

## **United States Department of Agriculture**

Research, Education, and Economics Agricultural Research Service

October 17, 2012

Results of the October 9, 2012 sampling of the First-Stubble (fourth sampling), Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Unit's Ardoyne Research Farm in Schriever, LA are attached. This study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2008 – 2012); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15 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 99-226, L 99-233, HoCP 00-950, L 01-283, L 01-299, 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. Since the last sample date Ardoyne Farm has received 2.46 inches of rainfall.

During the 2-week sampling interval, the core varieties (HoCP 96-540, L 99-226, L 99-233, HoCP 00-950, L 01-283 and L 03-371) grew an average of 6.7 inches and increased in weight by only 0.1 lbs. L 99-226 and HoCP 96-540 continue to have the heaviest stalks, while the lightest stalks were produced by HoCP 00-950, L 01-299 and HoCP 04-838. L 99-226 and L 99-233 had the longest stalks, whereas L 03-371 had the shortest stalks at less than 100 inches.

Brix, sucrose, and purity levels are higher in 2012 for this sampling date when compared to the 4-yr average; however, they are lower than those attained in 2011. The average theoretical recoverable sugar (TRS) levels for 2012 are only 3.9 lbs/ton of cane (TC) more than those recorded in 2011, but 18.4 lbs/TC higher than the 4-yr average. Of the varieties with major plantings for harvest in 2012, L 01-283 (278 lbs/TC) and HoCP 00-950 (274 lbs/TC) have the highest TRS levels, L 99-233 (225 lbs/TC) and L 99-226 (233 lbs/TC) had the lowest TRS levels. HoCP 96-540 ranked fifth in TRS producing 242 lbs/A which is higher than any of the previous 4 years at this sample date.

Estimated yields of the major varieties are lower for this sample date when compared to the data from 2011. The average cane yield of the core varieties was 50.7 tons/A which is only 0.3 tons/A less than last year but 6.2 tons/A better than the 4-yr average. The sugar yield of the core varieties follows the same pattern, yields are 160 lbs/A less than those recorded in 2011, but are 2376 lbs/A more than the 4-yr average. For this sample date, L 99-233 (53.7 tons/A) and L 03-371 (53.2 tons/A) produced the highest cane yields. The lowest cane yields were produced by HoCP 00-950 and HoCP 04-838 with 47.2 tons/A and 45.6 tons/A respectively. The highest estimated sugar yields were produced by L 01-283 (13378 lb/A) and L 03-371 (13241 lbs/A), while L 99-226 (11505 lbs/A) and HoCP 04-838 (11774 lbs/A) produced the lowest sugar yields.



Sugarcane Research Unit 5883 USDA Road Houma, LA 70360 (985) 872-5042 – Fax (985) 868-8369 An Equal Opportunity Employer The fifth sampling for the maturity test is scheduled for October 22<sup>rd</sup>.

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Maturity reports are prepared by Mr. Mike Duet of the USDA-ARS Sugarcane Research Lab.

October 09, 201	2 <sup>1</sup> .												
											TRS		
										Previous	change		
								Sugar	sample	from	Estin		
			Stalk <sup>2</sup>			Normal juice <sup>3</sup>			yield	date <sup>4</sup>	previous	yield <sup>6</sup>	
Variety	Year	Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	sample	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
HoCP 96-540	2012	2.5	105	0.87	1.12	16.14	13.14	81.45	242.1	209.4	32.7	52.4	12703
	2011	2.2	96	0.87	0.97	15.83	12.70	80.20	232.1	187.3	44.8	55.9	12958
	2010	2.1	99	0.81	1.15	15.41	12.15	78.89	220.3	180.8	39.5	34.9	7696
	2009	2.5	104	0.89	1.09	13.86	10.60	76.44	189.0	197.5	-8.5	55.5	10468
	2008	2.3	93	0.88	1.12	15.14	11.78	77.81	212.1	170.8	41.3	42.9	9088
L 99-226	2012	2.9	118	0.94	0.99	15.78	12.72	80.58	233.0	203.0	30.0	49.4	11505
	2011	2.8	101	0.95	1.08	15.69	12.44	79.25	226.0	197.6	28.4	55.5	12511
	2010	2.4	108	0.83	1.14	16.84	13.76	81.69	253.9	211.8	42.1	42.2	10717
	2009	2.9	109	0.95	1.05	14.41	11.22	77.75	201.9	190.8		50.4	10163
	2008												
L 99-233	2012	2.2	113	0.81	1.06	15.72	12.56	79.92	224.7	196.1	28.6	53.7	12079
	2011	2.0	103	0.83	1.03	15.72	12.73	81.01	229.3	197.3	32.0	47.4	10868
	2010	1.7	113	0.68	1.15	15.61	12.33	78.99	219.3	200.6	18.7	41.3	9030
	2009	2.0	108	0.74	1.17	15.01	11./83	78.76	210.1	199.0	11.1	49.6	10406
	2008	2.0	104	0.78	1.11	15.25	11.92	78.16	210.9	187.6	23.3	47.5	10007
HoCP 00-950	2012	2.0	102	0.82	1.03	17.33	14.55	83.91	274.4	246.7	27.7	47.2	12965
	2011	2.3	89	0.89	1.14	17.89	15.11	84.51	286.0	260.8	25.2	46.4	13274
	2010	2.2	94	0.79	1.31	17.82	14.92	83.72	281.0	251.0	30.0	35.8	10033
	2009	2.2	96	0.82	1.18	16.47	13.71	83.24	257.6	244.0	13.6	46.9	12085
	2008	2.0	86	0.86	1.11	17.15	14.12	82.33	263.9	220.8	43.1	41.4	10913
L 01-283	2012	2.1	101	0.79	1.17	17.60	14.75	83.82	278.1	250.6	27.5	48.0	13378
	2011	2.0	97	0.80	1.15	17.64	14.78	83.78	278.5	234.6	43.9	53.4	14874
	2010	1.8	100	0.71	1.29	18.28	15.26	83.48	287.1	260.5	26.6	42.5	12207
	2009	2.1	103	0.79	1.11	15.89	13.07	82.22	244.1	234.9	9.2	50.0	12210
	2008	2.1	94	0.83	1.14	16.14	12.80	79.27	234.8	198.5	36.3	46.2	10874
L 01-299	2012	2.0	109	0.73	1.23	16.16	13.14	81.28	239.4	203.5	35.9	51.0	12178
	2011												
	2010												
	2009												
	2008												
L 03-371	2012	2.3	98	0.92	1.00	16.29	13.24	81.22	248.4	214.6	33.8	53.3	13241
	2012	2.3	93	0.89	1.09	16.36	13.15	80.41	245.4	196.5	48.9	58.9	14472
	2010	2.2	100	0.79	1.00	16.40	13.22	80.57	246.9	223.5	23.4	46.2	11397
	2009	2.4	97	0.89	1.11	15.47	12.60	81.42	236.6	213.9	22.7	52.5	12443
	2008												
HoCP04-838	2012	2.0	101	0.79	1.10	16.47	14.02	85.12	258.4	230.3	28.1	45.6	11774
	2011	2.1	96	0.81	1.16	17.13	14.51	84.68	266.7	201.2	65.5	49.8	13294
	2010	2.1	103	0.79	1.13	17.02	14.26	83.76	258.3	228.5	29.8	36.2	9337
	2009												
Cont'd	2008												

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, October 09, 2012<sup>1</sup>.

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		Stalk <sup>2</sup>			Normal juice <sup>3</sup>			yield	date <sup>4</sup>	previous	yield <sup>6</sup>			
Variety	Year	Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	sample	Cane	Sugar	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)	
Averages <sup>5</sup>	2012	2.3	106	0.86	1.06	16.48	13.49	81.82	250.1	220.1	30.1	50.7	12645	
	2011	2.2	98	0.86	1.05	16.74	13.73	81.97	254.0	219.6	34.4	51.0	12805	
	2010	2.1	103	0.80	1.20	16.70	13.60	81.20	248.8	218.9	29.9	38.2	9470	
	2009	2.3	105	0.82	1.16	14.80	11.70	79.20	210.8	204.7	6.1	49.9	10492	
	2008	2.0	91	0.82	1.11	15.36	11.96	77.84	213.2	178.9	34.3	39.0	8311	

<sup>1</sup> Data for each parameter represents the average of four replications of 15 stalks each.

<sup>2</sup> Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalksample of each rep, will be taken on the 1st, 4th and the 8th maturity study sampling dates.

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

<sup>4</sup> Previous scheduled sample date was September 24, 2012 .

<sup>5</sup> Averages are based only on varieties included in previous year's first-stubble maturity study (HoCP 96-540, L99-226, L99-233, HoCP 00-950, L01-283 and L03-371).

<sup>6</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.