**United States Department of Agriculture**

Research, Education, and Economics
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Results of the eight and final sampling (December 5) of the 2011 First-Stubble, Sugarcane Maturity Test at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm in Schriever, LA are attached. The study is designed to examine natural ripening and compare the results for the same harvest dates over a 5-yr period (2007 – 2011. Samples consist of 15, hand-cut stalks of clean, trash-free and properly topped cane from each of four replications. **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 first-stubble study includes eight released Louisiana varieties: HoCP 96-540, L 97-128, L 99-226, L 99-233, HoCP 00-950, L 01-283, L 03-371, HoCP 04-838 and the candidate variety Ho 05-961. L 01-299 is omitted from the first-stubble test because it was released after the test was planted in 2009 but is included in the plant-cane maturity test. Beginning in 2008, harvestable stalks in all plots are counted in mid-July and together with stalk weights and TRS levels for this harvest date are used to provide an estimation of gross cane (tons/A) and sugar (lbs/A) yields.

During the 2-week interval, there was no increase in height or weight for the core varieties (HoCP 96-540, L 97-128, L 99-233, HoCP 00-950 and L01-283) due to cooler temperatures and several morning frosts. When compared to the previous four years, sugarcane stalks of the core varieties are about average in height, weight, diameter, and density for this sampling. Of the varieties, L 99-226 and L 99-233 had the longest stalks and HoCP 00-950 and L 03-371 had the shortest stalks. L 99-226 and L 97-128 continue to have the heaviest stalks, but all of the varieties are producing stalks in excess of 2.1 lbs.

Brix and sucrose percentages are similar to those obtained in 2010 for this sample date but better than the 4-year average. For the 2-week period theoretical recoverable sugar (TRS) levels for the core varieties increased by only 3.8 lbs./TC producing an average TRS of 303.5 lbs./TC. The low average increase in TRS/TC (< 0.5 lbs TRS/TC/day) and good purity levels signify a crop that has reached full maturity. Of the varieties, HoCP 00-950 (320.0 lbs./TC) and L 03-371 (313.0 lbs./TC) continue to have the highest TRS levels. Currently all of the varieties in the test have TRS levels at or above 298 lbs./TC with the exception of L 99-233.

Estimated yields of the major varieties remain higher in 2011 when compared to the 2010 data at this sampling date for both tons/A and lbs/A. The average cane yield of the core varieties was 53.5 tons/A which is 6.9 tons better than the 4-yr average and 12.1 tons better than last year. The sugar yield of the core varieties was 2971 lbs/A higher than the 4-yr average and 3788 lbs./A better than the 2010 average. Of the varieties sampled, the highest cane yields were produced by L 03-371 and L 01-283 which yielded over 60.0 tons/A. The highest estimated sugar yields were also obtained by L 03-371 and L 01-283 producing 19106 lbs/A and 18713 lbs/A, respectively.

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As mentioned above this is the eighth and **final sampling** of the 2011 maturity tests.

**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 in 2012, 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 and Dr. Ed Richard of the USDA-ARS Sugarcane Research Lab.***

# *!!Merry Christmas and a Happy New Year!!!*

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, December 5, 2011[1].

| 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 | sample | Cane | Sugar |
| | | (lb.) | (in.) | (in.) | (g/cm3) | (%) | (%) | (%) | (lb.) | (lb.) | (lb.) | (tons/A) | (lbs/A) |
| HoCP 96-540 | 2011 | 2.3 | 100 | 0.85 | 1.14 | 18.84 | 16.24 | 86.23 | 307.1 | 301.7 | 5.4 | 59.2 | 18153 |
| | 2010 | 2.5 | 107 | 0.83 | 1.18 | 17.97 | 15.19 | 84.54 | 284.8 | 285.5 | -0.7 | 40.5 | 11531 |
| | 2009 | 2.9 | 113 | 0.88 | 1.15 | 17.00 | 14.15 | 83.21 | 263.2 | 265.2 | -2.0 | 63.1 | 16601 |
| | 2008 | 2.4 | 100 | 0.90 | 1.06 | 18.17 | 15.46 | 85.07 | 290.6 | 283.5 | 7.1 | 45.1 | 13096 |
| | 2007 | 2.3 | 103 | 0.81 | 1.23 | 18.15 | 15.36 | 84.61 | 288.0 | 277.3 | 10.7 | --- | --- |
| L 97-128 | 2011 | 2.6 | 103 | 0.92 | 1.06 | 18.64 | 15.87 | 85.13 | 298.3 | 296.1 | 2.1 | 52.6 | 15686 |
| | 2010 | 2.1 | 107 | 0.75 | 1.27 | 19.04 | 16.32 | 85.74 | 307.8 | 309.0 | -1.2 | 36.6 | 11255 |
| | 2009 | 3.0 | 120 | 0.91 | 1.06 | 17.95 | 15.38 | 85.68 | 290.1 | 285.4 | 4.7 | 53.6 | 15552 |
| | 2008 | 2.4 | 108 | 0.90 | 0.99 | 18.15 | 15.11 | 83.21 | 281.0 | 283.8 | -2.8 | 40.9 | 11516 |
| | 2007 | 2.4 | 113 | 0.82 | 1.17 | 19.01 | 16.58 | 87.21 | 306.6 | 302.6 | 4.0 | --- | --- |
| L99-226 | 2011 | 2.9 | 108 | 0.93 | 1.09 | 18.70 | 16.08 | 85.98 | 303.7 | 304.4 | -0.7 | 57.6 | 17499 |
| | 2010 | 2.9 | 107 | 0.86 | 1.30 | 19.32 | 16.79 | 86.86 | 318.4 | 308.7 | 9.7 | 50.5 | 16083 |
| | 2009 | 3.1 | 121 | 0.92 | 1.08 | 17.29 | 14.59 | 84.36 | 273.2 | 261.6 | 11.6 | 54.1 | 14816 |
| | 2008 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2007 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| L 99-233 | 2011 | 2.1 | 107 | 0.82 | 1.03 | 17.93 | 15.28 | 85.23 | 281.9 | 276.7 | 5.2 | 48.6 | 13713 |
| | 2010 | 2.2 | 115 | 0.72 | 1.31 | 18.37 | 15.84 | 86.22 | 293.7 | 281.3 | 12.4 | 51.7 | 15197 |
| | 2009 | 2.2 | 117 | 0.81 | 1.01 | 17.20 | 14.55 | 84.49 | 267.4 | 263.5 | 3.9 | 56.8 | 15147 |
| | 2008 | 2.1 | 111 | 0.82 | 0.99 | 17.89 | 15.19 | 84.92 | 279.8 | 273.2 | 6.6 | 50.0 | 13967 |
| | 2007 | 2.0 | 110 | 0.75 | 1.29 | 18.35 | 15.75 | 85.82 | 291.4 | 274.1 | 17.3 | --- | --- |
| HoCP 00-950 | 2011 | 2.3 | 96 | 0.86 | 1.14 | 19.32 | 16.73 | 86.59 | 320.0 | 317.3 | 2.7 | 46.6 | 14923 |
| | 2010 | 2.3 | 91 | 0.86 | 1.19 | 19.57 | 16.99 | 86.83 | 325.4 | 316.3 | 9.1 | 37.0 | 12041 |
| | 2009 | 2.4 | 102 | 0.84 | 1.18 | 18.66 | 16.14 | 86.46 | 308.4 | 296.8 | 11.6 | 51.1 | 15757 |
| | 2008 | 2.0 | 92 | 0.85 | 1.07 | 18.70 | 16.03 | 85.67 | 305.1 | 309.3 | -4.2 | 41.6 | 12702 |
| | 2007 | 2.2 | 96 | 0.81 | 1.21 | 20.12 | 17.57 | 87.33 | 337.3 | 325.5 | 11.8 | --- | --- |
| L 01-283 | 2011 | 2.3 | 103 | 0.81 | 1.20 | 18.88 | 16.27 | 86.15 | 310.4 | 306.7 | 3.7 | 60.3 | 18713 |
| | 2010 | 2.1 | 102 | 0.74 | 1.31 | 19.39 | 16.69 | 86.09 | 318.5 | 318.0 | 0.5 | 47.5 | 15114 |
| | 2009 | 2.6 | 114 | 0.82 | 1.17 | 18.06 | 15.50 | 85.83 | 295.3 | 283.2 | 12.1 | 62.4 | 18396 |
| | 2008 | 2.1 | 99 | 0.83 | 1.07 | 18.62 | 15.60 | 83.78 | 294.1 | 305.6 | -11.5 | 45.6 | 13362 |
| | 2007 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| L 03-371 | 2011 | 2.3 | 94 | 0.94 | 1.00 | 18.70 | 16.21 | 86.64 | 313.0 | 320.2 | -7.2 | 61.0 | 19106 |
| | 2010 | 2.4 | 96 | 0.85 | 1.21 | 18.44 | 15.94 | 86.43 | 307.5 | 301.3 | 6.2 | 49.3 | 15154 |
| | 2009 | 2.9 | 103 | 0.94 | 1.13 | 17.75 | 15.23 | 85.77 | 292.8 | 272.0 | 20.8 | 63.2 | 18496 |
| | 2008 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2007 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| HoCP 04-838 | 2011 | 2.2 | 97 | 0.83 | 1.19 | 18.68 | 16.09 | 86.13 | 298.2 | 289.1 | 9.1 | 52.7 | 15714 |
| | 2010 | 2.2 | 102 | 0.77 | 1.26 | 18.97 | 16.37 | 86.30 | 300.6 | 295.7 | 4.9 | 38.4 | 11522 |
| | 2009 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (Cont'd.) | 2007 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, December 5, 2011[1].

| 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 | sample | Cane | Sugar |
| | | (lb.) | (in.) | (in.) | (g/cm3) | (%) | (%) | (%) | (lb.) | (lb.) | (lb.) | (tons/A) | (lbs/A) |
| Ho 05-961 | 2011 | 2.3 | 97 | 0.88 | 1.11 | 18.97 | 16.32 | 86.04 | 302.3 | 305.5 | -3.2 | 54.3 | 16369 |
| | 2010 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2009 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2008 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 2007 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Averages[5] | 2011 | 2.3 | 102 | 0.85 | 1.11 | 18.72 | 16.08 | 85.87 | 303.5 | 299.7 | 3.8 | 53.5 | 16238 |
| | 2010 | 2.3 | 103 | 0.80 | 1.21 | 18.70 | 16.03 | 85.75 | 301.4 | 297.6 | 3.8 | 41.4 | 12449 |
| | 2009 | 2.6 | 112 | 0.87 | 1.09 | 17.36 | 14.71 | 84.69 | 273.8 | 270.6 | 3.2 | 56.9 | 15527 |
| | 2008 | 2.1 | 98 | 0.85 | 1.05 | 18.10 | 15.31 | 84.57 | 284.1 | 282.1 | 2.0 | 41.6 | 11825 |
| | 2007 | 2.1 | 104 | 0.79 | 1.23 | 18.74 | 16.15 | 86.14 | 300.8 | 286.3 | 14.5 | --- | --- |

[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 November 21, 2011 .

[5] Averages are based only on varieties included in previous year's first-stubble maturity study (HoCP 96-540, L 97-128, L99-233, HoCP 00-950, and L01-283).

[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.