United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

September 16, 2015

Results of the 2nd sampling (September 14, 2015) of the first-stubble, Sugarcane 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-year 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.** The study includes 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; and two experimental varieties: HoCP 09-804 and Ho 09-840.

Conditions at the USDA-ARS Ardoyne Farm have been near perfect for cane growth all summer. Data from growth measurements recorded from within the Maturity Test indicated we received above average rainfall in March, April, and May with a good mix of sunshine and above average nighttime temperatures. This allowed the crop to get off to a fast start with above average growth for April and May followed by a more average pattern in June, July and August.

Since the last sampling the farm has received 2.48 in. of rain and at the time of this sampling all varieties in the test remain erect.

Over the 2-week sampling period the crop increased in weight by 0.10 lbs. and grew an average of 7 in. Currently the crop is 9 in. taller than last year, but 3 in. shorter than the 4-year average. Stalks are 0.35 lbs. heavier than last year and just about equal (-0.01 lbs.) to the 4-year average.

Of the varieties, L 99-226 (2.32 lbs.) and Ho 07-613 (2.06 lbs.) had the heaviest stalks; the lightest stalks were produced by candidate varieties Ho 09-840 (1.37 lbs.) and HoCP 09-804 (1.42 lbs.). The longest stalks were produced by L 99-226 (92 in.) and Ho 07-613 (91 in.), while HoCP 00-950 (76 in.) had the shortest stalks.

Brix, sucrose, and purities are equal to last year's data and above the 4-year average for this sampling date. Theoretical recoverable sugar (TRS) levels are only 0.75 lbs./ton of cane (TC) better than last year, but 13.8 lbs./TC better than the 4-year average. The average increase in TRS during the 2-week period was only 16.2 lbs. this is about half of what it should be at this sample date. This can be attributed to the cooler weather prior to the August 31st sample date; nighttime temperatures averaged 65.0º which likely increased TRS levels above what would be considered normal for the 1st sampling date.

Overall, HoCP 00-950 (223 lbs./TC) and L 01-283 (213 lbs./TC) have the highest early TRS levels, followed by candidate variety HoCP 09-804 (200 lbs./TC) and Ho 07-613 (198 lbs./TC). HoCP 96-540 and L 01-299 had the lowest TRS levels producing 158 lbs./TC each. The varieties with the

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

largest increase in TRS during the sampling period were L 99-226 (26.7.0 lbs.) followed by L 01-283 (25.1 lbs.) HoCP 96-540 had the smallest increase in TRS only gaining 2.2 lbs.

The third sampling for the 1st stubble maturity test and the first sampling of the plant-cane maturity test are scheduled for September 28th.

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

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

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 14, 2015[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous samples
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
HoCP 96-540	2015	1.95	86	---	---	12.68	9.14	71.92	157.69	155.50	2.2
	2014	1.28	70	---	---	13.21	9.57	72.36	165.53	129.30	36.2
	2013	1.43	82	---	---	11.31	7.44	65.70	121.14	96.70	24.4
	2012	2.33	98	---	---	12.90	9.46	73.20	164.74	no data[5]	0.0
	2011	2.16	89	---	---	12.55	8.85	70.55	150.85	117.60	33.3
L 99-226	2015	2.32	92	---	---	13.04	9.55	73.16	166.44	139.70	26.7
	2014	1.72	79	---	---	12.93	9.35	72.21	161.67	123.70	38.0
	2013	1.98	88	---	---	11.69	8.03	68.68	134.52	107.00	27.5
	2012	2.87	106	---	---	13.55	9.98	73.66	174.42	no data	---
	2011	2.57	95	---	---	12.22	8.33	68.11	138.97	106.70	32.3
HoCP 00-950	2015	1.73	76	---	---	15.65	12.25	78.25	223.41	213.90	9.5
	2014	1.42	67	---	---	15.87	12.70	79.91	234.13	190.70	43.4
	2013	1.42	77	---	---	14.32	10.74	75.00	191.47	170.40	21.1
	2012	1.94	90	---	---	14.39	10.87	75.54	194.45	no data	---
	2011	2.09	85	---	---	15.49	12.07	77.90	219.50	189.30	30.2
L 01-283	2015	1.79	89	---	---	14.94	11.69	78.22	212.94	187.80	25.1
	2014	1.47	82	---	---	15.12	11.88	78.57	216.97	163.00	54.0
	2013	1.34	84	---	---	13.79	10.04	72.79	176.07	147.90	28.2
	2012	2.07	100	---	---	14.92	11.69	78.35	213.14	no data	---
	2011	2.06	94	---	---	14.43	10.84	75.12	193.39	163.70	29.7
L01-299	2015	1.98	88	---	---	12.82	9.24	71.93	158.00	149.50	8.5
	2014	1.45	84	---	---	13.04	9.56	73.30	164.89	132.30	32.6
	2013	1.27	84	---	---	11.91	8.14	68.34	134.77	110.80	24.0
	2012	2.01	101	---	---	13.10	9.55	72.87	164.33	no data	---
	2011	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2015	1.78	82	---	---	13.37	10.40	77.72	183.54	158.50	25.0
	2014	1.33	69	---	---	13.41	10.40	77.47	183.18	139.70	43.5
	2013	1.42	83	---	---	12.42	9.42	75.65	163.92	128.50	35.4
	2012	1.91	96	---	---	13.52	10.58	78.14	187.18	no data	---
	2011	1.79	88	---	---	13.06	9.85	75.35	170.95	144.00	27.0
Ho 07-613	2015	2.06	91	---	---	13.99	10.88	77.70	197.61	180.40	17.2
	2014	1.67	80	---	---	13.37	10.03	74.91	178.71	151.40	27.3
	2013	1.79	89	---	---	13.19	9.86	74.62	175.28	144.80	30.5
	2012	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---
HoCP 09-804	2015	1.42	80	---	---	14.76	11.30	76.51	199.53	190.80	8.7
	2014	---	---	---	---	---	---	---	---	---	---
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2011	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 14, 2015[1].

Variety	Year	Stalk[2]			Normal juice[3]				Sugar yield	Previous sample date[4]	TRS change from previous samples
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
Ho 09-840	2015	1.37	78	---	---	13.50	10.43	77.24	185.20	162.10	23.1
	2014	---	---	---	---	---	---	---	---	---	---
	2013	---	---	---	---	---	---	---	---	---	---
	2012	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2011	---	---	---	---	---	---	---	---	---	---
Averages[6]	2015	1.82	85	---	---	13.86	10.54	75.85	187.15	170.91	16.2
	2014	1.48	76	---	---	13.90	10.50	75.50	186.40	147.20	39.2
	2013	1.52	84	---	---	12.57	8.95	70.96	153.50	125.50	28.0
	2012	2.19	98	---	---	13.70	10.17	74.09	179.10	no data[5]	---
	2011	2.13	92	---	---	13.67	10.00	72.86	174.40	148.00	26.4

[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, 4th, and the 8th maturity study sampling dates.
[3] Brix factor = .8854; Sucrose factor = .8105.
[4] Previous scheduled sample date was August 31, 2015.
[5] No data taken during this year due to hurricane Isaac.
[6] Averages are based on all varieties in the first-stubble maturity study.