United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

December 2, 2008

Results of the eighth (December 1, 2008) and final sampling of the First-Stubble Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at Schriever, LA are attached. The study examines the natural ripening process by comparing the results for the same harvest dates over a 5-yr period (2004 – 2008); 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 seven released Louisiana varieties: LCP 85-384, HoCP 91-555, Ho 95-988, HoCP 96-540, L 97-128, L 99-233, HoCP 00-950, and the newly released L 01-283. The variety, L 99-226 was inadvertently omitted when the study was planted in 2006. Harvestable sugarcane stalks in all plots were counted on August 25th. These stalk counts, along with the stalk weights and TRS levels from this harvest date, were used to provide an estimation of cane (t/A) and sugar (lbs./A) yields for the various varieties in this test.

Stalk breakage did occur for a number of the varieties in this test as a result of Hurricane Gustav on September 1st and to a lesser extent Hurricane Ike on September 12th. Efforts are made to include only whole stalks properly topped for this study; as has been done in the past. The Ardoyne Farm received approximately 2 inches of rainfall since the previous sampling with the majority of the rainfall occurring on November 30th, the day prior to this sampling.

There is essentially no change in the average stalk height and weight for the six core varieties (LCP 85-384, HoCP 91-555, Ho 95-988, HoCP 96-540, L 97-128, and L 99-233) since the November 17th sampling 14 days earlier. Stalk height, diameter, and weight for this sampling time appear to be "average" based on data collected since 2004, but stalk densities are significantly lower. Of the varieties, L 99-233 continues to have the longest stalks and HoCP 96-540 and L 97-128 the heaviest. Of note also is the fact that LCP 85-384 had the lightest and shortest stalks, but the densest stalks of the varieties in this study.

Despite the cool, dry, sunny weather there is little change in the measured maturation parameters of juice Brix, sucrose, and purity, as well as TRS levels, for the core varieties suggesting that maturation in 2008 has peaked. The average TRS level for the core varieties is lower for this sampling date than the level recorded in 2005 and 2006 (294 lbs./TC) and 2007 (301 lbs./TC). Only HoCP 96-540 has a TRS level above 300 lbs. for this sampling date. Estimated cane and

Southern Regional Research Center
Sugarcane Research Unit
5883 USDA Road ▪ Houma, LA 70360

sugar yields for the core varieties averaged 41.6 t/A and 11,825 lbs./A, respectively. Above average cane yields are still occurring with HoCP 96-540 (45.1 t/A), L 99-233 (50.0 t/A), and L 01-283 (45.6 t/A). These three varieties, along with HoCP 00-950, produced sugar yields in excess of the average for the core varieties (11,825 lbs./A.

As mentioned above this is the eighth and **final sampling** of the 2008 maturity tests.

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. Sandy Roberts by email (Sandra.Roberts@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 Unit.

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, December 01, 2008[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	sample	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	(lbs/A)
LCP 85-384	2008	1.7	90	0.76	1.14	18.17	15.55	85.55	290.1	286.6	3.5	35.5	10305
	2007	1.8	97	0.72	1.30	19.01	16.48	86.66	309.3	285.3	24.0	---	---
	2006	2.1	101	0.79	1.23	18.50	15.93	86.10	298.1	293.0	5.1	---	---
	2005	1.7	85	0.75	1.18	18.90	16.26	86.02	304.2	279.4	24.8	---	---
	2004	1.9	101	0.75	1.26	17.62	16.31	92.55	282.3	277.9	4.4	---	---
HoCP 91-555	2008	1.8	93	0.81	1.05	18.33	15.33	83.62	280.3	284.9	-4.6	39.2	10996
	2007	2.1	99	0.78	1.24	19.43	16.88	86.87	314.1	296.4	17.7	---	---
	2006	1.8	95	0.77	1.21	18.93	16.33	86.26	302.7	295.8	6.9	---	---
	2005	1.8	92	0.75	1.21	18.84	16.07	85.29	296.5	275.4	21.1	---	---
	2004	2.0	103	0.74	1.27	18.31	16.64	90.89	287.4	282.2	5.2	---	---
Ho 95-988	2008	2.1	88	0.88	1.07	17.89	15.21	85.05	283.1	280.5	2.6	39.1	11072
	2007	2.5	99	0.85	1.20	18.17	15.63	86.00	292.3	286.7	5.6	---	---
	2006	2.7	102	0.92	1.11	18.13	15.65	86.30	293.1	288.0	5.1	---	---
	2005	2.2	89	0.87	1.11	18.66	16.08	86.17	301.1	268.1	33.0	---	---
	2004	---	---	---	---	---	---	---	---	---	---	---	---
HoCP 96-540	2008	2.4	100	0.90	1.06	18.17	15.46	85.07	290.6	283.5	7.1	45.1	13096
	2007	2.3	103	0.81	1.23	18.15	15.36	84.61	288.0	277.3	10.7	---	---
	2006	2.5	104	0.88	1.15	18.00	15.38	85.46	289.6	284.4	5.2	---	---
	2005	2.1	86	0.84	1.13	18.48	15.88	85.93	299.8	265.9	33.9	---	---
	2004	2.4	107	0.81	1.17	17.66	16.04	90.90	280.4	267.7	12.7	---	---
L 97-128	2008	2.4	108	0.90	0.99	18.15	15.11	83.21	281.0	283.8	-2.8	40.9	11516
	2007	2.4	113	0.82	1.17	19.01	16.58	87.21	306.6	302.6	4.0	---	---
	2006	2.5	111	0.87	1.03	18.37	15.58	84.82	292.4	296.7	-4.3	---	---
	2005	2.2	94	0.80	1.19	18.44	15.59	84.54	292.1	277.7	14.4	---	---
	2004	2.5	113	0.80	1.21	18.35	16.88	91.99	294.7	287.5	7.1	---	---
L 99-233	2008	2.1	111	0.82	0.99	17.89	15.19	84.92	279.8	273.2	6.6	50.0	13967
	2007	2.0	110	0.75	1.29	18.35	15.75	85.82	291.4	274.1	17.3	---	---
	2006	2.2	116	0.81	1.06	18.13	15.61	86.09	292.1	290.7	1.4	---	---
	2005	1.8	102	0.76	1.02	18.22	15.52	85.18	289.0	268.2	20.8	---	---
	2004	1.9	118	0.72	1.15	17.93	16.32	91.14	285.2	261.5	23.7	---	---
HoCP 00-950	2008	2.0	92	0.85	1.07	18.70	16.03	85.67	305.1	309.3	-4.2	41.6	12702
	2007	2.2	96	0.81	1.21	20.12	17.57	87.33	337.3	325.5	11.8	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---	---	---	---	---
L 01-283	2008	2.1	99	0.83	1.07	18.62	15.60	83.78	294.1	305.6	-11.5	45.6	13362
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
	2005	---	---	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2004	---	---	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, December 01, 2008[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample	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)
Averages[5]	2008	2.1	98	0.85	1.05	18.10	15.31	84.57	284.1	282.1	2.0	41.6	11825
	2007	2.1	104	0.79	1.23	18.74	16.15	86.14	300.8	286.3	14.5	---	---
	2006	2.2	100	0.83	1.18	18.33	15.73	85.78	293.7	289.3	4.4	---	---
	2005	2.0	92	0.80	1.15	18.40	15.73	85.46	293.8	271.1	22.7	---	---
	2004	2.2	104	0.79	1.24	17.78	16.23	91.51	282.2	273.9	8.3	---	---

[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] Previous sample date was November 17, 2008.

[5] Averages are based only on varieties included in previous year's first-stubble maturity study (LCP 85-384, HoCP 91-555, 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