United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

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Results of the 5th sampling (October 20, 2014) of the first-stubble Maturity Test and the 2nd 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 2.00 in. of rain and at the time of this sampling all varieties in both test remain erect with the exception of L 99-226 and Ho 07-613.

First-Stubble: During the 2-week sampling period the average weight increased by 0.19 lbs. while length increased by 6 inches. The average stalk weight (1.94 lbs.) is 0.21 lbs. less than the 4-yr average but still slightly better than last year. Of the varieties, Ho 07-613 (2.43 lbs.) and L 99-226 (2.23 lbs.) continue to have the heaviest stalks, with HoCP 96-540 (1.69 lbs.) and HoCP 04-838 (1.75 lbs.) producing the lightest stalks. The longest stalks were produced by L 01-299 (107 in.) and L 99-226 (104 in.), while HoCP 00-950 (84 in.) and HoCP 04-838 (88 in.) had the shortest.

Brix, sucrose, and purities are significantly better than last year at this sample date, but overall, only purity is better when compared to the 4-yr average. Theoretically recoverable sugar (TRS) levels are 24.8 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 29.4 lbs. or 2.10 lbs./day.

For the varieties recommended in 2014, HoCP 00-950 and L 01-283 continue to have the highest early TRS levels each producing 298 lbs./TC. HoCP 96-540 (238 lbs./TC) and L 99-226 (237 lbs./TC) produced the lowest TRS levels. The varieties with the largest increases in TRS during the sampling period were Ho 07-613 (54.4 lbs.) and L 01-283 (53.9 lbs.). The average increase in TRS at this sample period (44.3 lbs.) is 21.5 lbs. better than the 4-yr average.

Plant-cane: For the 4-week sampling period stalk weight increased by 0.26 lbs. and length increased by 15 in. When compared to the previous four years stalks weigh 0.16 lbs. less but stalk lengths are only 5 in. shorter than average. Of the varieties, the heaviest stalks were produced by L 99-226 (3.02 lbs.) and HoCP 96-540 (2.48 lbs.); the lightest stalks were produced by the candidate varieties Ho 09-840 (1.57 lbs.) and HoCP 09-804 (1.68 lbs.). The longest stalks were produced by Ho 07-613 (111 in.) and L 99-226 (109 in.), the shortest stalks were produced by HoCP 00-950 (93 in.) and HoCP 09-804 (99 in.).

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Brix, sucrose and purity levels for this sampling period are lower than the 4-yr average however; brix and sucrose are slightly better than what was produced last year. Overall, the average TRS increase by 46.3 lbs. over the 4-week period. The 255 lbs./TC produced are 10.1 lbs. less than the 4-yr average but equal to last year. The varieties with the highest TRS levels were HoCP 00-950 (293 lbs./TC) and HoCP 09-804 (273 lbs./TC), while the lowest TRS levels were produced L 01-299 (230 lbs./TC) and HoCP 96-540 (234 lbs./TC). L 99-226 (65.1 lbs.) had the largest increase in TRS over the sampling period; Ho 07-613 (32.6 lbs.) had the smallest increase.

The sixth sampling for the 1st stubble maturity test is scheduled for November 3rd.

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.

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Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, October 20, 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	2.48	104			15.92	12.77	80.26	233.6	181.3	52.3
	2013	2.38	113	---	---	15.34	12.36	80.55	226.3	174.8	51.5
	2012	2.44	109	---	---	16.62	13.65	82.10	252.4	189.9	62.5
	2011	2.40	96	---	---	16.58	13.05	78.71	236.3	176.3	60.0
	2010	2.61	114	---	---	16.62	13.57	81.55	250.0	210.5	39.5
L 99-226	2014	3.02	109			16.29	13.21	81.01	242.6	177.5	65.1
	2013	3.06	123	---	---	15.74	12.92	82.05	238.9	170.8	68.1
	2012	3.05	117	---	---	17.11	14.21	83.02	264.1	189.3	74.8
	2011	3.17	107	---	---	17.09	13.80	80.69	253.0	170.3	82.7
	2010	3.03	116	---	---	17.77	14.89	83.76	278.0	214.3	63.7
HoCP 00-950	2014	2.23	93			18.06	15.40	85.25	292.5	256.2	36.3
	2013	2.14	100	---	---	17.80	15.38	86.39	293.8	242.1	51.7
	2012	2.17	102	---	---	18.59	16.04	86.26	304.8	244.5	60.3
	2011	2.15	92	---	---	18.50	15.50	83.78	292.2	234.8	57.4
	2010	2.23	104	---	---	18.28	15.49	84.71	293.4	257.1	36.3
L 01-283	2014	2.00	105			17.11	14.17	82.84	265.7	223.3	42.4
	2013	1.79	106	---	---	17.04	14.58	85.45	277.3	212.1	65.2
	2012	2.00	105	---	---	18.50	15.88	85.81	302.6	239.6	63.0
	2011	2.39	93	---	---	18.11	14.92	82.37	278.9	203.1	75.8
	2010	2.21	108	---	---	18.11	15.14	83.63	285.1	229.9	55.2
L 01-299	2014	2.15	105			15.85	12.72	80.26	230.4	178.0	52.4
	2013	2.05	115	---	---	15.27	12.50	81.83	228.5	170.1	58.4
	2012	2.21	110	---	---	16.91	13.86	81.93	253.4	191.7	61.7
	2011	2.20	100	---	---	16.78	13.41	79.92	242.2	177.7	64.5
	2010	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2014	1.91	101			16.60	13.97	84.11	256.2	214.9	41.3
	2013	2.29	111	---	---	16.51	14.14	85.60	261.3	211.7	49.6
	2012	2.02	105	---	---	17.60	15.11	85.87	279.6	204.2	75.4
	2011	2.12	98	---	---	17.13	14.33	83.63	262.0	191.5	70.5
	2010	2.18	111	---	---	17.18	14.64	85.22	270.0	219.5	50.5
Ho 07-613	2014	2.45	111			16.11	13.34	82.77	249.9	217.3	32.6
	2013	2.66	116	---	---	16.31	13.86	84.96	262.9	204.9	58.0
	2012	2.40	114	---	---	17.58	15.13	86.06	288.5	246.6	41.9
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
HoCP 09-804	2014	1.68	99			17.51	14.73	84.15	272.9	232.2	40.7
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
Cont'd	2010	---	---	---	---	---	---	---	---	---	---

Ho 09-840	2014	1.57	100			16.45	13.64	82.92	251.1	197.1	54.0
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
Averages[5]	2014	2.17	103	---	---	16.66	13.77	82.62	255.0	208.6	46.3
	2013	2.30	112	---	---	16.25	13.62	83.72	254.3	197.2	57.1
	2012	2.30	109	---	---	17.51	14.74	84.09	274.3	210.2	64.1
	2011	2.30	98	---	---	17.26	14.04	81.28	257.4	186.3	71.1
	2010	2.40	112	---	---	17.68	14.73	83.30	274.4	226.8	47.6

[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, September 22, 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, October 20, 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	1.69	92	---	---	16.07	12.97	80.72	237.9	208.0	29.9
	2013	1.88	102	---	---	15.27	12.06	78.93	218.7	No Data[6]	---
	2012	2.54	109	---	---	16.67	13.77	82.63	255.5	242.1	13.4
	2011	2.17	99	---	---	17.09	13.99	81.83	258.1	232.1	26.0
	2010	2.23	98	---	---	16.25	13.04	80.24	238.3	220.3	18.0
L 99-226	2014	2.23	104	---	---	15.89	12.88	81.02	236.6	205.6	31.0
	2013	2.39	106	---	---	15.76	12.54	79.58	228.4	---	---
	2012	3.27	120	---	---	17.24	14.29	82.87	265.3	233.0	32.3
	2011	2.77	109	---	---	17.24	14.31	82.96	265.8	226.0	39.8
	2010	2.58	108	---	---	18.11	15.30	84.49	286.6	253.9	32.7
HoCP 00-950	2014	1.88	84	---	---	18.22	15.64	85.87	298.1	275.6	22.5
	2013	1.74	96	---	---	17.13	14.31	83.50	269.2	---	---
	2012	2.11	101	---	---	18.11	15.33	84.66	290.4	274.4	16.0
	2011	2.16	89	---	---	18.93	16.22	85.69	308.8	286.0	22.8
	2010	2.00	88	---	---	18.55	15.83	85.34	300.9	281.0	19.9
L 01-283	2014	1.78	100	---	---	18.19	15.62	85.85	297.7	274.2	23.5
	2013	1.62	100	---	---	16.58	13.72	82.68	256.9	---	---
	2012	2.07	106	---	---	18.04	15.21	84.29	287.4	278.1	9.3
	2011	2.17	103	---	---	18.68	15.80	84.55	298.8	278.5	20.3
	2010	1.78	97	---	---	18.79	15.97	84.97	302.9	287.1	15.8
L 01-299	2014	1.81	107	---	---	16.38	13.60	83.01	250.3	223.9	26.4
	2013	1.61	110	---	---	14.70	11.52	78.38	206.1	0.0	---
	2012	2.04	106	---	---	16.93	13.96	82.43	256.1	239.4	16.7
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2014	1.75	88	---	---	17.02	14.48	85.00	266.7	227.6	39.1
	2013	1.87	104	---	---	16.16	13.58	84.04	248.9	---	---
	2012	2.01	102	---	---	17.35	14.90	85.84	275.6	258.4	17.2
	2011	2.32	100	---	---	17.84	15.15	84.93	279.0	266.7	12.3
	2010	1.98	100	---	---	17.89	15.30	85.57	280.0	258.3	21.7
Ho 07-613	2014	2.43	102	---	---	16.53	13.87	83.90	266.2	232.6	33.6
	2013	2.02	104	---	---	16.73	14.11	84.32	269.9	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
Averages[5]	2014	1.94	97	---	---	16.90	14.15	83.62	264.8	235.4	29.4
	2013	1.90	103	---	---	15.97	13.01	81.34	240.0	---	---
	2012	2.40	109	---	---	17.40	14.55	83.56	272.2	250.1	22.1
	2011	2.20	100	---	---	17.85	14.91	83.47	278.1	254.0	24.1
	2010	2.10	99	---	---	17.55	14.60	83.09	270.7	248.7	22.0

[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 1st, 4th and the 8th maturity study sampling dates.
[3] Brix factor = .8854; Sucrose factor = .8105.
[4] Previous sample date was October 6, 2014.
[5] Averages are based on all varieties in the first-stubble maturity study.
[6] Due to Federal Furlough in 2013 no data was taken.