USDA
United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

November 5, 2018

Results of the 5th sampling of the first-stubble Maturity Test and the 2nd sampling of the plant-cane Maturity Test harvested on October 22, 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 1.18 in. of rain. At the time of this sampling all the varieties in the test remain erect.

First-Stubble: During the 2-week sampling period the crop increased in weight by 0.34 lbs. and grew an average of 12 in. The crop is currently 8 in. taller than last year and 12 in. taller than the 4-year average. Stalk weights are 0.46 lbs. heavier than last year and 0.61 lbs. heavier than the 4-year average.

The heaviest stalks were produced by L 12-201 (3.16 lbs.) and HoCP 96-540 (2.80 lbs.), the lightest stalks were produced by HoCP 09-804 (1.93 lbs.) and Ho 12-615 (2.26 lbs.). L 01-299 had the longest stalks (117 in.) along with HoCP 96-540 (113 in.) and Ho 12-615 (113 in.). The shortest stalks were produced by L 01-283 (105 in.) and L 11-183 (108 in.).

Brix, sucrose and purities are less than the 4-year average and those produced last year. Theoretical recoverable sugar (TRS) levels are 39.7 lbs./ton of cane (TC) less than last year and 36.7 lbs. less than the 4-year average. The average increase in TRS during the 2-week period was only 3.6 lbs. which is 14.5 lbs. less than the 4-year average of 18.2 lbs.

The varieties with the highest early TRS levels were HoCP 09-804 (268 lbs./TC) and L 01-283 (259 lbs./TC), the lowest TRS levels were produced by HoCP 96-540 (199 lbs./TC). The varieties with the largest increases in TRS during the sampling period were HoCP 04-838 (14.3 lbs.) and HoCP 09-804 (12.1 lbs.). Three varieties had a decrease in TRS, HoCP 96-540 (-12.7 lbs.), L 01-283 (-5.6 lbs.), and L 11-183 (-3.2 lbs.).

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

USDA is an Equal Opportunity Employer

Plant-cane: For the 4-week sampling period stalks grew 13 in. and increased in weigh by 0.27 lbs. Average stalk weights are similar to last year (only 0.08 lbs. heavier,) but 0.34 lbs. heavier than the 4-year average. Stalks lengths are 5 in. better than last year and 9 in. longer than the 4-year average.

The heaviest stalks were produced by Ho 11-573 (3.10 lbs.) and L 12-201 (2.98 lbs.); while L 01-283 (1.99 lbs.) and HoCP 09-804 (2.02 lbs.) produced the lightest stalks. The longest stalks were produced by Ho 11-573 (120 in.) and L 01-299 (117 in.), the shortest stalks were produced by L 01-283 (97 in.) and Ho 13-739 (101 in.).

Brix, sucrose and purity levels are less than last year; brix and purity levels are also less than the 4-year average yet sucrose is better. The average TRS was 25.1 lbs./TC less than last year and 5.8 lbs./TC less than the 4-year average. The varieties with the highest TRS levels were Ho 13-739 (280 lbs./TC) and L 01-283 (260 lbs./TC), while L 01-299 (195 lbs./TC) and L 11-183 (216 lbs./TC) had the lowest TRS levels. The average increase in TRS for the 4-week period was 31.5 lbs. The varieties with the largest increase in TRS were HoCP 96-540 (55.8 lbs.) and L 12-201 (49.5 lbs.). The smallest increases in TRS were produced by HoCP 09-804 (18.3 lbs.) and L 01-299 (22.7 lbs.).

The sixth sampling for the 1st stubble maturity test is scheduled for November 5th.

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.

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit Houma, LA, October 22, 2018[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	2018	2.44	108	---	---	16.42	13.37	81.33	246.18	190.40	55.8
	2017	2.77	111	---	---	16.91	14.13	83.54	263.42	215.30	48.1
	2016	2.41	113	---	---	16.69	13.76	82.45	254.87	196.82	58.1
	2015	2.71	114	---	---	16.38	13.16	80.32	240.73	213.00	27.7
	2014	2.48	104	---	---	15.92	12.77	80.26	233.59	181.30	52.3
L 01-283	2018	1.99	97	---	---	16.87	13.91	82.50	260.34	237.40	22.9
	2017	2.01	107	---	---	17.73	15.20	85.68	289.35	252.80	36.6
	2016	2.09	110	---	---	18.06	15.35	84.97	291.16	247.09	44.1
	2015	2.23	107	---	---	17.04	14.32	83.99	270.06	221.30	48.8
	2014	2.00	105			17.11	14.17	82.84	265.69	223.30	42.4
L 01-299	2018	2.30	117	---	---	14.34	11.03	76.74	195.30	172.60	22.7
	2017	2.27	105	---	---	16.91	14.25	84.25	264.07	219.50	44.6
	2016	2.53	118	---	---	16.84	13.85	82.18	253.75	186.70	67.1
	2015	2.73	117	---	---	16.42	13.12	79.96	238.64	189.70	48.9
	2014	2.15	105	---	---	15.85	12.72	80.26	230.43	178.00	52.4
HoCP 04-838	2018	2.24	108	---	---	15.83	13.03	82.31	236.41	208.20	28.2
	2017	2.49	106	---	---	18.05	15.09	83.74	278.89	251.40	27.5
	2016	2.42	113	---	---	17.80	15.39	86.50	285.80	223.84	62.0
	2015	2.27	109	---	---	17.20	14.56	84.68	267.85	216.90	51.0
	2014	1.91	101	---	---	16.60	13.97	84.11	256.17	214.90	41.3
HoCP 09-804	2018	2.02	110	---	---	16.69	13.77	82.42	250.34	232.00	18.3
	2017	2.03	106	---	---	18.28	15.86	86.72	294.74	260.10	34.6
	2016	1.88	112	---	---	17.86	15.39	86.18	285.35	251.28	34.1
	2015	2.39	113	---	---	17.84	15.33	85.93	286.52	228.40	58.1
	2014	1.68	99	---	---	17.51	14.73	84.15	272.88	232.20	40.7
L 11-183	2018	2.67	113	---	---	15.25	12.11	79.43	216.05	188.20	27.9
	2017	2.88	109	---	---	17.22	14.56	84.52	270.26	225.40	44.9
	2016	2.39	111	---	---	17.09	14.29	83.60	268.97	205.27	63.7
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 11-573	2018	3.10	120	---	---	15.16	12.28	80.94	223.22	192.90	30.3
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
L 12-201	2018	2.98	111	---	---	16.27	13.08	80.32	239.37	189.90	49.5
	2017	3.28	108	---	---	17.22	14.40	83.62	271.26	222.90	48.4
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-615	2018	2.27	116	---	---	15.85	12.95	81.69	234.12	191.10	43.0
	2017	2.06	110	---	---	17.13	14.44	84.29	265.02	241.80	23.2
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-630	2018	2.94	114	---	---	16.34	13.17	80.65	241.41	193.20	48.2
	2017	2.68	107	---	---	17.20	14.26	82.93	264.98	234.10	30.9
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 13-739	2018	2.70	101	---	---	17.73	14.85	83.76	279.84	251.50	28.3
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
HoCP 13-758	2018	2.70	111	---	---	16.05	13.29	82.77	251.41	217.50	33.9
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---

Averages[5]	2018	2.33	102	---	---	14.83	12.06	74.99	221.08	189.61	31.5
	2017	2.25	97	---	---	15.67	13.22	75.93	246.20	212.33	33.9
	2016	1.96	97	---	---	14.91	12.58	72.27	234.27	187.29	47.0
	2015	2.06	93	---	---	14.15	11.75	69.15	217.30	178.22	39.1
	2014	1.70	86	---	---	13.83	11.39	68.60	209.79	171.62	38.2

[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 24, 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, October 22, 2018. [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	2018	2.80	113	---	---	14.65	11.18	76.26	199.07	211.80	-12.7
	2017	2.33	106	---	---	16.65	13.85	83.18	257.6	244.6	13.0
	2016	2.27	104	---	---	17.29	14.30	82.73	265.4	239.5	25.9
	2015	2.36	101	---	---	16.34	13.47	82.46	249.5	225.1	24.4
	2014	1.69	92	---	---	16.07	12.97	80.72	237.9	208.0	29.9
L 01-283	2018	2.36	105	---	---	16.84	13.86	82.29	259.05	264.67	-5.6
	2017	1.94	105	---	---	18.19	15.65	86.02	298.5	287.3	11.2
	2016	1.58	93	---	---	18.31	15.66	85.52	297.8	279.2	18.6
	2015	2.02	101	---	---	17.04	14.34	84.14	270.9	258.2	12.7
	2014	1.78	100	---	---	18.19	15.62	85.85	297.7	274.2	23.5
L 01-299	2018	2.46	117	---	---	15.41	12.16	78.91	218.30	212.80	5.5
	2017	1.88	106	---	---	16.76	14.14	84.36	262.1	252.0	10.2
	2016	1.82	108	---	---	17.49	14.50	82.90	266.7	244.3	22.4
	2015	2.14	104	---	---	16.22	13.40	82.55	245.9	227.9	18.0
	2014	1.81	107	---	---	16.38	13.60	83.01	250.3	223.9	26.4
HoCP 04-838	2018	2.57	110	---	---	16.05	13.28	82.77	241.73	227.46	14.3
	2017	2.32	98	---	---	17.33	14.80	85.41	273.3	264.1	9.2
	2016	1.70	90	---	---	18.19	15.84	87.03	294.8	270.4	24.4
	2015	1.84	96	---	---	16.22	13.66	84.21	250.6	245.8	4.8
	2014	1.75	88	---	---	17.02	14.48	85.00	266.7	227.6	39.1
HoCP 09-804	2018	1.93	109	---	---	17.29	14.59	84.41	267.99	255.90	12.1
	2017	1.81	102	---	---	18.11	15.59	86.11	288.9	287.7	1.2
	2016	1.43	89	---	---	18.44	16.04	86.97	301.4	287.3	14.1
	2015	1.76	99	---	---	17.33	14.78	85.26	275.3	269.3	6.0
	2014	---	---	---	---	---	---	---	---	---	---
L 11-183	2018	2.33	108	---	---	15.43	12.33	79.87	220.68	223.87	-3.2
	2017	2.06	99	---	---	16.69	13.93	83.46	257.0	249.6	7.4
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
L 12-201	2018	3.16	112	---	---	15.21	12.03	79.08	218.40	213.37	5.0
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-615	2018	2.26	113	---	---	15.94	13.16	82.59	239.28	228.88	10.4
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Ho 12-630	2018	2.72	111	---	---	16.11	12.87	79.88	234.8	227.8	7.0
	2017	---	---	---	---	---	---	---	---	---	---
	2016	---	---	---	---	---	---	---	---	---	---
	2015	---	---	---	---	---	---	---	---	---	---
	2014	---	---	---	---	---	---	---	---	---	---
Averages[5]	2018	2.51	111	---	---	15.88	12.83	80.67	233.3	229.6	3.6
	2017	2.06	103	---	---	17.29	14.66	84.76	272.9	264.2	8.7
	2016	1.76	96	---	---	17.94	15.27	85.03	285.2	264.1	21.1
	2015	2.02	99	---	---	16.63	13.93	83.72	258.4	245.3	13.2
	2014	1.76	97	---	---	16.92	14.17	83.65	263.2	233.4	29.7

[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 scheduled sample date was October 5, 2018.

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