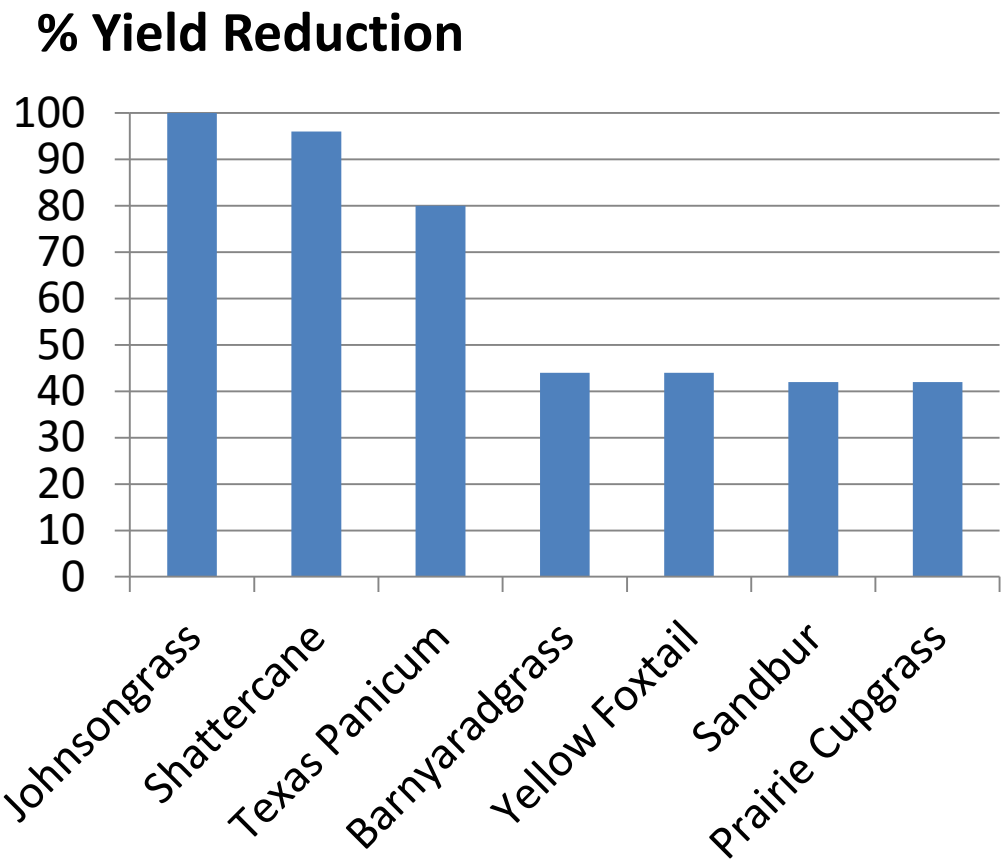
New Herbicide Technologies For Sorghum

Brent Bean, Agronomist

WTACI, 2021

Documented yield losses due to grass competition in sorghum



Grain sorghum yield loss associated with competition from grassy weeds. *2020. http://sorghumcheckoff.com*

AMS Approved

SORGHUM THE SMART CHOICE

THREE SEED TECHNOLOGIES

ALS Inhibitors

Inzen

- SU (sulfonylurea)
- Corteva

igrowth

- IMI (imidazolinone)
- Advanta

ACCase Inhibitor

Double Team

- ACCase – FOPs
- S&W

All non-GMO

AMS Approved

SORGHUM THE SMART CHOICE

Inzen™

- Large demo plots in 2021
- Zest (nicosulfuron) we have experience with the product
- Very good activity on grass species, but limited broadleaf activity
- SU grass resistance may be present in some fields
- Corteva has lots of regional personnel to advise and help growers

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igrowth®

Received label in December of 2020

Thousands of acres planted in 2021

- Five hybrids available ranging from medium-early to medium maturity

ImiFlex ™ imazamox herbicide sold by UPL

- Growers familiar with as Raptor in soybeans

Grass and broadleaf activity

Imiflex has both pre and post activity

Imiflex is an ALS herbicide but in the IMI subclass

Longer residual than the other two technologies

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SORGHUM THE SMART CHOICE

Double Team™

- Soft launch in 2021
  - 4000+ acres planted
  - Grain channeled
- FirstAct™ – Sold by ADAMA
  - Quizalofop is a proven over-the-top grass herbicide
- Grass resistance to ACCase is relatively low compared to ALS herbicides
- Very little soil activity and no broadleaf activity
- S&W and ADAMA has been fine tuning how to safely use the technology to avoid crop injury and maximize grass control in 2021

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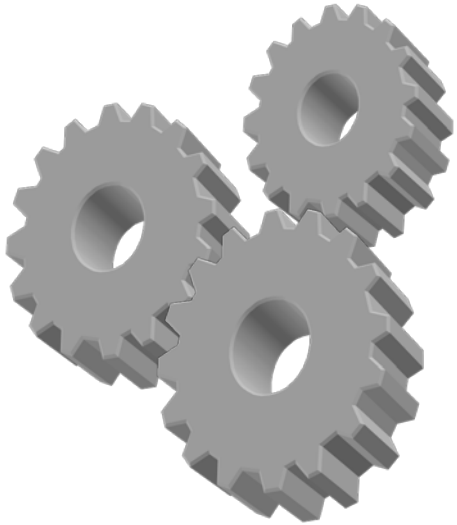
SORGHUM THE SMART CHOICE

Use in a Weed Control System

- Pre-plant – Start clean
- Pre-emergence – Group 15 herbicide
- Post-emergence
- Broadleaf help



Source: Corteva – Jeff Krumm

SORGHUM THE SMART CHOICE

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SORGHUM THE SMART CHOICE

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SORGHUM THE SMART CHOICE

2020 Trials

- Trials were conducted in fallow fields without the presence of sorghum
- Imiflex pre treatment compared to commonly used Group 15 herbicides
- Post treatments comparison of Imiflex, Zest and FirstAct
  - 2 rates
  - 2 growth stages

KSU - Hays

AMS Approved

SORGHUM THE SMART CHOICE

KSU Hays, KS

Researcher: Vipan Kumar

Application	Date	Grass Species, Size and Density	Conditions/Notes
PRE	April 16	Green Foxtail	Good
POST	June 4	Green Foxtail: 4 inch	Good
LPOST	July 26	Green Foxtail: 12 inch	Good

All post treatments applied with COC. In addition, ammonium sulfate was applied with Zest.

Quizalofop was Assure II. Accent Q was used instead of Zest. Rates have been adjusted to account for the differences in active ingredient.

2020 TRIALS - USCP

KSU - Hays

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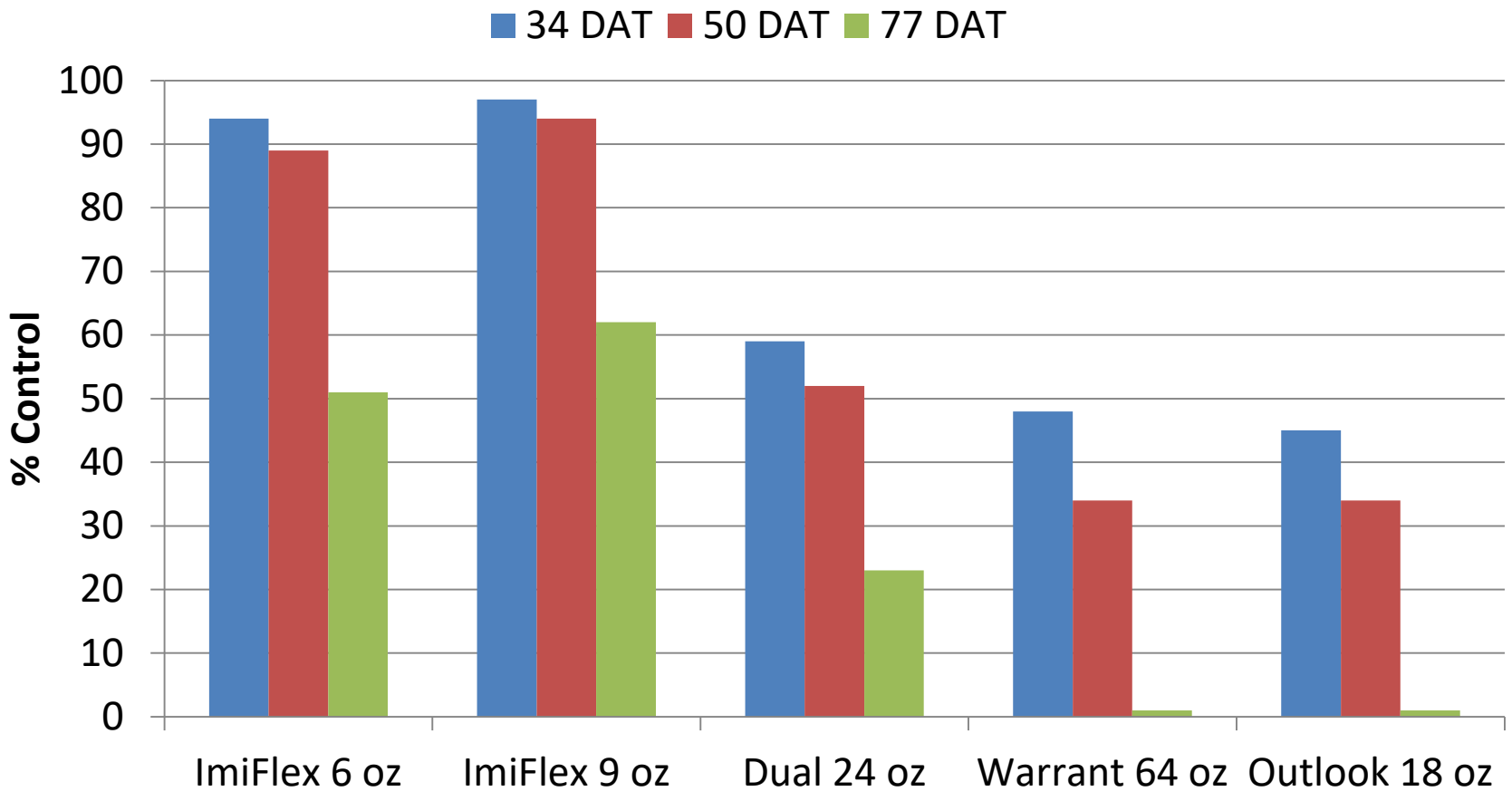
PRE Application – Green Foxtail Control

KSU, Hays, KS



Source: KSU, Vipan Kumar

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SORGHUM THE SMART CHOICE

ImiFlex 9 oz – PRE, Hays, KS
50 DAT

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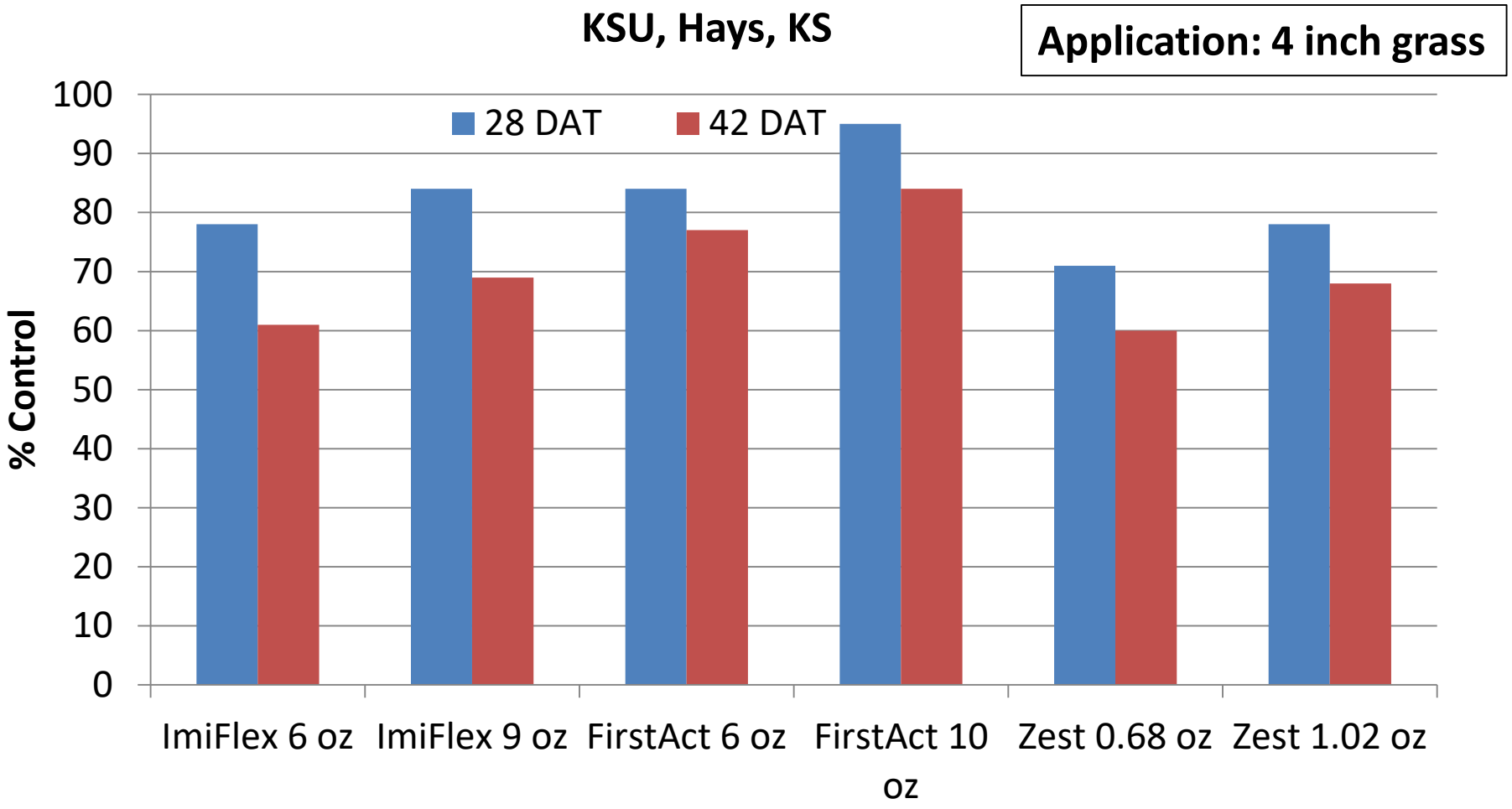
SORGHUM THE SMART CHOICE

EPOST Application – Green Foxtail Control



Source: KSU, Vipan Kumar

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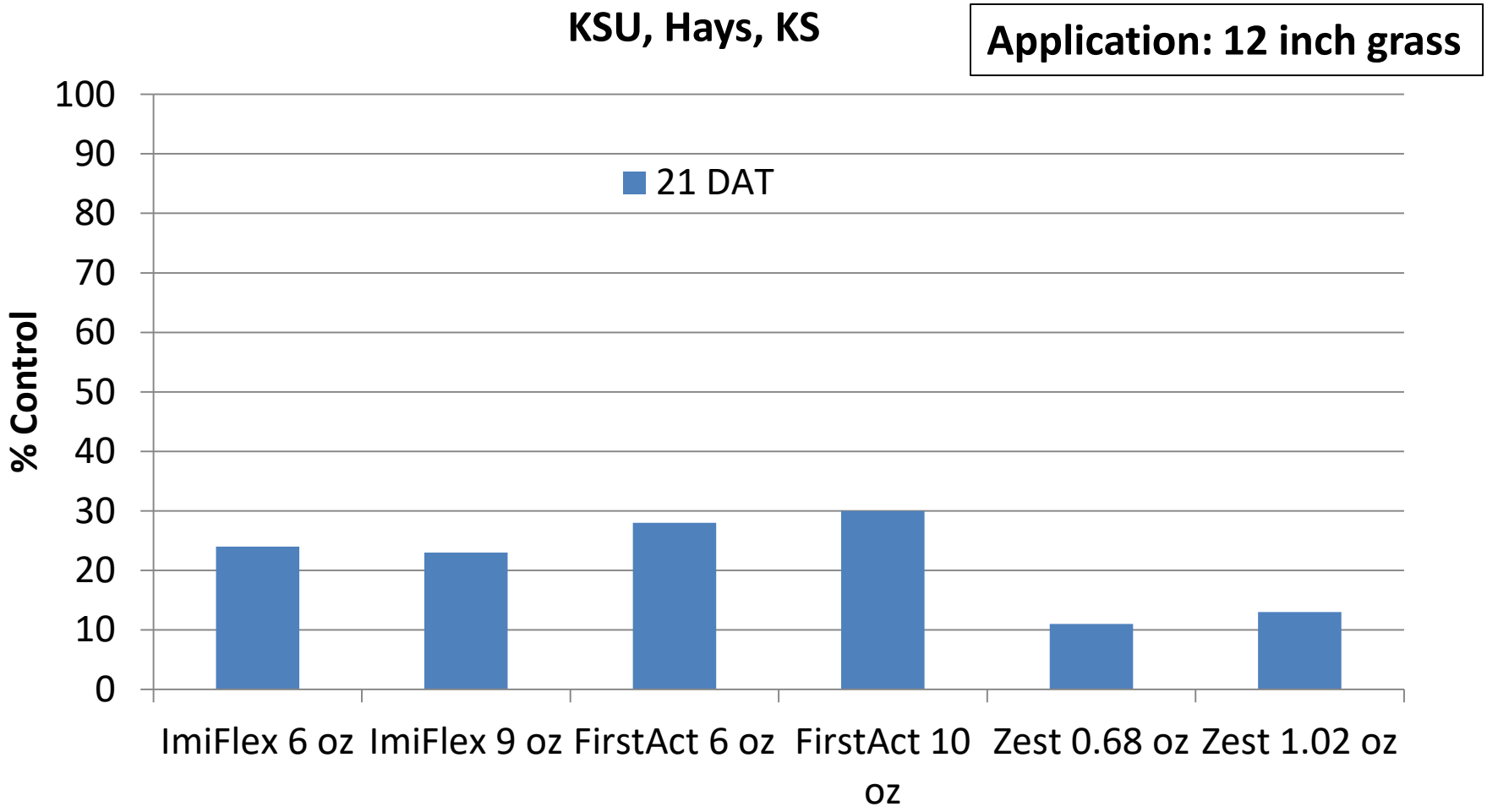
SORGHUM THE SMART CHOICE

LPOST Application – Green Foxtail Control



Source: KSU, Vipan Kumar

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SORGHUM THE SMART CHOICE

OSU Bixby, OK

Researcher: Todd Baughman

Application	Date	Grass Species, Size and Density	Conditions/Notes
PRE	June 2	Large Crabgrass	0.75 inch irrigation on June 9 to activate herbicides
POST	June 30	Large Crabgrass: 0.5 – 12 inch	Good
LPOST	July 16	Large Crabgrass: 6 – 15 inch	Good

All post treatments applied with COC. In addition, ammonium sulfate was applied with Zest.

Quizalofop was Assure II. Accent Q was used instead of Zest. Rates have been adjusted to account for the differences in active ingredient.

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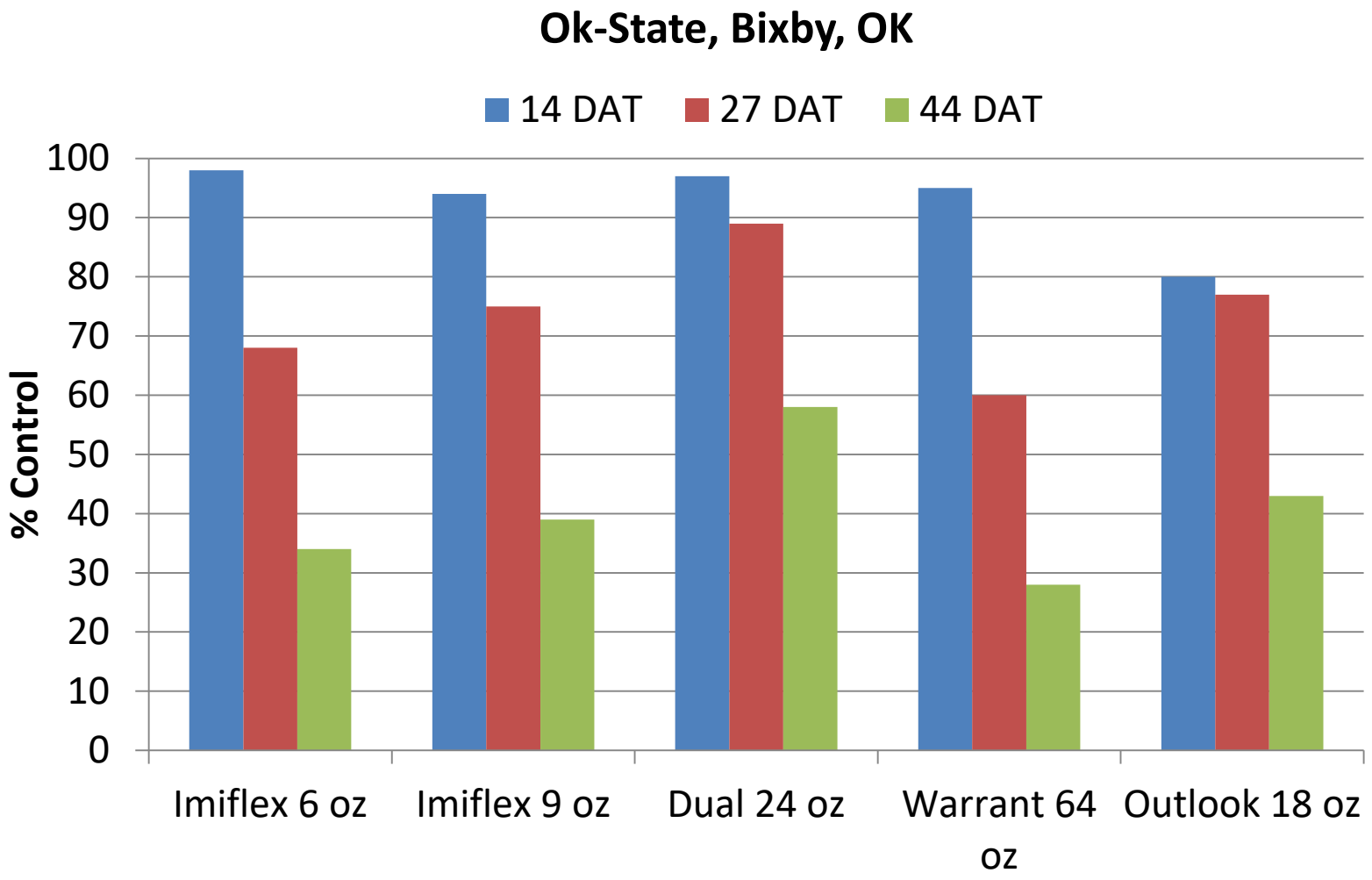
PRE Application – Crabgrass Control



Source: Ok-State, Todd Baughman

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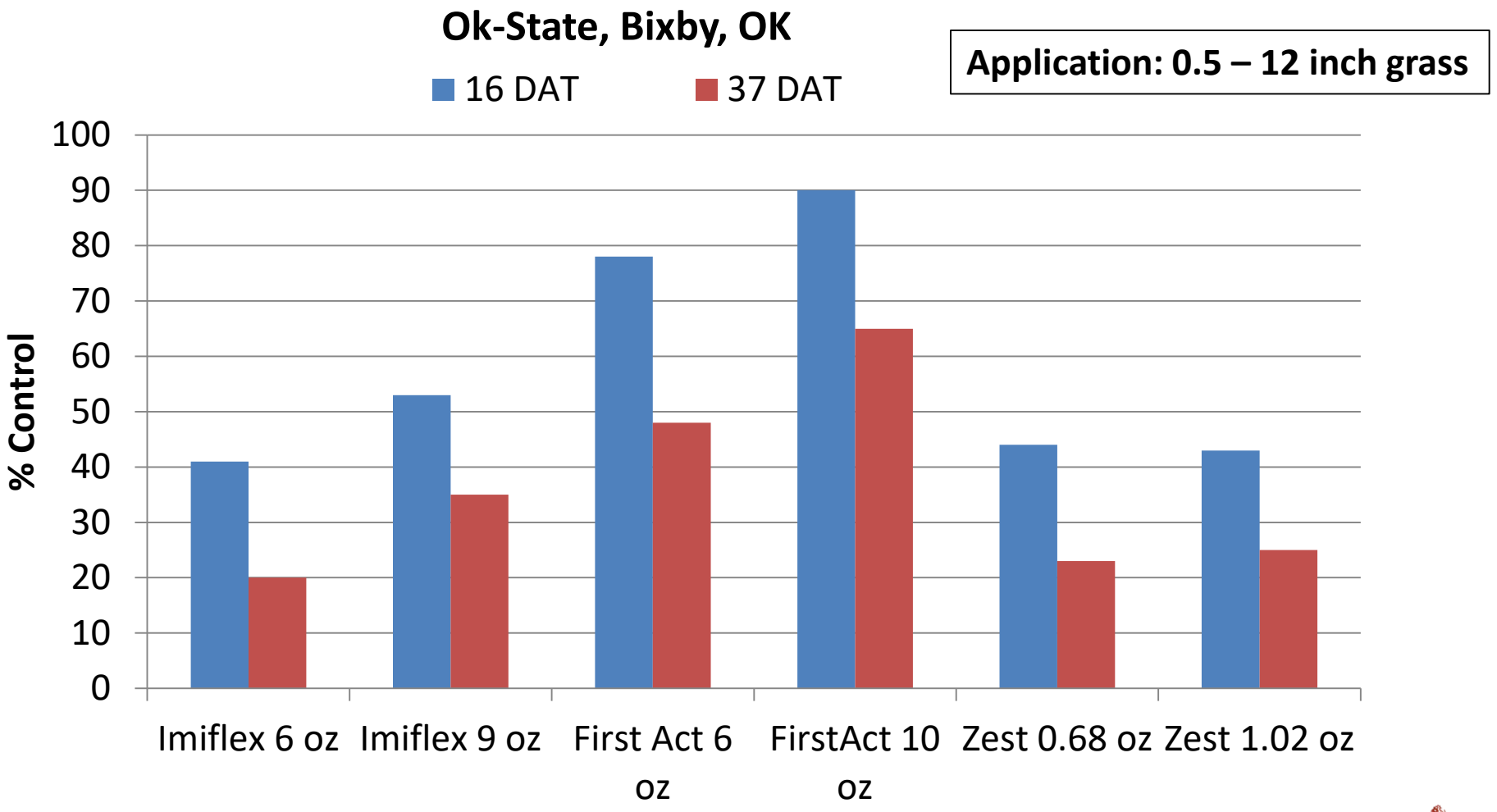
SORGHUM THE SMART CHOICE

POST Application – Crabgrass Control

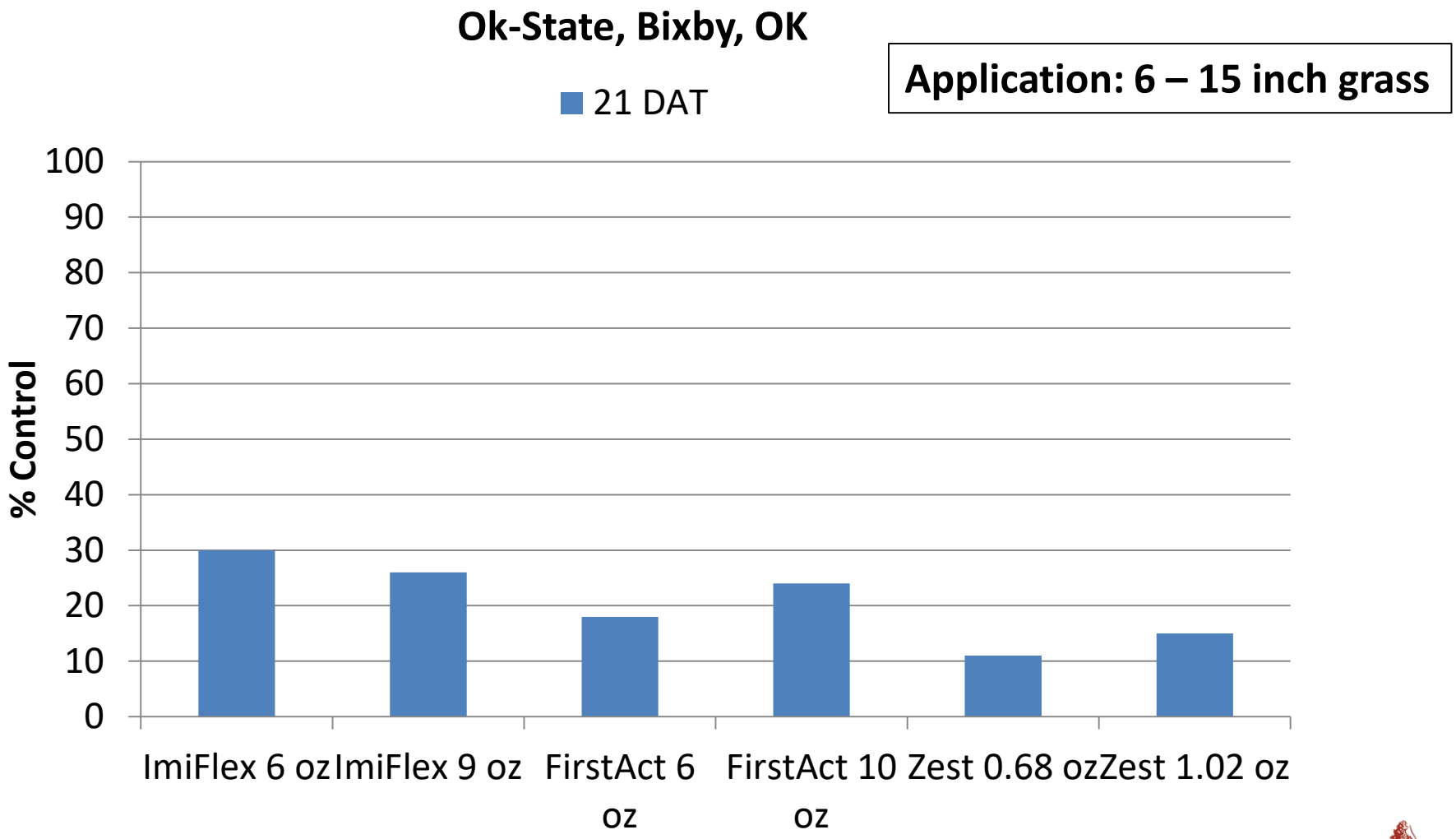


Source: Ok-State, Todd Baughman

AMS Approved

SORGHUM THE SMART CHOICE

LPOST Application – Crabgrass Control



Source: Ok-State, Todd Baughman

AMS Approved

SORGHUM THE SMART CHOICE

TAMU Corpus Christi, TX

Researcher: Josh McGinty

Application	Date	Grass Species, Size and Density	Conditions/Notes
PRE	April 7	Texas Panicum (Colorado grass) Palmer amaranth	Dry. First rain (.66 in) on May 9
POST	April 21	Texas Panicum: 3 inch Palmer amaranth: 2 inch	Dry
LPOST	April 28	Texas Panicum: 6 inch Palmer amaranth: 5 inch	Dry

All post treatments applied with COC. In addition, ammonium sulfate was applied with Zest.

Quizalofop used was Assure II.

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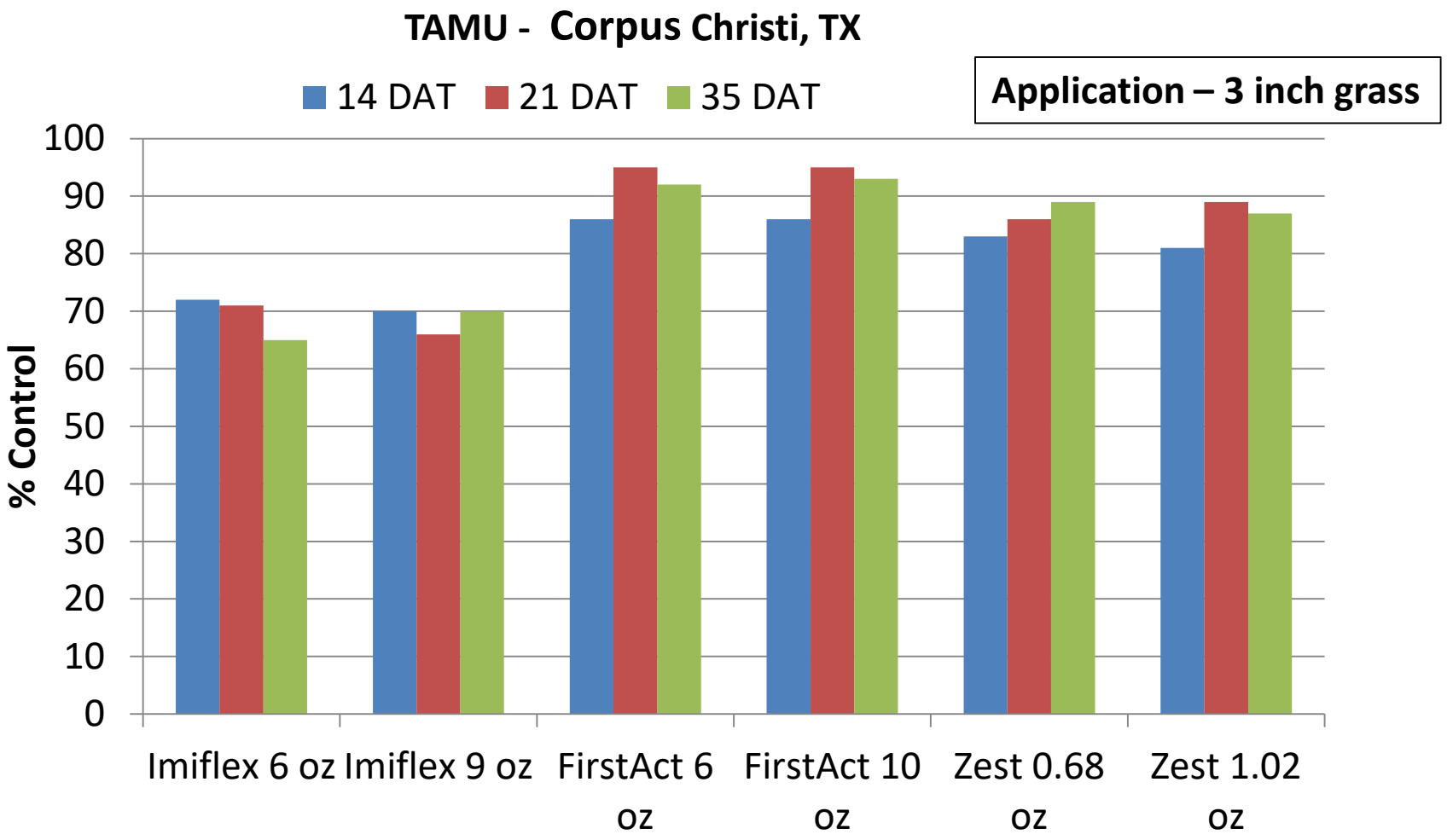
SORGHUM THE SMART CHOICE

POST Application – Texas Panicum Control



Source: TAMU – Josh McGinty

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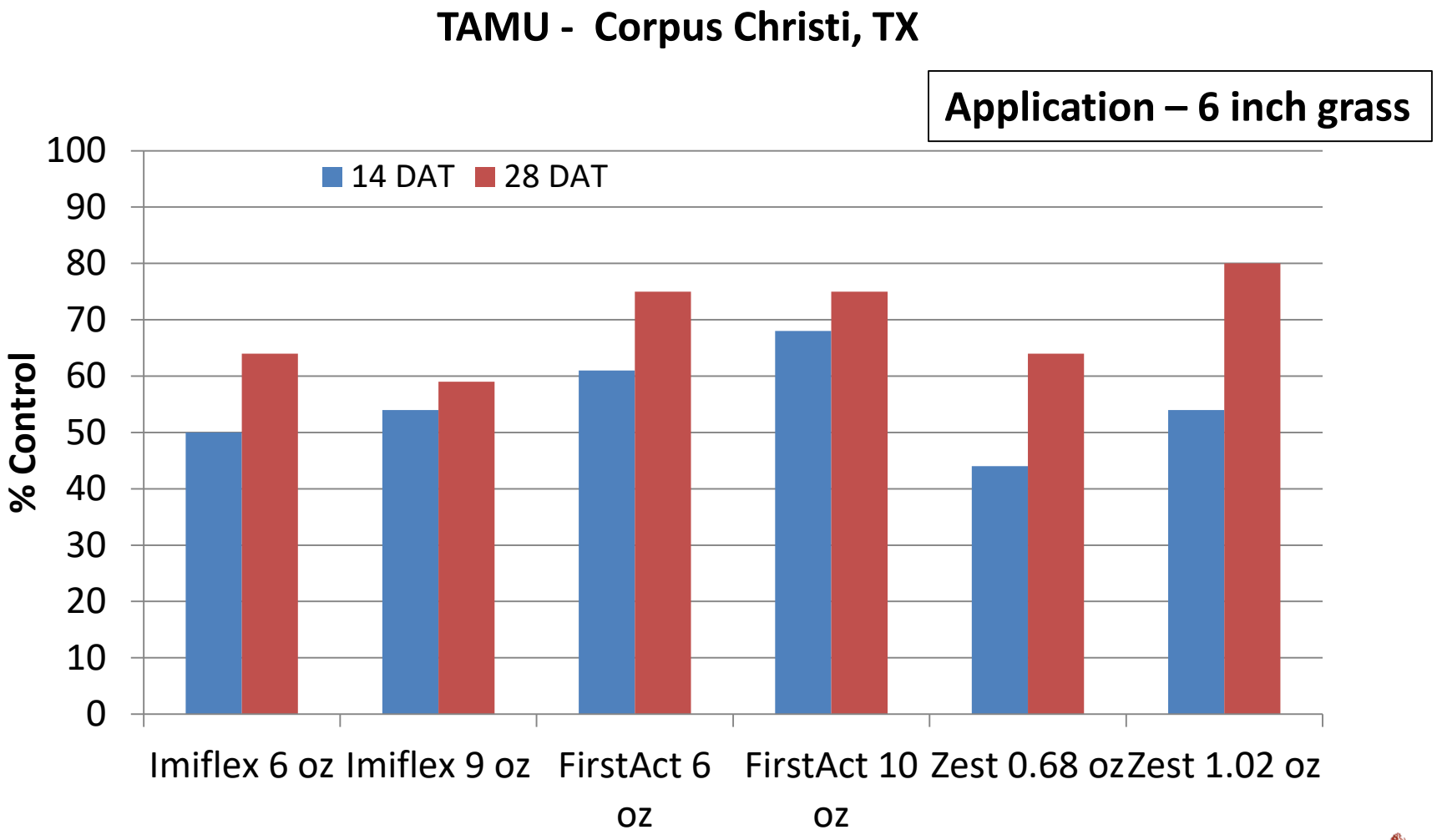
SORGHUM THE SMART CHOICE

LPOST Application – Texas Panicum Control



Source: TAMU – Josh McGinty

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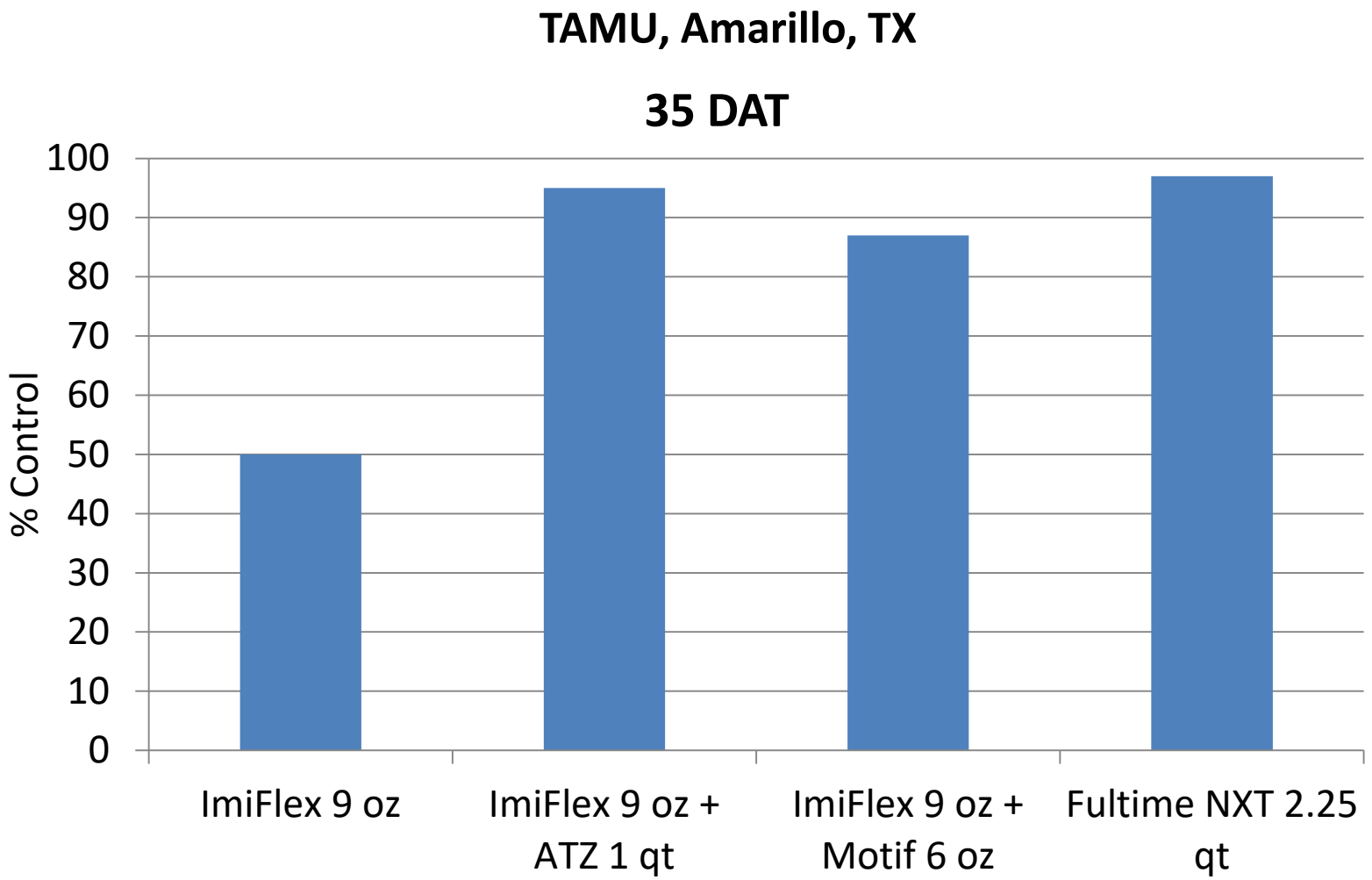
SORGHUM THE SMART CHOICE

Palmer Amaranth Control - PRE

Amarillo, TX 35 DAT
Untreated

SORGHUM THE SMART CHOICE

PRE Application – Palmer Amaranth



Source: TAMU, J. Bell & K Heflin

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SORGHUM THE SMART CHOICE

Palmer Amaranth Control - PRE

Fultime NXT 2.25 qt – 97%

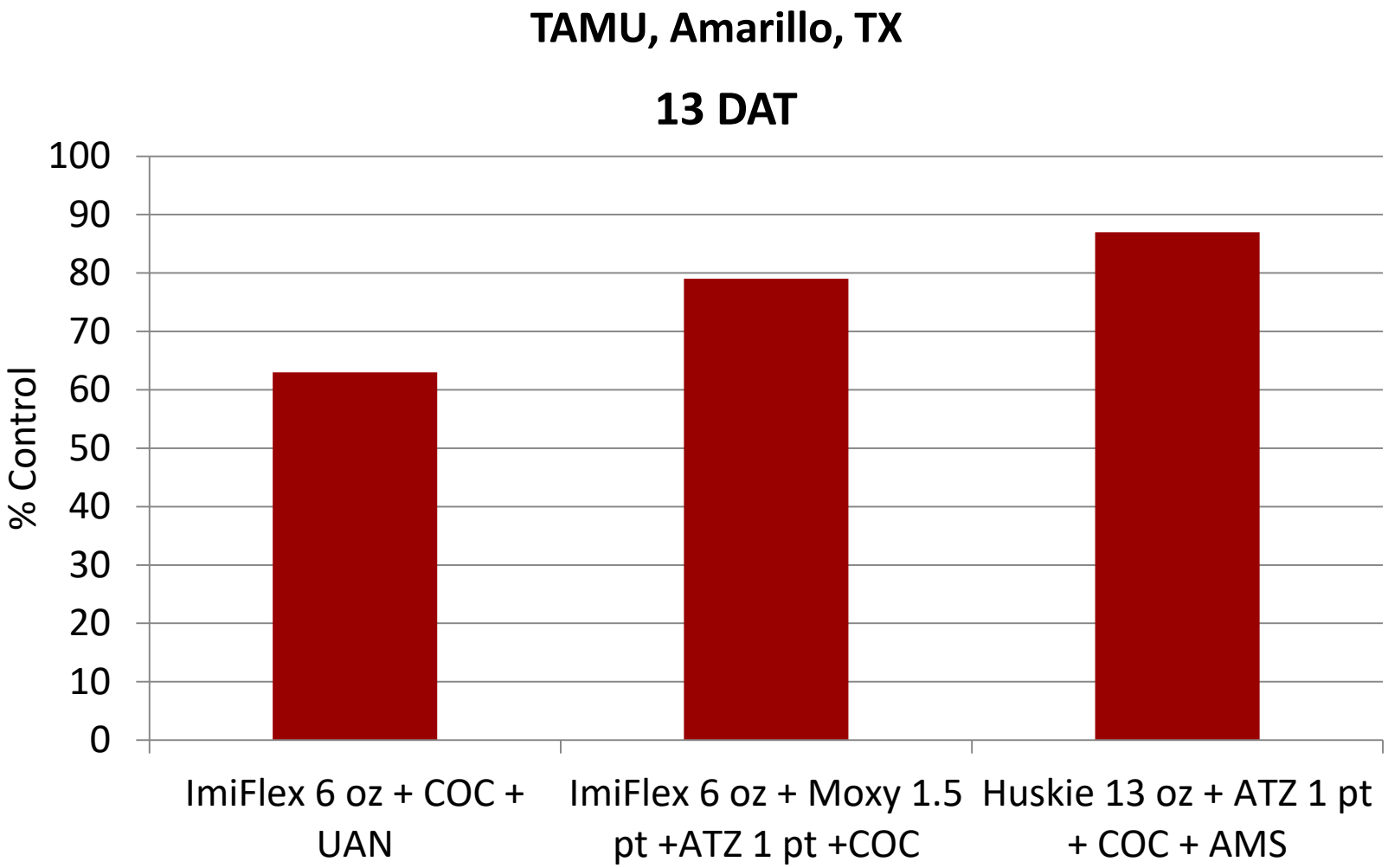
ImiFlex 9 oz – 50%

ImiFlex 9 oz + ATZ 1 QT – 95%

Amarillo, TX 35 DAT

SORGHUM THE SMART CHOICE

POST Application – Palmer Amaranth



Source: TAMU, J. Bell & K Heflin

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SORGHUM THE SMART CHOICE

POST ImiFlex 6 oz

13 DAT

Source: TAMU, J. Bell & K Heflin

SORGHUM THE SMART CHOICE

POST ImiFlex 6 oz + Moxy + ATZ

13 DAT

Source: TAMU, J. Bell & K Heflin

SORGHUM THE SMART CHOICE

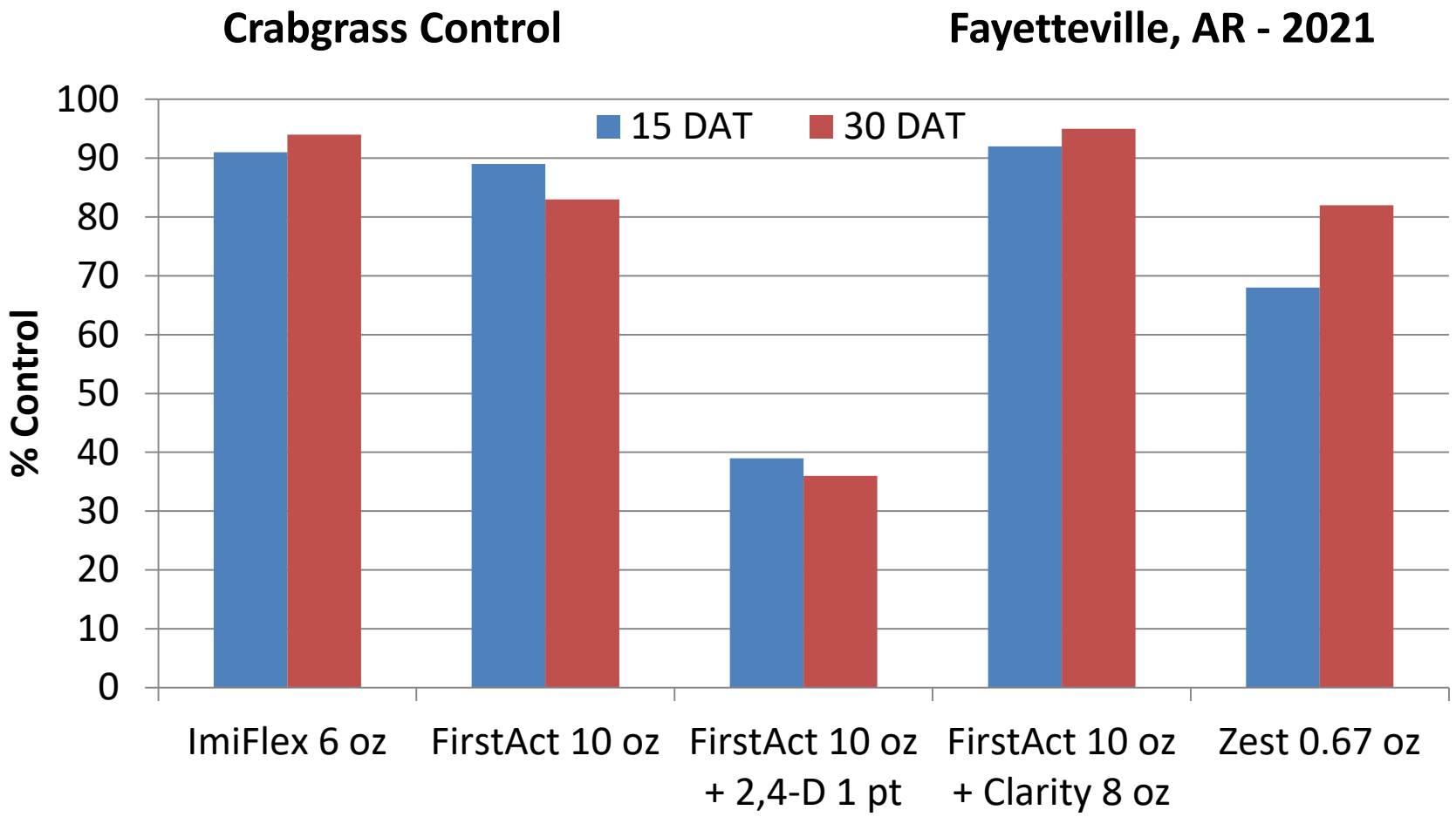
POST Huskie + ATZ

13 DAT

Source: TAMU, J. Bell & K Heflin

SORGHUM THE SMART CHOICE

FirstAct and Broadleaf Herbicides



Source: Jayson Norsworthy AR

SORGHUM THE SMART CHOICE

Rotational Restrictions

Product	Corn (Field)	Soybeans	Wheat (winter)	Cotton	Sorghum
Zest	Anytime	15 days	4 months	10 months	**10-18 months***
IMIFLEX	8.5 months	Anytime	3 months**	9 months	**18 months**
FirstAct	4 months	Anytime	4 months	Anytime	4 months***

* Cannot plant sorghum with ALS resistant traits for 18 months

**If less than 10 inches of rain/irrigation during the growing season plant back to wheat is 15 months

***Cannot plant Double Team Sorghum in consecutive years.

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SORGHUM THE SMART CHOICE

EXPECTATIONS FOR 2022

Inzen Sorghum

Limited sales in 2022. Talk to your sales rep now!

igrowth Sorghum

Advanta should have plenty of seed of several hybrids. Also introducing a silage sorghum.

Double Team Sorghum

Canada PNT expected late 2021

Seed available for 2022

2 – Early, 2 – Medium-Early, 1 Medium

Adjustments in timing on how First Act should be applied.

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SORGHUM THE SMART CHOICE

STEWARDSHIP GUIDELINES – SPECIFIC TO SORGHUM

- Use preemergence group 15 herbicides
- Do not use a particular technology if Johnsongrass or shattercane plants are present in the field that are known to be resistant to the particular technology
- To avoid potential outcrossing, control JG and shattercane plants in the field and also in nearby road ditches, fence rows etc. so that flowering does not coincide with HT sorghum
- Control volunteer sorghum/off-types the following year prior to flowering
- Consider using a desiccant at the end of the season to control any escapes and minimize weed seed production
- In trucking HT grain from the field avoid spills along road sides – consider tarping trucks

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Questions?

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