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Results of the October 23, 2006, samplings of the First-Stubble (5th sampling) and Plant-Cane (2nd sampling) Sugarcane Maturity Tests at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at Schriever, LA are attached. The study examines the natural ripening process and compares the results over a 5-yr period (2002 – 2006) for the same harvest dates; 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 first-stubble study includes eight released Louisiana varieties: LCP 85-384, HoCP 85-845, HoCP 91-555, Ho 95-988, HoCP 96-540, L 97-128, L 99-226, and L 99-233 and one Florida variety, CP 89-2143. The plant-cane study contains these varieties as well as HoCP 00-950 which is a candidate for release in 2007. The variety CP 70-321 is no longer included in the maturity studies because of declining acreage.

First stubble. All of the varieties are exhibiting some lodging and are trying to upright themselves. In the slightly over 2-week interval since the last sampling, the average increase in stalk length and weight was 9 in. and 0.13 lbs., respectively, while average stalk diameters and densities remained unchanged. As a result, stalk weights are the highest for the four varieties in this test since 2002 with similar highs in stalk length only being obtained in 2004. The greatest amount of growth since the last sampling occurred with the newly released varieties L 99-226 (16 in.) and L 99-233 (19 in.), but these two varieties have the greatest amount of lodging. Generally growth after significant lodging is accompanied by a slowing in the rate of sugar accumulation. This does not appear to be the case in 2006 as the average increase in TRS for the four varieties in this test since 2002 is nearly 46 lbs./ton. The varieties HoCP 91-555, HoCP 96-540, and Ho 95-988 have the greatest increases, but these varieties lagged behind the others in previous samplings. Sugar levels for HoCP 85-845 are still uncharacteristically high for this variety, but the increases in sugar recovery appears to be slowing when compared to the other varieties. Increases in TRS for the newly released L 99-233 are also trailing behind the other varieties, but it has the most lodging. It is interesting to note that, with the exception of L 99 -233, all of the varieties have higher sugar levels than the Florida variety, CP 89-2143. However, CP 89-2143's stalk weight is the second highest - surpassed only by the 27-in. taller L 99-226.



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Plant cane. Like the first stubble, plant-cane stalk lengths and weights for the five varieties included since 2002 are higher than previously obtained while diameters and estimated densities are similar suggesting that plant-cane yields (TC/A) may also be better than in previous years, especially if the newer varieties comprise a significant portion of the harvested plant cane. All of the varieties exhibited some lodging, particularly the taller varieties. The candidate variety, HoCP 00-950, and the Florida variety, CP 89-2143, are at least a foot shorter than the other varieties in this test, but their stalk weights are higher than HoCP 91-555 and L 99-233. In addition to higher anticipated tonnages, TRS/TC levels for the five varieties planted since 2002 are also slightly higher than in previous years. Of the varieties in the plant-cane test, HoCP 96-540 has the lowest TRS level (252 lbs.) and the experimental variety HoCP 00-950 the highest (306 lbs.). HoCP 00-950 continues to show an exceptionally high level of sugar that is nearly 30 lbs. higher than L 97-128. The Florida variety CP 89-2143 also has a relatively low TRS (263 lbs.) but it is similar to LCP 85-384. As in the first-stubble, the stalk weight of CP 89-2143 is surpassed only by the 15-in. taller L 99-226.

The next sampling of the maturity test is scheduled for November 6th.

Reminder. If you would like to discontinue your receipt of these reports in 2006 or if you know of individuals who would like to begin receiving this information in 2006, please contact Mrs. Sandy Roberts by email (sroberts@src.ars.usda.gov). Emailing insures address accuracy.

Maturity study reports are prepared by Dr. Ed Richard of the USDA-ARS Sugarcane Research Unit.

Good luck with the rest of the 2006 Harvest Season!!

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, October 23, 2006¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield TRS (lb.)	Previous sample date ⁴ TRS (lb.)	TRS change from previous sample (lb.)
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)			
L 99-233	2006	1.98	113	0.77	1.05	16.38	13.38	81.61	244.3	205.2	39.1
	2005	1.78	98	0.74	1.15	17.29	13.99	80.96	254.4	237.6	16.8
	2004	1.77	110	---	---	16.67	14.08	84.40	261.3	241.2	20.1
	2003	2.01	92	---	---	17.29	14.53	84.04	271.6	239.8	31.8
	2002	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2006	2.13	102	0.84	1.07	17.24	14.35	83.24	264.5	218.6	45.9
	2005	1.86	88	0.80	1.13	17.05	13.94	81.76	254.9	225.9	29.0
	2004	2.03	102	---	---	16.77	14.29	85.21	266.6	241.8	24.8
	2003	1.78	88	---	---	17.58	14.65	83.35	270.7	236.0	34.8
	2002	1.96	93	---	---	15.97	12.97	81.22	234.8	199.8	35.0

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-stalk sample of each rep.

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

⁴ Previous sample date was October 6, 2006.

⁵ Averages are based only on varieties included in previous year's first-stubble maturity study (LCP 85-384, HoCP 85-845, HoCP 91-555, and HoCP 96-540).

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, October 23, 2006¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield	Previous sample date ⁴	TRS change from previous sample
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	TRS (lb.)	(lb.)
LCP 85-384	2006	1.9	101	0.74	1.23	16.89	14.18	83.91	262.3	211.4	50.9
	2005	1.7	81	0.82	0.97	17.07	13.95	81.68	254.7	---	---
	2004	2.0	91	---	---	16.80	14.23	84.65	264.2	205.8	58.4
	2003	1.8	89	---	---	16.51	13.48	81.63	246.0	179.8	66.2
	2002	2.2	100	---	---	15.01	11.95	79.64	215.6	166.5	49.1
HoCP 85-845	2006	2.6	105	0.94	0.99	17.31	14.57	84.15	269.8	220.4	49.4
	2005	2.1	86	0.91	1.03	17.02	14.06	82.61	258.2	---	---
	2004	2.4	98	---	---	16.51	14.04	84.97	261.2	220.8	40.4
	2003	2.1	94	---	---	16.29	13.43	82.46	246.5	179.8	66.7
	2002	2.3	93	---	---	15.89	13.07	82.24	239.5	180.9	58.6
CP 89-2143	2006	2.9	99	1.00	1.04	16.87	14.38	85.26	262.7	196.9	65.8
	2005	2.3	80	0.96	0.99	15.94	13.10	82.17	239.9	---	---
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
HoCP 91-555	2006	2.2	105	0.82	1.06	18.42	15.55	84.41	285.5	222.4	63.1
	2005	1.7	82	0.75	1.16	18.17	14.99	82.45	274.9	---	---
	2004	2.0	100	---	---	17.42	14.51	83.27	264.8	215.3	49.5
	2003	1.9	93	---	---	17.35	14.10	81.25	254.3	196.0	58.3
	2002	1.9	95	---	---	16.31	13.05	79.94	233.5	165.6	67.9
Ho 95-988	2006	2.6	103	0.91	1.09	17.44	14.62	83.76	270.1	215.8	54.3
	2005	2.3	87	0.95	0.98	16.91	13.76	81.34	248.4	---	---
	2004	2.3	96	---	---	15.83	12.80	80.80	232.6	194.3	38.3
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
HoCP 96-540	2006	2.6	113	0.87	1.12	16.49	13.61	82.53	252.2	181.5	70.7
	2005	2.1	85	0.90	1.06	16.16	13.01	80.47	235.8	---	---
	2004	2.5	96	---	---	16.31	13.43	82.25	248.4	199.4	49.0
	2003	2.2	94	---	---	16.67	13.52	81.12	248.5	179.6	68.9
	2002	2.3	99	---	---	14.79	11.45	77.42	199.5	161.5	38.0
L 97-128	2006	2.6	117	0.87	1.06	17.82	14.91	83.66	275.4	229.1	46.3
	2005	2.2	100	0.88	1.04	17.89	14.57	81.44	268.3	---	---
	2004	2.4	104	---	---	17.86	15.32	85.76	289.0	254.5	34.5
	2003	2.1	98	---	---	17.04	13.87	81.37	255.3	199.8	55.5
(Cont'd.)	2002	2.5	105	---	---	15.72	12.63	80.37	233.4	197.2	36.2

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, October 23, 2006¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield	Previous sample date ⁴	TRS change from previous sample
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	TRS (lb.)	(lb.)
L 99-226	2006	3.1	114	0.94	1.11	17.64	14.88	84.35	278.7	212.6	66.1
	2005	2.5	94	0.90	1.12	17.15	14.04	81.82	259.1	---	---
	2004	3.2	107	---	---	16.65	13.88	83.34	258.5	217.8	40.7
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
L 99-233	2006	2.2	116	0.81	1.06	17.58	14.83	84.39	272.4	228.8	43.6
	2005	1.7	97	0.77	1.03	17.49	14.46	82.68	268.2	---	---
	2004	1.9	106	---	---	17.07	14.20	83.20	261.6	209.4	52.2
	2003	1.8	107	---	---	16.31	13.21	80.93	240.0	168.4	71.6
	2002	---	---	---	---	---	---	---	---	---	---
HoCP 00-950	2006	2.3	98	0.89	1.09	18.73	16.06	85.74	305.8	252.2	53.6
	2005	---	---	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2006	2.4	108	0.88	1.08	17.38	14.61	84.05	269.9	213.2	56.7
	2005	2.0	89	0.86	1.05	17.23	14.11	81.81	258.4	---	---
	2004	2.3	100	---	---	16.81	14.05	83.53	260.0	214.7	45.4
	2003	2.0	96	---	---	16.70	13.60	81.46	248.4	183.9	64.5
	2002	2.2	98	---	---	15.54	12.43	79.92	224.3	174.3	50.0

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-stalk sample of each rep.

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

⁴ Previous sample date, September 25, 2006 .

⁵ Averages are based only on varieties included in previous year's plant-cane maturity study (LCP 85-384, HoCP 85-845, HoCP 91-555, HoCP 96-540, and L 97-128).