October 6, 2015

Results of the 3rd sampling of the first-stubble Maturity Test and the 1st sampling of the plant-cane Maturity Test harvested on September 28, 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 tests 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 0.63 in. of rain. A line of thunderstorms on September 26th caused significant lodging to all the varieties in the test, with L 99-226 and Ho 07-613 being more significant.

First-Stubble: Over the two-week sampling period the crop increased in weight by 0.15 lbs. and grew an average of five inches. The average stalk weight (1.97 lbs.) is 0.36 lbs. better than last year and 0.12 lbs. better than the four-year average. Of the varieties, L 99-226 (2.49 lbs.) and HoCP 96-540 (2.34 lbs.) had the heaviest stalks, while Ho 09-840 (1.47 lbs.) and HoCP 09-804 (1.55 lbs.) had the lightest stalks. The longest stalks were produced by L 99-226, L 01-283, and Ho 07-613, all at 94 inches; the shortest stalks were produced by HoCP 00-950 (82 in.) and Ho 09-840 (84 in.).

Brix, sucrose, and purities are better than last year for this sampling date and significantly better than the four-year average. Theoretical recoverable sugar (TRS) levels are only 0.75 lbs./ton of cane (TC) better than last year but 13.8 lbs./ton better than the four-year average. The average increase in TRS during the two-week period was 38.1 lbs. or 2.72 lbs./day.

Overall, HoCP 00-950 (265 lbs./TC) and L 01-283 (244 lbs./TC) continue to have the highest early TRS levels, followed by HoCP 09-804 (239 lbs./TC). L 01-299 (188 lbs./ton) and HoCP 96-540 (199 lbs./ton) had the lowest TRS levels. The varieties with the largest increase in TRS during the sampling period were L 99-226 (63.8 lbs.) and HoCP 96-540 (41.8 lbs.). The smallest increases in TRS (30.3 lbs./ton) were produced by L 01-299 and HoCP 04-838.

Plant-cane: For this sample period weight, length, and diameter are better than last year and the four-year average. Overall, when compared to the four-year average, stalks are 0.25 lbs. heavier, 5 inches longer and but only 0.01 inches bigger in diameter. However, stalk density is 0.06 g/cm^2 better than average but are 0.13 g/cm^2 less than last year. Of the varieties, L 99-226 (2.94 lbs.) and Ho 07-613 (2.78 lbs.) produced the heaviest stalks; the candidate variety Ho 09-840 (1.74 lbs.) produced the lightest stalks. L 01-299 (105 in.) and HoCP 96-540 (104 lbs.) produced the longest

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stalks; the shortest stalks were produced by HoCP 00-950 (92 in.) and Ho 09-840 (94 in.). The largest diameter stalks were produced by L 99-226 (0.93 in.) while Ho 09-840 (0.76 in.) had the smallest diameter stalks. Ho 09-840 (1.37 g/cm^2) had the highest density while HoCP 09-804 (1.12 g/cm^2) had the smallest.

Brix, sucrose and purity levels for this sampling period are higher than those produced in 2014 and the four-year average. Overall, the average TRS is 15 lbs./TC better than last year and 21.7 lbs./TC more than the four-year average. The varieties with the highest TRS levels were HoCP 00-950 (260 lbs./TC) and Ho 07-613 (249 lbs./TC); the lowest TRS levels were produced by HoCP 96-540 (213 lbs./TC) and L 01-299 (190 lbs./TC).

The fourth sampling for the 1st stubble maturity test is scheduled for October 13th.

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, September 28, 2015[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)
HoCP 96-540	2015	2.46	104	0.84	1.18	15.16	11.82	77.97	213.0
	2014	2.14	88	0.78	1.39	14.06	10.37	73.64	181.3
	2013	2.15	94	0.81	1.24	13.26	9.92	74.78	174.8
	2012	2.44	100	0.88	1.10	14.34	10.76	74.87	189.9
	2011	2.24	90	0.92	1.04	14.17	10.22	72.10	176.3
L 99-226	2015	2.94	103	0.93	1.15	15.10	12.00	79.48	218.4
	2014	2.63	93	0.88	1.30	13.75	10.15	73.76	177.5
	2013	2.61	104	0.92	1.05	12.97	9.70	74.58	170.8
	2012	3.02	106	1.00	1.01	14.50	10.78	74.27	189.3
	2011	2.85	100	0.99	1.04	13.90	9.92	71.37	170.3
HoCP 00-950	2015	2.44	92	0.89	1.18	17.00	13.92	81.88	259.5
	2014	2.09	82	0.82	1.35	16.80	13.75	81.81	256.2
	2013	1.86	85	0.81	1.17	16.05	13.03	81.14	242.1
	2012	2.24	95	0.88	1.08	16.69	13.29	79.64	244.5
	2011	1.95	84	0.89	1.03	16.58	12.91	77.84	234.8
L 01-283	2015	2.46	96	0.85	1.25	15.25	12.07	79.16	221.3
	2014	1.95	93	0.73	1.39	15.54	12.22	78.59	223.3
	2013	1.68	92	0.74	1.17	14.70	11.59	78.84	212.1
	2012	2.08	98	0.82	1.11	16.71	13.12	78.49	239.6
	2011	2.18	91	0.89	1.06	15.52	11.48	73.99	203.1
L01-299	2015	2.54	105	0.84	1.22	14.01	10.74	76.56	189.7
	2014	1.81	88	0.74	1.39	13.99	10.29	73.52	178.0
	2013	1.75	99	0.73	1.17	13.02	9.74	74.83	170.1
	2012	2.21	100	0.83	1.13	15.10	11.10	73.46	191.7
	2011	2.13	92	0.84	1.16	14.54	10.43	71.67	177.7
HoCP 04-838	2015	2.24	97	0.84	1.16	14.96	12.07	80.63	216.9
	2014	1.67	85	0.76	1.31	14.90	11.98	80.39	214.9
	2013	2.02	95	0.83	1.11	14.43	11.73	81.18	211.7
	2012	2.11	96	0.87	1.02	15.01	11.61	77.33	204.2
	2011	2.15	94	0.87	1.07	14.63	11.03	75.40	191.5
Ho 07-613	2015	2.78	103	0.90	1.18	16.38	13.36	81.55	248.6
	2014	2.02	94	0.81	1.27	14.94	11.84	79.26	217.3
	2013	2.37	103	0.82	1.22	14.19	11.20	78.87	204.9
	2012	2.20	103	0.82	1.11	16.18	13.24	81.80	246.6
	2011	---	---	---	---	---	---	---	---
HoCP09-804	2015	1.98	100	0.79	1.12	15.69	12.61	80.26	228.4
	2014	1.60	86	0.72	1.28	16.07	12.85	79.97	232.2
	2013	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---
(Cont'd)	2011	---	---	---	---	---	---	---	---
Ho 09-840	2015	1.74	94	0.76	1.37	14.81	11.86	80.10	216.8
	2014	1.28	83	0.68	1.27	14.23	11.06	77.72	197.1

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 28, 2015[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)
	2013	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---
Averages[4]	2015	2.40	99	0.85	1.20	15.37	12.27	79.73	223.6
	2014	1.90	88	0.77	1.33	14.92	11.61	77.63	208.6
	2013	2.10	96	0.81	1.15	14.05	10.95	77.70	197.2
	2012	2.30	98	0.88	1.05	15.51	11.93	76.80	213.5
	2011	2.30	94	0.91	1.04	14.81	10.79	72.69	188.1

[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] 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, September 28, 2015[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	2015	2.34	93	---	---	14.45	11.14	77.04	199.4	157.7	41.8
	2014	1.57	80	---	---	14.76	11.37	77.00	203.5	165.5	38.0
	2013	1.56	89	---	---	12.26	8.64	70.47	147.2	121.1	26.1
	2012	2.26	99	---	---	14.85	11.61	78.13	209.4	164.7	44.7
	2011	2.05	92	---	---	14.03	10.58	75.29	187.3	150.9	36.4
L99-226	2015	2.49	94	---	---	15.63	12.57	80.47	230.2	166.4	63.8
	2014	1.82	87	---	---	14.25	10.93	76.66	195.2	161.7	33.5
	2013	1.96	92	---	---	13.10	9.71	74.10	170.3	134.5	35.8
	2012	2.78	105	---	---	14.70	11.33	77.08	203.0	174.4	28.6
	2011	2.44	99	---	---	14.74	11.15	75.57	197.6	139.0	58.6
HoCP 00-950	2015	2.01	82	---	---	17.27	14.19	82.18	265.1	223.4	41.7
	2014	1.65	76	---	---	16.98	14.08	82.94	264.2	234.1	30.1
	2013	1.44	81	---	---	15.14	11.76	77.65	213.6	191.5	22.1
	2012	2.07	94	---	---	16.45	13.31	80.91	246.7	194.5	52.2
	2011	2.01	84	---	---	17.11	14.00	81.82	260.8	219.5	41.3
L 01-283	2015	1.98	94	---	---	16.14	13.13	81.38	244.1	212.9	31.1
	2014	1.45	86	---	---	16.16	13.13	81.24	243.8	217.0	26.8
	2013	1.29	88	---	---	14.59	11.21	76.80	202.3	176.1	26.2
	2012	1.92	98	---	---	16.49	13.46	81.60	250.6	213.1	37.5
	2011	2.00	96	---	---	16.16	12.80	79.18	234.6	193.4	41.2
L 01-299	2015	1.88	92	---	---	14.03	10.69	76.09	188.3	158.0	30.3
	2014	1.42	88	---	---	14.76	11.61	78.59	208.0	164.9	43.1
	2013	1.35	92	---	---	12.93	9.37	72.49	160.7	134.8	25.9
	2012	2.03	101	---	---	14.90	11.48	77.04	203.5	164.3	39.2
	2011	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2015	1.76	85		---	14.74	11.89	80.65	213.8	183.5	30.3
	2014	1.48	76	---	---	14.92	12.07	80.78	217.2	183.2	34.0
	2013	1.47	89	---	---	13.46	10.60	78.70	188.1	163.9	24.2
	2012	2.00	95	---	---	15.25	12.65	82.93	230.3	187.2	43.1
	2011	2.00	92	---	---	14.45	11.35	78.49	201.2	171.0	30.2
Ho 07-613	2015	2.26	94	---	---	15.45	12.53	81.10	232.5	197.6	34.9
	2014	1.89	91	---	---	14.65	11.57	78.93	211.8	178.7	33.1
	2013	1.86	93	---	---	14.17	11.05	77.94	201.0	175.3	25.7
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
HoCP 09-804	2015	1.55	91	---	---	16.20	13.14	81.09	239.1	199.5	39.5
	2014	---	---	---	---	---	---	---	---	---	---
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
Ho 09-840	2015	1.47	84	---	---	15.49	11.87	76.94	214.5	185.2	29.3
	2014	---	---	---	---	---	---	---	---	---	---
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 28, 2015[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.)
Averages[5]	2015	1.97	90	---	---	15.49	12.35	79.66	225.2	187.2	38.1
	2014	1.61	83	---	---	15.21	12.11	79.45	220.5	186.4	34.1
	2013	1.56	89	---	---	13.49	10.10	74.69	178.2	153.5	24.7
	2012	2.16	100	---	---	15.39	12.11	78.57	220.1	179.1	41.0
	2011	2.07	94	---	---	15.53	12.16	78.07	219.6	174.4	45.2

[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, 4th, and the 8th maturity study sampling dates.
[3] Brix factor = .8854; Sucrose factor = .8105.
[4] Previous scheduled sample date was September 14, 2015