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Results of the September 25, 2012 second sampling of the Second-Stubble Variety Ripener Test (5 weeks after treatment) at the USDA-ARS Sugarcane Research Unit's Ardoyne Research Farm in Schriever, LA are attached. This study is designed to compare the use of chemical ripeners glyphosate (Roundup PowerMax) and trinexapac-ethyl (Palisade) with the natural ripening process beginning at 4 weeks after treatment (WAT) and weekly thereafter until 7 WAT. Samples consist of 10 hand-cut stalks, stripped of leaves, and properly topped. **On a commercial farm, one can expect TRS/TC levels to be as much as 20% lower due to the additional trash in the cane associated with mechanical harvesting.** The study includes eight released Louisiana varieties: HoCP 96-540, L 97-128, L 99-226, L 99-233, HoCP 00-950, L 01-283, L 03-371 and HoCP 04-838. Harvestable sugarcane stalks in all plots were counted in early July. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields. Chemical ripeners were applied to sugarcane using a hand-held spray boom at a volume of 10 gallons per acre. Palisade was applied at 11 oz/A, and Roundup PowerMax was applied at 5.3 oz/A. Palisade is a new ripener that has been labeled for use in sugarcane beginning this year. Trials such as this are being used to develop recommendations for the use of this new ripener in the future.

The USDA's Ardoyne Farm has received more than its share of rain this year, with 78.46 inches as of September 18<sup>th</sup>. A mild winter and good growing conditions allowed the crop to get an early start which contributed to above average height for all the varieties in the test. The test remained erect, with the exception of L 99-226 and L 99-233, throughout the growing season until Hurricane Isaac made landfall on the morning of August 29<sup>th</sup>. Winds associated with the storm caused some degree of lodging in all the varieties in the test, with the worst being L 99-233 and L 99-226, while the least amount of lodging occurred in HoCP 04-838, L 01-283, and HoCP 96-540. Lodging can reduce the effects of ripener application.

At 5 WAT, most varieties continued to show increased TRS in response to glyphosate application. TRS in the variety HoCP 96-540 increased from 230.2 lbs/ton in the non-treated to 239.4 lbs/ton when glyphosate was applied, a 9.2 lbs/ton increase in sugar yield. The newest varieties, L 03-371 and HoCP 04-838 also responded very well to glyphosate application; TRS increased by 15.8 lbs/ton in L 03-371 and by 24.4 lbs/ton in HoCP 04-838. Varieties not responding to glyphosate application were L 99-226 and Ho 00-950. Across all varieties, TRS increased by an average of 9.1 lbs/ton when glyphosate ripener was applied, much less than the previous sample date where an increase of 17.4 lbs/ton was seen. Average stalk weight continued to be 0.2 lbs less per stalk when glyphosate was applied resulting in an estimated reduction in cane yield of 2.1 tons/acre and a slight reduction in sugar yield of 146 lbs/acre.

Response of sugarcane varieties to Palisade (trinexapac-ethyl) was lower in most cases compared to glyphosate. The best response was seen in HoCP 04-838, where TRS increased from 226.4 lbs/ton in the non-treated to 240.4 lbs/ton when trinexapac-ethyl was applied, a 14 lbs/ton increase in sugar yield. TRS did not increase when trinexapac-ethyl at this harvest timing when applied to L 99-233, Ho 00-950, or L 03-371. The average increase of all varieties in the test when trinexapac-ethyl was



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applied was 3.3 lbs/ton. This was accompanied by a 1 tons/acre decrease in estimated cane yield and a 184 lbs/acre decrease in sugar yield.

Sugarcane will be sampled again at 6 and 7 weeks after application to evaluate sugarcane's response to ripeners over the currently recommended treatment to harvest interval (4 to 7 weeks after ripener application).

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*Sugarcane ripener reports are prepared by Dr. Caleb Dalley of the USDA-ARS Sugarcane Research Unit.*

Sugarcane ripener study on second-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, five weeks after treatment, September 25, 2012.<sup>1</sup>

Variety	Ripener Treatment <sup>2</sup>	Stalk		Normal juice <sup>3</sup>			Sugar yield <sup>4</sup>	Previous sample date	Estimated Yield	
		weight (lbs)	length (in.)	Brix (%)	Sucrose (%)	Purity (%)	TRS (lbs/T)	TRS (lbs/T)	Yield (tons/A)	S_A (lbs/A)
HoCP 96-540	Non-treated	2.1	110	17.4	15.0	86.5	230.2	183.1	37.3	8034
	Roundup PowerMax <sup>5</sup>	2.0	104	18.4	16.1	87.9	239.4	209.7	34.6	8302
	Palisade	2.2	103	17.8	15.8	88.4	234.5	202.8	37.6	8820
L 97-128	Non-treated	2.4	112	17.5	15.1	86.7	222.9	194.3	37.1	8283
	Roundup PowerMax	2.2	112	17.8	15.4	86.7	227.6	221.1	33.6	7626
	Palisade	2.2	112	18.2	15.9	87.5	235.2	202.7	33.9	7984
L 99-226	Non-treated	2.8	113	18.8	16.8	89.4	244.9	206.2	43.7	10161
	Roundup PowerMax	2.4	109	18.2	15.9	87.4	243.3	217.8	37.5	9440
	Palisade	2.4	111	18.3	16.4	89.7	246.4	216.6	38.5	9491
L 99-233	Non-treated	2.0	116	17.5	15.0	85.9	215.9	191.4	35.7	7712
	Roundup PowerMax	2.0	111	18.3	16.1	88.0	234.1	216.8	34.9	8128
	Palisade	2.1	111	17.5	15.1	86.3	205.4	197.1	36.8	7205
HoCP 00-950	Non-treated	2.2	99	18.7	16.5	88.3	248.2	230.2	37.0	9196
	Roundup PowerMax	2.1	101	18.7	16.5	88.5	248.2	230.0	36.3	8971
	Palisade	2.0	94	18.7	16.4	87.7	244.9	225.8	34.7	8512
L 01-283	Non-treated	2.0	107	18.9	16.7	88.5	250.8	227.1	33.3	8359
	Roundup PowerMax	1.9	103	19.3	16.9	87.6	252.6	238.6	32.0	8089
	Palisade	2.0	106	19.3	17.2	89.3	259.4	220.7	34.3	8907
L 03-371	Non-treated	2.1	102	17.6	15.1	85.3	240.0	211.7	37.2	9814
	Roundup PowerMax	1.9	95	18.5	16.3	87.9	255.8	224.8	33.5	8194
	Palisade	2.0	95	17.8	15.4	86.3	239.5	217.3	35.6	7998
HoCP 04-838	Non-treated	1.8	103	17.6	16.0	90.9	226.4	199.1	32.6	7167
	Roundup PowerMax	1.9	104	18.1	16.2	89.4	250.8	223.6	34.7	8809
	Palisade	1.9	102	18.1	16.3	90.2	240.4	198.0	34.7	8340
Averages	Non-treated	2.2	108	18.0	15.8	87.7	234.9	205.4	36.7	8591
	Roundup PowerMax	2.0	105	18.4	16.2	87.9	244.0	222.8	34.6	8445
	Palisade	2.1	104	18.2	16.1	88.2	238.2	210.1	35.8	8407

<sup>1</sup> Data for each parameter represents the average of four replications of 10 stalks each.

<sup>2</sup> Ripener treatments applied on August 21, 2012 using a hand-held spray boom at a rate of 10 gal/A. Roundup PowerMax was applied at 5.3 oz/A; Palisade was applied at 11 oz/A.

<sup>3</sup> Brix factor = .8854; Sucrose factor = .8105.

<sup>4</sup> Estimated cane yield is the product of stalk weight and millable stalk counts, estimated sugar yield is the product of TRS and estimated cane yield.

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