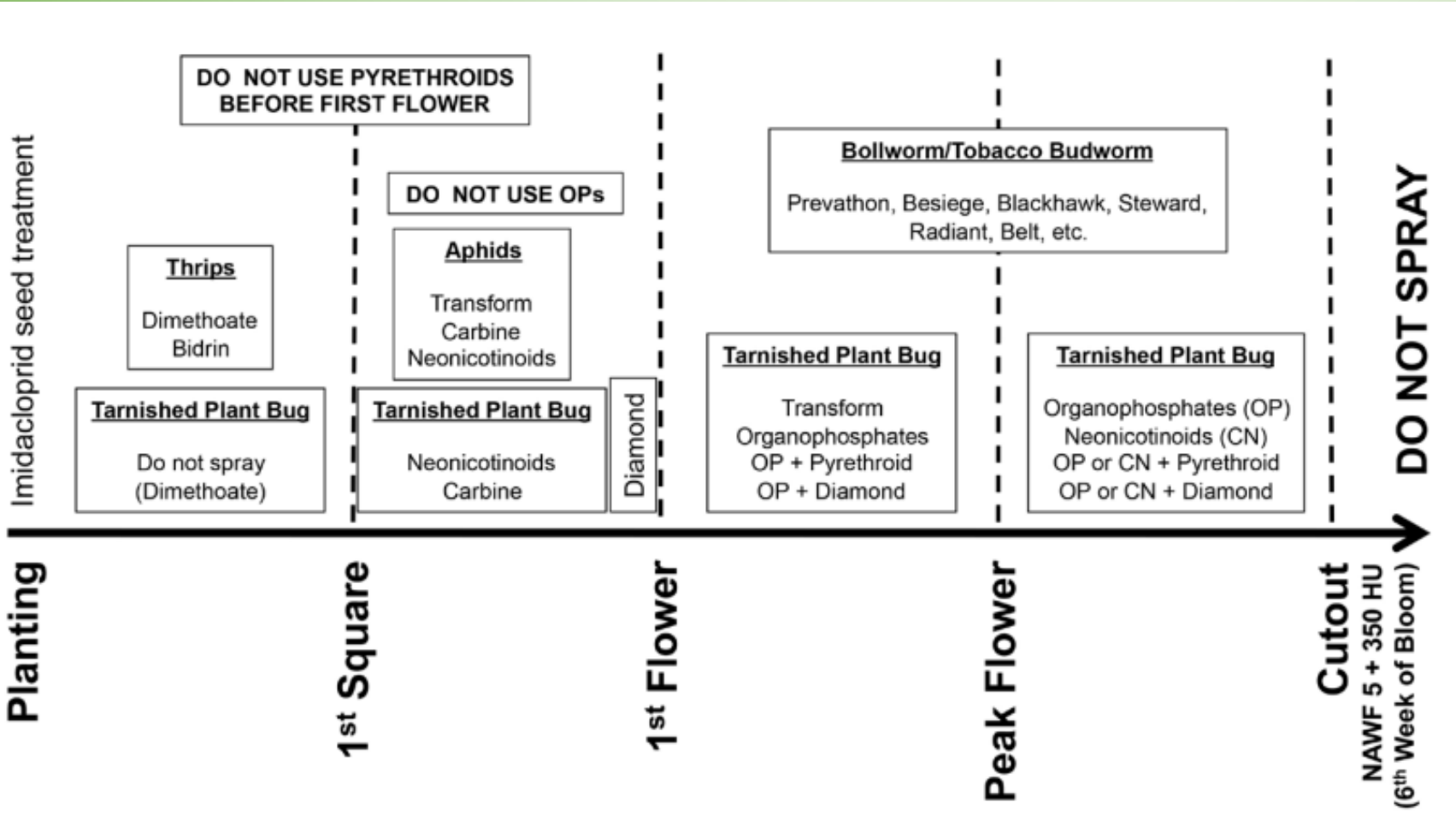


Rate Study of Admire Pro for Control of Tarnished Plant Bugs, 2016



Insecticide	Formulation/ Acre	Lb ai/Acre	Acres/Gallon
<u>Tank Mix Insecticide</u> novaluron Diamond 0.83 EC	6-9 oz	0.039-0.058	14.2-21.3

novaluron (IGR) Diamond 0.83EC	6-9 oz	0.04-0.06	21.3-14.2	30	Novaluron (Diamond) acts only on immature plant bugs and should be tank-mixed with a labeled adulticide. Use of novaluron (Diamond) during the third week of squaring or peak migration of adult plant bugs into cotton has shown benefits in protecting yield.
-----------------------------------	--------	-----------	-----------	----	---



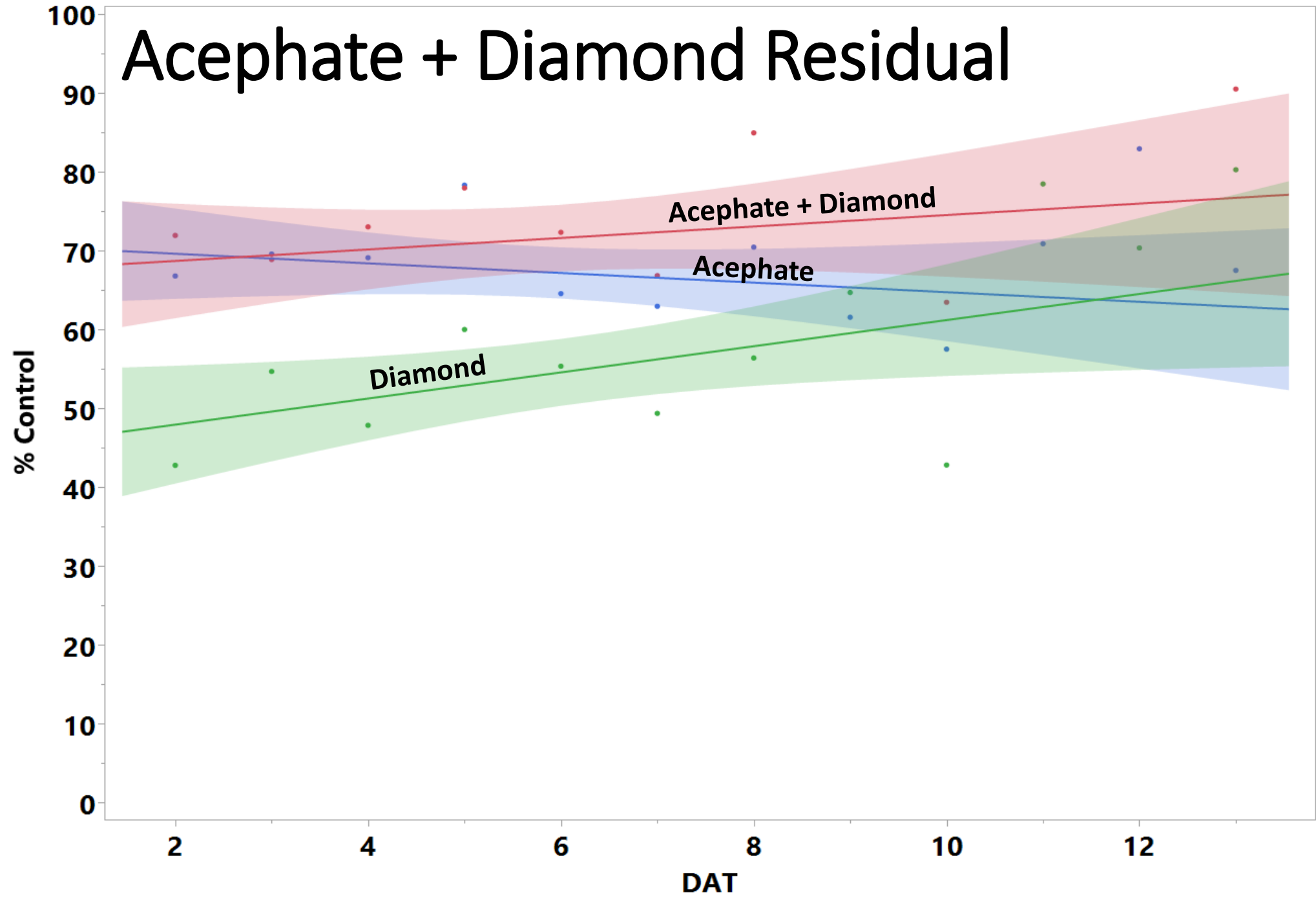
Diamond[®]
Get more with Diamond.

Effect of Novaluron on Tarnished Plant Bug Adults

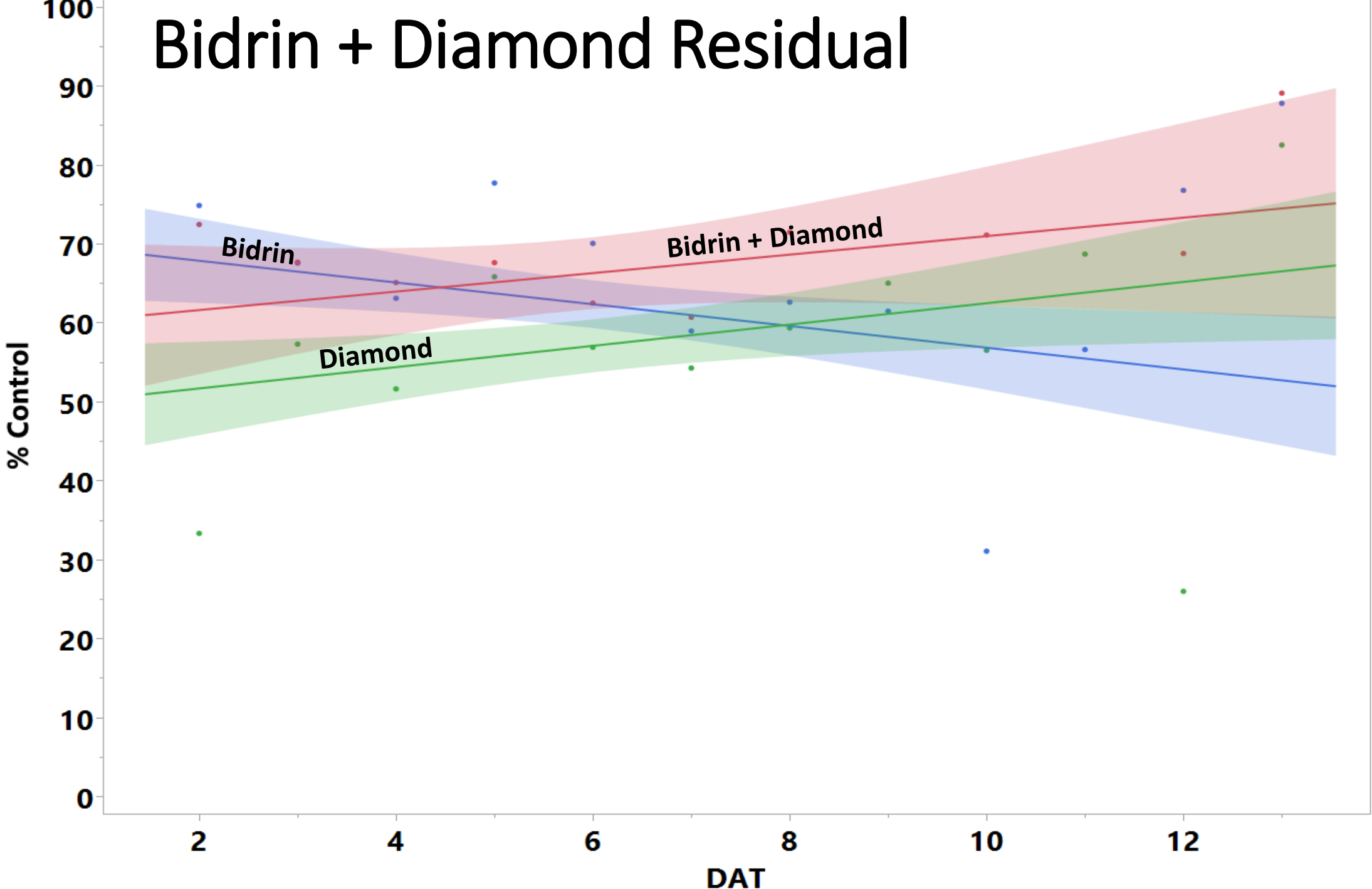
Fred Musser and Beverly Catchot

- Oviposition rate affected when female is exposed to novaluron within 1 day of adult emergence.
- Egg hatch rate impacted by novaluron whenever female is exposed and lasts rest of life.
- Novaluron has a detrimental physiological effect on early egg development.
- Novaluron reduces yolk protein storage in ovaries.
- Field exposure to residues within 24 h of application reduces hatch rate.
- Impact from open field application variable, but some reduction in nymph production mostly observed (ave. 20% reduction).

Acephate + Diamond Residual

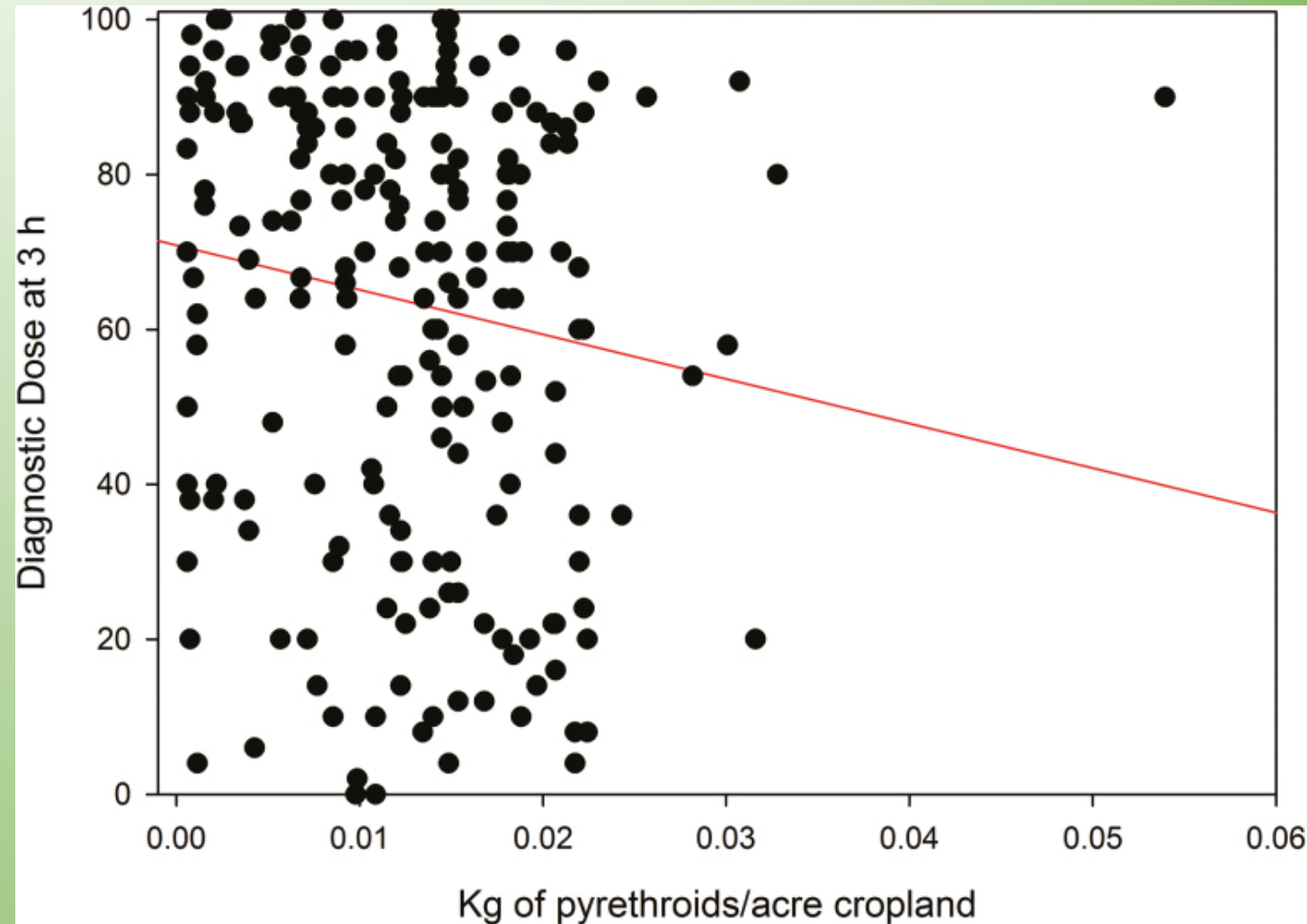


Bidrin + Diamond Residual



Effect of Lygus Trait on Resistance?

- Lygus trait very good on thrips, good for 1 or 2 sprays a year on plant bugs
- Parys found as pyrethroid use declined so did resistance
- A overall decrease in use may improve efficacy for our current insecticides



Conclusion

- **Plant bug insecticide efficacy can vary drastically from year to year and between locations even with good applications**
- **Stick to the labeled rates**
- **Diamond works, use it in medium to high populations**
- **Pay attention to the amount of control you are receiving from your insecticides and change if necessary**

Ben Thrash
Lonoke Extension Center
501-517-3853
bthrash@uaex.edu

Gus Lorenz
Lonoke Extension Center
501-944-0942
glorenz@uaex.edu

Nick Bateman
RREC-Stuttgart
870-456-8486
nbateman@uaex.edu

Glenn Studebaker
NEREC-Keiser
501-454-1922
gstudebaker@uaex.edu

