USDA
United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

November 6, 2013

Results of the October 21, 2013 sampling of the First-Stubble (fifth sampling), Sugarcane Maturity Test, and the second of three samplings of Plant-Cane Maturity Test at the USDA-ARS Sugarcane Research Unit's Ardoyne Research Farm in Schriever, LA are attached. As a result of the government shutdown, the fourth sampling of the First-Stubble test scheduled for October 7th was not harvested. This study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2009 – 2013); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15 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.** Both studies include eight released Louisiana varieties: HoCP 96-540, L 99-226, L 99-233, HoCP 00-950, L 01-283, L 01-299, L 03-371, HoCP 04-838 and the candidate variety Ho 07-613. Harvestable sugarcane stalks in all plots were counted in early August. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields.

Since the last sampling, the farm has received 6.55 inches of rain. Overall, the varieties in both tests remain fairly erect, with the exceptions of L 99-233, L 99-226 and Ho 07-613.

First-Stubble: Stalk measurements indicate the crop grew 13.7 in. (3.4 in. per week) and increased in weight by 0.30 lbs since the last sample date on September 24th. Compared to the 4-yr averages, both length and weight remain below average for this time of year.

Brix, sucrose, and purities remain lower for this sampling date when compared to 2012 and the 4-yr average. The theoretically recoverable sugar (TRS) levels for this sample date are 32.2 lbs/ton of cane (TC) less than last year and 26.1 lbs less than average. Among the varieties with major plantings for harvest in 2013, L 01-299 (206 lbs/TC) and HoCP 96-540 (219 lbs/TC) have the lowest TRS levels, while HoCP 00-950 (269 lbs/TC) has the highest TRS levels. Candidate variety Ho 07-613 has the highest TRS levels of all the varieties producing 270 lbs/TC.

Estimated yields continue to be lower in 2013 when compared to the 4-yr average for both tons/A and lbs/A.; however, this data indicates tonnage has increased slightly and is closer to average than before. For this sample date, the average estimated cane yield (46.6 tons/A) is only 5.5 tons/A less than last year and 1.7 ton/A less than the 4-yr average. The estimated sugar yield is 1611 lbs/A less than the 4-yr average and 3007 lbs/A less than the 2012 average. L 01-233 (49.0 tons/A) and Ho 07-613 (48.8 tons/A) produced the highest cane yields. Ho 07-613 (13165 lbs/A) and HoCP 04-838 (12030 lbs/A) produced the highest sugar yields.

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Plant-cane: Plant-cane weight was equal to the 4-yr average for this sample period; however, stalk length was 6 in. greater than average. With weather conditions remaining favorable for growth, the varieties in the plant-cane test grew an average of 16 in. during the 4-week sampling interval.

Brix and sucrose levels for this sampling period are lower than those produced in 2012 and the 4-yr average, but, purity levels although less than last year remain slightly better than average. Overall, the average TRS is 20.0 lbs/TC less than last year but only 10.2 lbs/TC less than the 4-yr average. Similar to the first-stubble data, the varieties with the lowest TRS levels were HoCP 96-540 (226 lbs/TC) and L 01-299 (229 lbs/TC). The varieties producing the highest TRS levels were HoCP 00-950 (294 lbs/TC) and L 01-283 (277 lbs/TC).

Estimated cane and sugar yields remain lower than last year and the 4-yr average. The estimated cane yield (46.7 tons/A) is only 3.1 tons/A less than average and 6.6 tons/A less than last year. Varieties producing the highest cane yields were Ho 07-613 (52.9 tons/A) and L 99-226 (49.2 tons/A), the lowest cane yields were produced by L 01-283 (42.2 tons/A) and HoCP 00-950 (44.1 tons/A). The estimated sugar yield of 11833 lbs/A is 1349 lbs/A less than average and 2792 lbs/A less than last year. The varieties producing the highest sugar yields were Ho 07-613 (13908 lbs/A) and HoCP 00-950 (12953 lbs/A). The varieties producing the lowest sugar yields were HoCP 96-540 (10154 lbs/A) and L 01-299 (10487 lbs/A).

The sixth sampling for the maturity test is scheduled for November 4th.

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 via 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 first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, October 21, 2013[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous	Estimated yield[5]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	sample	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
HoCP 96-540	2013	1.9	102			15.27	12.06	78.93	218.7	No Data	---	45.3	9904
	2012	2.5	109	---	---	16.67	13.77	82.63	255.5	242.1	13.4	53.2	13604
	2011	2.2	99	---	---	17.09	13.99	81.83	258.1	232.1	26.0	55.7	14329
	2010	2.2	98	---	---	16.25	13.04	80.24	238.3	220.3	18.0	36.8	8772
	2009	2.5	108	---	---	15.54	12.60	81.09	231.5	189.0	42.5	55.6	12877
L 99-226	2013	2.4	106			15.76	12.54	79.58	228.4	0.0	---	44.0	10054
	2012	3.3	120	---	---	17.24	14.29	82.87	265.3	233.0	32.3	55.3	14661
	2011	2.8	109	---	---	17.24	14.31	82.96	265.8	226.0	39.8	55.5	14742
	2010	2.6	108	---	---	18.11	15.30	84.49	286.6	253.9	32.7	45.1	12929
	2009	3.1	113	---	---	15.74	12.85	81.61	237.0	201.9	35.1	53.1	12599
L 99-233	2013	1.8	108			15.67	12.47	79.55	222.6	0.0	---	49.0	10879
	2012	2.3	118	---	---	16.87	13.89	82.33	252.0	224.7	27.3	54.8	13850
	2011	2.1	104	---	---	16.67	13.75	82.45	249.8	229.3	20.5	48.3	12121
	2010	1.9	114	---	---	16.71	13.77	82.37	250.0	219.3	30.7	44.5	11113
	2009	2.0	115	---	---	15.83	12.98	82.01	235.2	210.1	25.1	51.4	12095
HoCP 00-950	2013	1.7	96			17.13	14.31	83.50	269.2	0.0	---	42.2	11314
	2012	2.1	101	---	---	18.11	15.33	84.66	290.4	274.4	16.0	49.9	14482
	2011	2.2	89	---	---	18.93	16.22	85.69	308.8	286.0	22.8	43.9	13519
	2010	2.0	88	---	---	18.55	15.83	85.34	300.9	281.0	19.9	33.0	9917
	2009	2.1	100	---	---	17.55	14.95	85.15	283.9	257.6	26.3	44.0	12503
L 01-283	2013	1.6	100			16.58	13.72	82.68	256.9	0.0	---	44.7	11460
	2012	2.1	106	---	---	18.04	15.21	84.29	287.4	278.1	9.3	48.3	13960
	2011	2.2	103	---	---	18.68	15.80	84.55	298.8	278.5	20.3	57.3	17139
	2010	1.8	97	---	---	18.79	15.97	84.97	302.9	287.1	15.8	41.1	12428
	2009	2.1	106	---	---	17.07	14.46	84.73	273.9	244.1	29.8	51.8	14212
L 01-299	2013	1.6	110			14.70	11.52	78.38	206.1	0.0	---	48.5	9988
	2012	2.0	106	---	---	16.93	13.96	82.43	256.1	239.4	16.7	52.1	13321
	2011	---	---	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---	---	---
L 03-371	2013	2.0	95			15.76	12.78	81.08	239.5	0.0	---	48.5	11632
	2012	2.3	98	---	---	17.49	14.80	84.59	282.7	248.4	34.3	51.1	14433
	2011	2.2	95	---	---	17.58	14.69	83.60	279.3	245.4	33.9	57.8	16143
	2010	2.2	93	---	---	17.22	14.41	83.65	273.9	246.9	27.0	45.2	12375
	2009	2.6	103	---	---	16.53	13.88	83.93	264.4	236.6	27.8	56.5	14951
HoCP 04-838	2013	1.9	104			16.16	13.58	84.04	248.9	0.0	---	48.4	12030
	2012	2.0	102	---	---	17.35	14.90	85.84	275.6	258.4	17.2	47.1	12972
	2011	2.3	100	---	---	17.84	15.15	84.93	279.0	266.7	12.3	55.8	15587
	2010	2.0	100	---	---	17.89	15.30	85.57	280.0	258.3	21.7	35.0	9799
(Cont'd.)	2009	---	---	---	---	---	---	---	---	---	---	---	---
Ho 07-613	2013	2.0	104			16.73	14.11	84.32	269.9	0.0	---	48.8	13165

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, October 21, 2013[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous	Estimated yield[5]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	sample	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
	2012	---	---	---	---	---	---	---	---	---	---	---	---
	2011	---	---	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---	---	---
Averages[6]	2013	1.9	103	---	---	15.97	13.01	81.34	240.0	0.0	#DIV/0!	46.6	11158
	2012	2.4	109	---	---	17.40	14.55	83.56	272.2	250.1	22.1	52.1	14165
	2011	2.2	100	---	---	17.85	14.91	83.47	278.1	254.0	24.1	51.2	14210
	2010	2.1	99	---	---	17.55	14.60	83.09	270.7	248.7	22.0	38.9	10328
	2009	2.4	108	---	---	16.01	13.24	82.61	243.6	210.8	32.8	50.8	12375

[1] Data for each parameter represents the average of four replications of 15 stalks each.
[2] Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalksample of each rep, 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 7, 2013, but due to Furlough no data was taken.
[5] Estimated cane yield is the product of stalk weight and millable stalk counts, estimated sugar yield is the product of TRS and estimated cane yield.
[6] Averages are based on all varieties in the first-stubble maturity study.

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit
Houma, LA, October 22, 2013[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample	Estimated yield[5]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS		Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	(lbs/A)
HoCP 96-540	2013	2.4	113			15.34	12.36	80.55	226.3	174.8	51.5	44.9	10154
	2012	2.4	109	---	---	16.62	13.65	82.10	252.4	189.9	62.5	50.9	12851
	2011	2.4	96	---	---	16.58	13.05	78.71	236.3	176.3	60.0	45.3	10705
	2010	2.6	114	---	---	16.62	13.57	81.55	250.0	210.5	39.5	56.4	14064
	2009	2.8	101	---	---	15.63	12.76	81.62	235.2	182.3	52.9	46.6	11004
L 99-226	2013	3.1	123			15.74	12.92	82.05	238.9	170.8	68.1	49.2	11702
	2012	3.1	117	---	---	17.11	14.21	83.02	264.1	189.3	74.8	57.4	15193
	2011	3.2	107	---	---	17.09	13.80	80.69	253.0	170.3	82.7	57.2	14525
	2010	3.0	116	---	---	17.77	14.89	83.76	278.0	214.3	63.7	58.6	16304
	2009	3.1	111	---	---	15.56	12.71	81.51	234.4	189.6	44.8	54.1	12858
L 99-233	2013	2.1	121			16.31	13.62	83.48	248.8	202.5	46.3	48.1	11958
	2012	2.2	115	---	---	17.22	14.40	83.62	263.3	212.2	51.1	59.3	15606
	2011	2.0	101	---	---	16.60	13.27	79.88	237.4	150.6	86.8	45.5	10843
	2010	2.3	116	---	---	16.96	14.03	82.75	255.3	207.0	48.3	54.5	13917
	2009	2.3	119	---	---	15.74	12.82	81.39	231.5	195.6	35.9	51.5	11884
HoCP 00-950	2013	2.1	100			17.80	15.38	86.39	293.8	242.1	51.7	44.1	12953
	2012	2.2	102	---	---	18.59	16.04	86.26	304.8	244.5	60.3	52.4	15978
	2011	2.2	92	---	---	18.50	15.50	83.78	292.2	234.8	57.4	46.6	13554
	2010	2.2	104	---	---	18.28	15.49	84.71	293.4	257.1	36.3	47.0	13800
	2009	2.5	98	---	---	17.66	15.01	84.99	284.8	247.7	37.1	48.9	13917
L 01-283	2013	1.8	106			17.04	14.58	85.45	277.3	212.1	65.2	42.2	11649
	2012	2.0	105	---	---	18.50	15.88	85.81	302.6	239.6	63.0	50.9	15432
	2011	2.4	93	---	---	18.11	14.92	82.37	278.9	203.1	75.8	45.3	12678
	2010	2.2	108	---	---	18.11	15.14	83.63	285.1	229.9	55.2	51.3	14619
	2009	2.3	103	---	---	17.04	14.38	84.38	272.0	229.9	42.1	48.7	13267
L 01-299	2013	2.1	115			15.27	12.50	81.83	228.5	170.1	58.4	45.9	10487
	2012	2.2	110	---	---	16.91	13.86	81.93	253.4	191.7	61.7	51.6	13065
	2011	2.2	100	---	---	16.78	13.41	79.92	242.2	177.7	64.5	42.0	10175
	2010	---	---	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---	---	---
L 03-371	2013	2.5	103			15.92	13.24	83.14	251.1	186.1	65.0	45.7	11456
	2012	2.2	100	---	---	17.89	15.29	85.48	293.6	215.1	78.5	52.2	15336
	2011	2.5	94	---	---	17.46	14.37	82.24	271.0	182.5	88.5	50.7	13753
	2010	2.5	102	---	---	17.86	15.07	84.32	287.5	230.3	57.2	55.4	15923
	2009	2.7	101	---	---	16.73	14.12	84.39	269.6	204.3	65.3	57.7	15583
HoCP 04-838	2013	2.3	111			16.51	14.14	85.60	261.3	211.7	49.6	46.9	12234
	2012	2.0	105	---	---	17.60	15.11	85.87	279.6	204.2	75.4	50.9	14249
	2011	2.1	98	---	---	17.13	14.33	83.63	262.0	191.5	70.5	45.7	11972
	2010	2.2	111	---	---	17.18	14.64	85.22	270.0	219.5	50.5	48.0	12971
	2009	2.5	109	---	---	17.09	14.61	85.48	267.1	217.8	49.3	50.5	13497
Ho 07-613	2013	2.7	116			16.31	13.86	84.96	262.9	204.9	58.0	52.9	13908
	2012	2.4	114	---	---	17.58	15.13	86.06	288.5	246.6	41.9	60.2	17367
	2011	---	---	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---	---	---
Cont'd	2009	---	---	---	---	---	---	---	---	---	---	---	---

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit Houma, LA, October 22, 2013[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample	Estimated yield[5]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS		Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	(lbs/A)
Averages[b]	2013	2.3	112	---	---	16.25	13.62	83.72	254.3	197.2	57.1	46.7	11833
	2012	2.3	109	---	---	17.51	14.74	84.09	274.3	210.2	64.1	53.3	14625
	2011	2.3	98	---	---	17.26	14.04	81.28	257.4	186.3	71.1	46.8	12065
	2010	2.4	112	---	---	17.68	14.73	83.30	274.4	226.8	47.6	51.0	13917
	2009	2.5	105	---	---	16.42	13.61	82.85	252.0	208.2	43.8	48.1	12123

[1] Data for each parameter represents the average of four replications of 15 stalks each.

[2] Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 10-stalk sample of each rep, 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, 2013 .

[5] Estimated cane yield is the product of stalk weight and millable stalk counts, estimated sugar yield is the product of TRS and estimated cane yield.

[6] Averages are based on all varieties in the plant cane maturity study.