United States Department of Agriculture

Research, Education, and Economics
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Results of the initial sampling of the 2009, First-Stubble, Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm in Schriever, LA are attached. The first sampling is generally done at the start of the last week in August. The study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2005 – 2009); 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. **When mechanically harvested, one can expect TRS/TC levels to be 10 to 20% lower as a result of additional trash in the cane.** The study includes nine released Louisiana varieties: LCP 85-384, Ho 95-988, HoCP 96-540, L 97-128, L 99-226, L 99-233, HoCP 00-950, L 01-283 and L 01-299, and the candidate variety L 03-371 which is up for release in 2010. Over the years, density measurements have been fairly consistent over the various sampling dates as a result density measurements will only be made during the first, fourth, and eighth sampling of this maturity test. Harvestable sugarcane stalks in all plots were counted on July 9th. Stalk counts, stalk weights, and TRS levels will be used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields for the varieties in this test.

The Ardoyne Farm had a very dry early growing season but has received frequent rains during the last several weeks, and at the time of this sampling, the crop is not lodged. When compared to the 5-year average, sugarcane stalks of the core varieties (LCP 85-384, Ho 95-988, HoCP 96-540, L 97-128, and L 99-233) are slightly lower in weight but are 10 inches longer. Stalk densities are only slightly less than the 5-year average. Of the varieties, L 97-128 and L 99-233 had the longest stalks and L 97-128 and L 99-226 the heaviest. HoCP 00-950 had the shortest stalks of the varieties in this test, but its stalk weight, diameter, and density are all average when compared to the other varieties.

Brix, sucrose, and purities are all higher in 2009 than in 2008 at this sampling date, as a result, the average theoretically recoverable sugar (TRS) levels are nearly 14 lbs/ton of cane (TC) greater in 2009 than in 2008. Of the varieties with major plantings for harvest in 2009, L 97-128 continues to have the highest early TRS levels producing 175 lbs. of sugar/TC; nearly 36 lbs/TC higher than HoCP 96-540. The new varieties HoCP 00-950 and L 01-283 continue to produce good early sugar. HoCP 00-950 has the highest TRS/TC level at 185 lbs., which is 10 and 45 lbs/TC higher than L 97-128 and HoCP 96-540, respectively. L 01-283 produced 168 lbs/TC, which is higher than all other varieties except HoCP 00-950 and L 97-128. The newest variety, L01-299 and the candidate variety L 03-371 have TRS levels equivalent to L 99-233.

When compared to the 2008 data, cane yields are higher in 2009 at this sampling date for both tons/A and lbs/A for the major varieties. Of the varieties sampled, none produced less than 36.0

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tons/A and only one (Ho 95-988) yielded less than 5000 lbs/A. The highest cane yields were produced by L 99-226 which yielded 45.1 tons/A and L 01-299 with 44.6 tons/A. Three varieties, L 97-128, HoCP 00-950 and L 01-283 produced sugar yields in excess of 6700 lbs./A.

The second sampling for the maturity test is scheduled for September 14th.

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 2009, 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 Dr. Ed Richard and Mr. Mike Duet 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 31, 2009[1].

		Stalk[2]				Normal juice[3]			Sugar yield	Estimated[6] yield	
Variety	Year	Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
LCP 85-384	2009 (08/31)	1.7	84	0.80	1.11	11.7	8.1	69.4	135.2	39.9	5411
	2008 (08/25)	1.3	71	0.73	1.27	10.9	7.4	67.6	121.5	28.3	3471
	2007 (08/27)	1.3	70	0.77	1.05	12.3	8.2	66.9	134.1	---	---
	2006 (08/28)	1.7	75	0.82	1.14	10.7	6.8	64.1	108.6	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
Ho 95-988	2009 (08/31)	2.0	85	0.89	1.04	11.6	7.7	65.7	123.4	40.4	4973
	2008 (08/25)	1.6	68	0.88	1.09	11.2	7.2	64.3	114.1	31.1	3552
	2007 (08/27)	1.8	75	0.87	1.16	12.5	8.3	66.2	134.4	---	---
	2006 (08/28)	1.8	74	0.89	1.02	10.6	6.3	59.0	93.5	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
HoCP 96-540	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	---	---
	2006 (08/28)	2.0	80	0.91	1.05	11.2	7.3	65.1	118.2	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 97-128	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	---	---
	2006 (08/28)	2.1	89	0.88	1.05	12.5	8.6	69.0	144.9	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 99-226	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)	---	---	---	---	---	---	---	---	---	---
	2006 (08/28)	---	---	---	---	---	---	---	---	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 99-233	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	---	---
	2006 (08/28)	1.6	81	0.75	1.18	11.0	6.8	61.7	104.6	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
HoCP 00-950	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	---	---
	2006 (08/28)	---	---	---	---	---	---	---	---	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 01-283	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)	---	---	---	---	---	---	---	---	---	---
	2006 (08/28)	---	---	---	---	---	---	---	---	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 01-299	2009 (08/31)	1.8	90	0.79	1.10	11.9	7.9	66.2	128.6	44.6	5735
	2008 (08/25)	---	---	---	---	---	---	---	---	---	---
	2007 (08/27)	---	---	---	---	---	---	---	---	---	---
	2006 (08/28)	---	---	---	---	---	---	---	---	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---
L 03-371	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)	---	---	---	---	---	---	---	---	---	---
	2006 (08/28)	---	---	---	---	---	---	---	---	---	---
(Cont'd)	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Reasearch Unit, Houma, LA, August 31, 2009[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Estimated[6] yield	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lbs/ton)	(tons/A)	lbs/A)
Averages[5]	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	---	---
	2006 (08/28)	1.7	77	0.85	1.10	11.1	7.1	64.1	113.2	---	---
	2005 (08/29)[4]	---	---	---	---	---	---	---	---	---	---

[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] No data taken due to hurricane Katrina for year 2005.
[5] Averages are based only on varieties included in previous year's first-stubble maturity study (LCP 85-384, Ho 95-988, HoCP 96-540 L 97-128, and L 99-233).
[6] 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.