

Estimating Brix Values To Improve Sugarcane Quality



Collecting juice at midpoint of stalk



Refractometer



12.4 Brix reading

Maturity (ripening) is a continuous process during the growing and harvest season. During stalk growth, each internode (joint) tends to function as a single unit. While it has a leaf attached, the internode completes cell elongation and cell-wall thickening and tends to complete filling its storage volume with sugars, the majority of which is sucrose. Hence, the internodes have generally completed their cycle by the time the attached leaf dies, and the lower ones are essentially ripe while the upper part of the stalk is still growing.

With stalk maturation, more and more internodes reach the same condition and a progressive increase in Brix (total soluble solids that include sucrose) is observed. In mature cane, most of the soluble solids are in the form of sucrose. Ripening is an ongoing process that hastens when environmental conditions, such as sunshine and cool, dry weather, constrain stalk elongation.

In many countries, representative cane samples are taken, and detailed analyses for Brix, pol and purity are made in the laboratory. The common practice, however, is to test the standing cane in the field for Brix with a hand refractometer, which is an approximate measure of the amount of sucrose in the juice and/or cane. To obtain the Brix, a punch is used to extract and accumulate a small juice sample from the middle internode of at least two stalks within the stool. A hand refractometer Brix is read and compared to the Brix of other fields and/or varieties with or without ripener to determine which fields to treat with ripener and/or for determining harvest schedules.

Fields with the highest Brix values should be treated with ripener first. After treatment with a ripener, the fields with the highest Brix should be harvested first. As the season progresses, it may become necessary to check the Brix at a higher level on the stalk nearer to the top.

For additional information, contact Dr. Kenneth Gravois (225-642-0224 or kgravois@agcenter.lsu.edu) or Dr. Al Orgeron (225-562-2320 or aorgeron@agcenter.lsu.edu) with the LSU AgCenter.

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William B. Richardson, LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

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