



December 9, 2015

Results of the 7th sampling of the first-stubble Maturity Test and the 3rd sampling of the plant-cane Maturity Test harvested on November 23, 2015 at the USDA-ARS Sugarcane Research Unit's Ardoyne Research Farm in Schriever, LA are attached. This study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2011 – 2015); consequently, a glyphosate-containing ripener is not applied. Samples consist of 10 hand-cut stalks, stripped of leaves, and properly topped. **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.** Included in both test are seven commercially released Louisiana varieties: HoCP 96-540, L 99-226, HoCP 00-950, L 01-283, L 01-299, HoCP 04-838 and Ho 07-613, along with two experimental varieties, HoCP 09-804 and Ho 09-840.

Since the last sampling, the farm has received 3.15 in. of rainfall.

First-Stubble: Over the 2-week sampling period the crop showed a decrease in weight by 0.02 lbs. and only 3.00 in. of growth. The average stalk weight (2.09 lbs.) is 0.09 lbs. better than last year, but 0.11 lbs. less than the 4-year average. The varieties with the heaviest stalks were L 99-226 (2.53 lbs.) and Ho 07-613 (2.50 lbs.), while Ho 09-840 (1.62 lbs.) and HoCP 09-804 (1.70 lbs.) had the lightest stalks. The longest stalks were produced by L 01-283 (114 in.) and L 99-226 (112 in.); the shortest stalks were produced by HoCP 00-950 (94 in.) and Ho 09-840 (99 in.).

Purities continue to be better this year than last year and better than the 4-year average for this sample date. Theoretical recoverable sugar (TRS) levels are only 1.34 lbs./ton of cane (TC) less than last year and 3.12 lbs./TC less than the 4-year average. The average increase in TRS during the 2-week period was 8.7 lbs. The average increase in TRS per day is 0.62 lbs., with some varieties slightly above 1 lb./day; a strong indication that this crop has reached full maturity.

Overall, HoCP 00-950 (311 lbs./TC) and Ho 07-613 (305 lbs./TC) have the highest TRS levels; HoCP 04-838 (273 lbs./TC) and L 01-299 (280 lbs./TC) had the lowest TRS levels. The variety with the largest increase in TRS during the sampling period was L 01-299 (17.6 lbs.). The smallest increase in TRS was produced by HoCP 00-950 and HoCP 04-838 with 2.1 lbs. each.

Plant-cane: Over the 4-week sampling period, stalks increased in weight by 0.13 lbs. and grew an average of 5 in. Stalks are 0.38 lbs. heavier and 8 in. longer than last year and 0.27 lbs. heavier and 6 in. longer than the 4-year average. Overall, L 99-226 (3.58 lbs.) and Ho 07-613 (2.87 lbs.) produced the heaviest stalks; the lightest stalks were produced by the candidate varieties Ho 09-840 (1.96 lbs.) and HoCP 09-804 (2.18 lbs.). The longest stalks were also produced by L 99-226 (128 in.) and Ho 07-613 (119 in.); the shortest stalks were produced by Ho 09-840 (107 in.) and HoCP 00-950 (109 in.).

Similar to the 1st stubble test, brix and sucrose percentages are lower than both last year and the 4-year average, but purities are higher in both instances. The average TRS is only 1.26 lbs./TC better than last year but 4.41 lbs./TC less than the 4-year average. The highest TRS levels were produced by HoCP 00-950 (313 lbs./TC) and HoCP 09-804 (300 lbs./TC), while HoCP 96-540 (274 lbs./TC) and HoCP 04-838 (279 lbs./TC) produced the lowest TRS levels. The average increase in TRS during the 4-week period was 23.1 lbs. or 0.82 lbs./day. The variety with the largest increase in TRS was L 01-299 (41.0 lbs.); the smallest increases were produced by HoCP 04-838 and Ho 07-613 with 10.7 lbs. each.

The eighth and final sampling for the 1st stubble maturity test is scheduled for December 7th.

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, please contact Mrs. Brenda Aysenne by email (Brenda.Aysenne@ars.usda.gov) emailing insures address accuracy. Information regarding USDA research activities can also be found on our website:

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Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, November 23, 2015¹.

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.)
Ho 09-840	2015	1.96	107	0.76	1.11	18.33	15.74	85.87	297.0	267.3	29.7
	2014	1.69	104	0.75	1.09	18.19	15.60	85.73	291.4	251.1	40.3
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2015	2.63	115	0.83	1.16	17.93	15.41	85.96	290.8	267.6	23.1
	2014	2.25	107	0.82	1.15	18.06	15.44	85.43	289.5	255.0	34.5
	2013	2.30	114	0.79	1.17	18.01	15.49	86.03	292.7	254.3	38.4
	2012	2.30	113	0.84	1.03	18.77	16.14	85.99	304.9	280.1	24.8
	2011	2.60	103	0.89	1.70	18.38	15.59	84.82	293.6	261.3	32.3

¹ Data for each parameter represents the average of four replications of 10 stalks each.

² Stalk diameter and density will be taken on the 1st & 3rd plant-cane maturity study sampling.

³ Brix factor = 0.8854; Sucrose factor = 0.8105.

⁴ Previous sample date, October 27, 2015.

⁵ Averages are based on all varieties in the plant cane maturity study.

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/cm3)	Bx. (%)	Su. (%)	Pu. (%)			
Averages ⁵	2015	2.09	106.1	---	---	17.96	15.47	86.10	291.7	283.0	8.7
	2014	2.00	101	---	---	18.12	15.53	85.72	293.0	282.6	10.4
	2013	2.10	106	---	---	17.65	15.02	85.05	282.4	271.2	11.2
	2012	2.40	114	---	---	18.64	16.04	86.00	304.0	288.8	15.1
	2011	2.30	103	---	---	18.58	15.90	85.53	299.7	291.3	8.4

¹ Data for each parameter represents the average of four replications of 10 stalks each.

² Stalk diameter and density will be taken on the 1th, 4th and the 8th maturity study sampling dates.

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

⁴ Previous scheduled sample date was November 9, 2015.

⁵ Averages are based on all varieties in the first-stubble maturity study.