

SUGARCANE WEED MANAGEMENT

Albert J. Orgeron
Sugar Research Station

Investigating the Impact of Italian Ryegrass Competition on Newly Established Plantcane.

A study was initiated in a newly established plantcane field of L 01-299 at the Sugar Research Station in St. Gabriel, LA to investigate the impact of Italian ryegrass (*Lolium multiflorum*) on sugarcane. On September 27, 2021, Strelus II (*S*-metolachlor) at 0.98 qt/A was applied to “control” plots to prevent the establishment of Italian ryegrass. The entire study area was sprayed with TriCor (metribuzin) at 1 pound per acre to prevent winter broadleaf weeds from establishing immediately following the Strelus II application. Italian ryegrass was allowed to compete with the sugarcane until it naturally senesced. Stalk counts were recorded on August 2, 2022. Ryegrass competition reduced the number of stalks per acre by 29% as compared to the control treatment where ryegrass was not allowed to establish (37,162 stalks/A) (Table 1). Plots were hand-sampled (10-stalks) and harvested with a sugarcane chopper harvester on November 20, 2022, and were loaded into a wagon equipped with load cells to gain theoretical recoverable sucrose and sugarcane yield. Cane yield averaged 10.7 tons/A less where Italian ryegrass was not controlled. Similarly, sugar yield was reduced by 2,491 lb/A less where Italian ryegrass was not controlled.

Efficacy of Zidua (Pyroxasulfone) on Italian ryegrass.

A study was initiated at the Sugar Research Station in St. Gabriel, LA to evaluate the efficacy of Zidua (pyroxasulfone) in controlling Italian ryegrass (*Lolium multiflorum*) prior to its emergence. On October 11, 2022 (Run 1) and October 27, 2022 (Run 2) herbicide treatments were applied to a sugarcane field with a history of Italian ryegrass. Treatments evaluated included Zidua at 5 and 8 oz/A, Moccasin II (*S*-metolachlor) at 1.5 pt/A, Alion (indaziflam) at 3.75 oz/A and an untreated check. The experimental site received 0.3 inches of rainfall on October 30, 2022. Italian ryegrass control was evaluated on January 11, 2023, 92 days after treatment (DAT) for Run 1 and 76 DAT for Run 2. Ryegrass control was excellent for Zidua at both 5 and 8 oz/A as well as the other herbicide treatments and control averaged at least 97% for experimental Run 1 and 99 % for Run 2.

Table 1. Effect of Italian ryegrass on mean stalk population, sugarcane yield, theoretical recoverable sugar (TRS), and sugar yield of plantcane L 01-299 in St. Gabriel, LA in 2022.

Treatment ¹	Population ² (stalks/A)	Cane Yield (tons/A)	TRS (lb/ton)	Sugar Yield (lb/A)
Ryegrass	26,272 b ³	27.2 b	208 a	5,691 b
Control	37,162 a	37.9 a	216 a	8,182 a

¹ Control plots treated with Strelus II at 0.98 qt/A.

² Stalk counts were recorded on August 2, 2022 and plots were harvested November 20, 2022.

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

Table 2. Mean percentage PRE control of Italian ryegrass with several herbicide treatments in St. Gabriel, LA in 2022.

Treatment ¹	Rate/A	Run 1	Run 2
		% Ryegrass Control 92 DAT ²	% Ryegrass Control 76 DAT
Zidua*	5 oz	98 a ³	100 a
Zidua*	8 oz	99 a	100 a
Moccasin II	1.5 pt	97 a	99 a
Alion	3.75 oz	98 a	99 a
Non-treated Control		0 b	0 b

¹ Treatments applied 10-11-2022 for Run 1 and 10-27-2022 for Run 2.

² DAT = Days after treatment.

³ 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.