

The Old Maple Diabetic Meter Isn't Working so Well Anymore

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In 2005 testing was started at the Cornell Food Venture Center to see if common diabetic meters could be used to measure invert sugar levels in maple syrup for making a variety of maple value added products where crystalizing the syrup is critical. Crystalized maple products such as granulated sugar, maple sugar shapes, and maple cream each have a range of acceptable invert sugar levels where high quality products can be made. The diabetic meter could substitute for more complicated testing using the urinalysis tablets, and tests could be run easily and rapidly. For more than ten years I have used the Relion meter sold by Walmart with excellent success. But when I needed to purchase more test strips I found that the strips for my old meter were no longer available, so I purchased a new meter with new strips. However, I soon found that the new Relion meter and strips were giving me error messages most of the time. It seems that the new meters are smarter than the older ones and don't accept the low readings of maple syrup suitable for making maple confections.

To get past this problem, I purchased several diabetic meters and tested them using maple syrup to see which ones give consistent readings. The tests were fairly simple, just running multiple tests on the same syrups to see how often error messages were given and how consistent the readings were. Four meters were tested.

The new Relion meter gave an error

message about 80% of the time. Different syrup temperatures were tried and a variety of methods of waving the test strip in the syrup sample did reduce the percentage of error messages but gave erratic results.

The second meter tried was the Nova Max. This meter had an error message rate of about 45% and readings had a numerical spread of about 25%.

The Bayer Contour had about the same results as the Nova Max.

The meter that really stood out was the Accu-Check Aviva. This meter had an error rate of about 5%, and those may have been my mishandling of some strips. The numerical range of the readings was also excellent with less than a 5% spread. On checking with others in the maple industry who do significant testing, the Accu-Chek Aviva also came up as a favorite. Though there are a number of meters that will still work well, this will be my maple meter of choice for now. Purchasing test strips online also offers significant price savings.

For information on how to test maple syrup with a diabetic meter and how to choose or blend syrup to reach specific requirements for maple value added products, check out the New York State Maple Confection Notebook at goo.gl/8oPy2Z.