Sugarcane Herbicide and Weed Control Research

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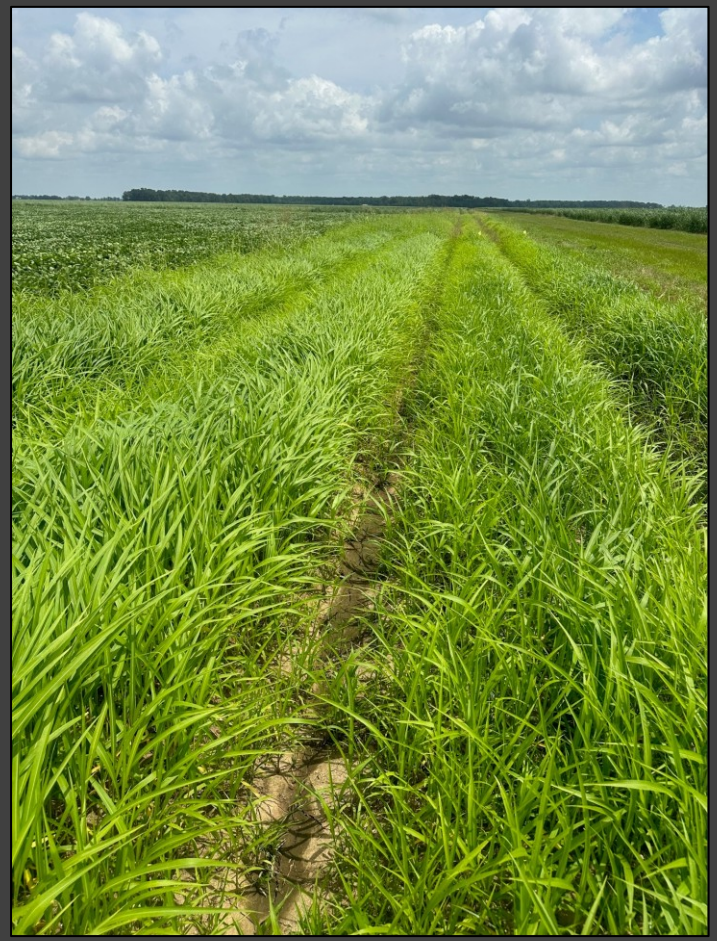
Got Itchgrass?

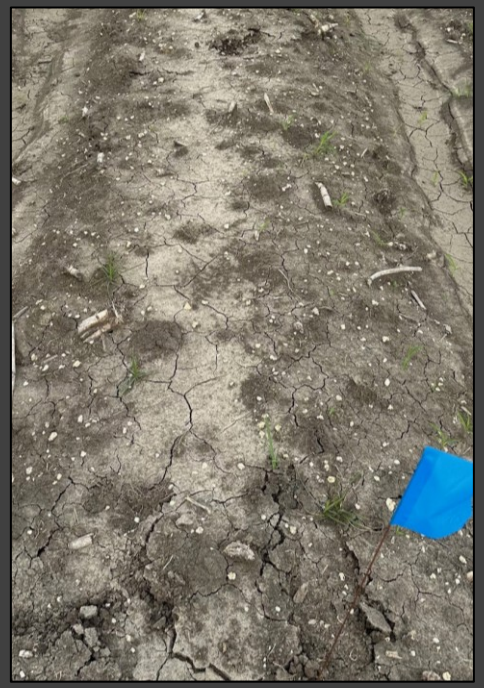


2025 Herbicide Screening Trials

- **Postemergence Trials in Iberia Parish**
  - Fallow field
    - Herbicide efficacy on itchgrass
      - 2-6” and 8-10” tall itchgrass
    - Herbicide rate evaluation
  - Flat fan XR11002VS nozzles, 15 GPA
  - RCBD – 4 reps

Postemergence Control of 2-6” Tall Itchgrass – 14 DAT

Nontreated



Reviton at 3 oz/A

HAI-333 at 32 oz/A

Liberty ULTRA at 19 oz/A

Liberty ULTRA at 32 oz/A

Note: Reviton, HAI-333, and Liberty Ultra aren’t labeled in sugarcane

MSO at 1% v/v included in all treatments except Liberty Ultra

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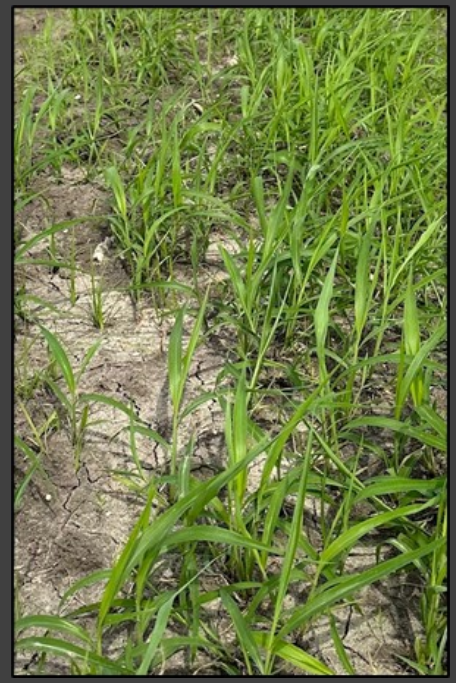
Postemergence Control of 2-6” Tall Itchgrass – 14 DAT

Nontreated

Gramoxone 2.0 at 48 oz/A

Quinclorac at 4 qt/A

Armezon at 2 oz/A



Armezon at 1 oz/A
+ Trycera at 45 oz/A

MSO at 1% v/v included in all treatments

Note: Quinclorac isn’t labeled in sugarcane

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Postemergence Control of 8-10” Tall Itchgrass – 14 DAT

Nontreated

Reviton at 3 oz/A

HAI-333 at 32 oz/A

MSO at 1% v/v included in all treatments

Note: Reviton and HAI-333 aren’t labeled in sugarcane

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Postemergence Control of 8-10” Tall Itchgrass – 14 DAT

Nontreated

Liberty ULTRA at 19 oz/A

Liberty ULTRA at 32 oz/A

Gramoxone 2.0 at 48 oz/A

MSO at 1% v/v included with Gramoxone

Note: Liberty Ultra isn’t labeled in sugarcane

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Postemergence Control of Itchgrass – 14 DAT

Treatment	Rate/A	% Itchgrass Control (2-6”)	% Itchgrass Control (8-10”)
Reviton	3 oz	94.5 a[a]	50.0 c
HAI-333 + AMS	32 oz + 3 lb	97.8 a	95.3 a
Liberty Ultra + AMS	19 oz + 3 lb	94.5 a	77.5 b
Liberty Ultra + AMS	32 oz + 3 lb	97.3 a	92.5 a
Gramoxone 2.0	48 oz	82.5 b	47.5 c
Quinclorac	128 oz	0.0 c	-
Armezon	2 oz	0.0 c	-
Armezon + Trycera	1 oz + 45 oz	0.0 c	-
Nontreated		0.0 c	0.0 d

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

Note: Reviton, HAI-333, Liberty Ultra, and Quinclorac aren’t labeled in sugarcane

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Reviton Efficacy on 2-6” Tall Itchgrass – 12 DAT

Reviton at 1 oz/A

Reviton at 2 oz/A

Reviton at 3 oz/A

MSO at 1% v/v included in all treatments

Note: Reviton isn’t labeled in sugarcane

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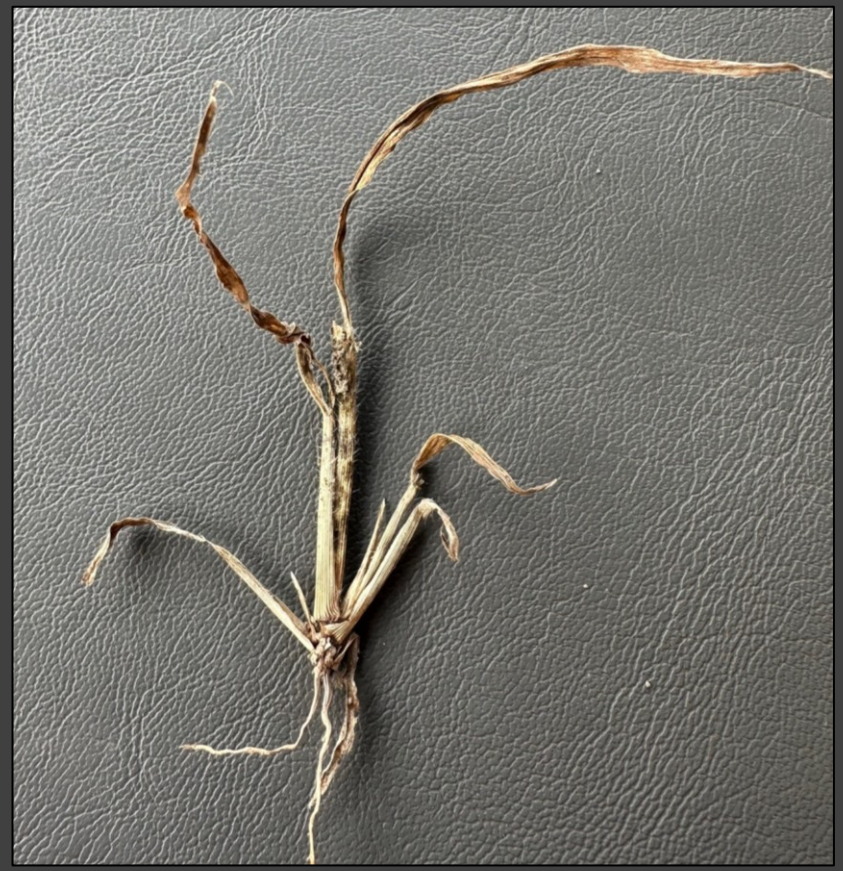
Reviton Efficacy on 2-6” Tall Itchgrass – 12 DAT

Reviton at 1 oz/A

Reviton at 2 oz/A



Reviton at 3 oz/A

MSO at 1% v/v included in all treatments

Note: Reviton isn’t labeled in sugarcane

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Reviton Efficacy on 2-6” Tall Itchgrass – 27 DAT

Treatment	Rate/A	% Itchgrass Control (2-6”)
Reviton	1 oz	63.3 c[a]
Reviton	2 oz	71.7 b
Reviton	3 oz	95.0 a
Nontreated		0.0 d

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

MSO at 1% v/v included in all treatments

Note: Reviton isn’t labeled in sugarcane

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2025 Post-Directed Herbicide Trials

- **<u>Sugarcane yield response to herbicides applied Post-directed</u>**
  - Iberia Parish (L 15-306 plantcane)
  - St. James Parish (first stubble L 01-299)
  - Applied on June 10th
  - Average crop height of 36 inches (from soil to the top visible dewlap)
  - 3 row plots, applied to the bottom 12 inches of the cane
  - Two OC04 nozzles, 15 GPA
  - RCBD- 4 reps

2025 Post-Directed Herbicide Trial – Iberia (L 15-306 plantcane)

Treatment	Rate/A	% Injury 10 DAT	TCA	TRS	SPA
Reviton	3 oz	6.5 c[a]	36.6	259.0	9,500.9
HAI-333 + AMS	32 oz + 3 lb	11.3 b	39.0	245.1	9,562.2
Liberty Ultra + AMS	19 oz + 3 lb	10.0 b	38.0	256.7	9,766.1
Liberty Ultra + AMS	32 oz + 3 lb	10.0 b	38.1	240.3	9,161.0
Gramoxone 2.0	48 oz	18.8 a	38.4	247.2	9,500.6
Nontreated		0.0 d	37.4	253.3	9,469.8
			NS		

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

MSO at 1% v/v included in all treatments except Liberty Ultra.

Note: Reviton, HAI-333, and Liberty Ultra aren't labeled in sugarcane

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2025 Post-Directed Herbicide Trial 10 DAT – Iberia (L 15-306 plantcane)

Nontreated

Reviton at 3 oz/A

HAI-333 at 32 oz/A

Note: Reviton and HAI-333 aren't labeled in sugarcane

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2025 Post-Directed Herbicide Trial 10 DAT – Iberia (L 15-306 plantcane)

Nontreated

Liberty ULTRA at 19 oz/A

Liberty ULTRA at 32 oz/A

Gramoxone 2.0 at 48 oz/A

Note: Liberty Ultra isn't labeled in sugarcane

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2025 Post-Directed Herbicide Trial – St. James (First stubble L 01-299)

Treatment	Rate/A	TCA	TRS	SPA
Reviton	3 oz	29.3	303.0	8,872.2
HAI-333 + AMS	32 oz + 3 lb	32.0	309.0	9,871.1
Liberty Ultra + AMS	19 oz + 3 lb	30.6	310.5	9,494.8
Liberty Ultra + AMS	32 oz + 3 lb	30.4	311.4	9,458.5
Gramoxone 2.0	48 oz	30.5	312.2	9,526.1
Nontreated		29.6	302.1	8,957.9
		NS		

MSO at 1% v/v included in all treatments except Liberty Ultra

Note: Reviton, HAI-333, and Liberty Ultra aren't labeled in sugarcane

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Envoke Efficacy on Itchgrass – 43 DAT

Treatment	Rate/A	% Itchgrass Control (2-4”) Pointe Coupee	% Itchgrass Control (4-6”) Iberville
Envoke	0.3 oz	81.3 c[a]	50.0 b
Envoke	0.6 oz	88.8 b	50.0 b
Envoke + Atrazine + Impact	0.3 + 64 oz + 1 oz	67.5 d	33.8 c
Envoke + Asulam	0.3 + 64 oz	97.3 a	88.8 a
Nontreated		0.0 e	0.0 d

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

Note: Impact isn’t labeled in sugarcane

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Envoke Efficacy on Itchgrass – 43 DAT

Nontreated

Envoke at 0.3 oz/A

Envoke at 0.6 oz/A

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Envoke Efficacy on Itchgrass – 43 DAT

Nontreated

Envoke at 0.3 oz/A + Atrazine at 64 oz/A + Impact at 1 oz/A

Envoke at 0.3 oz/A + Asulam at 64 oz/A

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Command in the Spring?

L 01-299

Command at 3.3 pt/A applied April 9th

12 DAT

HoCP 14-885

April 2025 Application - 54 DAT

Command at 3.3 pt/A

L 01-299

2024/2025 Fall and Spring Applied Herbicide Trial - 299

Treatment	Rate/A	Timing	TCA	TRS	SPA
Command	3.3 pt	Fall	40.3	224.0	9,004.8
Metribuzin	2 lb	Fall	40.7	222.5	9,049.9
Dual II Magnum	1.5 pt	Fall	43.5	227.1	9,876.5
Prowl H_2O	3 qt	Fall	43.6	213.0	9,263.7
Command	3.3 pt	Spring	41.5	219.8	9,092.6
Metribuzin	2 lb	Spring	44.1	212.8	9,363.8
Dual II Magnum	1.5 pt	Spring	44.3	210.9	9,342.6
Prowl H_2O	3 qt	Spring	40.4	222.7	9,005.4
				NS	

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2024/2025 Fall and Spring Applied Herbicide Trial - 885

Treatment	Rate/A	Timing	TCA	TRS	SPA
Command	3.3 pt	Fall	48.5	248.8	12,036.5
Metribuzin	2 lb	Fall	44.0	255.3	11,254.1
Dual II Magnum	1.5 pt	Fall	44.7	255.2	11,464.6
Prowl H_2O	3 qt	Fall	43.9	253.4	11,128.1
Command	3.3 pt	Spring	47.0	241.2	11,356.9
Metribuzin	2 lb	Spring	44.9	239.8	11,030.6
Dual II Magnum	1.5 pt	Spring	45.9	247.6	11,309.9
Prowl H_2O	3 qt	Spring	48.4	249.4	12,082.8
				NS	

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2025 Spring Herbicide Trial

- First stubble L 01-299 and HoCP 14-885 in St. Gabriel
- **Treatments:**
  1. **Command at 3.3 pt/a**
  2. Metribuzin at 2 lb/a
  3. Dual II Magnum at 1.5 pt/a
  4. Prowl H_2O at 3 qt/a
  5. Command at 3.3 pt/a + Metribuzin at 2 lb/a
  6. Command at 3.3 pt/a + Diuron at 3 qt/a
- Applied over-the-top on April 9, 2025
  - Harvested on October 14, 2025 (non-ripened)
- **Max air temperature:**
  - 77.6 °F average seven days before application
  - 74.4 °F on the day of application
  - 77.9 °F average seven days before application

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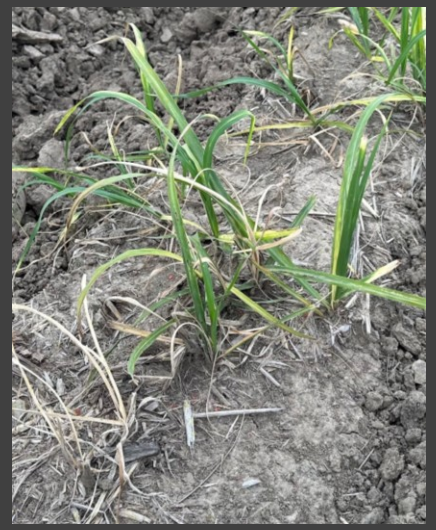
2025 Spring Herbicide Trial – 12 DAT

Command at 3.3 pt/a



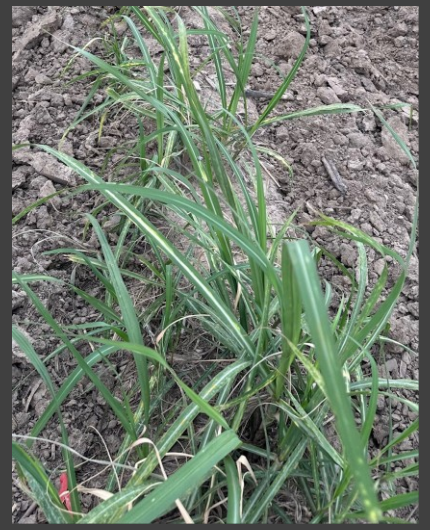
Command at 3.3 pt/a + Metribuzin at 2 lb/a

Command at 3.3 pt/a + Diuron at 3 qt/a

L 01-299

Command at 3.3 pt/a

Command at 3.3 pt/a + Metribuzin at 2 lb/a



Command at 3.3 pt/a + Diuron at 3 qt/a

HoCP 14-885

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2025 Spring Herbicide Trial - 299

Treatment	Rate/A	TCA	TRS	SPA
Command	3.3 pt	40.2 a[a]	186.8	7,501.0 a
Metribuzin	2 lb	42.1 a	179.8	7,562.3 a
Dual II Magnum	1.5 pt	42.5 a	185.6	7,880.4 a
Prowl H_2O	3 qt	41.2 a	192.4	7,904.3 a
Command + Metribuzin	3.3 pt + 2 lb	33.8 b	178.9	6,107.0 b
Command + Diuron	3.3 pt + 3 qt	29.8 b	174.2	5,187.8 b
			NS	

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

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2025 Spring Herbicide Trial - 885

Treatment	Rate/A	TCA	TRS	SPA
Command	3.3 pt	36.9	208.9	7,685.7
Metribuzin	2 lb	39.8	193.4	7,735.5
Dual II Magnum	1.5 pt	36.8	202.5	7,458.1
Prowl H_2O	3 qt	41.8	206.0	8,560.8
Command + Metribuzin	3.3 pt + 2 lb	40.7	203.0	8,225.7
Command + Diuron	3.3 pt + 3 qt	40.9	199.7	8,113.7
		NS		

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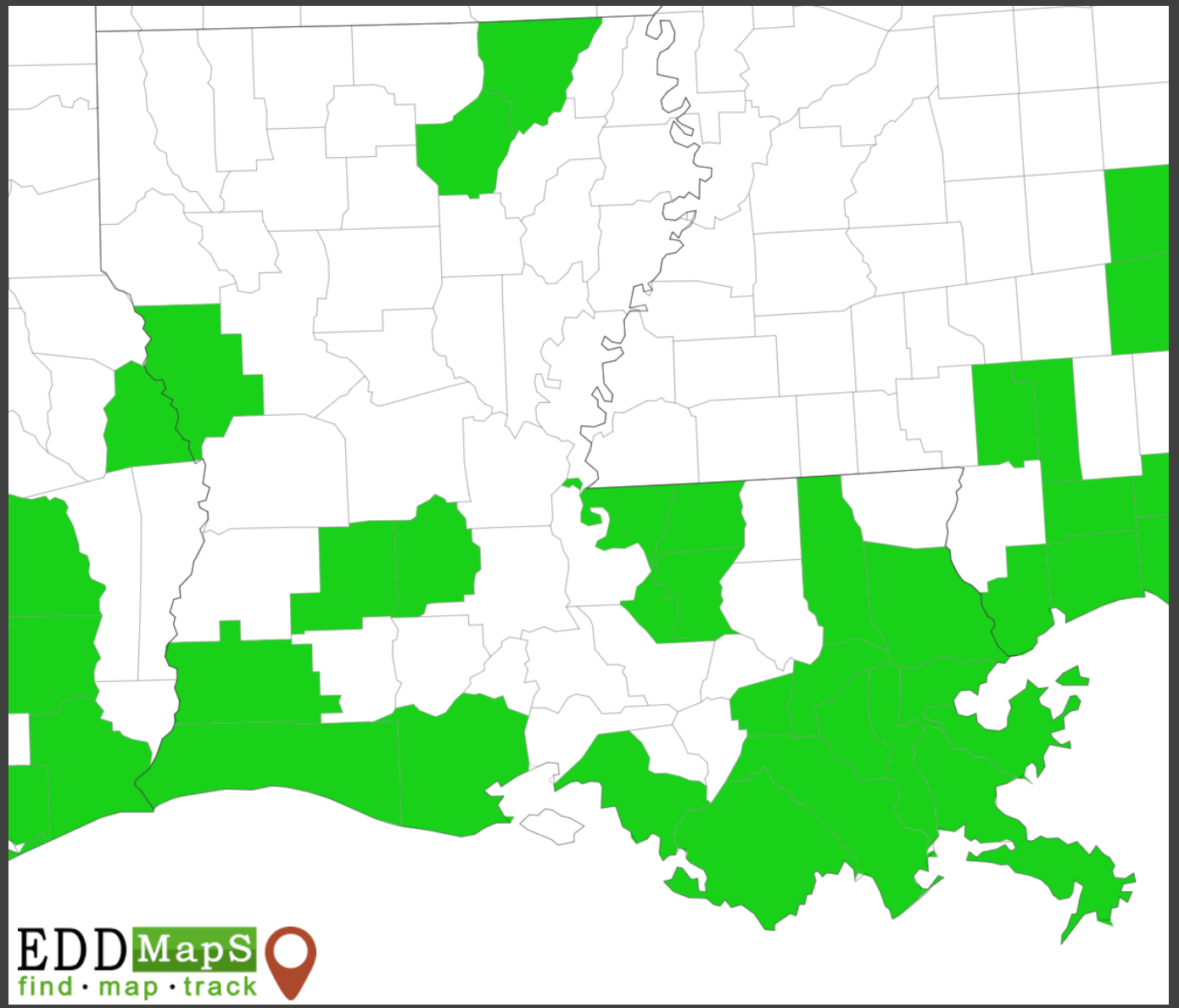
Torpedograss (*Panicum repens*)

- One of the most invasive weeds in the world
- First reported near Mobile, AL in 1876
  - USDA – Potential forage crop in the early 1900s
- Common in south LA wetland areas, landscapes, and along roadsides
  - Spread by rhizome-infested soils from the Bonnet Carré Spillway
  - LDWF – Tier I invasive species
- Found in sugarcane fields in St. John the Baptist Parish
  - Commonly misidentified as bermudagrass
- Weed pest of sugarcane in Florida, Taiwan, and Japan
  - 80% yield reduction documented in Japan

Source: USDA

Torpedograss Distribution in Louisiana

- Present in 12 sugarcane producing Parishes



Torpedograss (*Panicum repens*)

- Perennial life cycle
- **Rhizomes:**
  - Bright white, long, creeping, with a sharp, pointed end that resembles a torpedo
  - 80% of the plant biomass occurs underground as rhizomes and roots
  - Can produce new roots and shoots at every node, even from small pieces
- **Leaves:**
  - Erect, waxy, silver-green, pointed tip
  - 45-degree angle from stem
  - Flat or folded
  - Hair on the surface and around the sheath

Larry Allain, U.S. Geological Survey

Source: Chris Marble, UF/IFAS

Torpedograss (*Panicum repens*)

- **Seed heads:**
  - Small and flat
  - White to brown in color
  - Seed production is common
    - Not viable
- Propagation only occurs vegetatively by rhizomes
  - Preemergence herbicides not effective
  - Can float or move with soil after flooding
  - Plants can grow up to 3 feet tall when fully mature
- Management is extremely difficult
  - Aggressive growth
  - Herbicide tolerance
- No previous research has been conducted in Louisiana sugarcane

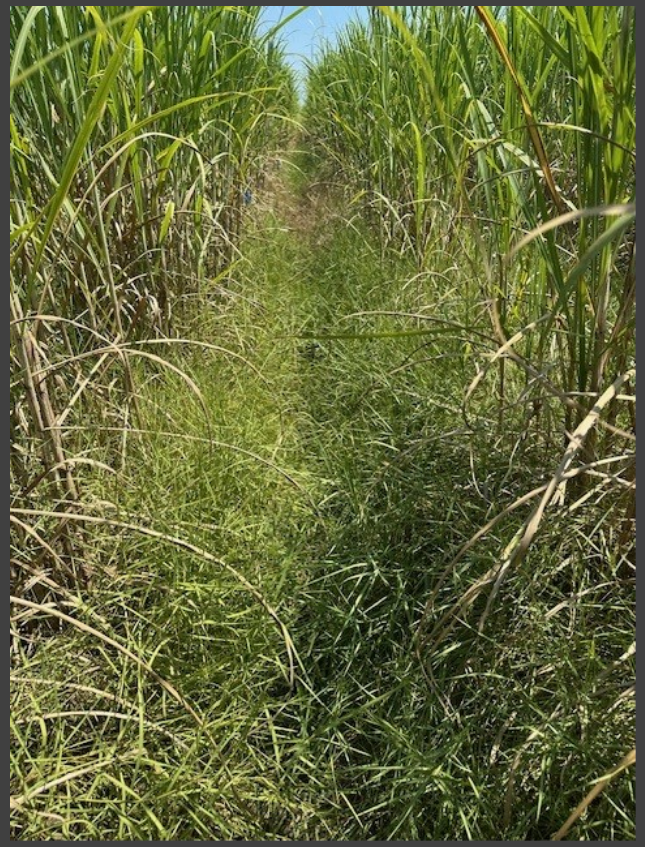
Source: USDA

Source: Larry Allain, U.S. Geological Survey

2025 Torpedograss Trial

- **So which poison should we use?**
  - Sugarcane research in Japan showed that 3 sequential applications of asulam at 3.2 qt/a were effective
  - Turf research in Florida showed sequential applications of trifloxysulfuron (Monument) at 0.5 oz/a were effective (same as Envoke)
- On July 29, 2025, 8 herbicide treatments were applied POST-directed to a field of third stubble L 01-299 in LaPlace, LA
- Visual weed control ratings (0-100%) taken 7, 17, 28, 35, and 49 DAT
- At 69 DAT, aboveground shoot biomass was collected from a 144 ft^2 area in each plot
  - Dry weights measured

2025 Torpedograss Trial- 28 DAT



Nontreated

Asulam at 4 qt/a

Asulam at 2 qt/a +
Envoke at 0.3 oz/a

Asulam at 4 qt/a +
Trycera at 45 oz/a

COC at 1% v/v added to all treatments

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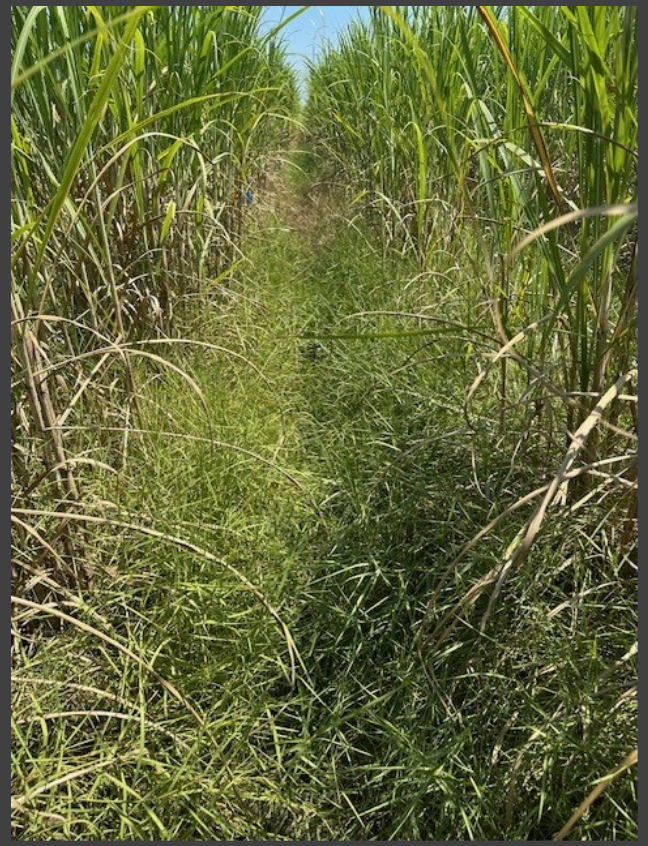
2025 Torpedograss Trial- 28 DAT



Nontreated

Reviton at 3 oz/a

Liberty Ultra at 1 qt/a

HAI-333 at 1 qt/a

MSO at 1% v/v added to all treatments except Liberty Ultra
Verimax AMS at 16 oz/a added to all treatments except Reviton

Note: Reviton, Liberty Ultra, and HAI-333 aren't labeled in sugarcane

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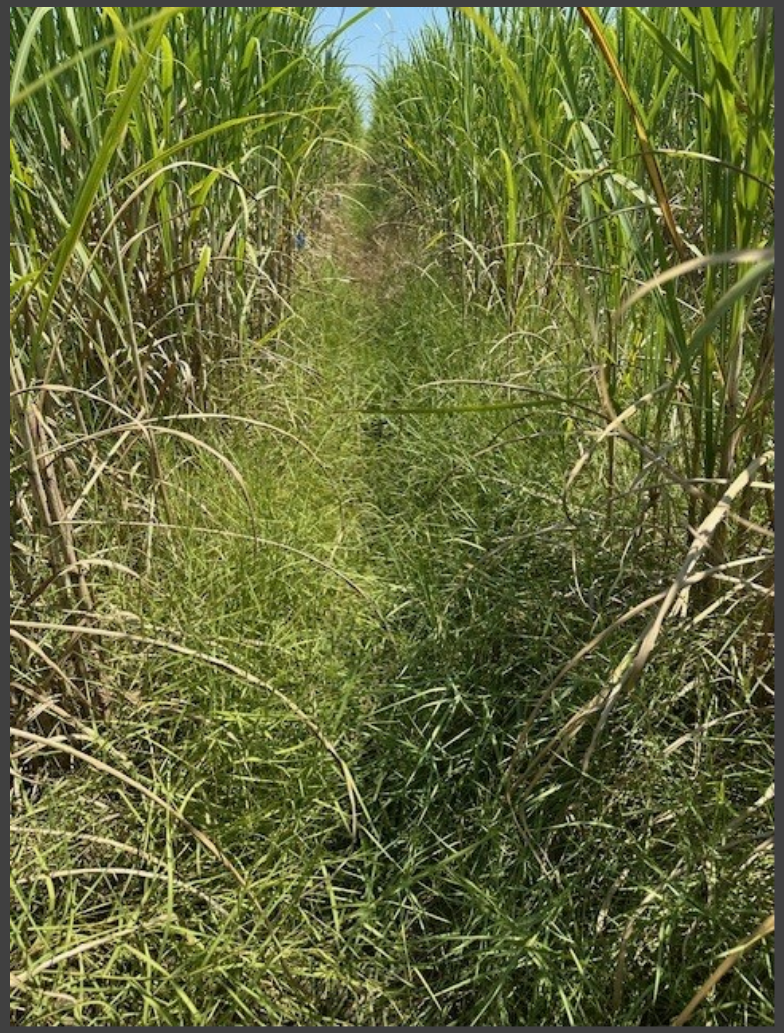
2025 Torpedograss Trial- 28 DAT



Nontreated

Quinclorac at 2 qt/a

Quinclorac at 4 qt/a

MSO at 32 oz/a + Verimax AMS at 16 oz/a added to all treatments

Note: Quinclorac isn't labeled in sugarcane

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2025 Torpedograss Trial

Treatment	Rate/A	% Control 49 DAT	Dry Weight (g) 69 DAT
Asulam	4 qt	87.5 b[a]	20.6 b
Asulam + Envoke	2 qt + 0.3 oz	88.8 b	20.3 b
Asulam + Trycera	4 qt + 45 oz	92.5 a	21.4 b
Liberty Ultra	1 qt	88.8 b	17.5 b
Reviton	3 oz	30.0 d	43.3 a
HAI-333	1 qt	87.5 b	23.8 b
Quinclorac	2 qt	31.3 d	42.7 a
Quinclorac	4 qt	36.3 c	42.0 a
Nontreated		0.0 e	52.7 a

[a] Means within columns followed by the same letter are not significantly different at $p < 0.05$.

- Short-term control is possible
- **Long-term control:**
  - Multiple in-crop herbicide applications may be necessary
  - Fallow program
    - Multiple high-rate applications of glyphosate in combination with tillage
- **Future research:**
  - Additional management options
  - Impact on sugarcane yield

Note: Reviton, HAI-333, Liberty Ultra, and Quinclorac aren't labeled in sugarcane

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Questions?

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