United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

September 14, 2012

Results of the September 10, 2012 sampling of the First-Stubble (second sampling), Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm in Schriever, LA are attached. The first sampling scheduled on August 27th was not harvested due to preparations for Hurricane Isaac. This study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2008 – 2012); 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.** The study includes 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 and HoCP 04-838. Harvestable sugarcane stalks in all plots were counted in early July. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields.

Ardoyne Farm has received more than its share of rain this year, with 75.76 inches as of September 5th. A mild winter and good growing conditions allowed the crop to get an early start which contributed to above average height for all the varieties in the test. The test remained erect throughout the growing season until Hurricane Isaac made landfall on the morning of August 29th. Winds associated with the storm caused some degree of lodging in all the varieties in the test, with the worst being L 99-233 and L 99-226, while the least amount of lodging occurred in L 01-299, HoCP 04-838, L 01-283, and HoCP 96-540.

Sugarcane stalks of the core varieties (HoCP 96-540, L 99-226, L 99-233, HoCP 00-950, L 01-283 and L 03-371) are average to slightly above average in weight, but 7 inches longer when compared to the average for the previous four years. L 99-226 and HoCP 96-540 had the heaviest stalks, while L 99-233, HoCP 00-950, and HoCP 04-838 had the lightest stalks at 1.9 lbs each. The varieties L 99-226, L 99-233 and L 01-299 had the longest stalks at over 100 inches, whereas HoCP 00-950 and L 03-371 had the shortest stalks.

Brix levels for this sampling date are equal to those attained in 2011, while sucrose and purities are slightly better than last year. When compared to the 4-yr average brix and sucrose levels are lower, -0.4 and -0.3 respectively, while purity levels (74.09%) are equal. The average theoretical recoverable sugar (TRS) levels for 2012 are only 4.7 lbs/ton of cane (TC) more than those recorded in 2011. Of the varieties with major plantings for harvest in 2012, L 01-283 (213 lbs/TC) and HoCP 00-950 (195 lbs/TC) have the highest TRS levels, the lowest TRS levels were produced by L 99-233 (162 lbs/TC) and L 01-299 (164 lbs/TC). HoCP 96-540 had the third lowest TRS producing 165 lbs/TC, 2 lbs less than its 4-yr average for this sample date and 14 lbs

Sugarcane Research Unit
5883 USDA Road
Houma, LA 70360
(985) 872-5042 – Fax (985) 868-8369

better than last year. The newer variety, HoCP 04-838 produced the third highest TRS at 187 lbs/TC, which is 22.5 lbs greater than HoCP 96-540 and 8 lbs better than the average for this sample date.

Estimated yields of cane and sugar per acre for the major varieties are slightly less in 2012 when compared to the 2011 data at this sampling date. Of the varieties sampled, none produced less than 44.5 tons/A or yielded less than 7000 lbs/A. The average cane yield of the core varieties was 47.0 tons/A which is 5.9 tons better than the 4-yr average but 2.5 tons less than last year. The sugar yield of the core varieties was only 176 lbs/A, less than those recorded in 2011, yet 981 lbs/A more than the 4-yr average. Of the varieties, L 01-299 (51.7 tons/A) and HoCP 96-540 (49.0 tons/A) produced the highest cane yields. The lowest cane yields were produced by L 99-233 and HoCP 04-838 with both averaging 45.0 tons/A. The highest estimated sugar yields were obtained by L 01-283 and HoCP 00-950 producing 10192 lbs/A and 8883 lbs/A respectively, while L 99-233 (7178 lbs/A) and L 03-371 (7736 lbs/A) produced the lowest sugar yields.

The third sampling for the maturity test is scheduled for September 24th.

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. Ashley DeHart by email (Ashley.DeHart@ars.usda.gov) Emailing insures address accuracy. Information regarding USDA research activities can also be found on our website: www.ars.usda.gov/msa/srrc/sru .

Maturity reports are prepared by Mr. Mike Duet of the USDA-ARS Sugarcane Research Lab.

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 10, 2012.

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous	Estimated yield [6]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	samples	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
HoCP 96-540	2012	2.3	98			12.90	9.46	73.20	164.7	no data	0.0	49.0	8077
	2011	2.2	89	---	---	12.55	8.85	70.55	150.9	117.6	33.3	55.2	8309
	2010	1.8	85	---	---	13.21	9.62	72.79	167.1	151.3	15.8	30.2	5043
	2009	2.0	91	---	---	13.88	10.39	74.88	183.3	139.8	43.5	44.6	8172
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
L 99-226	2012	2.9	106			13.55	9.98	73.66	174.4	no data	---	48.5	8429
	2011	2.6	95	---	---	12.22	8.33	68.11	139.0	106.7	32.3	51.6	7202
	2010	2.2	93	---	---	14.25	10.67	74.79	188.1	158.7	29.4	38.7	7242
	2009	2.6	95	---	---	13.72	10.22	74.48	179.7	118.6	61.1	45.5	8165
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
L 99-233	2012	1.9	101			13.08	9.50	72.62	161.6	no data	---	44.5	7178
	2011	2.0	97	---	---	12.42	8.52	68.50	139.9	123.9	16.0	46.2	6470
	2010	1.5	97	---	---	13.72	9.88	71.99	167.0	137.7	29.3	36.2	6051
	2009	1.6	96	---	---	13.48	9.79	72.60	166.3	123.6	42.7	39.8	6604
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
HoCP 00-950	2012	1.9	90			14.39	10.87	75.54	194.5	no data	---	45.8	8883
	2011	2.1	85	---	---	15.49	12.07	77.90	219.5	189.3	30.2	42.8	9398
	2010	1.6	78	---	---	16.34	13.00	79.58	238.1	203.4	34.7	26.8	6379
	2009	1.9	82	---	---	15.52	12.07	77.79	219.3	185.1	34.2	40.0	8789
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
L 01-283	2012	2.1	100			14.92	11.69	78.35	213.1	no data	---	47.8	10192
	2011	2.1	94	---	---	14.43	10.84	75.12	193.4	163.7	29.7	54.3	10503
	2010	1.6	89	---	---	16.27	12.94	79.50	237.7	207.2	30.5	36.4	8644
	2009	2.0	92	---	---	14.74	11.39	77.21	206.2	168.1	38.1	47.7	9867
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
L01-299	2012	2.0	101			13.10	9.55	72.87	164.3	no data	---	51.7	8480
	2011	---	---	---	---	---	---	---	---	---	---	---	---
	2010	---	---	---	---	---	---	---	---	---	---	---	---
	2009	---	---	---	---	---	---	---	---	---	---	---	---
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
L 03-371	2012	2.1	91			13.37	9.52	71.15	166.2	no data	---	46.6	7736
	2011	2.1	88	---	---	12.66	8.74	69.01	149.8	128.2	21.6	53.6	8034
	2010	1.9	84	---	---	14.85	11.30	76.08	205.0	162.1	42.9	40.2	8226
	2009	2.1	87	---	---	13.72	10.17	73.98	181.6	126.2	55.4	45.0	8217
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---
HoCP 04-838	2012	1.9	96			13.52	10.58	78.14	187.2	no data	---	44.7	8279
	2011	1.8	88	---	---	13.06	9.85	75.35	171.0	144.0	27.0	43.1	7359
	2010	1.6	86	---	---	14.59	11.60	79.46	204.8	174.3	30.5	27.9	5686
	2009	---	---	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, September 10, 2012.

Variety	Year	Stalk[2]			Normal juice[3]				Sugar yield	Previous sample date[4]	TRS change from previous	Estimated yield [6]	
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	samples	Cane	Sugar
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)	(tons/A)	lbs/A)
Averages[5]	2012	2.2	98	---	---	13.70	10.17	74.09	179.1	#DIV/0!	#DIV/0!	47.0	8416
	2011	2.1	92	---	---	13.67	10.00	72.86	174.4	148.0	26.4	49.5	8592
	2010	1.8	87	---	---	14.60	11.00	75.20	194.8	168.8	26.0	32.0	6181
	2009	1.9	93	---	---	13.90	10.30	74.30	180.4	139.4	40.9	41.8	7533
	2008 [7]	---	---	---	---	---	---	---	---	---	---	---	---

[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 sample date was scheduled for August 27th (no data taken due to hurricane Isaac).
[5] Averages are based only on varieties included in previous year's first-stubble maturity study (HoCP 96-540, L99-226, L99-233, HoCP 00-950, L01-283 and L03-371).
[6] 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.
[7] No data taken during this year due to hurricane Gustav.