

## SUGARCANE WEED MANAGEMENT

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### Evaluation of Zidua SC (Pyroxasulfone) At Planting

Two at-planting studies were initiated to evaluate the efficacy of Zidua SC (pyroxasulfone) and other herbicide treatments on Johnsongrass (*Sorghum halepense*), yellow nutsedge (*Cyperus esculentus*), and Italian ryegrass (*Lolium multiflorum*). The variety HoCP 14-885 was planted on August 17, 2023 at the Sugar Research Station in St. Gabriel, LA and on September 13, 2023 at a commercial farm in New Iberia, LA. Herbicide treatments applied at planting included: (1) Command (clomazone) at 3.3 pt/A + Metribuzin at 1.5 lb/A, (2) Zidua SC at 8 oz/A + Prowl H<sub>2</sub>O (pendimethalin) at 3 qt/A, (3) Metribuzin at 3 lb/A + Prowl H<sub>2</sub>O at 3 qt/A, and (4) Metribuzin at 3 lb/A + Prowl H<sub>2</sub>O at 3 qt/A + Zidua SC at 8 oz/A. Treatments 1 and 3 at both locations received follow up applications of Dual II Magnum (*S*-metolachlor) at 20 oz/A and Zidua SC at 8 oz/A on November 9, respectively. A nontreated control was included for comparison. The first activating rainfall occurred 55 days after treatment (DAT) in St. Gabriel and 26 DAT in New Iberia. Due to dry conditions, herbicide activity and weed emergence were severely limited, therefore efficacy data on Johnsongrass and yellow nutsedge wasn't collected. In both trials, nontreated plots were equivalent to treated plots (no weed emergence in either) until sufficient rainfall was received. Substantial winter weed emergence was observed in nontreated plots 85 DAT in St. Gabriel and 58 DAT in New Iberia. At that time, winter weed control for herbicide treatments at both locations ranged from 85 to 90% when compared to the nontreated control (Table 1). Lesser swinecress (*Coronopus didymus*) was the predominant winter weed species observed in the nontreated plots at the St. Gabriel location. Winter weed species observed in the nontreated plots at the New Iberia location included bur clover (*Medicago polymorpha*), Carolina geranium (*Geranium carolinianum*), hairy buttercup (*Ranunculus sardous*), and annual sowthistle (*Sonchus oleraceus*). Italian ryegrass pressure in St. Gabriel wasn't consistent, therefore efficacy data wasn't collected. On January 31, 2024, 141 DAT for the at planting application and 83 DAT for the November application, control of Italian ryegrass in New Iberia for all herbicide treatments was 95% when compared to the nontreated control (Table 2). No crop injury from Zidua SC was observed.

Table 1. Mean percentage PRE control of winter weeds with several herbicide treatments applied at planting in St. Gabriel, LA and New Iberia, LA in 2023.

Treatment <sup>1</sup>	Rate/A	% winter weed control <sup>2</sup> 85 DAT <sup>3</sup> St. Gabriel	% winter weed control <sup>4</sup> 58 DAT New Iberia
Command + Metribuzin	3.3 pt + 1.5 lb	85 a <sup>5</sup>	85 a
Zidua SC* + Prowl H <sub>2</sub> O	8 oz + 3 qt	90 a	90 a
Metribuzin + Prowl H <sub>2</sub> O	3 lb + 3 qt	90 a	90 a
Metribuzin + Prowl H <sub>2</sub> O + Zidua SC*	3 lb + 3 qt + 8 oz	90 a	90 a
Nontreated Control		0 b	0 b

<sup>1</sup> Treatments applied at planting.

<sup>2</sup> Lesser swinecress was the predominant winter weed.

<sup>3</sup> DAT = Days after treatment.

<sup>4</sup> Winter weeds included bur clover, Carolina geranium, hairy buttercup, and annual sowthistle.

<sup>5</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

\* Experimental compound; not labeled for use in sugarcane.

Table 2. Mean percentage PRE control of Italian ryegrass with several herbicide treatments applied in New Iberia, LA in 2023.

Treatment <sup>1</sup>	Rate/A	% Italian ryegrass control 141 DAT <sup>2</sup> for at planting app. 83 DAT for November app.
Command + Metribuzin	3.3 pt + 1.5 lb	95 a <sup>3</sup>
fb Dual II Magnum	20 oz	
Zidua SC* + Prowl H <sub>2</sub> O	8 oz + 3 qt	95 a
Metribuzin + Prowl H <sub>2</sub> O	3 lb + 3 qt	95 a
fb Zidua SC*	8 oz	
Metribuzin + Prowl H <sub>2</sub> O + Zidua SC*	3 lb + 3 qt + 8 oz	95 a
Nontreated Control		0 b

<sup>1</sup> Treatments applied at planting. Treatments 1 and 3 received applications in November.

<sup>2</sup> DAT = Days after treatment.

<sup>3</sup> Means within a column followed by the same lowercase letter are not significantly different at P=0.05.

\* Experimental compound; not labeled for use in sugarcane.