United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

October 4, 2012

Results of the October 3, 2012 third sampling of the Second-Stubble Variety Ripener Test (6 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 79.42 inches as of October 2nd. 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 6 WAT, most varieties continued to show increased TRS in response to glyphosate application. TRS in the variety HoCP 96-540 increased from 216.9 lbs/ton in the non-treated to 264.5 lbs/ton when glyphosate was applied, a 47.6 lbs/ton increase in sugar yield. The newest variety HoCP 04-838 also responded very well to glyphosate application; TRS increased by 24.4 lbs/ton. Varieties not responding to glyphosate application were L 01-283 and Ho 00-950. Across all varieties, TRS increased by an average of 16 lbs/ton when glyphosate ripener was applied. Average stalk weight was reduced by 0.1 lbs less per stalk when glyphosate was applied resulting in an estimated reduction in cane yield of 1.5 tons/acre and a slight increase in sugar yield of 188 lbs/acre.

Response of sugarcane varieties to Palisade (trinexapac-ethyl) was greater than previous harvest dates, but still remained lower than glyphosate in most cases. The best response was seen in HoCP 96-540, where TRS increased from 216.9 lbs/ton in the non-treated to 243.3 lbs/ton when trinexapac-ethyl was applied, a 26.4 lbs/ton increase in sugar yield. TRS did not increase when trinexapac-ethyl at this harvest timing when applied to Ho 00-950. The average increase of all varieties in the test when trinexapac-ethyl was applied was 9.4 lbs/ton. This was accompanied by a 0.2 tons/acre

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increase in estimated cane yield and a 370 lbs/acre increase in sugar yield. This was a higher increase in sugar than was found when using glyphosate.

Sugarcane will be sampled again at 7 weeks after application to evaluate sugarcane's response to ripeners over the remainder of 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 Lab.

Sugarcane ripener study on second-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, six weeks after treatment, October 3, 2012.[1]

		Stalk		Normal juice[3]			Sugar yield[4]	Previous sample date	Estimated Yield	
Variety	Ripener Treatment[2]	weight	length	Brix	Sucrose	Purity	TRS	TRS	Yield	S_A
		(lbs)	(in.)	(%)	(%)	(%)	(lbs/T)	(lbs/T)	(tons/A)	(lbs/A)
HoCP 96-540	Non-treated	2.1	113	16.8	14.7	87.2	216.9	230.2	37.7	8172
	Roundup PowerMax[5]	2.2	109	19.4	17.6	90.5	264.5	239.4	39.1	10329
	Palisade	2.2	106	18.2	16.3	89.4	243.3	234.5	36.4	8884
L 97-128	Non-treated	2.3	119	18.2	16.0	87.8	237.1	222.9	35.1	8325
	Roundup PowerMax	2.4	112	19.1	17.1	89.7	256.9	227.6	36.9	9444
	Palisade	2.5	117	18.9	16.8	89.1	251.1	235.2	40.3	10116
L 99-226	Non-treated	2.6	117	18.4	16.5	89.6	247.3	244.9	36.8	9205
	Roundup PowerMax	2.7	112	19.7	17.9	90.9	270.6	243.3	44.8	12147
	Palisade	2.6	111	18.7	17.0	90.9	256.7	246.4	43.0	11103
L 99-233	Non-treated	2.1	119	17.5	15.3	87.4	222.4	215.9	38.6	8600
	Roundup PowerMax	1.7	109	18.9	16.9	89.4	248.3	234.1	28.6	7105
	Palisade	2.0	113	18.6	16.3	87.9	238.0	205.4	35.6	8474
HoCP 00-950	Non-treated	2.2	105	19.4	17.6	91.0	268.7	248.2	38.3	10260
	Roundup PowerMax	2.0	99	19.2	17.1	88.9	257.2	248.2	34.7	8935
	Palisade	2.0	100	19.1	17.4	90.7	264.0	244.9	33.2	8772
L 01-283	Non-treated	2.0	110	19.4	17.7	91.5	270.5	250.8	36.2	9777
	Roundup PowerMax	1.7	107	19.6	17.9	91.2	272.9	252.6	29.8	8131
	Palisade	1.9	105	19.7	18.0	91.4	275.2	259.4	30.4	8377
L 03-371	Non-treated	2.0	101	19.0	17.2	90.8	264.6	240.0	36.0	9495
	Roundup PowerMax	1.9	104	19.1	17.3	90.5	264.7	255.8	33.1	8708
	Palisade	2.1	98	19.2	17.6	91.6	271.3	239.5	36.6	9931
HoCP 04-838	Non-treated	2.0	110	18.1	16.6	91.9	246.7	226.4	36.6	9042
	Roundup PowerMax	2.0	107	19.5	18.0	92.3	267.8	250.8	35.8	9587
	Palisade	2.3	109	18.3	16.8	92.1	250.2	240.4	41.1	10185
Averages	Non-treated	2.2	112	18.3	16.5	89.7	246.8	234.9	36.9	9110
	Roundup PowerMax	2.1	107	19.3	17.5	90.4	262.8	244.0	35.4	9298
	Palisade	2.2	107	18.8	17.0	90.4	256.2	238.2	37.1	9480

[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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