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Results (September 22, 2014) of the third sampling of the first-stubble Maturity Test and the first sampling of the plant-cane Maturity Test at the USDA-ARS Sugarcane Research Unit's Ardoyne Research Farm in Schriever, Louisiana are attached. This study is designed to examine the natural ripening process and compare the results for the same harvest dates over a five-year period (2010 – 2014); 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. Included in both tests are seven commercial Louisiana varieties: HoCP 96-540, L 99-226, HoCP 00-950, L 01-283, L 01-299, HoCP 04-838 and the newly released Ho 07-613. The plant-cane test also includes two experimental varieties, HoCP 09-804 and Ho 09-840.

Since the last sampling, the farm has received 4.80 in. of rain and at the time of this sampling all varieties in both test remain erect.

**First-Stubble:** Over the two-week sampling period the crop increased in weight by 0.13 lbs. and grew an average of 8.00 in. The average stalk weight (1.61 lbs.) is slightly better than last year for this sample date but 0.32 lbs. less than the four-year average. Of the varieties, Ho 07-613 (1.89 lbs.) and L 99-226 (1.82 lbs.) had the heaviest stalks, while L 01-299 (1.42 lbs.) and L 01-283 (1.45 lbs.) had the lightest stalks. Ho 07-613 (91 in.) produced the longest stalks and L 01-299 (88 in.), HoCP 00-950 (76 in.) and HoCP 04-838 (76 in.) had the shortest.

Brix, sucrose, and purities are above the four-year average for this sampling date and significantly better than last year. Percent purity (79.45 %) is better at this sample date than any of the previous four years. Theoretically recoverable sugar (TRS) levels are 32.9 lbs./ton of cane (TC) better than last year and but equal to the other three years. The average increase in TRS during the two-week period was 34.1 lbs. or 2.43 lbs./day.

Of the recommended varieties in 2014, HoCP 00-950 (264 lbs./TC) and L 01-283 (244 lbs./TC) continue to have the highest early TRS levels, followed by HoCP 04-838 (217 lbs./TC). Every variety sampled produced over 200 lbs./TC with the exception of L 99-226 which is considered a mid-maturing variety and should show a measurable increase by mid-October. The varieties with the largest increase in TRS during the sampling period were L 01-299 (43.1 lbs.) and HoCP 96-540 (38.0 lbs.). Both L 01-283 (26.8 lbs.) and HoCP 00-950 (30.1 lbs.) had the smallest increase in TRS.

**Plant-cane:** Plant-cane weight, length and diameter are less than last year and the four-year average for this sample period. Overall, when compared to the four-yr average, stalk weight is 0.34 lbs. less, length is 11 in. shorter and diameter is 0.08 in. less. On the other hand, stalk

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density is 0.22 g/cm<sup>2</sup> better than the average. Of the varieties, HoCP 96-540 (2.14 lbs.) and L 99-226 (2.63 lbs.) produced the heaviest stalks; the candidate variety HoCP 09-840 produced the lightest stalks at only 1.28 lbs. Both L 99-226 and L 01-283 produced the longest stalks at 93 in. each; the shortest stalks were produced by HoCP 00-950 (82 in.) and HoCP 09-840 (83 in.). The largest diameter stalks were produced by L 99-226 (0.88 in.) while HoCP 09-840 (0.68 in.) had the smallest diameter. Density was above 1.30 g/cm<sup>2</sup> for every variety except Ho 07-613, HoCP 09-804 and Ho 09-840.

Brix and sucrose levels for this sampling period are higher than those produced in 2013 and almost equal to the four-year average. Purities are better than the four-year average but similar to last year. Overall, the average TRS is 11.4 lbs./TC better than last year and 2.4 lbs./TC more than the four-year average. The varieties with the highest TRS levels were HoCP 00-950 (256 lbs./TC) and HoCP 09-804 (232 lbs./TC), while L 99-226 and L 01-299 had the lowest TRS levels with 178 lbs./TC each.

The forth sampling for the first stubble maturity test is scheduled for October 6th.

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://ars.usda.gov/main/site\\_main.htm?modecode=64-10-05-00](http://ars.usda.gov/main/site_main.htm?modecode=64-10-05-00)

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