



United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

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Results of the 7th sampling of the first-stubble Maturity Test and the 3rd sampling of the plant-cane Maturity Test harvested on November 19, 2018 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 (2014 – 2018); 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 six commercial varieties: HoCP 96-540, L 01-283, L 01-299, HoCP 04-838, HoCP 09-804, L 11-183 and three experimental varieties L 12-201, Ho 12-615 and Ho 12-630. The plant-cane test also includes the experimental varieties: Ho 11-573, Ho 13-739 and HoCP 13-758.

Since the last sampling Ardoyne Farm has received 3.41 in. of rain. At the time of this sampling most of the varieties are still semi-erect.

First-Stubble: The cane grew an average of 5 in, but only increased in weight by 0.01 lbs. Stalks are 14 in. taller than the 4-year average and 13 in. taller than last year. They are 0.60 lbs. heavier than the 4-year average and 0.44 lbs. heavier than last year.

The heaviest stalks were produced by L 12-201 (3.36 lbs.) and Ho 12-630 (3.00 lbs.), the lightest stalks were produced by HoCP 09-804 (1.93 lbs.) and L 01-283 (2.31 lbs.). L 01-299 and Ho 12-615 had the longest stalks (123 in.), the shortest stalks were produced by HoCP 96-540 and L 11-183 (112 in.).

Brix, sucrose and purities continue to be less than the 4-year average and those produced last year. Theoretical recoverable sugar (TRS) levels are 23.8 lbs. /ton of cane (TC) less than last year and 19.4 lbs. less than the 4-year average. The average increase in TRS during the 2-week period was 15.6 lbs., which is about average for this time of year.

The varieties with the highest TRS levels were HoCP 09-804 (292 lbs./TC) and L 01-283 (289 lbs./TC), the lowest TRS levels were produced by HoCP 96-540 (269 lbs./TC) and L 12-201 (271 lbs./TC). Varieties showing the largest increases in TRS during the sampling period were L 01-299 (36.0 lbs.) and L 12-201 (22.8 lbs.).

Plant-cane: For the 4-week sampling period stalks grew 5 in. and increased in weight by only 0.06 lbs. Average stalk weights remain similar to last year (0.08 lbs. heavier), but 0.34 lbs. heavier than the 4-year average. Stalks lengths are 9 in. longer than last year and 11 in. longer than the 4-year average.

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

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Ho 11-573 (3.27 lbs.) and Ho 13-739 (3.12 lbs.) produced the heaviest stalks, the lightest stalks were produced by Ho 12-615 (2.04 lbs.) and HoCP 09-804 (2.06 lbs.). The longest stalks were produced by L 01-299 (125 in.) and Ho 12-615 (121 in.), the shortest stalks were produced by Ho 13-739 (110 in.) and L 01-283 (111 in.).

Brix and sucrose levels are less than last year, while purity levels are slightly better, all 3 parameters are better when compared to the 4-year average. The average TRS is 12.4 lbs. /TC less than last year but only 6.2 lbs. /TC less than the 4-year average. The varieties with the highest TRS levels were Ho 13-739 (300 lbs. /TC) and HoCP 09-804 (299 lbs. /TC), the lowest TRS levels were produced by L 01-299 (246 lbs. /TC) and HoCP 12-630 (269 lbs. /TC). The average increase in TRS for the 4-week period was 36.7 lbs. The largest increases in TRS were produced by L 11-183 (59.1 lbs.) and Ho 12-630 (52.7 lbs.). The smallest increases in TRS were produced by L 01-283 (25.2 lbs.) and Ho 13-739 (20.3 lbs.).

The 8th and final sampling for the 1st stubble maturity test is scheduled for December 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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5883 USDA Road, Houma, LA 70360
Voice: 985-872-5042 · Fax: 985-868-8369

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Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRR, Sugarcane Research Unit, Houma, LA, November 16, 2018¹.

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/cm ³)	Bx. (%)	Su. (%)	Pu. (%)			
HoCP 96-540	2018	2.64	118	--	--	17.51	14.75	84.22	276.06	246.20	29.9
	2017	2.75	108	0.85	1.23	18.35	15.87	86.46	300.36	263.42	36.9
	2016	2.51	120	0.79	1.18	18.26	15.81	86.58	299.45	254.90	44.6
	2015	2.63	117	0.82	1.18	17.29	14.62	84.56	274.05	240.70	33.4
	2014	2.56	109	0.85	1.14	17.04	14.04	82.38	259.99	233.60	26.4
L 01-283	2018	2.23	111	--	--	17.77	15.07	84.78	285.58	260.34	25.2
	2017	2.09	109	0.72	1.31	18.55	16.12	86.92	308.93	289.35	19.6
	2016	2.19	110	0.75	1.24	19.17	16.73	87.26	321.08	291.20	29.9
	2015	2.51	115	0.83	1.14	17.89	15.31	85.62	291.32	270.10	21.2
	2014	2.50	113	0.82	1.17	18.62	16.03	86.12	305.90	265.70	40.2
L 01-299	2018	2.32	125	--	--	16.27	13.43	82.52	246.39	195.30	51.1
	2017	2.39	108	0.75	1.39	18.11	15.76	87.04	296.24	264.07	32.2
	2016	2.58	127	0.77	1.22	18.28	15.86	86.75	297.78	253.80	44.0
	2015	2.79	118	0.83	1.22	17.55	14.99	85.41	279.61	238.60	41.0
	2014	2.06	112	0.78	1.18	17.49	14.61	83.54	269.65	230.40	39.3
HoCP 04-838	2018	2.45	117	--	--	17.89	15.33	85.73	283.58	236.40	47.2
	2017	2.70	109	0.84	1.25	18.59	16.21	87.16	301.94	278.89	23.1
	2016	2.33	116	0.77	1.20	18.68	16.38	87.69	305.97	285.80	20.2
	2015	2.38	112	0.80	1.17	17.49	15.04	86.00	278.61	267.90	10.7
	2014	1.92	103	0.77	1.20	18.06	15.54	86.02	287.73	256.20	31.5
HoCP 09-804	2018	2.06	114	--	--	18.57	16.09	86.66	299.02	250.30	48.7
	2017	2.05	104	0.75	1.23	18.97	16.53	87.12	307.78	294.74	13.0
	2016	1.90	113	0.71	1.18	18.44	16.11	87.39	300.51	285.40	15.1
	2015	2.18	113	0.75	1.20	18.44	15.97	86.60	299.52	286.50	13.0
	2014	1.81	104	0.74	1.12	18.11	15.67	86.52	293.74	272.90	20.8
L 11-183	2018	2.44	113	--	--	17.62	14.95	84.85	275.20	216.10	59.1
	2017	2.63	109	0.87	1.11	18.15	15.71	86.53	294.62	270.26	24.4
	2016	2.60	116	0.84	1.13	18.70	16.35	87.40	313.93	269.00	44.9
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 11-573	2018	3.27	119	--	--	17.20	14.53	84.49	269.69	223.20	46.5
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
L 12-201	2018	2.87	112	--	--	17.66	14.92	84.45	279.47	239.40	40.1
	2017	3.39	108	0.97	1.17	18.22	15.64	85.83	297.93	271.26	26.7
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-615	2018	2.04	121	--	--	18.15	15.52	85.52	286.80	234.10	52.7
	2017	2.16	115	0.73	1.22	18.55	15.98	86.15	296.11	265.02	31.1
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-630	2018	2.84	117	--	--	17.38	14.45	83.15	268.75	241.40	27.4
	2017	3.00	111	0.85	1.22	18.42	15.80	85.78	298.02	264.98	33.0
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 13-739	2018	3.12	110	--	--	18.28	15.74	86.07	300.14	279.80	20.3
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
HoCP 13-758	2018	2.84	117	--	--	17.15	14.63	85.26	280.49	251.40	29.1
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2018	2.39	107	--	--	16.27	13.80	78.28	257.78	221.07	36.7
	2017	2.32	98	0.73	1.11	16.59	14.36	77.90	270.19	246.20	24.0
	2016	2.02	100	0.66	1.02	15.93	13.89	74.72	262.67	234.30	28.4
	2015	2.08	96	0.67	0.99	14.78	12.66	71.37	237.19	217.30	19.9
	2014	1.81	90	0.66	0.97	14.89	12.65	70.76	236.17	209.80	26.4

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

² Stalk diameter and density will be only be taken on the 1st sampling date.

³ Brix factor =0.8854; Sucrose factor = 0.8105.

⁴ Previous sample date, October 22, 2018

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 19, 2018¹.

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/cm ³)	Bx. (%)	Su. (%)	Pu. (%)			
HoCP 96-540	2018	2.49	112	---	---	17.22	14.41	83.68	268.93	253.73	15.2
	2017	2.50	106	---	---	18.02	15.35	85.18	288.63	262.15	26.5
	2016	2.19	100	---	---	18.55	16.14	87.03	306.48	284.53	22.0
	2015	2.20	106	---	---	17.64	15.04	85.23	282.87	268.70	14.2
	2014	1.94	98	---	---	17.73	14.95	84.29	279.67	270.33	9.3
L 01-283	2018	2.31	114	---	---	17.89	15.22	85.06	288.75	280.30	8.4
	2017	1.92	106	---	---	18.97	16.58	87.42	318.53	297.40	21.1
	2016	1.79	101	---	---	19.17	16.71	87.15	320.41	318.06	2.4
	2015	2.25	114	---	---	17.97	15.47	86.04	294.94	290.73	4.2
	2014	1.81	102	---	---	18.77	16.26	86.65	311.16	300.38	10.8
L 01-299	2018	2.45	123	---	---	17.27	14.63	84.70	271.74	235.76	36.0
	2017	2.05	112	---	---	18.28	15.93	87.12	299.63	268.05	31.6
	2016	1.86	105	---	---	18.77	16.41	87.44	309.25	289.36	19.9
	2015	2.07	110	---	---	17.53	15.02	85.65	280.34	262.68	17.7
	2014	1.88	110	---	---	17.46	14.87	85.12	276.84	261.30	15.5
HoCP 04-838	2018	2.58	118	---	---	17.73	15.26	86.04	282.60	264.16	18.4
	2017	2.45	104	---	---	18.24	15.92	87.30	296.83	269.16	27.7
	2016	2.01	94	---	---	19.26	16.92	87.87	316.33	302.06	14.3
	2015	1.98	105	---	---	17.24	14.75	85.51	272.51	270.41	2.1
	2014	1.89	93	---	---	17.84	15.37	86.12	284.75	276.07	8.7
HoCP 09-804	2018	2.14	116	---	---	18.15	15.71	86.56	291.76	283.32	8.4
	2017	1.74	96	---	---	19.01	16.61	87.34	309.59	296.81	12.8
	2016	1.48	96	---	---	18.97	16.55	87.25	311.49	309.62	1.9
	2015	1.70	106	---	---	18.62	16.20	87.00	304.49	290.33	14.2
	2014	---	---	---	---	---	---	---	---	---	---
L 11-183	2018	2.42	112	---	---	17.49	14.81	84.67	272.35	262.06	10.3
	2017	2.14	98	---	---	18.31	15.85	86.59	297.43	269.45	28.0
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
L 12-201	2018	3.36	115	---	---	17.31	14.51	83.77	270.77	247.99	22.8
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-615	2018	2.43	123	---	---	17.73	15.05	84.88	277.13	273.13	4.0
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-630	2018	3.00	116	---	---	17.80	14.90	83.69	277.98	261.26	16.7
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2018	2.58	117	---	---	17.62	14.94	84.78	278.00	262.41	15.6
	2017	2.13	104	---	---	18.47	16.04	86.83	301.77	277.17	24.6
	2016	1.87	99	---	---	18.94	16.55	87.35	312.79	300.73	12.1
	2015	2.04	108	---	---	17.80	15.30	85.89	287.03	276.57	10.5
	2014	1.88	101	---	---	17.95	15.36	85.55	288.11	277.02	11.1

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

² Stalk diameter and density will only be taken on the 1st sample date.

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

⁴ Previous scheduled sample date was November 5, 2018.

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