

SUGARCANE RIPENERS

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Early Season Variety Response to Glyphosate Ripener

Two studies were conducted in 2018 at the Sugar Research Station in St. Gabriel, LA to evaluate variety response to glyphosate ripener. The experimental design for both studies was a randomized complete block design with 3 replications, and the plot size was 6 ft X 50 ft. On September 13, 2018, 5.3 oz/a of Roundup PowerMax II[®] was applied to plots in the first study. Varieties included in the first study were L 01-299, Ho 07-613, HoCP 09-804, and L 11-183. The experiment was hand harvested on October 11, 2018, 28 days after application (DAA). A 10-stalk sample from each plot was processed using Spectra Cane NIR to determine variety TRS. TRS was increased by 17.5, 17.7, 16.8, and 8.2 % for L 01-299, Ho 07-613, HoCP 09-804, and L 11-183, respectively as compared to the non-treated check (Table 1). On September 17, 2018, 5.3 oz/a of Roundup PowerMax II[®] was applied to plots in the second study. Varieties included in the second study were L 12-201, Ho 12-615, and Ho 12-630. The experiment was hand harvested on October 22, 2018, 35 DAA and on November 5, 2018, 42 DAA. A 10-stalk sample was hand harvested from each plot on each harvest date and was processed using Spectra Cane NIR to determine variety TRS. TRS was increased by 13.8, 11.2, and 9.1 % at 35 DAA and 13.1, 7.6, and 18.0 % at 42 DAA, for L 12-201, Ho 12-615, and Ho 12-630, respectively as compared to the non-treated check (Table 2).

Sugarcane Ripener Additives Study

A study was initiated on August 25, 2018 to evaluate the effect of ripener additives to glyphosate ripener at the Sugar Research Station in St. Gabriel, LA. The experimental design was a randomized complete block design with 3 replications, and plot size was 12 ft X 40 ft. Treatments included Roundup PowerMax II[®] at 5.3 oz/a, Roundup PowerMax II[®] at 2.65 oz/a + Moddus[®] at 11 oz/a, Roundup PowerMax II[®] at 5.3 oz/a + Intake[®] at 8 oz/a, Roundup PowerMax II[®] at 5.3 oz/a + Anova[®] at 16 oz/a, Roundup PowerMax II[®] at 5.3 oz/a + B Sure[®] at 16 oz/a, and a non-treated check. Treatments were applied to second stubble L 01-299, and were hand sampled at 16 and 31 DAA. A 10-stalk sample from each plot was processed using Spectra Cane NIR to determine variety TRS. At 31 DAA, plots were harvested by combine and weighed. All treatments increased TRS (16 and 31 DAA) and sugar yield significantly as compared to the non-treated check; however, the additive treatments did not increase TRS or sugar yield when compared to the Roundup PowerMax II[®] treatment alone (Table 3).

Table 1. Effect of Roundup PowerMax II[®] on improving TRS for 4 commercial varieties at the Sugar Research Station in St. Gabriel, LA in 2018.

Variety	-----TRS (lb/ton) 28 DAA ¹ -----		
	Check	Roundup PowerMax II ^{®2}	% Increase
L 01-299	171	201	17.5
Ho 07-613	209	246	17.7
HoCP 09-804	214	250	16.8
L 11-183	182	197	8.2

¹ DAA = Days after application.

² PowerMax II[®] applied at 5.3 oz/a on 9/13/18 and hand harvested on 10/11/18.

Table 2. Effect of Roundup PowerMax II[®] on improving TRS for 3 experimental varieties at the Sugar Research Station in St. Gabriel, LA in 2018.

Variety	-----TRS (lb/ton) 35 DAA ¹ -----			-----TRS (lb/ton) 42 DAA-----		
	Check	Roundup PowerMax II ^{®2}	% Increase	Check	Roundup PowerMax II [®]	% Increase
L 12-201	240	273	13.8	244	276	13.1
Ho 12-615	213	237	11.2	237	255	7.6
Ho 12-630	243	265	9.1	245	289	18.0

¹ DAA = Days after application.

² PowerMax II[®] applied at 5.3 oz/a on 9/17/18 and hand harvested on 10/22/18 and 11/05/18.

Table 3. Effect of ripener additives on TRS, cane yield, sugar yield and fiber on second stubble L 01-299 at the Sugar Research Station in St. Gabriel in 2018.

Treatment ¹	Rate/a	TRS (lb/ton)		Cane Yield (tons/a)	Sugar Yield (lb/a)	% Fiber
		16 DAA ²	-----31 DAA-----			
Untreated Check		128 c ³	180 b	47.3	7924 b	12.1
Roundup PowerMax II [®]	5.3 oz	165 a	258 a	42.0	10861 a	12.1
Roundup PowerMax II [®] + Moddus [®]	2.65 oz + 11 oz	162 ab	229 a	44.7	10237 a	12.3
Roundup PowerMax II [®] + Intake [®]	5.3 oz + 8 oz	160 ab	244 a	44.0	10742 a	12.0
Roundup PowerMax II [®] + Anova [®]	5.3 oz + 16 oz	165 a	252 a	42.4	10668 a	11.9
Roundup PowerMax II [®] + B Sure [®]	5.3 oz + 16 oz	148 b	232 a	44.6	10312 a	11.9

¹ Treatments applied 8/25/18.

² DAA = Days after application.

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