United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

December 29, 2014

Results of the 7th sampling (November 17, 2014) of the first-stubble Maturity Test and the 3rd sampling of the plant-cane Maturity Test 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 (2010 – 2014); 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 commercial Louisiana varieties: HoCP 96-540, L 99-226, HoCP 00-950, L 01-283, L 01-299, HoCP 04-838 and the newly released Ho 07-613. The plant-cane test also includes two experimental varieties, HoCP 09-804 and Ho 09-840.

Since the last sampling, the farm has received 0.33 in. of rain.

First-Stubble: During the 2-week sampling period the average weight increased by 0.13 lbs. while length increased by 3 inches. The average stalk weight (2.00 lbs.) is 0.25 lbs. less than the 4-yr average and 0.10 lbs. less than last year. Of the varieties, L 99-226 (2.43 lbs.) and Ho 07-613 (2.31 lbs.) have the heaviest stalks, with L 01-283 (1.81 lbs.) and HoCP 00-950 (1.77 lbs.) producing the lightest stalks. The longest stalks were produced by L 99-226 (111 in.) and L 01-299 (110 in.), while HoCP 00-950 (89 in.) and HoCP 04-838 (93 in.) had the shortest stalks.

Brix, sucrose, and purities are significantly better than last year at this sample date, but when compared to the 4-yr average, only purity is better. Theoretically recoverable sugar (TRS) levels are 10.6 lbs./ton of cane (TC) better than last year, but equal to the 4-yr average. The average increase in TRS during the 2-week period was only 10.4 lbs. which is average for this point in the season.

For the varieties recommended in 2014, HoCP 00-950 (317 lbs./TC) and L 01-283 (311 lbs.TC) continue to have the highest early TRS levels. L 01-299 (277 lbs./TC) and HoCP 96-540 (280 lbs./TC) produced the lowest TRS levels. The varieties with the largest increases in TRS during the sampling period were L 01-299 (15.5 lbs.) and Ho 07-613 (13.4 lbs.).

Plant-cane: For the 4-week sampling period stalk weight increased by 0.08 lbs. and length increased by 4 inches. When compared to the 4-yr average, stalks weighted 0.18 lbs. less and were 4 inches shorter. Of the varieties, the heaviest stalks were produced by L 99-226 (3.11 lbs.) and HoCP 96-540 (2.56 lbs.); while the candidate varieties Ho 09-840 (1.69 lbs.) and HoCP 09-804 (1.81 lbs.) continue to produce the lightest stalks. The longest stalks were produced by L 01-283 and L 99-226 with 113 in. each and L 01-299 (112 in.), the shortest stalks were produced by HoCP 00-950 (98 in.) and HoCP 04-838 (103 in.).

Brix, sucrose and purity levels for this sampling period are lower than the 4-yr average. Overall, the

Sugarcane Research Unit
5883 USDA Road, Houma, LA 70360
Voice: 985-872-5042 · Fax: 985-868-8369

average TRS increased by 34.5 lbs. over the 4-week period. The 290 lbs./TC produced are only 6.4 lbs. less than the 4-yr average and 3.2 lbs. less than last year. The varieties with the highest TRS levels were HoCP 00-950 (322 lbs./TC) and L 01-283 (306 lbs./TC), while the lowest TRS levels were produced by HoCP 96-540 (260 lbs./TC) and L 01-299 (270 lbs./TC). Ho 07-613 (42.9 lbs.) had the largest increase in TRS over the sampling period; HoCP 09-804 (20.8 lbs.) had the smallest increase.

The eighth and final sampling for the 1st stubble maturity test is scheduled for December 2nd.

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: http://www.ars.usda.gov/main/site_main.htm?modecode=64-10-00-00.

Maturity reports are prepared by Mr. Mike Duet of the USDA-ARS Sugarcane Research Unit.

Sugarcane Research Unit
5883 USDA Road, Houma, LA 70360
Voice: 985-872-5042 · Fax: 985-868-8369

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, November 17, 2014[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
HoCP 96-540	2014	2.56	109	0.85	1.14	17.04	14.04	82.38	260.0	233.6	26.4
	2013	2.36	113	0.80	1.16	17.71	15.06	85.06	283.1	226.3	56.8
	2012	2.49	115	0.85	1.06	18.35	15.56	84.77	292.0	252.4	39.6
	2011	2.53	98	0.90	1.66	18.19	15.33	84.25	286.9	236.3	50.6
	2010	2.59	112	0.80	1.30	17.84	15.17	85.02	285.1	250.0	35.1
L99-226	2014	3.11	113	0.95	1.09	17.93	15.09	84.17	282.3	242.6	39.7
	2013	2.97	123	0.85	1.18	18.15	15.66	86.30	296.3	238.9	57.4
	2012	3.13	126	0.98	0.92	18.90	16.34	86.41	309.2	264.1	45.1
	2011	3.39	112	0.95	1.76	18.39	15.68	85.25	295.0	253.0	42.0
	2010	3.29	123	0.91	1.14	18.75	16.18	86.29	306.0	278.0	28.0
HoCP 00-950	2014	2.18	98	0.83	1.15	19.46	16.84	86.57	322.1	292.5	29.6
	2013	2.11	105	0.80	1.13	19.08	16.61	87.04	318.4	293.8	24.6
	2012	2.10	107	0.83	1.00	18.93	16.39	86.58	313.5	304.8	8.7
	2011	2.33	99	0.88	1.60	18.99	16.18	85.21	307.4	292.2	15.2
	2010	2.26	106	0.77	1.26	18.81	16.12	85.66	306.7	293.4	13.3
L 01-283	2014	2.50	113	0.82	1.17	18.62	16.03	86.12	305.9	265.7	40.2
	2013	1.84	106	0.71	1.20	18.39	15.83	86.05	301.9	277.3	24.6
	2012	2.07	109	0.78	1.10	19.24	16.54	85.99	315.5	302.6	12.9
	2011	2.45	98	0.86	1.80	18.95	16.25	85.76	309.5	278.9	30.6
	2010	2.44	115	0.75	1.32	18.42	15.68	85.15	297.7	285.1	12.6
L01-299	2014	2.06	112	0.78	1.18	17.49	14.61	83.54	269.7	230.4	39.3
	2013	1.94	115	0.68	1.29	16.98	14.37	84.66	266.9	228.5	38.4
	2012	2.30	116	0.79	1.14	18.33	15.63	85.26	291.2	253.4	37.8
	2011	2.35	103	0.84	1.73	17.86	15.11	84.57	280.4	242.2	38.2
	2010	2.64	111	0.84	1.19	18.70	16.04	85.78	299.7	285.7	14.0
HoCP 04-838	2014	1.92	103	0.77	1.20	18.06	15.54	86.02	287.7	256.2	31.5
	2013	2.32	112	0.80	1.15	18.02	15.57	86.41	288.9	261.3	27.6
	2012	2.19	109	0.81	1.10	18.84	16.36	86.83	304.2	279.6	24.6
	2011	2.25	99	0.86	1.61	18.22	15.66	85.98	289.9	262.0	27.9
	2010	2.34	114	0.76	1.24	17.91	15.32	85.54	283.0	270.0	13.0
Ho 07-613	2014	2.38	109	0.85	1.17	17.64	15.50	87.86	292.8	249.9	42.9
	2013	2.83	118	0.85	1.19	17.84	15.40	86.33	294.3	262.9	31.4
	2012	2.66	119	0.85	1.08	18.55	16.07	86.64	307.4	288.5	18.9
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
HoCP 09-804	2014	1.81	104	0.74	1.12	18.11	15.67	86.52	293.7	272.9	20.8
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2010	---	---	---	---	---	---	---	---	---	---

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, November 17, 2014[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
Ho 09-840	2014	1.69	104	0.75	1.10	18.19	15.60	85.73	291.4	251.1	40.3
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
Averages[5]	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
	2010	2.50	114	0.79	1.34	18.27	15.55	85.11	292.4	274.4	18.0
	#7Avg	2.43	111	0.83	1.31	18.36	15.69	85.49	295.9	267.5	28.4

[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 1st & 3rd plant-cane maturity study sampling.

[3] Brix factor =0.8854; Sucrose factor = 0.8105.

[4] Previous sample date, October 20, 2014.

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

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, November 17, 2014[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
HoCP 96-540	2014	1.94	98	---	---	17.73	14.95	84.29	279.7	270.3	9.4
	2013	2.26	105	---	---	17.00	14.06	82.73	260.9	246.4	14.5
	2012	2.47	113	---	---	18.15	15.48	85.29	291.4	271.6	19.8
	2011	2.42	101	---	---	18.59	15.98	85.92	301.7	289.1	12.6
	2010	2.30	100	---	---	17.84	15.18	85.11	285.5	258.6	26.9
L 99-226	2014	2.43	111	---	---	17.89	15.12	84.53	283.3	273.6	9.7
	2013	2.74	113	---	---	18.17	15.60	85.82	294.3	274.3	20.0
	2012	2.84	124	---	---	19.08	16.44	86.13	310.6	287.8	22.8
	2011	2.81	107	---	---	18.66	16.09	86.25	304.4	304.5	-0.1
	2010	2.79	112	---	---	18.77	16.28	86.72	308.7	294.0	14.7
HoCP 00-950	2014	1.77	89	---	---	19.12	16.57	86.65	317.1	311.6	5.5
	2013	1.86	97	---	---	18.70	16.14	86.29	308.3	297.3	11.0
	2012	2.02	106	---	---	18.86	16.32	86.53	312.1	297.4	14.7
	2011	2.27	95	---	---	19.19	16.60	86.48	317.3	318.7	-1.4
	2010	2.09	92	---	---	19.17	16.55	86.36	316.3	308.1	8.2
L 01-283	2014	1.81	102	---	---	18.77	16.26	86.65	311.2	300.4	10.8
	2013	1.80	105	---	---	17.69	15.03	84.95	285.1	283.7	1.4
	2012	2.16	114	---	---	19.17	16.62	86.71	318.1	309.4	8.7
	2011	2.33	103	---	---	18.81	16.11	85.64	306.7	308.9	-2.2
	2010	2.01	102	---	---	19.28	16.65	86.34	318.0	312.9	5.1
L 01-299	2014	1.88	110	---	---	17.46	14.87	85.12	276.8	261.3	15.5
	2013	1.82	112	---	---	16.98	14.15	83.32	260.8	241.5	19.3
	2012	2.03	115	---	---	18.26	15.63	85.57	291.7	279.1	12.6
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2014	1.89	93	---	---	17.84	15.37	86.12	284.8	276.1	8.6
	2013	1.87	103	---	---	17.71	15.30	86.37	283.8	277.8	6.0
	2012	1.98	109	---	---	18.39	15.73	85.52	292.1	289.7	2.4
	2011	2.31	103	---	---	18.19	15.62	85.84	289.1	293.8	-4.7
	2010	2.00	104	---	---	18.68	16.11	86.25	295.7	283.4	12.3
Ho 07-613	2014	2.31	105	---	---	18.00	15.60	86.66	298.5	285.1	13.4
	2013	2.30	107	---	---	17.86	15.48	86.66	296.2	292.6	3.6
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
(Cont'd)											
Averages[5]	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
	2010	2.20	101	---	---	18.52	15.85	85.56	297.6	283.6	14.0

[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 3, 2014.

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