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Results of the September 18, 2012 first sampling of the Second-Stubble Variety Ripener Test (4 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 18th. 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 29th. 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 4 WAT, most varieties showed an increase in TRS in response to glyphosate application. TRS in the variety HoCP 96-540 increased from 183.1 lbs/ton in the non-treated to 209.7 lbs/ton when glyphosate was applied, a 26.6 lbs/ton increase in sugar yield. The only variety not responding to glyphosate application was Ho 00-950 where TRS was 230.2 lbs/ton in the non-treated and 230.0 lbs/ton when glyphosate was applied. TRS increased by an average of 17.4 lbs/ton when glyphosate ripener was applied. However, this was accompanied by an average decrease in stalk weight of 0.2 lbs per stalk and estimated cane yield of 2.6 tons/A resulting in an insignificant increase in sugar yield of 17 lbs/A.

Response of sugarcane varieties to trinexapac-ethyl was lower in most cases compared to glyphosate. The best response was seen in L 99-226, where TRS increased from 206.2 lbs/ton in the non-treated to 216.6 lbs/ton when trinexapac-ethyl was applied, a 10.4 lbs/ton increase in sugar yield. TRS did not increase when trinexapac-ethyl was applied in Ho 00-950, L 01-283, and HoCP 04-838. The average increase of all varieties in the test when trinexapac-ethyl was applied was 4.7 lbs/ton. This was accompanied by a 2 ton/A decrease in estimated cane yield and a 261 lb/ton decrease in sugar yield.

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Sugarcane will be sampled again at 5, 6, and 7 weeks after application to evaluate its response to ripeners over the recommended treatment to harvest interval (4 to 7 weeks after ripener application).

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Sugarcane ripener study on second-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, four weeks after treatment, September 18, 2012.[1]

Variety	Ripener Treatment[2]	Stalk weight	Stalk length	Normal juice[3] Brix	Normal juice[3] Sucrose	Normal juice[3] Purity	Sugar yield[4] TRS	Previous sample date TRS	Estimated Yield Yield	Estimated Yield S_A
		(lbs)	(in.)	(%)	(%)	(%)	(lbs/T)	(lbs/T)	(tons/A)	(lbs/A)
HoCP 96-540	Non-treated	2.3	104	15.4	12.7	82.7	183.1	–	39.2	7132
	Roundup PowerMax[5]	2.1	97	16.9	14.4	84.9	209.7	–	36.3	7578
	Palisade	1.9	100	16.4	13.9	84.7	202.8	–	32.8	6635
L 97-128	Non-treated	2.0	107	16.1	13.4	83.6	194.3	–	31.2	6064
	Roundup PowerMax	2.1	104	17.5	15.1	86.0	221.1	–	32.8	7232
	Palisade	2.1	101	16.6	14.0	84.0	202.7	–	31.8	6458
L 99-226	Non-treated	2.6	108	16.6	14.1	85.0	206.2	–	41.3	8483
	Roundup PowerMax	2.3	107	17.4	14.9	85.6	217.8	–	36.2	7956
	Palisade	2.4	106	17.1	14.7	86.3	216.6	–	38.5	8370
L 99-233	Non-treated	1.6	107	16.1	13.5	83.6	191.4	–	28.5	5445
	Roundup PowerMax	1.8	104	17.5	15.1	86.1	216.8	–	32.8	7089
	Palisade	1.9	106	16.6	13.9	83.7	197.1	–	33.9	6684
HoCP 00-950	Non-treated	2.2	98	17.9	15.5	86.7	230.2	–	37.1	8545
	Roundup PowerMax	1.8	89	18.1	15.5	86.0	230.0	–	31.6	7250
	Palisade	2.1	96	17.6	15.2	86.4	225.8	–	35.3	7934
L 01-283	Non-treated	2.0	105	17.7	15.3	86.3	227.1	–	33.2	7578
	Roundup PowerMax	1.9	98	18.3	16.0	87.5	238.6	–	31.8	7588
	Palisade	1.6	95	17.4	14.9	85.8	220.7	–	26.9	6018
L 03-371	Non-treated	2.0	95	17.0	14.3	84.3	211.7	–	35.6	7542
	Roundup PowerMax	1.7	90	17.5	15.0	86.0	224.8	–	29.4	6607
	Palisade	1.9	92	17.0	14.6	85.6	217.3	–	33.6	7220
HoCP 04-838	Non-treated	2.1	102	15.7	13.7	87.6	199.1	–	37.9	7551
	Roundup PowerMax	1.8	102	17.4	15.3	88.2	223.6	–	32.1	7179
	Palisade	2.0	99	15.8	13.7	86.8	198.0	–	35	6939
Averages	Non-treated	2.1	103.0	16.5	14.1	85.0	205.4	–	35.5	7293
	Roundup PowerMax	1.9	98.9	17.6	15.2	86.3	222.8	–	32.9	7310
	Palisade	2.0	99.0	16.8	14.4	85.4	210.1	–	33.5	7032

[1] Data for each parameter represents the average of four replications of 10 stalks each.

[2] 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.

[3] Brix factor = .8854; Sucrose factor = .8105.

[4] 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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