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Results of the October 12, 2010, samplings of the First-Stubble (fourth sampling) Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at 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 (2006 – 2010); 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: Ho 95-988, HoCP 96-540, L 97-128, L 99-226, L 99-233, HoCP 00-950, L 01-283 and L 03-371, and the candidate variety HoCP 04-838. L 01-299 is omitted from this test because its release was not expected when the test was planted in 2008. Harvestable sugarcane stalks in all plots were counted on July 9th. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields.

The Ardoyne Farm has received frequent, timely rains during the growing season and at the time of this sampling; the crop is mostly erect, with the exception of L99-226 and L99-233. Since the last sampling, the farm has received 0.29 in. of rain all of which fell Monday morning prior to sampling. During the 2-week interval, the average growth for the core varieties (Ho 95-988, HoCP 96-540, L 97-128, L 99-233 and HoCP 00-950) was 7.6 in. with a 0.17 lb increase in stalk weight. When compared to the previous four years sugarcane stalks of the core varieties are average in weight, but above average in length and density for this sampling. The varieties, L 99-233, L 99-226, and L 97-128 continue to have the longest stalks and HoCP 00-950 the shortest stalks. The variety L 99-226 had the heaviest stalks, while L 01-283 and L 99-233 had the lightest. The newly released variety, L 03-371, and the candidate for release, HoCP 04-838, are average in length and weight when compared to the averages for the core varieties.

Brix, sucrose, and purity percentages are all higher in 2010 than in the previous four years for this sampling date. The average theoretically recoverable sugar (TRS) levels for the core varieties at this sampling date is 38 lbs./ton of cane (TC) greater than those recorded in 2009. The varieties with the greatest increase in TRS levels were L 99-226 and HoCP 96-540 with an average increase of 41 lbs./TC. Of the varieties with major plantings for harvest in 2010, L 01-283, L 97-128 and HoCP 00-950 continue to have the highest TRS levels producing over 280 lbs. of sugar/TC; which is 60 lbs./TC higher than HoCP 96-540 and L 99-233. The new variety L 03-371 produced 247 lbs./TC and the candidate variety HoCP 04-838 produced 258 lbs./TC ; both would be considered similar to the average for the core varieties.



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Estimated cane and sugar yields of the major varieties are lower in 2010 when compared to the 2009 data at this sampling date for both tons/A and lbs/A. Of the varieties sampled, the highest cane yields were produced by L 03-371 which yielded 46.2 tons/A and L 01-283 with 42.5 tons/A. The highest estimated sugar yields were obtained by L 01-283 and L 03-371 producing 12207 lbs./A and 11397 lbs./A respectively. The candidate variety, HoCP 04-838, has cane and sugar yields that are similar to the average for the core varieties but better than HoCP 96-540.

The fifth sampling of the first-stubble maturity test is scheduled for October 25th.

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 2010, 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, October 12, 2010¹.

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/cm3)	Bx. (%)	Su. (%)	Pu. (%)				Cane (tons/A)	Sugar (lbs/A)
HoCP04-838	2010	2.1	103	0.79	1.13	17.02	14.26	83.76	258.3	228.5	29.8	36.2	9337
	2009												
	2008	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2010	2.1	102.6	0.8	1.2	16.7	13.6	81.2	248.8	218.9	29.9	38.2	9470.2
	2009	2.3	105	0.82	1.16	14.8	11.7	79.2	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	---	---
	2006	2.0	93	0.81	1.12	15.42	12.18	78.91	218.6	188.6	30.0	---	---

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, 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 27, 2010.

⁵ Averages are based only on varieties included in previous year's first-stubble maturity study (Ho 95,988, HoCP 96-540, L 97-128, L99-233, and HoCP 00-950).

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.