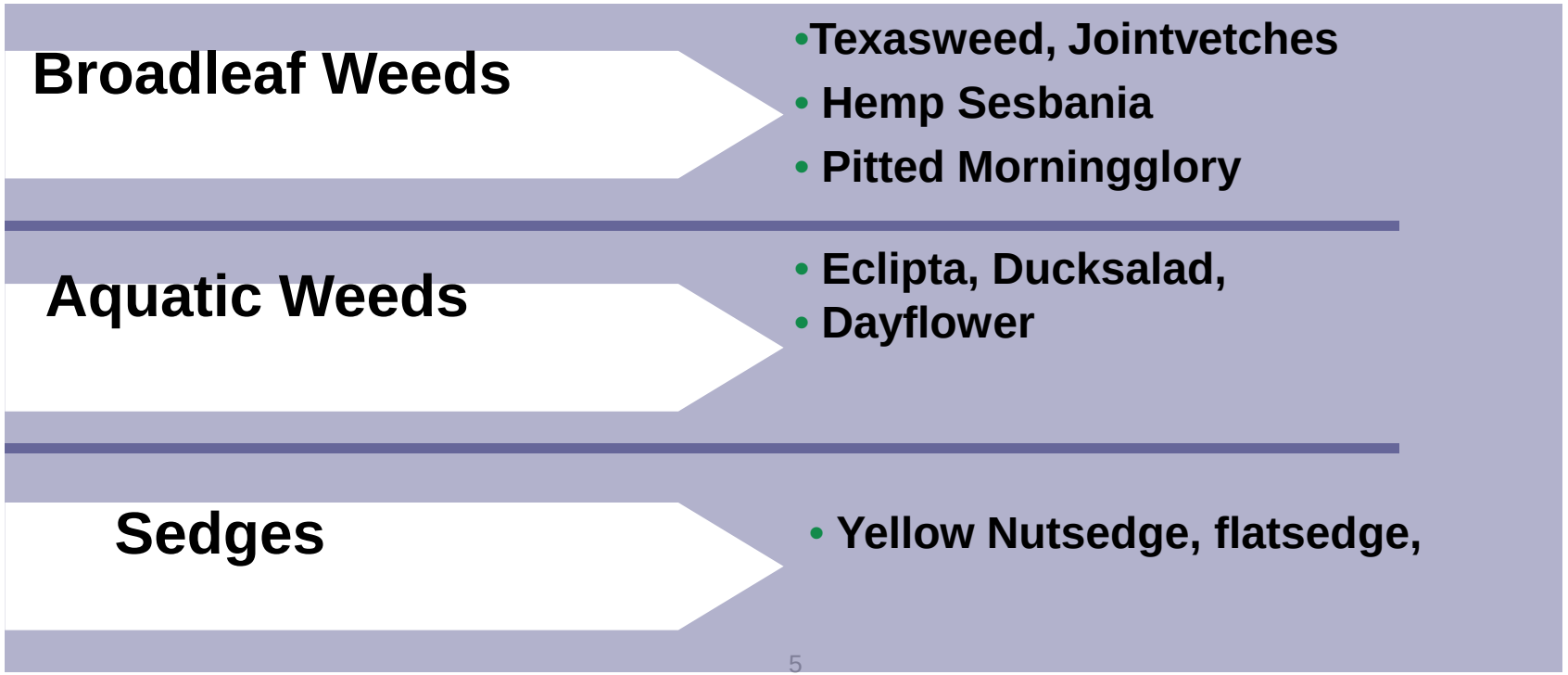
Valent USA Product Update

Bill Odle and John Bordlee

Products That Work, From People Who Care®

Rice – League, Belay, NipsIt INSIDE
Soybeans - Fierce

- A selective herbicide which provides residual and contact control of many tough weeds
- Imazosulfuron - herbicide class is sulfonylurea (ALS)
- Conventional or Clearfield rice, dry-seeded or water-seeded
- Targeting:



BELAY® INSECTICIDE

VALENT®

- Active ingredient = clothianidin (neonicotinoid)
- 4.5 fl oz/A
- Dry-seeded or water-seeded
- Rice water weevil control
- 1 application per year
- Pre or post-flood
- Up to 3rd tiller
- Longer application window than pyrethroids, more grower flexibility

NipsIt INSIDE® Insecticide

VALENT®

- Active Ingredient = clothianidin
  - Seed treatment for insect control
  - Class of chemistry: neonicotinoid
  - Insect Control: systemic and contact
  - Registrations: sorghum, canola, sugarbeet, soybean, cereals
  - EPA registration on rice: August 30, 2012
  - Rice insects controlled: rice water weevil, grape colaspis, chinch bug, aphids, thrips

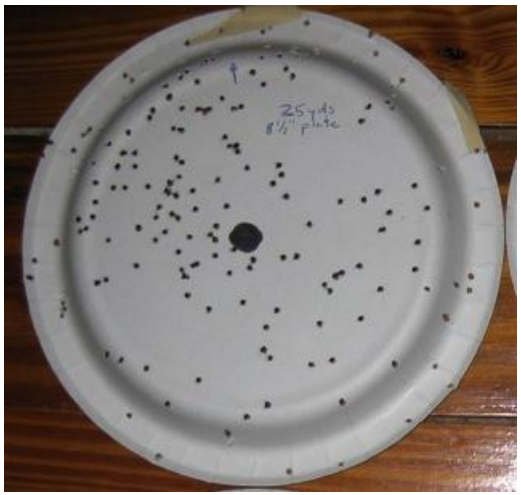

FIERCE™
HERBICIDE

Background

- Premix of flumioxazin and pyroxasulfone
- New herbicide discovered and patented by Kumiai Chemical Industry Co. Ltd. and Ihara Chemical Industry Co. Ltd.
- Registration schedule:
  - Field corn: March 2012
  - Soybean: February 2013 (any day now?)
  - Cotton: Fall 2013
  - Wheat: 2014
  - Peanuts: 2014

Two Modes of Action Working Together

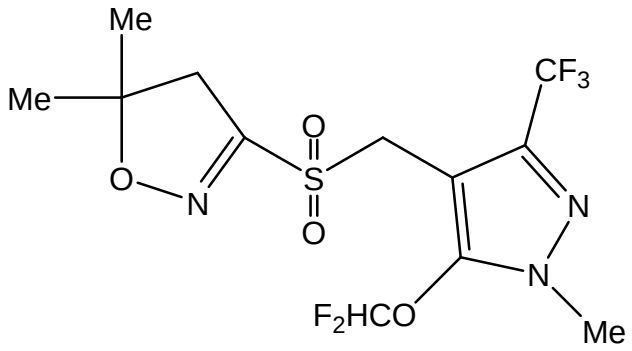
Single barrel



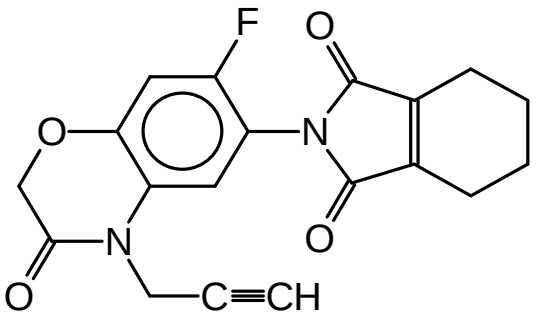
Double barrel

- *Fierce* = Flumioxazin + Pyroxasulfone (1.27:1)
- Pyroxasulfone
  - Mode of Action: VLCFA (very long chain fatty acid inhibition)
  - Class of chemistry: Isoxazoline
- Flumioxazin
  - Mode of Action: Cell membrane disruptions
  - Class of Chemistry: PPO

Pyroxasulfone



Flumioxazin



Pyroxasulfone – Mode of Action

Mode of Action	Site of Action	Chemical Family	Active Ingredient	Product Example
Shoot and Root Inhibitors	Lipid Synthesis Inhibitors 8	Thiocarbamate	EPTC butylate	Eradicane Sutan
	VLCFA Inhibitors 15	Chloroacetamide	acetochlor	Harness, Surpass
			metolachlor	Dual II Mag, others
			dimethenamid	Outlook
		Pyrazole	pyroxasulfone	Part of *Fierce*
		Oxyacetamide	flufenacet	Define

Fierce Rate Structure

		Rate (oz product/A)		
		Course	Medium/Fine	Fine
Fierce	**% AI**	**3**	**3.75**	**4.5**
Flumioxazin	**33.5**	2.00	2.50	3.00
Pyroxasulfone	**42.5**	1.50	1.87	2.25
	76.0	**Equivalent rates of Valor 51 WDG and KIH-485 85 WDG**		

Fierce Rotational Restrictions

Crop	Rotational Restriction for crops other than corn or soybeans (in months)
Wheat	18
Cotton	18
Peanuts	18
Rice	18
Alfalfa	18
Sugarbeet	18
All other Crops	18

*Working on lowering the rotational restriction on the above crops. Should be 9 month maximum for all crops.

Working on registration for cotton and wheat for 2013 season.

Anticipated Fierce Rotational Restrictions

Crop	Rotational Restriction for crops other than corn or soybeans (in months)
Wheat	1
Cotton	4
Peanuts	4
Rice	12
Alfalfa	10
Sugarbeet	15
All other Crops	18

*Soybean registration and crop rotation changes pending at EPA

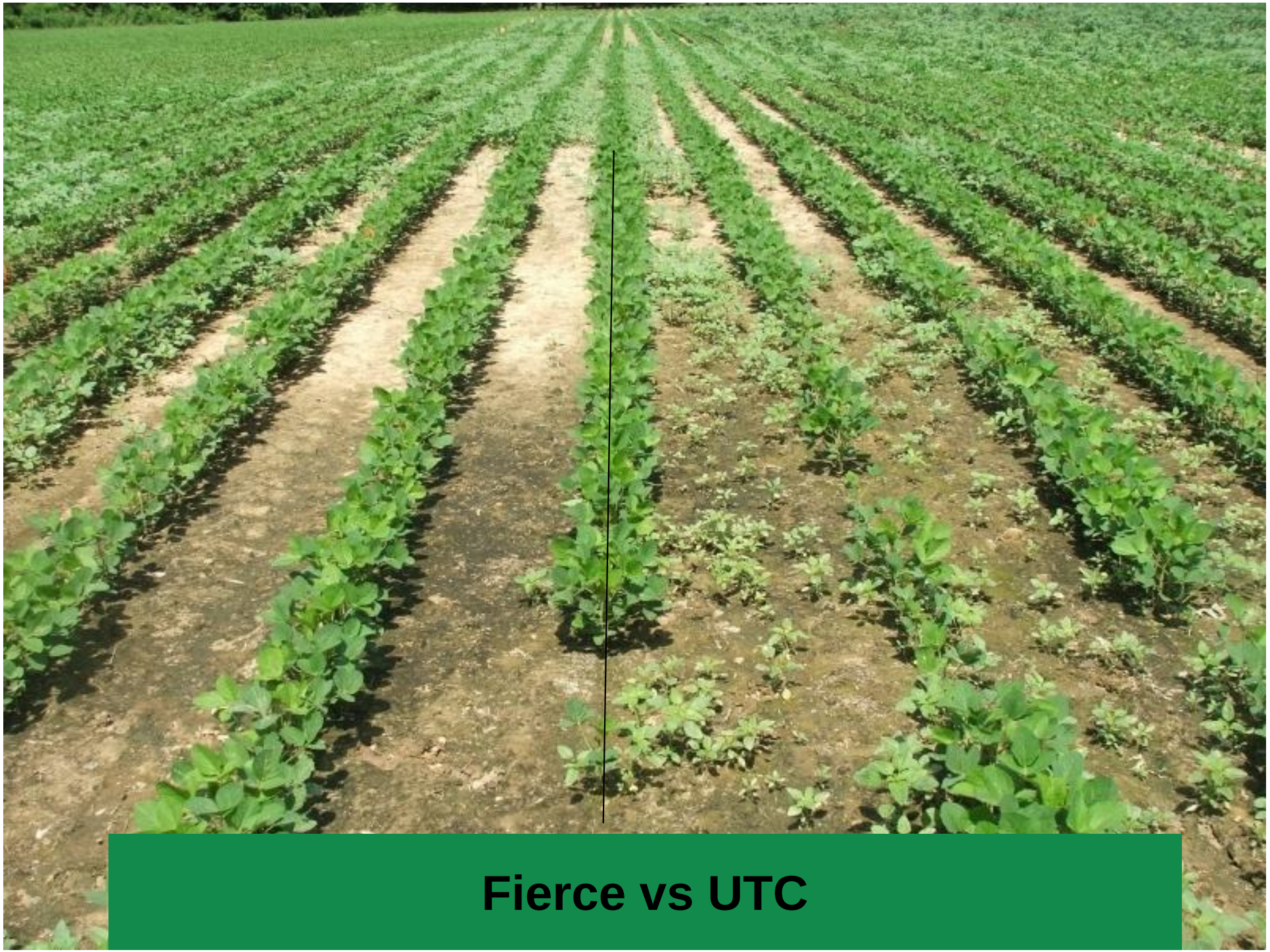
Weeds Controlled by *Fierce*

Carpetweed	Henbit	Puncturevine	Venice Mallow
Chickweeds	Jimsonweed	Purple Deadnettle	Waterhemp
Coffee Senna	Kochia	Purslane, Common	Barnyardgrass
Common Ragweed	Lambsquarters	Radish, Wild	Bluegrass, Annual
Dandelion	Little Mallow	Redmaids	Cheat
Eclipta	Marestail	Russian Thistle	Crabgrass
Eveningprimrose	Nightshade	Shepherds-purse	Downy Brome
Florida Beggarweed	Morningglory	Smallflower Morningglory	Foxtails
Florida Pusley	Mustard, Wild	Spotted Spurge	Goosegrass
Golden Crownbeard	Palmer Amaranth	Spurred Anoda	Panicums
Hairy Indigo	Pigweeds	Tropic Croton	Red Rice
Hemp Sesbania	Prickly Sida	Velvetleaf	Ryegrass, Italiian

FIERCE HERBICIDE

VALENT

- Palmer amaranth control



Fierce vs UTC


Fierce at 3.75 oz

Fierce at 3.75 oz – Alexandria, LA

UTC

Fierce 3.75 oz

Untreated check – browntop millet, smellmelon, hophornbeam copperleaf
Alexandria, LA


Untreated check
Fierce


Untreated check
Fierce


FIERCE
02/08/2011

Fierce Technical Summary

- Low use rate
- Unique chemistry
- Dual action
- Resistance Management
- Palmer amaranth control
- Broad Spectrum (broadleaf, annual grass)
- Consistent


FIERCE™
HERBICIDE

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NEW ***League*** **Herbicide**

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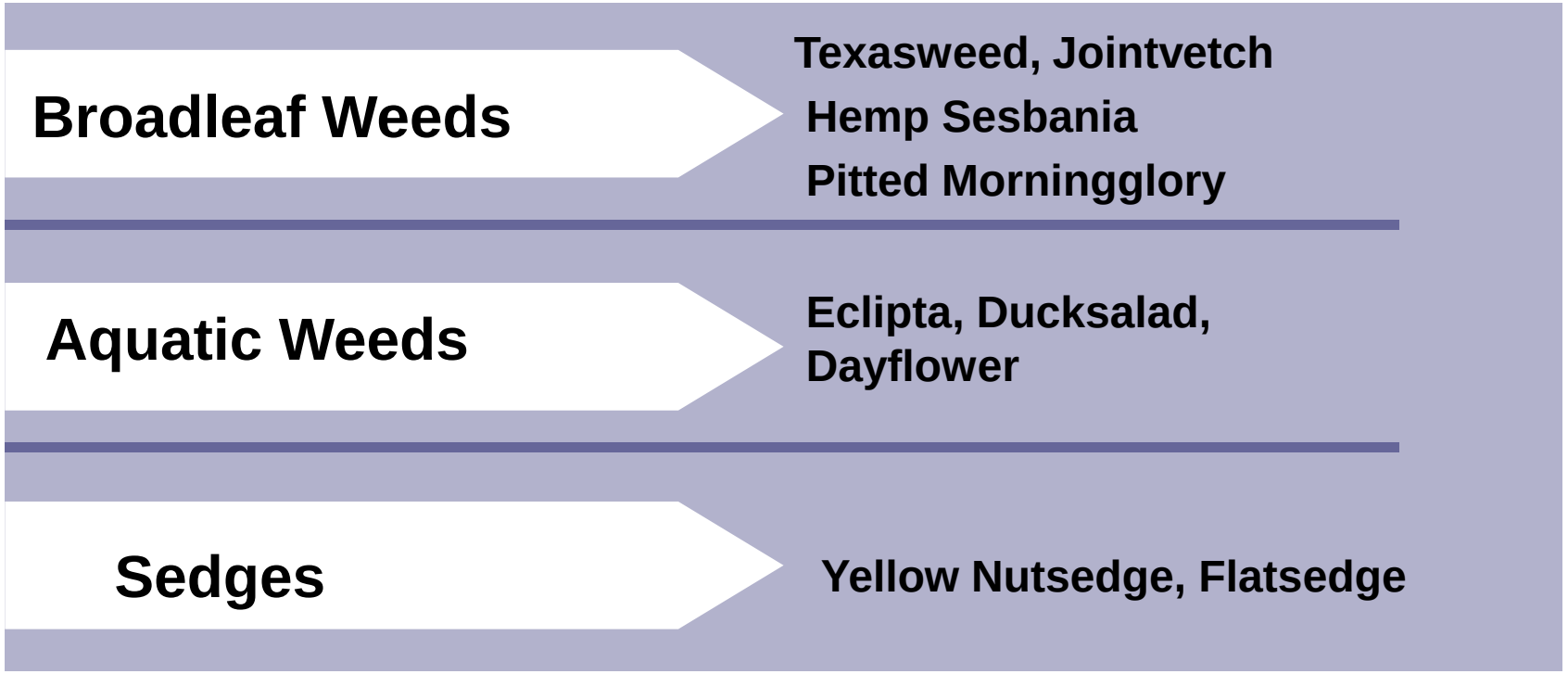


- Preemergence 4.0 – 6.4 oz/A
- Postemergence 3.2 – 4.0 oz/A + approved surfactant
- Sequential Program – 3.2 oz pre followed by 3.2 oz post
- Dry-Seeded & Water-Seeded
- Conventional & Clearfield
- Ground & Air
- Herbicide Compatible - Bolero, Regiment, Command, Newpath, propanil, Facet, Prowl

Key Rice Weeds Controlled by League

- Dayflower
- Ducksalad
- Eclipta
- Hemp Sesbania
- Jointvetch (Indian, Northern)
- Pigweed [1]
- Pitted Morningglory
- Redstem (postemergence)
- Rice Flatsedge
- Ricefield Bulrush (preemergence)
- Texasweed
- Yellow Nutsedge

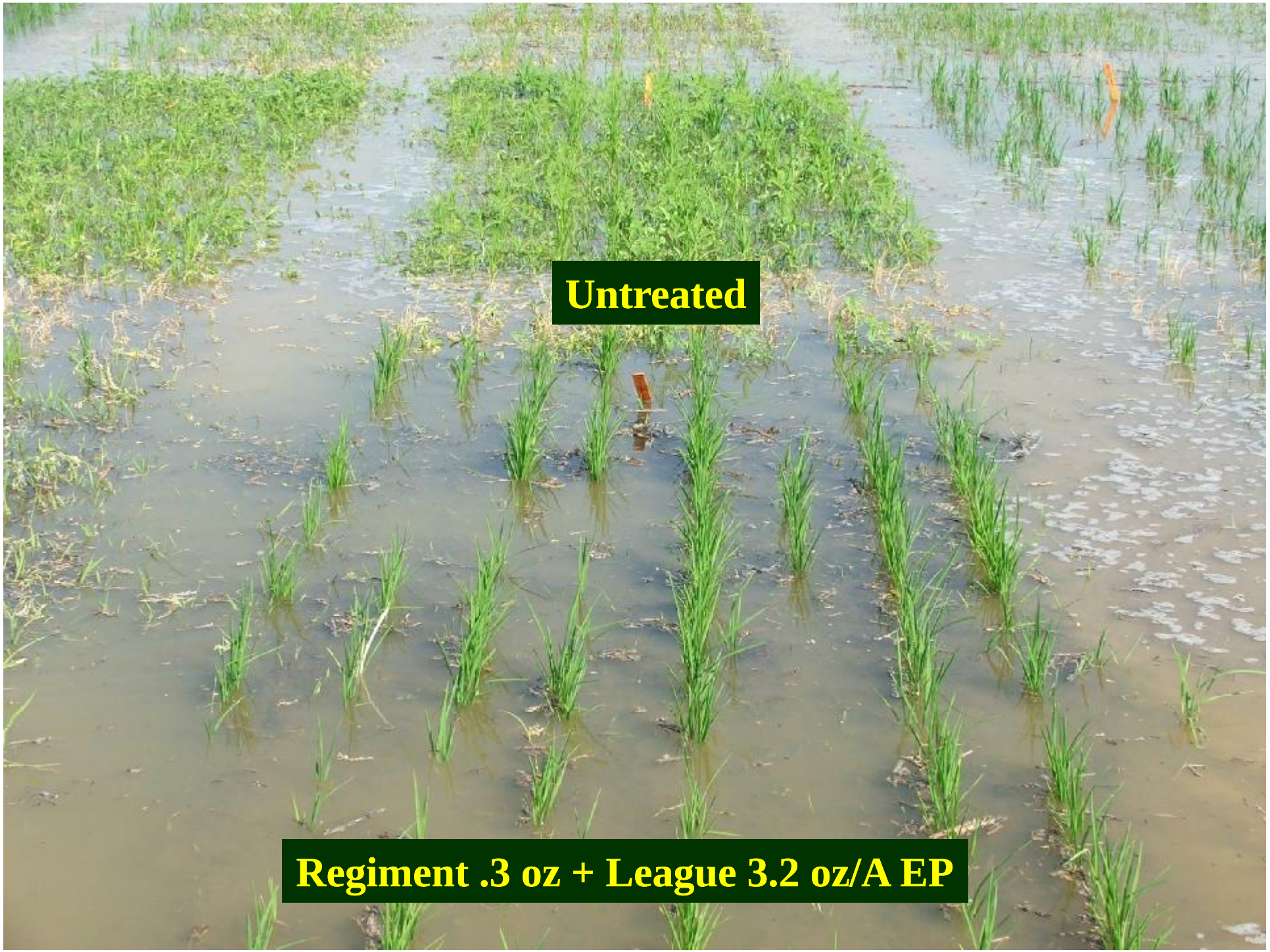
[1] Does not control ALS resistant species

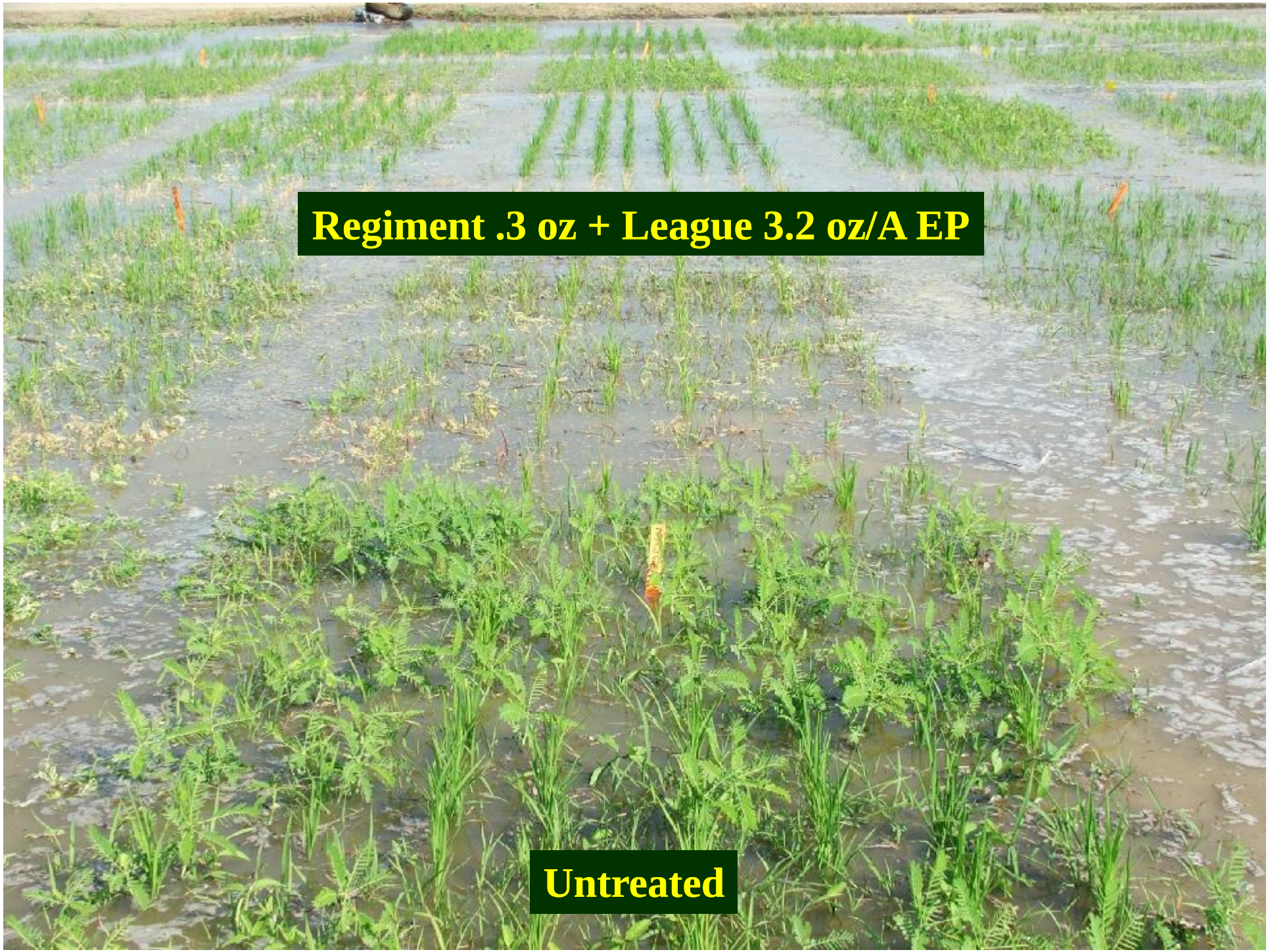
Untreated Check

League 5.0 oz/A + Command


Command
League 5 oz/A + Command
UTC
League 5.0/A oz


Untreated


Untreated
Regiment .3 oz + League 3.2 oz/A EP


Regiment .3 oz + League 3.2 oz/A EP
Untreated


Regiment .3 oz + League 3.2 oz/A EP
Stunted TX weed below water

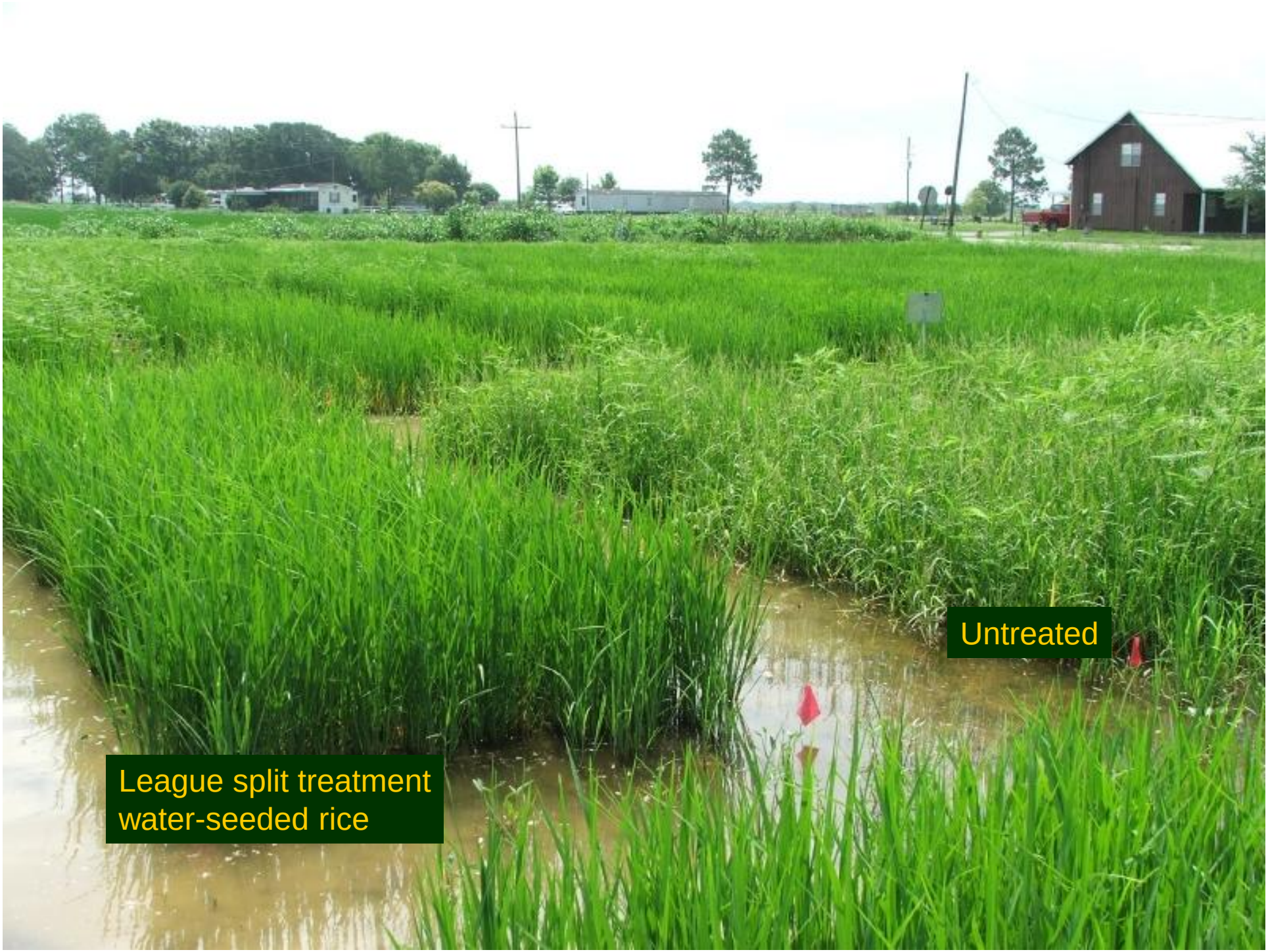

League 4.0 oz/A post – yellow nutsedge


Texasweed seedlings, controlled after field watered
League 4.0 oz/A early-post


Untreated check – heavy hemp sesbania, yellow nutsedge and barnyardgrass; light Texasweed, jointvetch, gatorweed


Split treatment (3.2 oz + Command pre fb 3.2 oz + Regiment 0.3 oz E.P.
only weeds present were a few gatorweeds and late-emerging barnyargrass


Check
Check
League split treatment


Untreated
League split treatment
water-seeded rice

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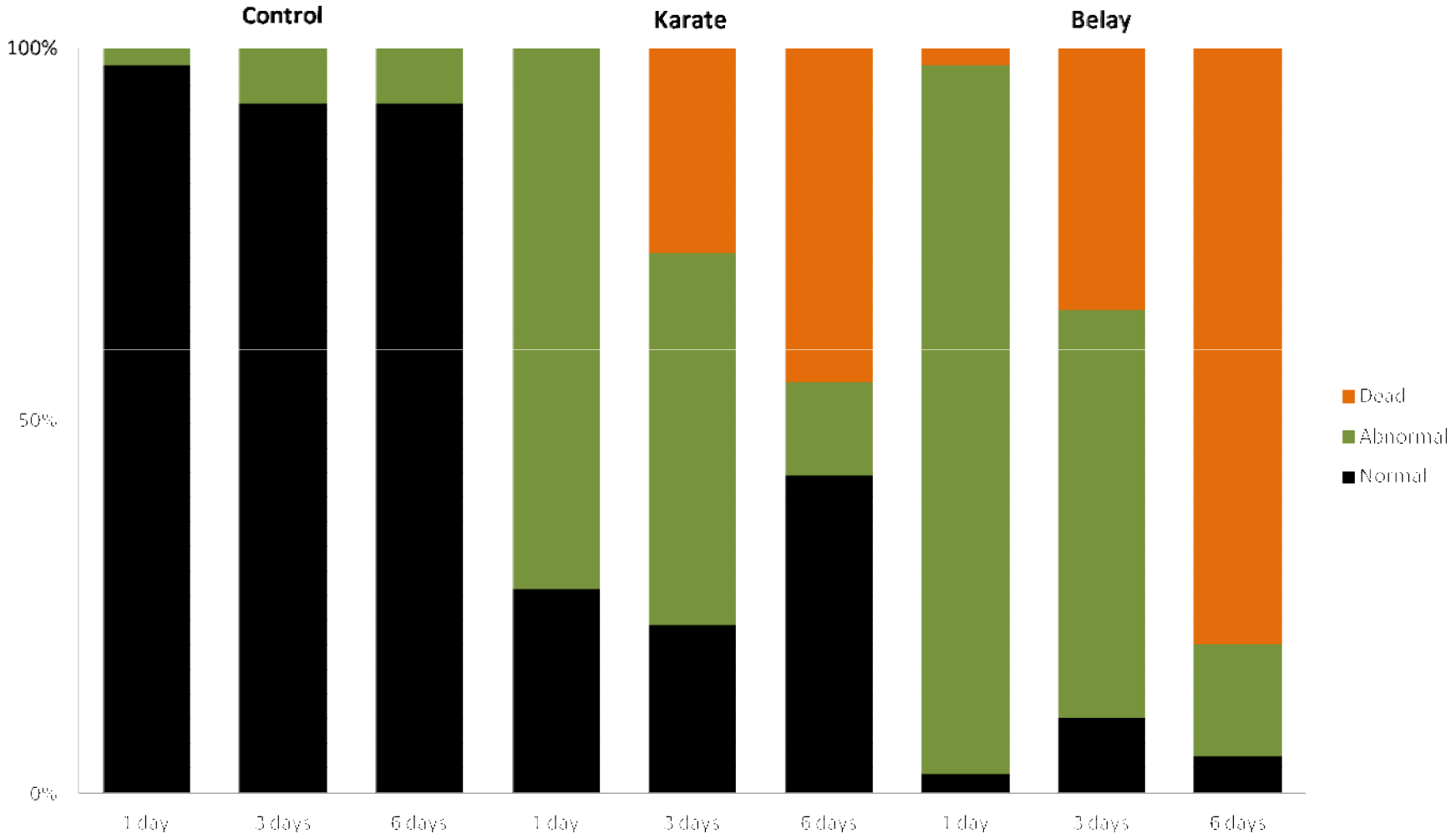
- Clothianidin – neonic
- 4.5 fl oz/A
- Rice water weevil control
- Systemic and contact activity
- Pre or post flood
- Dry-seeded or water-seeded
- Up to 3rd tiller
- Excellent pyrethroid alternative
  - Longer application window (7 days pre-flood - 10 days post)
  - Resistance management – different AI/MOA

Why Belay?



Srinivas K. Lanka and Michael Stout, LSU AgCenter

RWW control in dry-seeded rice

Dr. Mo Way, Beaumont, TX, 2011

Treatment	Rate (fl oz/A)	Timing [a]	RWW/5 cores		Yield (lb/A)
			Jun 21	Jul 1	
Untreated	---	---	94 a	34 a	6091 c
Karate Z + NIS[b]	0.03 lb ai/A + 0.15% v/v	BF	21 b	28 a	6887 b
Belay 2.13SC + NIS	3.5 + 0.15 % v/v	BF	5 cd	7 cd	7247 ab
Belay 2.13SC + NIS	4.5 + 0.15 % v/v	BF	2 d	4 d	7372 ab

[a] BF = before flood

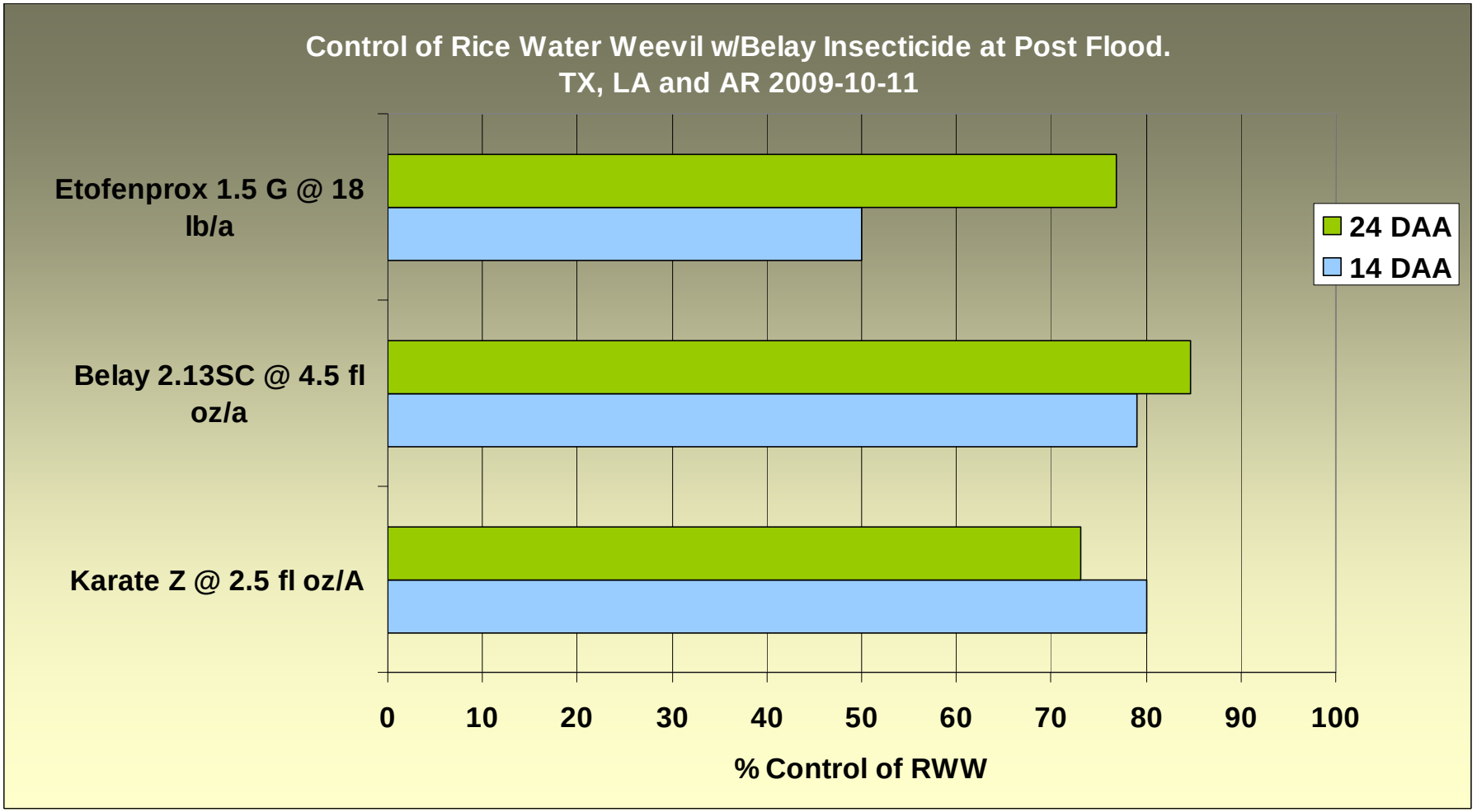
[b] NIS = non-ionic surfactant (Induce)

Belay control of RWW, dry-seeded

Dr. Mike Stout, Crowley, LA 2011

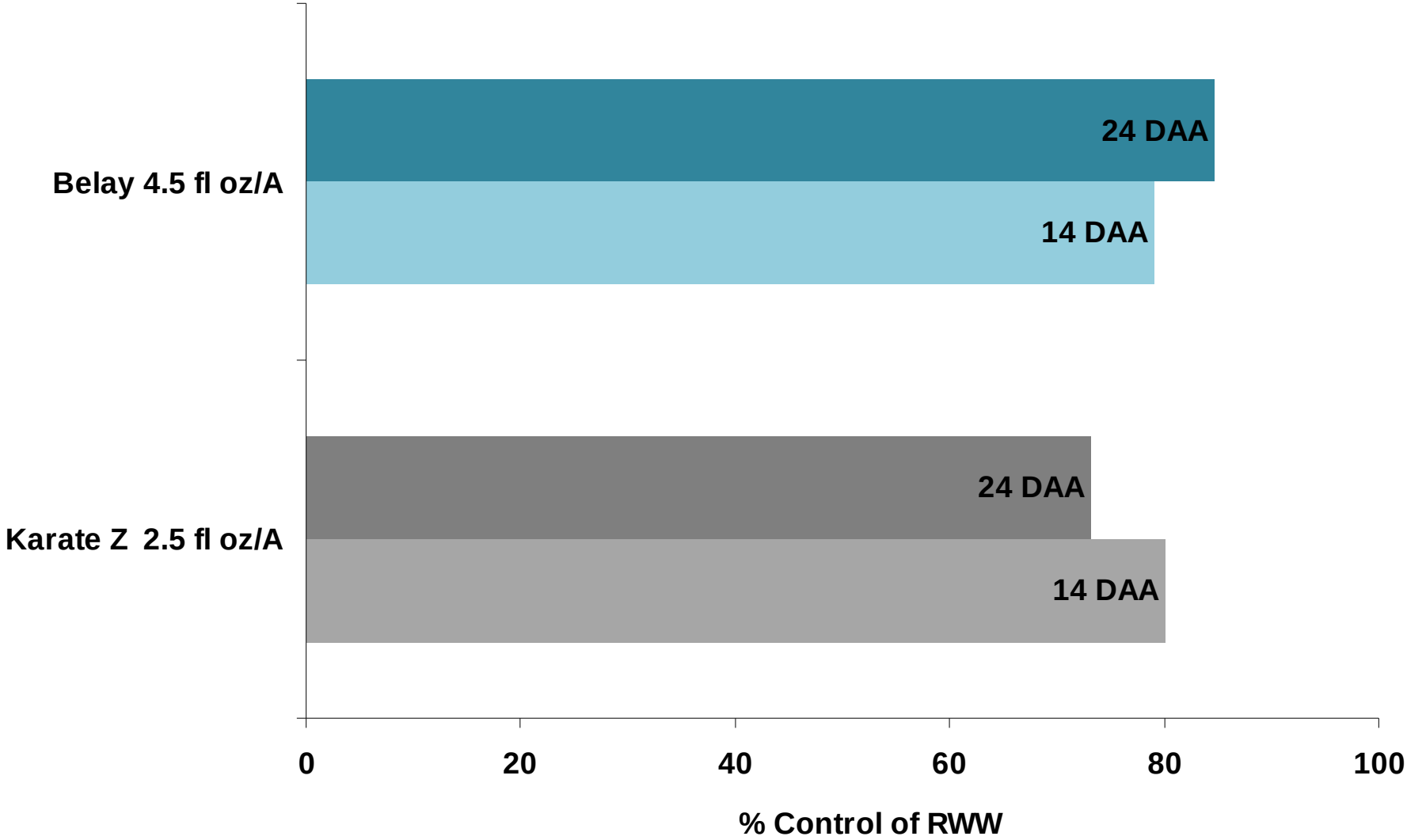
Densities of rice water weevil larvae			
Treatment	Larvae per core sample		
	14 DAF	20 DAF	28 DAF
UTC	0.3	8.4	27.3
Belay 4.5 oz/A Pre-flood	0.5	6.1	10.4
Karate 0.03 lb ai/A Pre-flood	0.6	3.7	25.7
Cruiser ST 7.0 oz/cwt	0.0	3.3	17.1

Belay as a post-flood application for RWW



RWW Post-flood

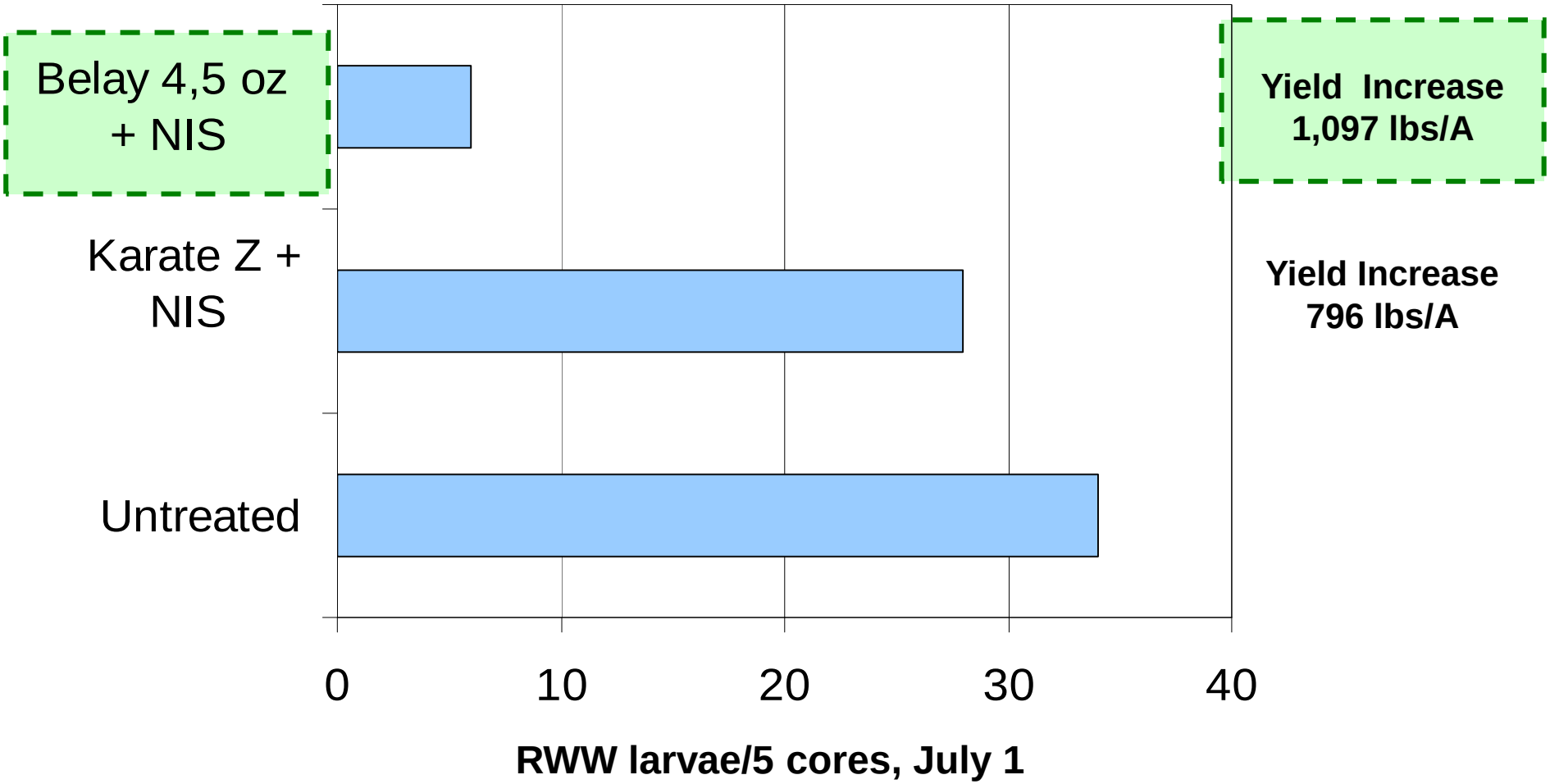
Dr. Mo Way, Beaumont, TX 2009



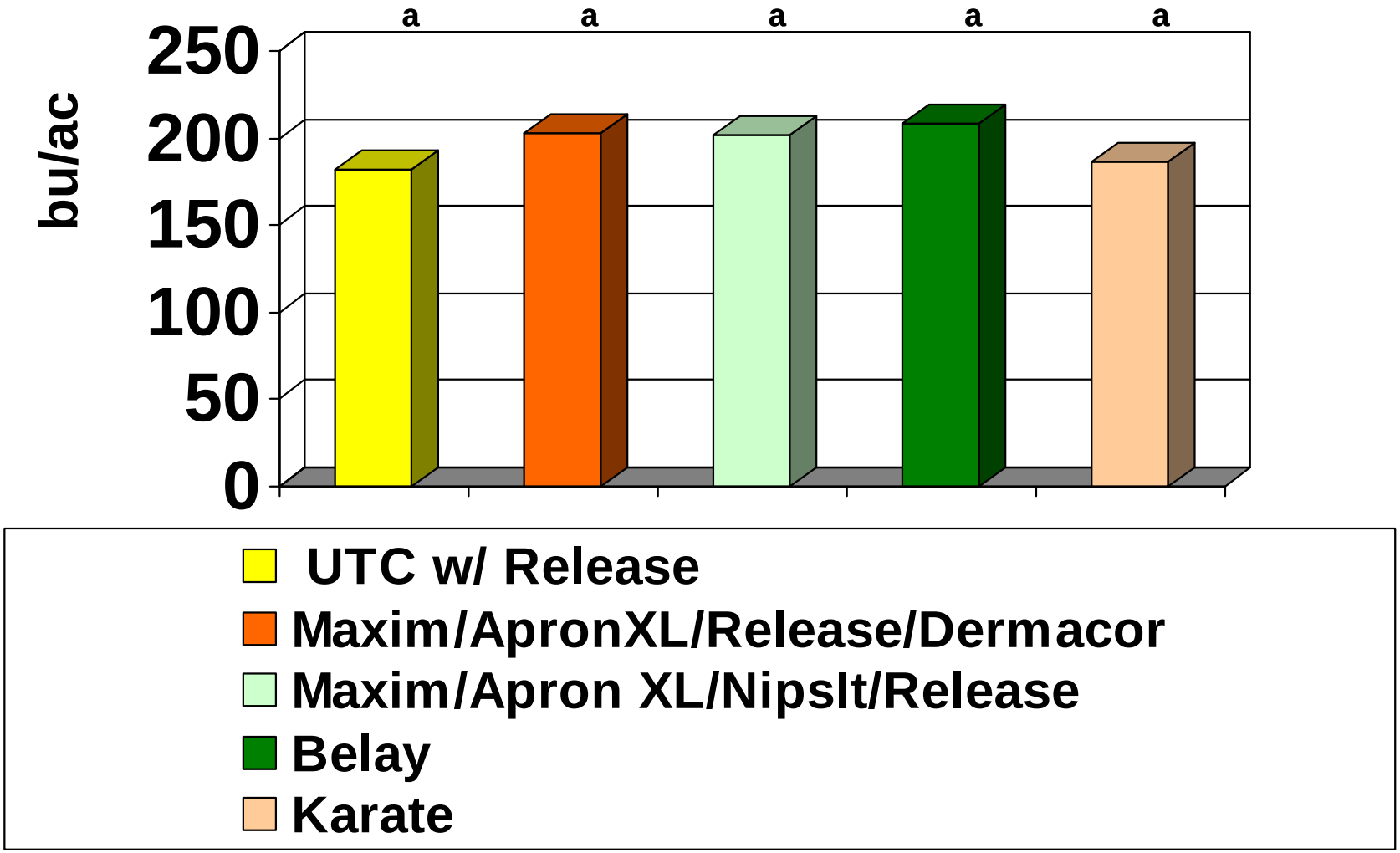
Belay for the control of RWW

Foliar program, delayed post-flood timing 10 days

Dr. Mo Way, Beaumont, TX,2011



Belay Insecticide yields compared to STs (2010)



Summary across 8 locations (MS-3, AR, MO, TX-2, LA)

Belay control of RWW, water-seeded

Dr. Mike Stout, Crowley, LA 2009

Densities of rice water weevil larvae			
Treatment	Larvae per core sample		
	May 21	May 28	June 4
UTC	2.6	13.0	10.1
Belay 5 oz/A Post-flood	1.2	1.8	4.1
Dinotefuran G 150 gm ai/A Post-flood	2.8	2.6	5.4
Dinotefuran G 150 gm ai/A Split	0.3	2.4	5.1

Belay control of RWW, water-seeded

Dr. Mike Stout, Crowley, LA 2011

Densities of rice water weevil larvae			
Treatment	Larvae per core sample		
	I coring (21 DPF***)	II coring (28 DPF)	III coring (35 DPF)
UTC	3.8 ± 1.0 a	10.8 ± 2.9 a	8.9 ± 2.0
Karate 5 DAF	2.3 ± 0.7 a	3.5 ± 0.7 b	5.6 ± 1.0
Belay 4.5 fl oz/A 5 DAF	1.4 ± 0.7 a	2.5 ± 1.4 b	5.3 ± 1.4
Belay 4.5 fl oz/A 12 DAF	0.8 ± 0.3 b	1.8 ± 0.9 b	2.8 ± 0.7

NipsIt INSIDE® Insecticide

VALENT®

- Clothianidin (lowest neonic water solubility)
- Registered for use in soybeans, sorghum, canola, sugar beets, cereals
- Rice registration approved August, 2012
- Dry-seeded only
- 1 application rate regardless of seeding rate
  - Low use rate with excellent efficacy = good ROI
- Proven control of rice water weevil, grape colaspis and chinch bug
  - 2011 and 2012 EUP in Arkansas, Louisiana, Mississippi and Texas
  - Near 60,000 acres treated over 2 years

Rice EUP 2011 & 2012

- Varieties
  - 24 total varieties
  - 9 conventional bred varieties
  - 6 Clearfield varieties
  - 9 total hybrids
    - 7 Clearfield hybrids

- Seeding Rates
  - Ranged from 22 – 106 lbs/Ac

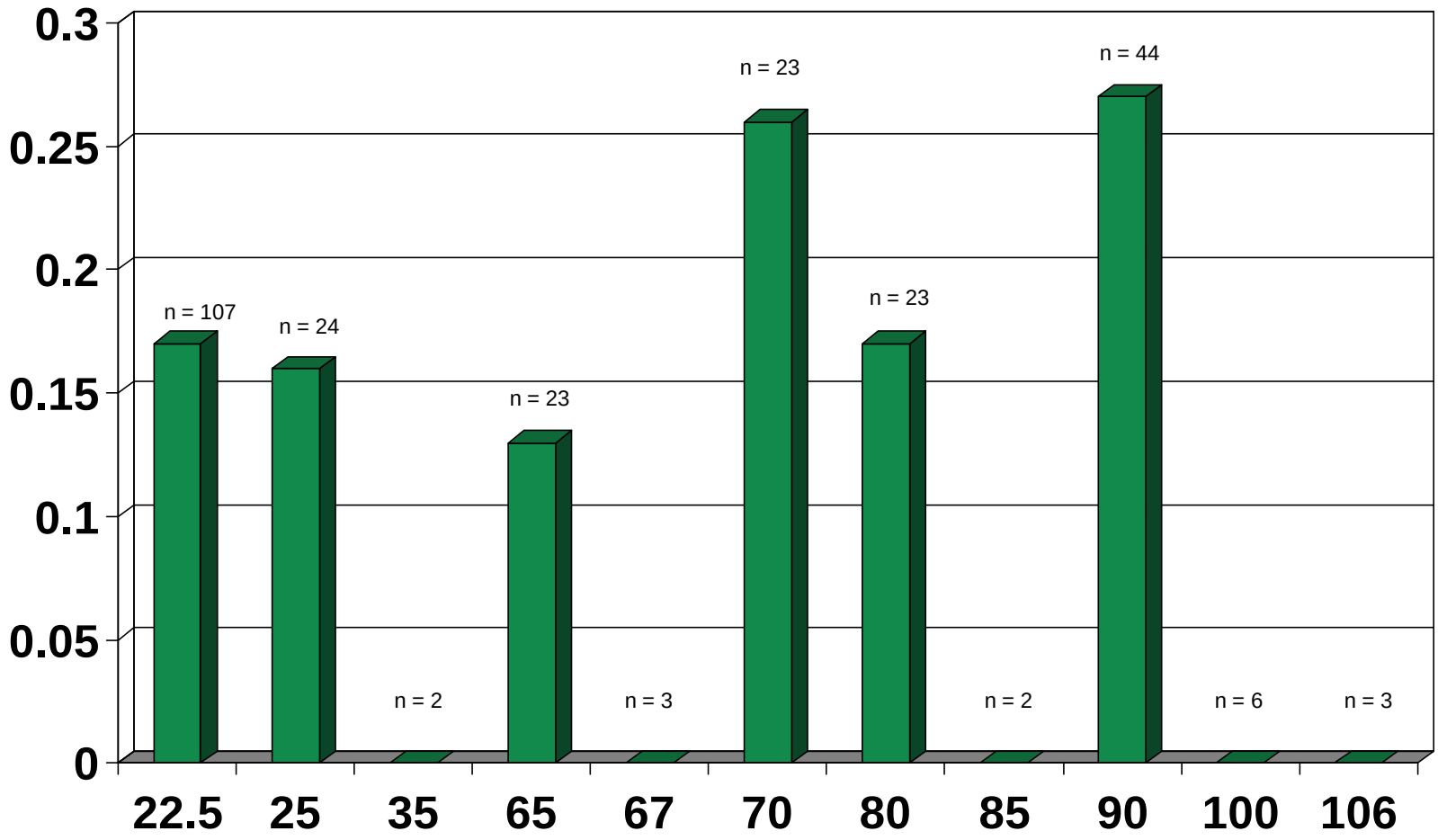
Rice EUP Results

2011 & 2012 Overall average

0.26 larvae / core

2012 Results by seeding Rate

Avg. larvae/core



Seeding rate (lbs seed/A)

NipsIt INSIDE Improves Yield

Treatment	Lake Hogue Poinsett Co.	Price Bros. Prairie Co.	Hunter Woodruff Co.	3 Location Mean (Bu/A)
Untreated	141.3 bcd	224.9 ab	159.4 bc	175 c
Dermacor 2.2 fl oz/cwt	128.6 d	228.0 ab	176.0 c	176 c
Cruiser 3.3 fl oz/cwt	152.0 a-d	227.1 ab	167.8 ab	182 abc
NipsIt INSIDE 1.92 fl oz/cwt	176.3 a	218.8 b	167.5 ab	188 ab

Dr. Gus Lorenz, et al., University of Arkansas – 2009 (3 locations)

NipsIt INSIDE RWW Control & Yield

Treatment	RWW/5 cores June 15	RWW/5 cores June 26	Yield (lb/A)
Untreated	77.5 a	41.3 a	6,321
Dermacor 2.5 fl oz/cwt	2.5 c	0.3 c	6,903
Cruiser 3.6 fl oz/cwt	11.0 b	13.8 b	6,614
NipsIt INSIDE 1.92 fl oz/cwt	1.5 c	6.0 bc	7,140 N.S.

Dr. Mo Way, Texas A&M University, 2012

NipsIt INSIDE RWW Control

Treatment	RWW/core 22 Days PF	RWW/core 29 Days PF
Untreated	10.4 a	7.3 a
Dermacor 2.5 fl oz/cwt	0.6 c	2.0 b
Cruiser 3.6 fl oz/cwt	7.0 ab	2.5 b
NipsIt INSIDE 1.92 fl oz/cwt	4.8 b	2.8 b

Dr. Mike Stout, LSU, 2012

NipsIt INSIDE – Chinch Bug Protection

Treatment	Rate[a] (gai/100 KG seed)	% Mortality[b]
Untreated	-	10 b
NipsIt INSIDE	25	87 a
NipsIt INSIDE	100	95 a
NipsIt INSIDE	150	90 a

[a] Commercial rate of NipsIt INSIDE is 75 gai/100 KG seed (= 1.92 fl oz/cwt seed).
[b] % mortality based on 5 chinch bugs / cage after 48 hours exposure and all missing insects considered dead.
Means in a column followed by the same letter are not significantly different (P = 0.05, ANOVA and LSD.
Dr. Mo Way et al, TAMU, Beaumont, TX. 2008 Greenhouse Study

Rice Product Update

Bill Odle and John Bordlee

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- Redstem (postemergence)
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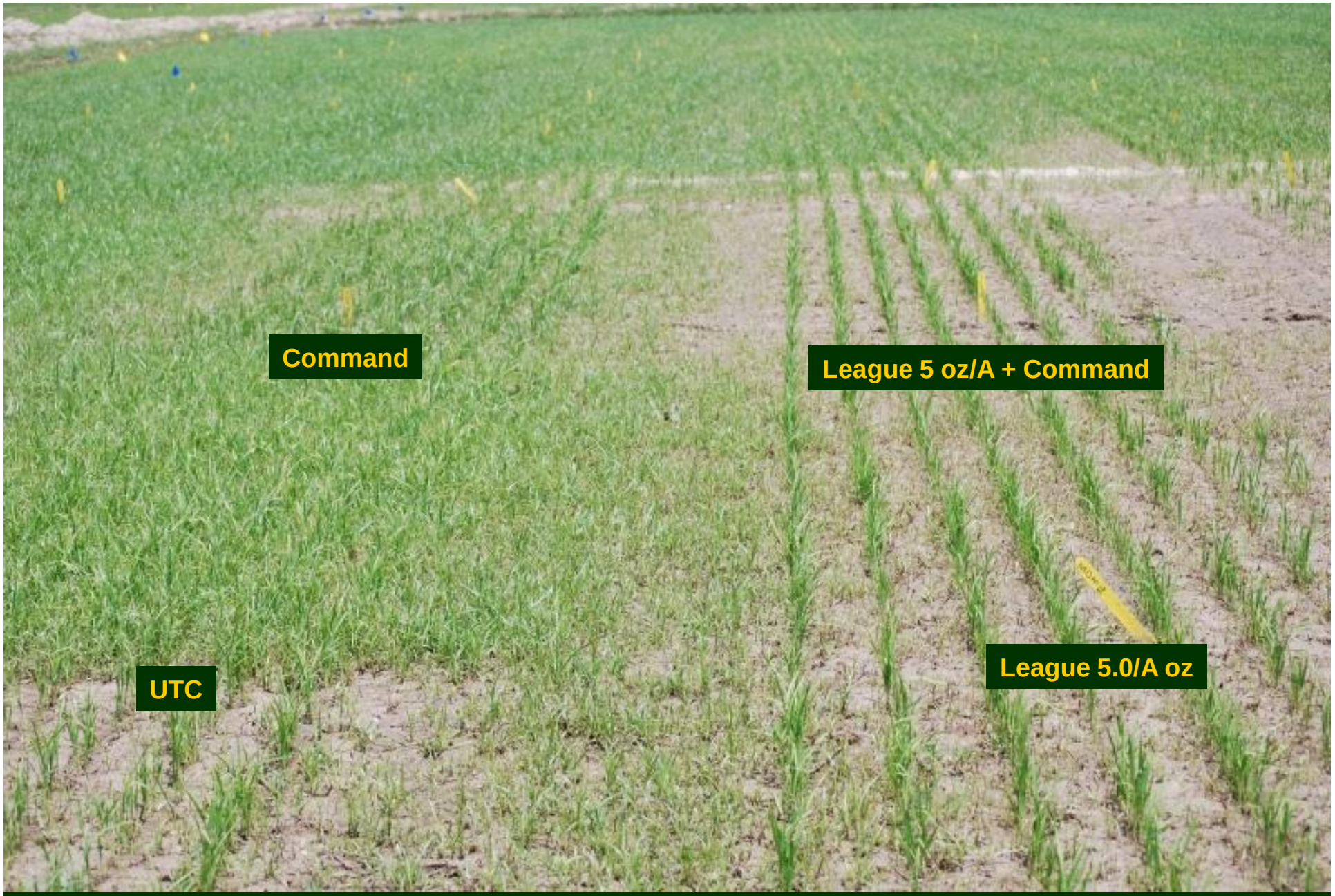
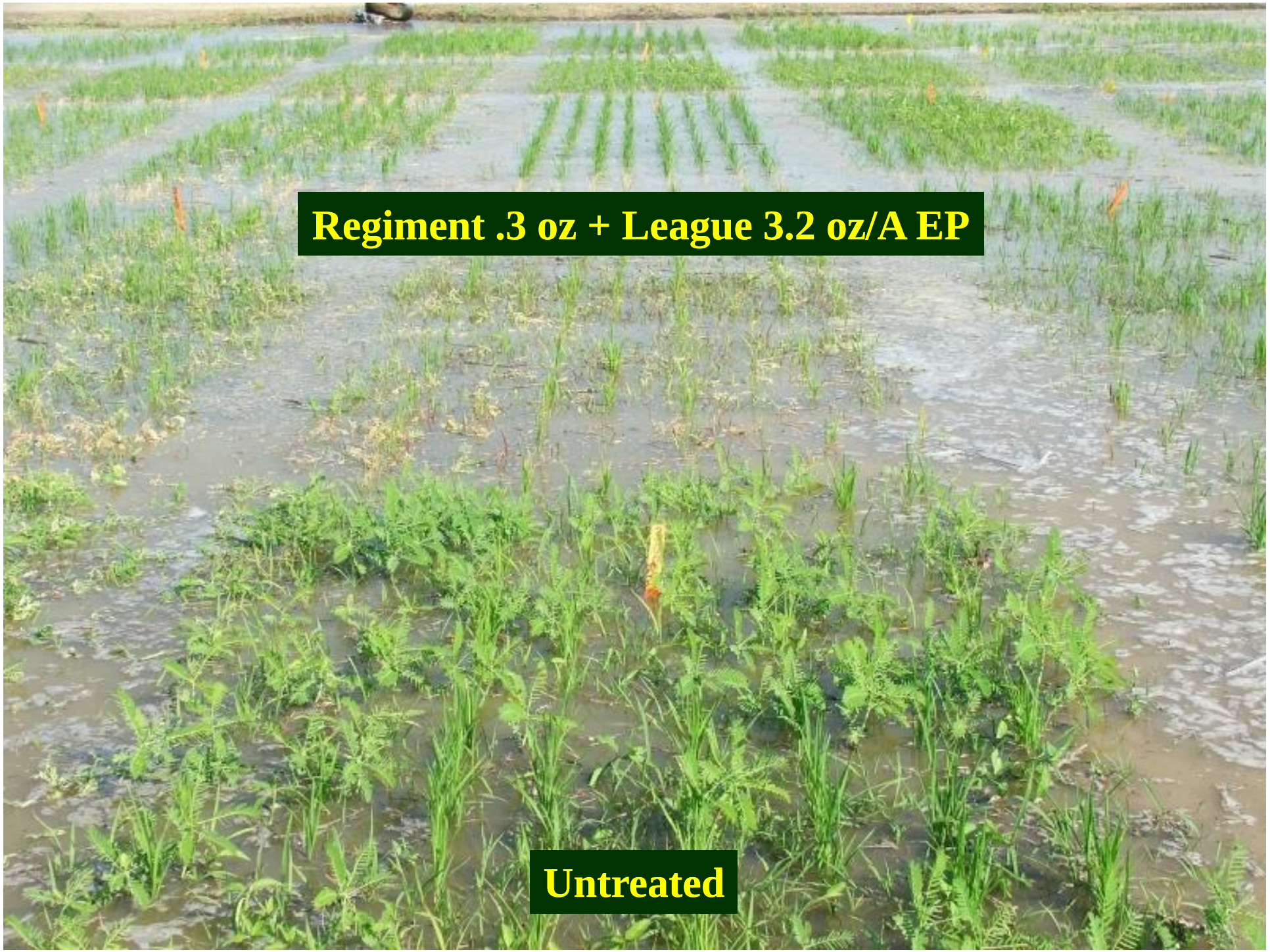
[1] Does not control ALS resistant species

Untreated Check

League 5.0 oz/A + Command


Command
League 5 oz/A + Command
UTC
League 5.0/A oz


Untreated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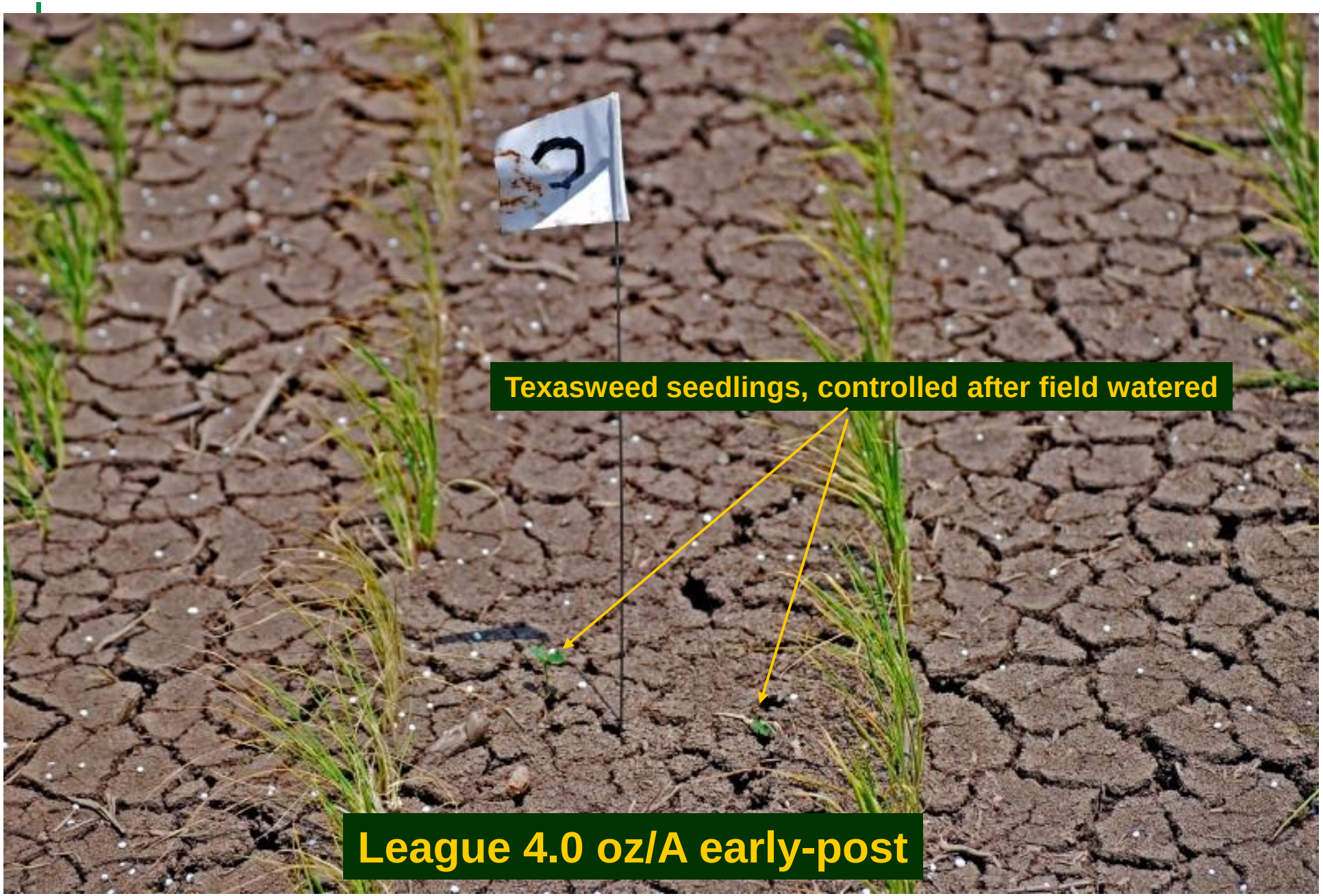
League 4.0 oz/A post – yellow nutsedge


Texasweed seedlings, controlled after field watered
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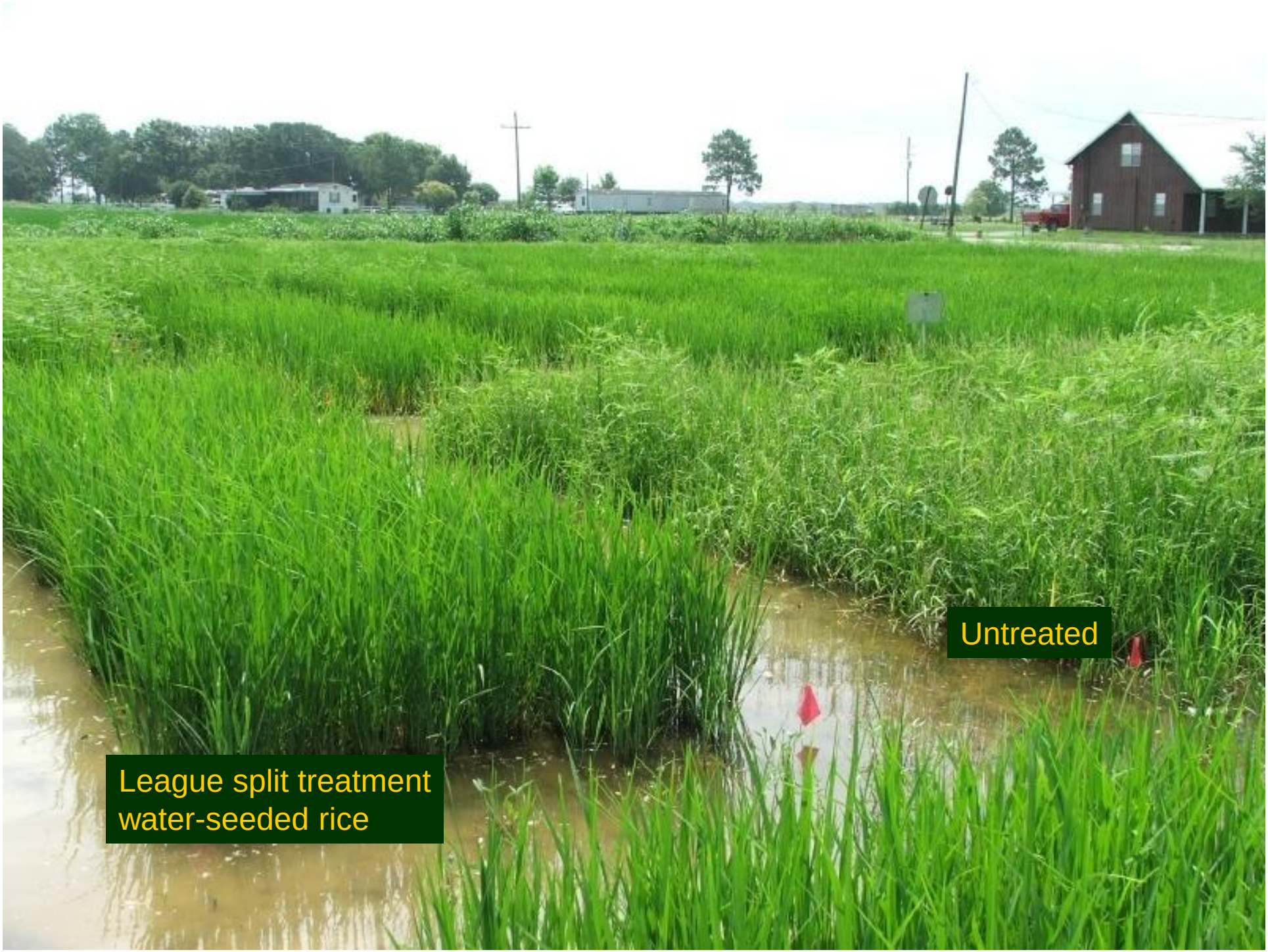
Check
Check
League split treatment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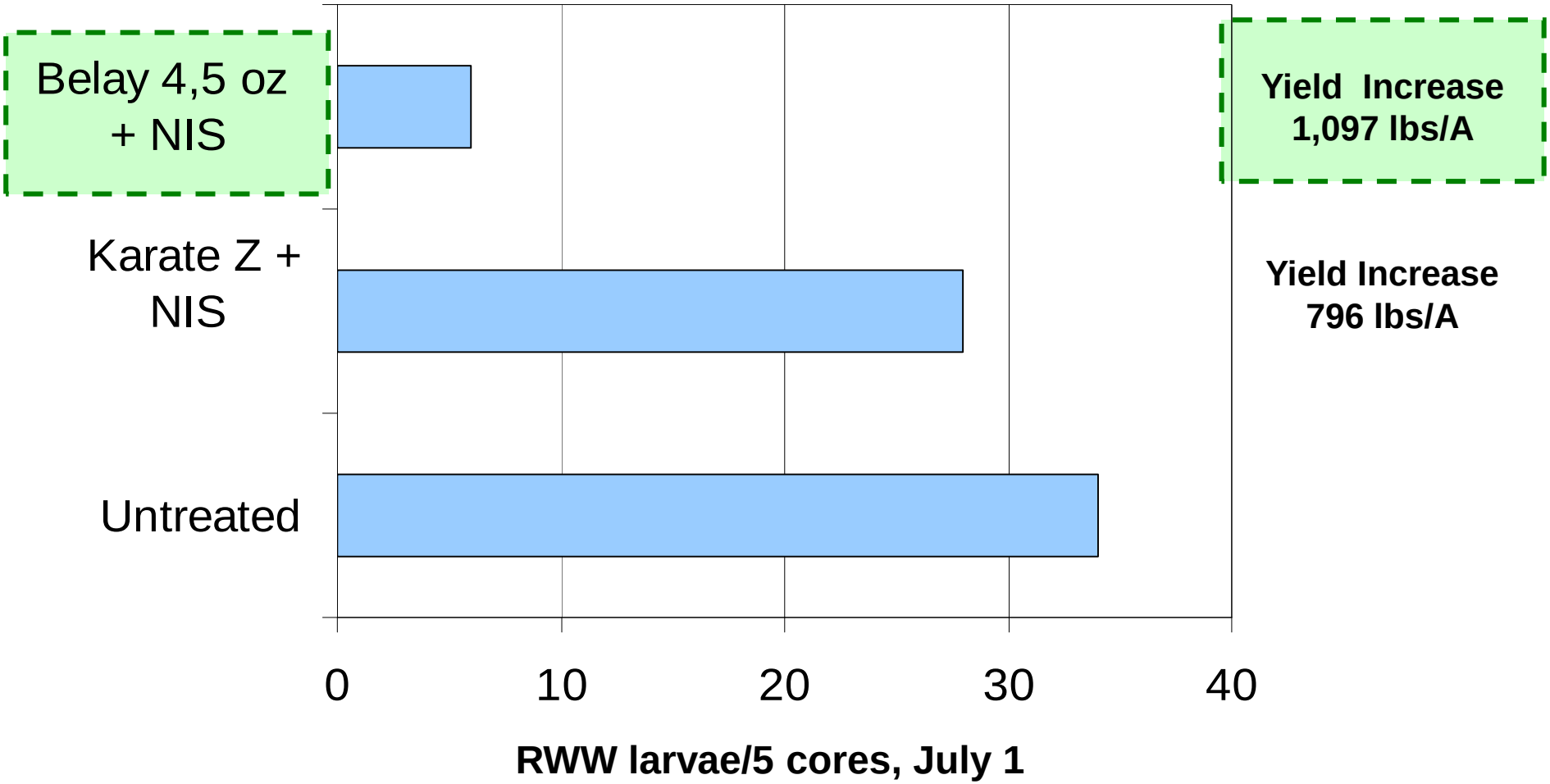
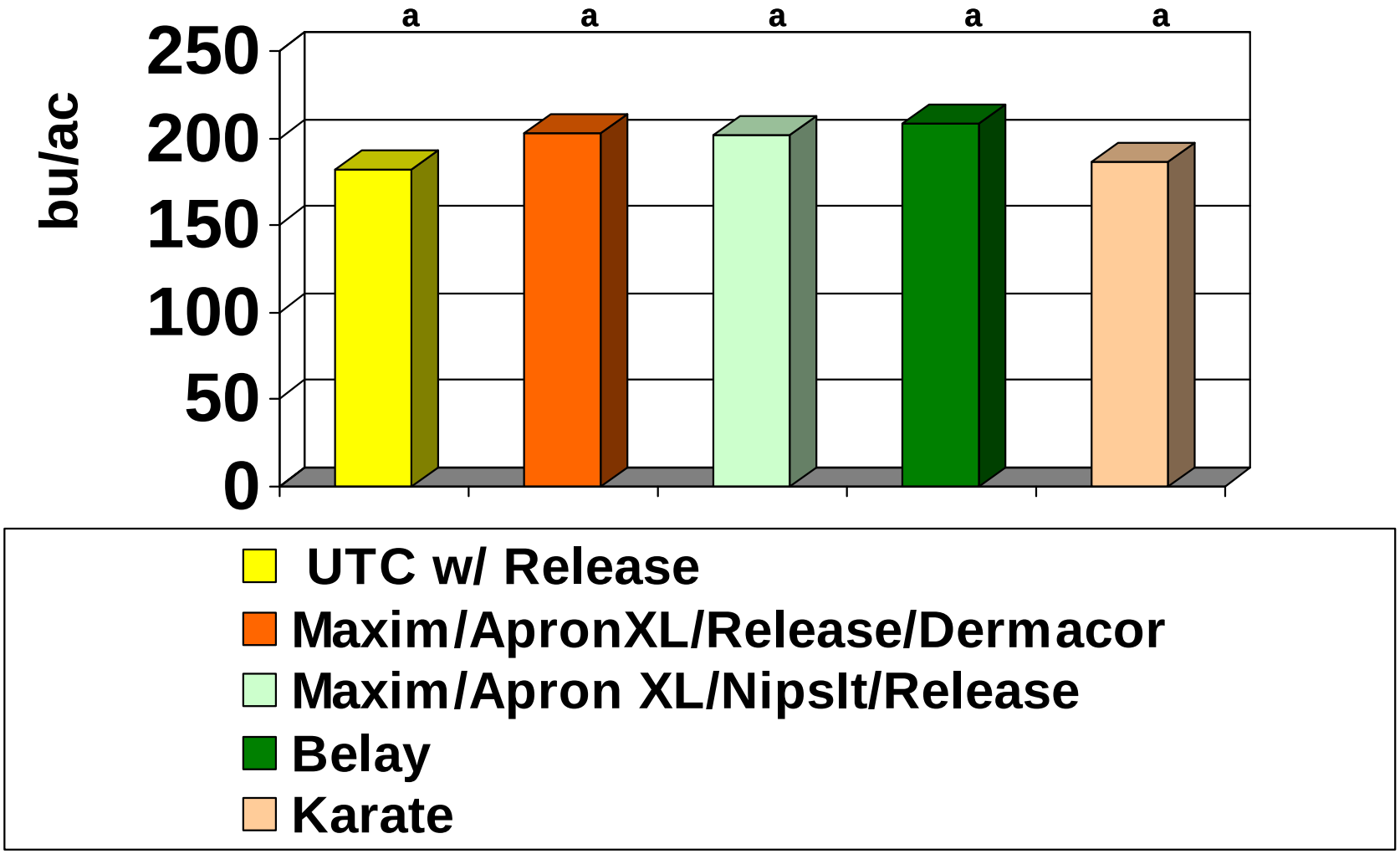


Belay Insecticide yields compared to STs (2010)



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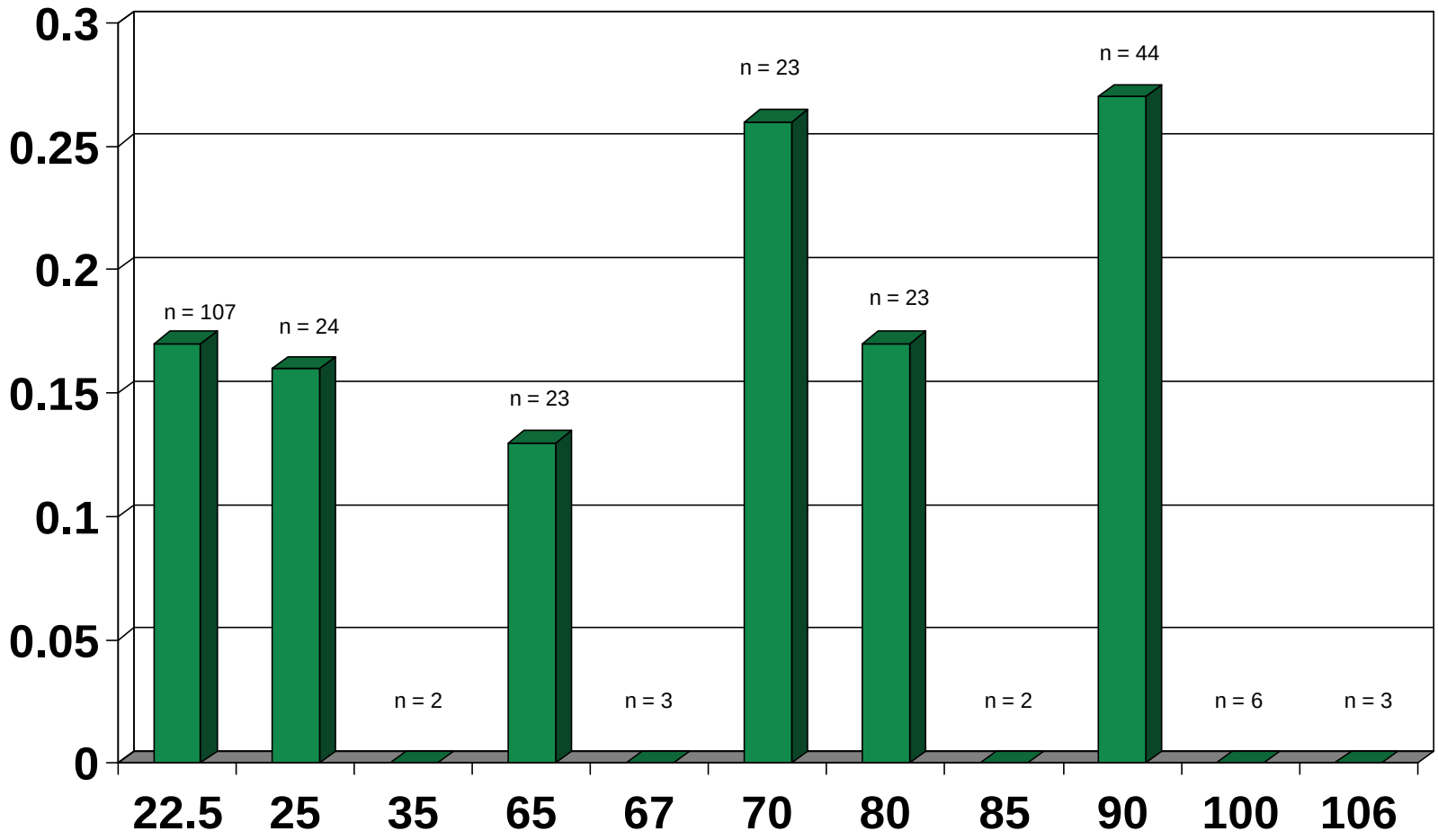

Seeding rate (lbs seed/A)

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