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

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 12th.

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: www.ars.usda.gov/msa/srrc/sru .

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[1].

		Stalk[2]				Normal juice[3]			Sugar yield	Estimated[5] yield	
Variety	Year	Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
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	4263
	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	0.90	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	---	---
L 97-128	2011 (08/29)	2.0	90	0.90	0.97	12.4	8.6	69.6	145.3	41.0	5959
	2010 (08/30)	1.9	85	0.80	1.21	14.7	11.5	78.2	208.3	31.8	6625
	2009 (08/31)	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	---	---
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 (08/30)	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
	2008 (08/25)	---	---	---	---	---	---	---	---	---	---
	2007 (08/27)	---	---	---	---	---	---	---	---	---	---
L 99-233	2011 (08/29)	1.8	87	0.83	1.03	11.5	7.7	66.9	123.9	41.0	5082
	2010 (08/30)	1.4	86	0.68	1.26	12.3	8.4	68.2	137.7	33.8	4660
	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
	2007 (08/27)	1.4	81	0.71	1.21	13.0	8.7	67.3	141.4	---	---
HoCP 00-950	2011 (08/29)	1.8	76	0.93	0.97	14.1	10.6	75.4	189.3	36.2	6867
	2010 (08/30)	1.6	71	0.81	1.17	14.7	11.3	76.8	203.4	25.6	5189
	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	---	---
L 01-283	2011 (08/29)	1.9	86	0.88	1.00	13.0	9.4	72.3	163.7	49.5	8105
	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 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)	---	---	---	---	---	---	---	---	---	---
	2007 (08/27)	---	---	---	---	---	---	---	---	---	---
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)	---	---	---	---	---	---	---	---	---	---
(Cont'd)	2007 (08/27)	---	---	---	---	---	---	---	---	---	---
Ho 05-961	2011 (08/29)	1.7	79	0.88	0.99	13.2	9.7	73.5	165.5	40.1	6655
	2010 (08/30)	---	---	---	---	---	---	---	---	---	---
	2009 (08/31)	---	---	---	---	---	---	---	---	---	---
	2008 (08/25)	---	---	---	---	---	---	---	---	---	---
(Cont'd)	2007 (08/27)	---	---	---	---	---	---	---	---	---	---

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

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Estimated[5] yield	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
Averages[4]	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	---	---

[1] Data for each parameter represents the average of four replications of 15 stalks each.
[2] 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.
[3] Brix factor = 0.8854; Sucrose factor = 0.8105.
[4] 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).
[5] 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.