



United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

October 12, 2011

Results of the fourth sampling (October 11) of the 2011, of the 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. Beginning in 2008, harvestable sugarcane stalks in all plots are counted in mid-July and together with stalk weights and TRS levels are used to provide an estimation of gross cane (tons/A) and sugar (lbs/A) yields.

During the 2-week sampling interval, the five core varieties grew an average of 4 in. and increased in stalk weight by 0.2 lb. The resulting stalk lengths and weights are now about average for this sampling date. Of the varieties, L 97-128, L 99-226, and L 99-233 had the longest stalks and HoCP 00-950 and the candidate variety, Ho 05-961, the shortest stalks. As expected, L 97-128 and L 99-226 had the heaviest stalks with all of the other varieties producing stalks in excess of 2.0 lbs. When compared to the previous four years, sugarcane stalks of the core varieties (HoCP 96-540, L 97-128, L 99-233, HoCP 00-950 and L 01-283) are slightly above average in stalk diameter but lower in stalk density.

The weather over the two-week sampling interval (no rain and cool nights) obviously promoted natural ripening while discouraging growth as Brix, sucrose, and purity percentages are now higher than in the previous 4 years for the core varieties. These increases are reflected in TRS levels. Of particular note is the change in TRS from the previous 2-week sampling (>40 lbs./TC) for HoCP 96-540, L 01-283, L 03-371, HoCP 04-838, and the candidate variety Ho 05-961. The newly released variety, HoCP 04-838, had a tremendous increase in TRS (65.5 lbs./TC) for the 2-week period. Increases in TRS for the varieties such as L 97-128 and HoCP 00-950 that are considered early maturers were significantly less and expected.

Estimated yields of the major varieties are higher in 2011 at this time than in the previous three years. The average cane yield of the core varieties was 51 tons/A; 8.6 tons better than the previous 3-yr average and 12.8 tons better than last year. Three varieties (HoCP 96-540, L 99-226, and L 03-371) had estimated cane yields in excess of 55 tons/A. However, the highest sugar yields (>14,000 lbs./A) were obtained with L 01-283 and L 03-371. The newly released



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variety, HoCP 04-838, and the candidate variety, Ho 05-961, both produced sugar yields approximately equivalent to Ho 00-950 (>13,000 lbs./A), but in excess of the average (12,805 lbs./A) for the five core varieties.

The fifth sampling for the maturity test is scheduled for October 24th.

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/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 Research Unit, Houma, LA, October 11, 2011¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield TRS (lb.)	Previous sample date ⁴ TRS (lb.)	TRS change from previous sample (lb.)	Estimated yield ⁶	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)				Cane (tons/A)	Sugar (lbs/A)
Ho 05-961	2011	2.2	94	0.89	1.04	17.71	14.89	84.09	273.0	231.8	41.2	50.2	13699
	2010	---	---	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---	---	---
	2008	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2011	2.2	98	0.86	1.05	16.74	13.73	81.97	254.0	219.6	34.4	51	12805
	2010	2.1	103	0.80	1.20	16.70	13.60	81.20	248.8	218.9	29.9	38.2	9470
	2009	2.3	105	0.82	1.16	14.80	11.70	79.20	210.8	204.7	6.1	49.9	10492
	2008	2.0	91	0.82	1.11	15.36	11.96	77.84	213.2	178.9	34.3	39.0	8311
	2007	1.9	94	0.76	1.23	15.67	12.62	80.40	228.4	201.5	26.9	---	---

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 26, 2011 .

⁵ Averages are based only on varieties included in previous year's first-stubble maturity study (HoCP 96-540, L 97-128, L99-233, HoCP 00-950, and L01-283).

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.