

September 27, 2013

Results of the September 23, 2013 sampling of the First-Stubble (third sampling), Sugarcane Maturity Test and the first of three samplings of Plant-Cane Maturity Test at the USDA-ARS Sugarcane Research Laboratory'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 (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 2.84 in. of rain. Overall the test remains fairly erect, however, winds associated with a storm system that moved in over the weekend did lodge some plots of L 99-233, and to a lesser extent plots of L 99-226 and Ho 07-613.

First-Stubble: Nighttime temperatures averaged in the upper 60's and lower 70's which slowed growth of the crop and should have a positive influence on sugar yields. Stalk measurements indicate that the crop only grew 5.2 in. during the sampling period. An average stalk weight of 1.56 lbs is 0.50 lbs less than the 4-yr average and only a 0.05 lb increase from the last sample date.

Brix, sucrose, and purities remain lower for this sampling date when compared to both last year and the 4-yr. average. The theoretically recoverable sugar (TRS) levels for 2013 are 37.6 lbs/ton of cane (TC) less than average and 41.9 lbs less than last year. Among the varieties with major plantings for harvest in 2013, HoCP 00-950 (214 lbs/TC) and L 01-283 (202 lbs/TC) have the highest early TRS levels; while, candidate variety Ho 07-613 (201 lbs/A) continues to produce good early sugar. The lowest TRS levels were produced by HoCP 96-540 (147 lbs/A).

The increase in TRS levels over the 2-week period is slightly less than average (1.76 lbs/day) at 24.7 lbs. The varieties with the highest increase in TRS over the 2-week period were L 99-226 (36 lbs) and HoCP 96-540 and L 01-283 (26 lbs).

Estimated yields are also lower in 2013 when compared to the 4-yr average for both tons/A and lbs/A. At this sample date, the average cane yield was 38.5 tons/A which is 5.4 tons less than the 4-yr average, and 9.1 tons less than 2012. The estimated sugar yield is 2222 lbs/A less than the 4-yr average and 3634 lbs/A less than the 2012 average. The candidate variety Ho 07-613 continues to produce the highest cane yields (45.1 tons/A) and (9003 lbs/A) sugar yields.

Plant-cane: Plant-cane length, diameter, and density were equal to the 4-yr average for this sample period; however, stalk weight is down by 0.22 lbs per stalk on average. Unlike the first-stubble, plant-cane lengths are only 2 inches shorter than last year and the average.

Brix and sucrose levels for this sampling period are lower than those produced in 2012 and the 4-yr average, however, purities are slightly better when compared to both. Overall, the average TRS is only 16.3 lbs/TC less than last year and 11.7 lbs/TC less than the 4-yr average. The varieties with the highest TRS levels were HoCP 00-950 (242 lbs/TC) and L 01-283 (212 lbs/TC), while L 99-226 and L 01-299 had the lowest TRS levels with 170 lbs/TC each.

Estimated cane and sugar yields are lower in 2013 than last year and lower than the 4-yr average. The estimated cane yield of 47.3 tons/A is only 5.3 tons/A less than average and 11.6 tons/A less than last year. Ho 07-613 (47.2 tons/A) and L 03-371 (46.2 tons/A) produced the highest cane yields, whereas L 01-283 and L 01-299 both produced 39.3 tons/A, which were the lowest. The 9870 lbs/A of sugar produced is 1641 lbs/A less than average and 3150 less than last year. The varieties producing the highest sugar yields were Ho 07-613 (9661 lbs/A) and HoCP 00-950 (9227 lbs/A). The varieties producing the lowest sugar yields were HoCP 96-540 (7089 lbs/A) and L 01-299 (6666 lbs/A).

The forth sampling for the maturity test is scheduled for October 7th.

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 Ms. Ashley Bussey by email (Ashley.Bussey@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 Lab.

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma LA, September 24, 2013¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield	Estimated yield ⁴	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	Cane (tons/A)	Sugar (lbs/A)
HoCP 96-540	2013	2.2	94	0.81	1.24	13.26	9.92	74.78	174.8	40.5	7098
	2012	2.4	100	0.88	1.10	14.34	10.76	74.87	189.9	50.8	9575
	2011	2.2	90	0.92	1.04	14.17	10.22	72.10	176.3	42.3	7466
	2010	2.5	102	0.83	1.26	15.07	11.71	77.65	210.5	53.1	11170
	2009	2.6	95	0.92	1.14	13.81	10.34	74.78	182.3	43.5	7934
L 99-226	2013	2.6	104	0.92	1.05	12.97	9.70	74.58	170.8	42.2	7148
	2012	3.0	106	1.00	1.01	14.50	10.78	74.27	189.3	56.8	10715
	2011	2.9	100	0.99	1.04	13.90	9.92	71.37	170.3	51.2	8734
	2010	2.9	112	0.86	1.24	15.18	11.87	78.14	214.3	55.6	11868
	2009	2.6	97	0.95	1.05	14.17	10.70	75.50	189.6	45.7	8674
L 99-233	2013	1.8	102	0.76	1.09	14.39	11.38	79.03	202.5	42.9	8611
	2012	2.0	104	0.81	1.04	15.85	12.13	76.54	212.2	54.9	11653
	2011	2.0	99	0.83	1.03	13.59	9.23	67.87	150.6	44.9	6767
	2010	2.1	114	0.77	1.11	15.21	11.76	77.30	207.0	50.2	10402
	2009	1.9	105	0.80	1.00	14.48	11.15	76.96	195.8	42.7	8326
HoCP 00-950	2013	1.9	85	0.81	1.17	16.05	13.03	81.14	242.1	38.6	9227
	2012	2.2	95	0.88	1.08	16.69	13.29	79.64	244.5	54.1	13202
	2011	2.0	84	0.89	1.03	16.58	12.91	77.84	234.8	42.2	9855
	2010	2.1	99	0.79	1.22	16.98	13.83	81.42	257.1	44.8	11523
	2009	2.2	86	0.89	1.13	16.53	13.37	80.84	247.7	43.9	10874
L 01-283	2013	1.7	92	0.74	1.17	14.70	11.59	78.84	212.1	39.3	8352
	2012	2.1	98	0.82	1.11	16.71	13.12	78.49	239.6	52.9	12630
	2011	2.2	91	0.89	1.06	15.52	11.48	73.99	203.1	41.6	8482
	2010	2.1	106	0.72	1.34	15.96	12.57	78.75	229.9	47.9	10976
	2009	2.2	95	0.87	1.10	15.65	12.49	79.77	229.9	46.8	10734
L01-299	2013	1.8	99	0.73	1.17	13.02	9.74	74.83	170.1	39.3	6666
	2012	2.2	100	0.83	1.13	15.10	11.10	73.46	191.7	51.7	9902
	2011	2.1	92	0.84	1.16	14.54	10.43	71.67	177.7	40.7	7191
	2010	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---
L 03-371	2013	2.5	94	0.91	1.13	13.48	10.26	76.04	186.1	46.2	8565
	2012	2.2	89	0.92	1.02	15.47	11.83	76.46	215.1	52.2	11215
	2011	2.2	88	0.91	1.08	14.63	10.44	71.33	182.5	45.0	8208
	2010	2.3	101	0.84	1.17	15.80	12.47	78.85	230.3	52.7	12168
	2009	2.5	92	0.93	1.13	14.54	11.20	76.88	204.3	54.2	11140
HoCP 04-838	2013	2.0	95	0.83	1.11	14.43	11.73	81.18	211.7	41.2	8737
	2012	2.1	96	0.87	1.02	15.01	11.61	77.33	204.2	52.9	10660
	2011	2.2	94	0.87	1.07	14.63	11.03	75.40	191.5	46.4	8854
	2010	2.1	106	0.74	1.26	15.05	12.19	80.96	219.5	45.2	9928
(Cont'd)	2009	2.3	96	0.86	1.15	14.92	12.17	81.58	217.8	46.2	10078

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma LA, September 24, 2013¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield	Estimated yield ⁴	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	Cane (tons/A)	Sugar (lbs/A)
Ho 07-613	2013	2.4	103	0.82	1.22	14.19	11.20	78.87	204.9	47.2	9661
	2012	2.2	103	0.82	1.11	16.18	13.24	81.80	246.6	55.0	13503
	2011	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2013	2.1	96	0.81	1.15	14.05	10.95	77.70	197.2	41.9	8229
	2012	2.3	98	0.88	1.05	15.51	11.93	76.80	213.5	53.5	11379
	2011	2.3	94	0.91	1.04	14.81	10.79	72.69	188.1	45.0	8438
	2010	2.3	106	0.81	1.19	15.82	12.49	78.83	226.0	47.4	10654
	2009	2.3	95	0.87	1.12	14.99	11.62	77.34	208.2	43.2	9010

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-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 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.

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, September 23, 2013¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield TRS (lb.)	Previous sample date ⁴ TRS (lb.)	TRS change from previous sample (lb.)	Estimated yield ⁵	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm ³)	Bx. (%)	Su. (%)	Pu. (%)				Cane (tons/A)	Sugar (lbs/A)
Averages ⁶	2013	1.56	89	---	---	13.49	10.10	74.69	178.2	153.5	24.7	38.5	6848
	2012	2.2	100	---	---	15.39	12.11	78.57	220.1	179.1	41.0	47.6	10482
	2011	2.0	94	---	---	15.53	12.16	78.07	219.6	174.4	45.2	47.4	10325
	2010	1.9	95	---	---	15.57	12.17	77.96	218.9	194.8	24.1	35.1	6134
	2009	2.1	101	---	---	14.60	11.40	78.10	204.7	180.4	24.3	45.6	9340

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 September 09, 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.