

## **United States Department of Agriculture**

Research, Education, and Economics Agricultural Research Service

August 29, 2011

Results of the initial sampling of the 2011, First-Stubble, Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm in Schriever, LA are attached. The study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2007 – 2011); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15, hand-cut stalks of clean, trash-free and properly topped cane from each of four replications. **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, HoCP 04-838 and the candidate variety Ho 05-961. L 01-299 is omitted from this test because it was released after the test was planted in 2009. Harvestable sugarcane stalks in all plots were counted in mid-July. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields.

The Ardoyne Farm was very dry during the early part of the growing season with less than 12" of rainfall for the year until mid-July. Since that time the farm has received frequent, timely rains and ample sunshine. At the time of this sampling the crop is erect. Sugarcane stalks of the core varieties (HoCP 96-540, L 97-128, L 99-233, HoCP 00-950 and L 01-283) are average to slightly above average in weight, length, and diameter, but have less density when compared to the average for the previous four years. Of the varieties, L 99-233 and L 97-128 had the longest stalks, HoCP 00-950 and L 03-371 had the shortest stalks. The varieties L 99-226 and L 97-128 had the heaviest stalks, while HoCP 04-838 had the lightest. The candidate for release, Ho 05-961 is average in weight, length, diameter, and density.

Brix, sucrose, and purities are less in 2011 than in 2010, but are equal to the 4-yr average for this sampling date. The average theoretically recoverable sugar (TRS) levels for 2011 are 21 lbs./ton of cane (TC) less than those recorded in 2010. Of the varieties with major plantings for harvest in 2011, HoCP 00-950 (189 lbs./TC) and L 01-283 (164 lbs./TC) have the highest early TRS levels, L 99-226 had the lowest TRS levels producing only 107 lbs./TC. HoCP 96-540 had the second lowest TRS producing 118 lbs./TC, which is 20 lbs less than its 4-yr average at this sample date. Of the new varieties, HoCP 04-838 produced 144 lbs./TC, while L 03-371 produced 128 lbs./TC which is 26 and 10 lbs greater than HoCP 96-540. The candidate variety, Ho 05-961 produced the second highest TRS levels at 166 lbs./A.

Estimated yields of the major varieties are higher in 2011 when compared to the 2010 data at this sampling date for both tons/A and lbs/A, this is greatly attributable to higher stalk populations recorded this year which average 20% better than last year. Of the varieties sampled none



Sugarcane Research Unit 5883 USDA Road Houma, LA 70360 (985) 872-5042 – Fax (985) 868-8369 An Equal Opportunity Employer produced less than 36.0 tons/A, with only L 99-226 yielded less than 5000 lbs./A. The average cane yield of the core varieties was 43.5 tons/A which is 8.6 tons better than the 4-yr average and 13.7 tons better than last year. The sugar yield of the core varieties was 1370 lbs./A higher than those recorded in 2010 and the 4-yr average. The highest cane yields were produced by HoCP 96-540 which produced 49.6 tons/A and L 01-283 with 49.5 tons/A. The highest estimated sugar yields were obtained by L 01-283 and HoCP 00-950 producing 8105 lbs./A and 6867 lbs./A respectively. Of the new varieties L 03-371 has the third highest cane yield producing 44.8 tons/A and slightly below average sugar yields with 5762 lbs./A. HoCP 04-838, has below average cane and sugar yields producing 39.5 tons/A and 5685 lbs./A.

The second sampling for the maturity test is scheduled for September 12<sup>th</sup>.

**Reminder.** If you would like to discontinue your receipt of these reports or if you know of individuals who would like to begin receiving this information in 2011, please contact Mrs. Ashley DeHart by email (Ashley.DeHart@ars.usda.gov) Emailing insures address accuracy. Information regarding USDA research activities can also be found on our website: <a href="https://www.ars.usda.gov/msa/srrc/sru">www.ars.usda.gov/msa/srrc/sru</a>.

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

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Reasearch Unit, Houma, LA, August 29, 2011<sup>1</sup>.

2010 (0830)   1.7   71   0.81   1.32   1.25   8.9   70.9   151.3   28.3   4203   2009 (0831)   2.0   85   0.96   1.11   12.0   8.3   83.0   139.8   436.6   6072   2008 (0825)   1.9   76   0.90   1.04   11.1   7.3   66.0   119.8   35.6   4268   2007 (0827)   1.6   73   0.52   1.17   13.1   9.3   71.4   150.2	LA, August 29,	2011.								Sugar	Estimated <sup>5</sup>	
HoCP 96-540 2011 (88/29) 1.9 81 0.99 1.06 11.0 7.2 65.7 117.6 49.6 5886 2010 (8830) 1.7 71 0.81 1.32 12.5 8.9 70.9 151.3 28.3 4283 2009 (8831) 2.0 85 0.86 1.11 12.0 8.3 68.0 139.8 43.6 6072 2008 (8822) 1.9 76 0.93 1.04 11.1 73.3 65.6 119.8 35.6 4289 2010 (8830) 1.9 85 0.86 1.11 12.0 8.3 68.0 139.8 43.6 6072 2009 (8873) 1.6 73 0.82 1.17 13.1 93.3 71.4 180.2 2009 (8821) 1.9 9.0 0.90 0.97 12.4 8.6 69.6 145.3 41.0 5959 2010 (8830) 1.9 85 0.80 1.21 14.7 11.5 78.2 208.3 31.8 6625 2009 (8831) 2.1 92 0.85 1.15 13.7 10.0 73.4 175.2 38.9 6767 2009 (8831) 2.1 92 0.85 1.15 13.7 10.0 73.4 175.2 38.9 6767 2009 (8821) 2.1 92 0.85 1.15 13.7 10.0 73.4 175.2 38.9 6767 2009 (8822) 1.8 80 0.82 1.15 14.5 10.6 73.1 182.3 2009 (8822) 2.0 85 0.89 1.07 12.6 9.1 71.7 156.0 34.3 5343 2009 (8823) 2.0 83 0.87 1.14 12.8 9.2 71.8 182.3 2009 (8822) 2.0 83 0.87 1.14 12.8 9.2 71.8 182.3 2009 (8823) 2.0 83 0.87 1.14 12.8 9.2 71.8 182.3 2009 (8823) 2.0 1.0 0.95 1.12 11.1 7.3 65.8 118.6 43.1 532 2009 (8823) 2009 (8823) 2009 (8823) 2009 (8823) 1.7 80 0.95 1.12 11.1 7.3 65.8 118.6 43.1 5332 2009 (8823) 1.7 80 0.95 1.12 11.1 7.3 65.8 118.6 42.1 5332 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5332 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5333 4000 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5233 4000 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5233 4000 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5233 4000 2009 (8823) 1.7 80 0.85 1.12 11.1 7.3 65.8 118.6 42.1 5233 4000 2009 (8823) 1.7 80 0.95 1.12 11.1 7.7 86.9 12.3 41.0 5082 2009 (8823) 1.7 80 0.85 1.12 11.1 7.7 86.9 12.3 41.0 5082 2009 (8823) 1.7 80 0.85 1.12 13.1 1.7 7.7 66.9 12.3 41.0 5082 2009 (8823) 1.7 80 0.85 1.12 13.1 1.7 7.7 66.1 12.3 6.2 6601 2007 (8827) 1.7 86 0.78 1.13 11.7 11.1 15.3 11.4 7.4 7.0 18.3 13.8 10.3 74.4 18.3 3.8 4660 2009 (8823) 1.7 80 0.88 1.13 13.8 10.3 74.4 18.2 3 36.2 6601 2009 (8823) 1.7 80 0.88 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1												
HoCP 96-540 2011 (08/29) 1.9 81 0.89 1.06 11.0 7.2 65.7 117.6 49.6 5866 2010 (08/30) 1.7 71 0.81 1.32 12.5 8.9 70.9 151.3 28.3 428.3 2009 (08/31) 2.0 85 0.86 1.11 12.0 8.3 69.0 139.8 43.6 6072 2008 (08/25) 1.9 76 0.00 1.04 11.1 7.3 66.0 119.8 35.6 4268 2007 (08/27) 1.6 73 0.82 1.17 13.1 9.3 71.4 160.2	Variety	Year										
2010 (0830)   1.7   71   0.81   1.32   1.25   8.9   70.9   151.3   28.3   4263   2009 (0831)   2.0   85   0.96   1.11   12.0   8.3   83.0   139.8   4365   6072   2008 (0825)   1.9   76   0.90   1.04   11.1   7.3   66.0   119.8   35.6   4268   2007 (0827)   1.6   73   0.52   1.17   13.1   9.3   71.4   150.2			(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
2009 (08/31)   2.0	HoCP 96-540											
2008 (08/25)   1.9   76   0.90   1.04   11.1   7.3   66.0   119.8   35.6   4268   2007 (08/27)   1.6   73   0.82   1.17   13.1   9.3   71.4   160.2			<b>+</b>									
L 97-128    2011 (08/29)   2.0   90   0.90   0.97   12.4   8.6   69.6   145.3   41.0   5959												
L 97-128    2011 (08/29)   2.0   90   0.90   0.97   12.4   8.6   69.6   145.3   41.0   5859   2010 (08/30)   1.9   85   0.80   1.21   14.7   11.5   78.2   203.3   31.8   6625   2099 (08/31)   2.1   92   0.85   1.15   13.7   10.0   73.4   175.2   38.9   6767   2003 (08/25)   2.0   85   0.89   1.07   12.6   9.1   77.1   71.5   34.3   5343   2007 (08/27)   1.8   80   0.82   1.15   14.5   10.6   73.1   182.3			<b>+</b>									
2010 (08/30)		2007 (08/27)	1.6	73	0.82	1.17	13.1	9.3	71.4	160.2		
2010 (08/30)	L 97-128	2011 (08/29)	2.0	90	0.90	0.97	12.4	8.6	69.6	145.3	41.0	5959
2008 (08/25)   2.1   92   0.85   1.15   13.7   10.0   73.4   175.2   38.9   6767												
2008 (08/25)   2.0   85   0.89   1.07   12.6   9.1   71.7   156.0   34.3   5343   2007 (08/27)   1.8   80   0.82   1.15   14.5   10.6   73.1   182.3           2011 (08/29)   2.1   85   0.93   1.00   10.6   6.7   63.3   106.7   41.1   4390   2010 (08/30)   2.0   83   0.87   1.14   12.8   9.2   71.8   158.7   35.6   5659   2008 (08/25)												
L 99-226  L 99-226  2011 (08/29)  2.1												
L 99-226    2011 (08/29)   2.1   85   0.93   1.00   10.6   6.7   63.3   106.7   41.1   4390												
2010 (08/20)   2.0   83   0.87   1.14   12.8   9.2   71.8   158.7   35.6   5659   2009 (08/31)   2.6   91   0.95   1.12   11.1   7.3   65.8   118.6   45.1   5352   2007 (08/27)		2007 (00/21)	1.0	00	0.02	1.10	14.0	10.0	70.1	102.0	ı	
2009 (08/31)   2.6   91   0.95   1.12   11.1   7.3   65.8   118.6   45.1   5352   2008 (08/25)	L 99-226	2011 (08/29)	2.1	85	0.93	1.00	10.6	6.7	63.3	106.7	41.1	4390
L 99-233   2011 (08/29)   1.8   87   0.83   1.03   11.5   7.7   66.9   123.9   41.0   5082   2009 (08/31)   1.7   86   0.78   1.13   11.7   7.9   67.1   127.5   39.3   4981   2007 (08/27)   1.4   81   0.71   1.21   13.0   8.7   67.3   141.4		2010 (08/30)	2.0	83	0.87	1.14	12.8	9.2	71.8	158.7	35.6	5659
L 99-233  2011 (08/29)		2009 (08/31)	2.6	91	0.95	1.12	11.1	7.3	65.8	118.6	45.1	5352
L 99-233    2011 (08/29)   1.8		2008 (08/25)										
Description		2007 (08/27)										
Description	I 00-333	2011 (08/20)	l 19	l 97	0.83	1.03	11 5	77	l 66 0	123.0	41 0 I	5082
2009 (08/31)   1.7   97   0.77   1.02   11.6   7.7   66.1   123.6   42.1   5233   2008 (08/25)   1.7   86   0.78   1.13   11.7   7.9   67.1   127.5   39.3   4981   3007 (08/27)   1.4   81   0.71   1.21   13.0   8.7   67.3   141.4	L 99-233											
HoCP 00-950   1.7   86   0.78   1.13   11.7   7.9   67.1   127.5   39.3   4981												
HoCP 00-950												
HoCP 00-950    2011 (08/29)   1.8											39.3	
2010 (08/30)		2007 (08/27)	1.4	81	0.71	1.21	13.0	8.7	67.3	141.4		<u></u>
2009 (08/31)   1.7   79   0.84   1.08   14.1   10.5   74.0   185.1   36.5   6765   2008 (08/25)   1.8   70   0.88   1.13   13.8   10.3   74.4   182.3   36.2   6601   2007 (08/27)   1.6   68   0.87   1.11   15.3   11.4   74.3   201.3	HoCP 00-950	2011 (08/29)	1.8	76	0.93	0.97	14.1	10.6	75.4	189.3	36.2	6867
L 01-283   2011 (08/29)   1.8   70   0.88   1.13   13.8   10.3   74.4   182.3   36.2   6601		2010 (08/30)	1.6	71	0.81	1.17	14.7	11.3	76.8	203.4	25.6	5189
L 01-283  2011 (08/27)		2009 (08/31)	1.7	79	0.84	1.08	14.1	10.5	74.0	185.1	36.5	6765
L 01-283    2011 (08/29)   1.9		2008 (08/25)	1.8	70	0.88	1.13	13.8	10.3	74.4	182.3	36.2	6601
2010 (08/30)   1.6   81   0.72   1.33   14.7   11.4   77.6   207.2   36.9   7682   2009 (08/31)   1.7   86   0.78   1.12   13.4   9.7   72.0   168.1   40.2   6758   2008 (08/25)   1.7   77   0.81   1.17   13.2   9.6   72.8   168.5   36.7   6108   2007 (08/27)		2007 (08/27)	1.6	68	0.87	1.11	15.3	11.4	74.3	201.3		
2010 (08/30)   1.6   81   0.72   1.33   14.7   11.4   77.6   207.2   36.9   7682   2009 (08/31)   1.7   86   0.78   1.12   13.4   9.7   72.0   168.1   40.2   6758   2008 (08/25)   1.7   77   0.81   1.17   13.2   9.6   72.8   168.5   36.7   6108   2007 (08/27)	L 01-283	2011 (08/29)	1.9	86	0.88	1.00	13.0	9.4	72.3	163.7	49.5	8105
2009 (08/31)												
L 03-371       2011 (08/29)       1.7       77       0.81       1.17       13.2       9.6       72.8       168.5       36.7       6108         L 03-371       2011 (08/29)       1.7       77       0.89       0.99       11.6       7.7       66.2       128.2       44.8       5762         2010 (08/30)       1.7       78       0.81       1.17       13.0       9.3       71.4       162.1       35.5       5758         2009 (08/31)       2.0       90       0.79       1.10       11.6       7.6       65.4       126.2       44.1       5563         2008 (08/25)												
L 03-371  L 03-3												
2010 (08/30)   1.7   78   0.81   1.17   13.0   9.3   71.4   162.1   35.5   5758   2009 (08/31)   2.0   90   0.79   1.10   11.6   7.6   65.4   126.2   44.1   5563   2008 (08/25)												
2010 (08/30)   1.7   78   0.81   1.17   13.0   9.3   71.4   162.1   35.5   5758   2009 (08/31)   2.0   90   0.79   1.10   11.6   7.6   65.4   126.2   44.1   5563   2008 (08/25)												
2009 (08/31)   2.0   90   0.79   1.10   11.6   7.6   65.4   126.2   44.1   5563	L 03-371	2011 (08/29)	1.7	77	0.89	0.99	11.6	7.7	66.2	128.2	44.8	5762
HoCP 04-838 2011 (08/29) 1.6 81 0.85 1.00 11.7 8.5 72.6 144.0 39.5 5685 2010 (08/30) 1.6 77 0.77 1.22 12.9 10.0 77.4 174.3 27.3 4786 2009 (08/31)		2010 (08/30)	1.7	78	0.81	1.17	13.0	9.3	71.4	162.1	35.5	5758
HoCP 04-838 2011 (08/29) 1.6 81 0.85 1.00 11.7 8.5 72.6 144.0 39.5 5685 2010 (08/30) 1.6 77 0.77 1.22 12.9 10.0 77.4 174.3 27.3 4786 2009 (08/31)		2009 (08/31)	2.0	90	0.79	1.10	11.6	7.6	65.4	126.2	44.1	5563
HoCP 04-838 2011 (08/29) 1.6 81 0.85 1.00 11.7 8.5 72.6 144.0 39.5 5685 2010 (08/30) 1.6 77 0.77 1.22 12.9 10.0 77.4 174.3 27.3 4786 2009 (08/31)		2008 (08/25)										
2010 (08/30)   1.6   77   0.77   1.22   12.9   10.0   77.4   174.3   27.3   4786   2009 (08/31)		2007 (08/27)										
2010 (08/30)   1.6   77   0.77   1.22   12.9   10.0   77.4   174.3   27.3   4786   2009 (08/31)	LL-OD 04 000	0044 (00(00)	1 40	٠.,	0.05	1 400	44.7	۱ ۵۰	l 70.0	1 4440	00.5	5005
2009 (08/31)	HoCP 04-838											
(Cont'd) 2008 (08/25)												
(Cont'd) 2007 (08/27)												
Ho 05-961	(O (I - I)											
2010 (08/30)	(Cont'd)	2007 (08/27)										
2010 (08/30)	Ho 05-961	2011 (08/29)	1.7	79	0.88	0.99	13.2	9.7	73.5	165.5	40.1	6655
2009 (08/31)												
2008 (08/25)												
		2008 (08/25)										
	(Cont'd)											

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Reasearch Unit, Houma,

LA. August 29, 2011<sup>1</sup>

LA, August Za	), <b>2</b> 011 .										
		Stalk <sup>2</sup>			Normal juice <sup>3</sup>			Sugar	Estimated <sup>5</sup> yield		
								yield			
Variety	Year	Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
Averages <sup>4</sup>	2011 (08/29)	1.9	84	0.89	1.01	12.4	8.7	70.0	147.9	43.5	6376
	2010 (08/30)	1.6	77	0.78	1.23	13.3	9.7	72.7	168.8	29.8	4998
	2009 (08/31)	1.9	89	0.83	1.09	12.1	8.4	68.7	139.4	41.0	5691
	2008 (08/25)	1.7	77	0.83	1.12	11.5	7.7	66.6	125.4	33.7	4243
	2007 (08/27)	1.5	74	0.79	1.13	13.4	9.4	70.0	157.1		

<sup>3</sup> Brix factor = 0.8854; Sucrose factor = 0.8105.

Data for each parameter represents the average of four replications of 15 stalks each.
 Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalk sample of each rep, will be taken on the 1st, 4th and the 8th maturity study sampling dates.

Averages are based only on varieties included in previous year's first-stubble maturity study (HoCP 96-540, L 97-128, L 99-233, HoCP 00-950, and L01-283).

<sup>&</sup>lt;sup>5</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.