United States Department of Agriculture

Research, Education, and Economics
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Results of the second sampling (September 14) 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. Since the first sampling, the farm has received 3.32 in. of rain. Strong winds associated with some of these rain events have caused a majority of the varieties in the maturity test to become lodged. The varieties with the greatest degree of lodging were L 99-233 and L 99-226. During the 2-week interval, the crop grew an average of only 4 in. with no increase in weight. However, 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 heavier (0.2 lbs) and longer (9 inches) than the 5-year average. The varieties L 99-226 and Ho 95-988 had the heaviest stalks, while L 97-128 and L 99-233 continue to have the longest stalks. HoCP 00-950 continues to have some of the shortest stalks of the varieties in this test, but its stalk weight is average when compared to the core varieties.

Brix, sucrose, and purities are typical for this time of year when compared to the 5-year average. Theoretically recoverable sugar (TRS) levels are only 9 lbs/ton of cane (TC) higher in 2009 than the 5-year average. The varieties with the greatest increase in TRS levels were L 99-226, L 03-371 and Ho 95-988 with an average increase 57 lbs/TC. Those varieties showing the lowest increase in TRS were LCP 85-384, L 97-128 and HoCP 00-950 with an average increase of 33 lbs/TC. Of the varieties with major plantings for harvest in 2009, L 97-128 continues to have the highest early TRS levels producing 212 lbs. of sugar/TC, nearly 29 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 219 lbs., 7 and 36 lbs/TC higher than L 97-128

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and HoCP 96-540, respectively. L 01-283 produced 206 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 had TRS levels of 174 lbs/TC and 182 lbs/TC respectively, which is average when compared to the core varieties. The varieties with the lowest TRS levels were LCP 85-384 (163 lbs/TC) and L 99-233 (166 lbs/TC).

When looking at the estimated yields, none of the varieties sampled produced less than 37.0 tons/A or less than 6000 lbs/A. The highest cane yields were produced by L 01-283 which yielded 47.7 tons/A and L 01-299 with 47.3 tons/A. Every variety except of LCP 85-384 and L 99-233 produced sugar yields of over 8000 lbs/A. The newly released variety L 01-283 was the only one to produce sugar yields over 9000 lbs/A

The third sampling for the maturity test is scheduled for September 28th.

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 2008, 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 Research Unit, Houma, LA, September 14, 2009[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous	Estimated yield[6]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	samples	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
LCP 85-384	2009	1.6	89			13.04	9.47	72.60	162.6	135.2	27.4	37.8	6154
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.4	77	0.72	1.20	13.10	9.68	73.88	167.8	134.1	33.7	---	---
	2006	1.7	86	0.80	1.15	12.84	9.18	71.46	156.2	108.6	47.6	---	---
	2005	1.3	72	0.78	1.05	13.28	9.31	70.11	156.5	no data	0.0	---	---
Ho 95-988	2009	2.3	89			13.92	10.27	73.71	177.8	123.4	54.4	45.9	8129
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	2.0	81	0.87	1.10	13.15	9.27	70.47	156.4	134.4	22.0	---	---
	2006	2.1	85	0.88	1.15	12.71	8.57	67.42	140.5	93.5	47.0	---	---
	2005	1.8	80	0.90	0.99	13.33	9.22	69.14	153.7	no data	0.0	---	---
HoCP 96-540	2009	2.0	91			13.88	10.39	74.88	183.3	139.8	43.5	44.6	8172
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.8	83	0.82	1.18	13.61	10.14	74.47	178.2	160.2	18.0	---	---
	2006	1.8	84	0.80	1.22	12.77	8.93	69.83	151.3	118.2	33.1	---	---
	2005	1.8	78	0.85	1.04	13.39	9.61	71.72	163.7	no data	0.0	---	---
L 97-128	2009	2.2	98			15.16	11.78	77.69	211.9	175.2	36.7	40.7	8607
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.8	88	0.81	1.14	15.12	11.76	77.80	209.7	182.3	27.4	---	---
	2006	2.1	97	0.86	1.08	14.10	10.35	73.41	180.6	144.9	35.7	---	---
	2005	1.8	83	0.81	1.06	14.79	11.02	74.54	193.9	no data	0.0	---	---
L 99-226	2009	2.6	95			13.72	10.22	74.48	179.7	118.6	61.1	45.5	8165
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
L 99-233	2009	1.6	96			13.48	9.79	72.60	166.3	123.6	42.7	39.8	6604
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.4	93	0.68	1.23	13.39	9.61	71.71	162.1	141.4	20.7	---	---
	2006	1.6	90	0.72	1.21	12.93	8.94	69.00	148.9	104.6	44.3	---	---
	2005	1.4	84	0.75	1.00	14.39	10.53	73.15	181.5	no data	0.0	---	---
HoCP 00-950	2009	1.9	82			15.52	12.07	77.79	219.3	185.1	34.2	40.0	8789
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.8	75	0.87	1.12	16.29	13.08	80.28	241.6	201.3	40.3	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
L 01-283	2009	2.0	92			14.74	11.39	77.21	206.2	168.1	38.1	47.7	9867
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
L 01-299	2009	1.9	94			13.61	10.05	73.80	174.0	128.6	45.4	47.3	8249
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2005	---	---	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 14, 2009[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous samples	Estimated yield[6]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS		Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
L 03-371	2009	2.1	87			13.72	10.17	73.98	181.6	126.2	55.4	45.0	8217
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
Averages[5]	2009	1.9	92.6	#DIV/0!	#DIV/0!	13.9	10.3	74.3	180.4	139.4	40.9	41.8	7533
	'2008[7]	---	---	---	---	---	---	---	---	---	---	---	---
	2007	1.6	82	0.77	1.17	14.07	10.58	75.09	184.9	157.1	27.7	---	---
	2006	1.8	84	0.80	1.19	12.94	8.90	68.72	147.7	102.7	45.0	---	---
	2005	1.6	77	0.81	1.05	13.86	10.01	72.13	171.2	no data	0.0	---	---

[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-stalksample of each rep, will be taken on the 1st, 4th and the 8th maturity study sampling dates.

[3] Brix factor = .8854; Sucrose factor = .8105.

[4] Previous scheduled sample date was September 8, 2008 .

[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.

[7] No data taken during this year due to hurricane Gustav.