

Application

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QUANTOFIX® Total sugar on QUANTOFIX® Relax in different samples

QUANTOFIX® Total sugar are test strips for the semi-quantitative detection of the monosaccharides (simple sugars) fructose and glucose. QUANTOFIX® Total sugar test strips are also suitable for reflectometric evaluation with the QUANTOFIX® Relax (REF 91346). Some applications of this product are presented here.

Measurements in food

Table 1 shows comparative measurements between QUANTOFIX® Total sugar on the QUANTOFIX® Relax and a photometric method from r-Biopharm (D-Glucose/D-Fructose Order No. 10139106035) in liquid samples. Coca-Cola, Fanta and Sprite were diluted 1:100 with deionized water and the glucose and fructose content determined according to the instructions for use. The deviation between the two methods was a maximum of 2.7% for these samples. In a dry white wine (Riesling, also diluted 1:100 with deionized water) a value of 9.2 g/L total sugar was found with QUANTOFIX® and 9.6 g/L with the comparison method (deviation 4.2%). In fruit juice (diluted 1:250 with deionized water), 50.3 g/L was measured with QUANTOFIX® total sugar and 50.8 g/L with the comparison method (deviation 1.0%). The values shown for the QUANTOFIX® Relax are mean values from 3 determinations on 2 instruments (i.e. 6 measurements in total). The values for the comparison method are mean values from double determinations.

Table 1: Comparative measurements between QUANTOFIX® Total sugar on the QUANTOFIX® Relax and a photometric method from r-Biopharm in liquid samples.

Sample	QUANTOFIX® Relax g/L	Enzymatic comparison method g/L	Deviation %
Coca Cola ¹⁾	34.8	33.9	2.7
Fanta ¹⁾	24.8	24.4	1.6
Sprite ¹⁾	11.8	12.1	2.5
Wine (Riesling dry) ¹⁾	9.2	9.6	4.2
Fruit juice ²⁾	50.3	50.8	1.0

1) 1:100 diluted with deionized water

2) 1:250 diluted with deionized water

Coffee syrup, jam, potatoes and potato flakes were also tested and the results are shown in Table 2. The deviation of the two measurement methods in Expressi coffee syrup (1 g syrup was dissolved in 50 mL deionized water and then made up to 1000 mL with deionized water) was 2.2%. In strawberry jam (5 g was stirred in 50 mL of deionized water for 10 min and then made up to 1000 mL with deionized water), the difference in methods was 3.7%. In commercially available potatoes, the total sugar content was 5.3 g/kg with QUANTOFIX® Total sugar and 5.0 g/kg with the comparison method (deviation 6.0%). In potato flakes, the total sugar content was 8.4 g/kg with QUANTOFIX® total sugar and 7.5 g/kg with the comparative method (deviation 12.0%).

Table 2: Comparative measurements between QUANTOFIX® Total sugar on the QUANTOFIX® Relax and a photometric method from r-Biopharm in liquid samples.

Sample	QUANTOFIX® Relax g/L	Enzymatic comparison method g/L	Deviation %
Expressi Coffee syrup ¹⁾	192.2	196.5	2.2
Jam (Bonne Maman, strawberry jam) ²⁾	25.7	26.7	3.7
Potatoes (Toscana, NRW) ³⁾	5.3	5.0	6.0
Potato flakes ⁴⁾	8.4	7.5	12.0

- 1) 1 g syrup was dissolved in 1000 mL deionized water.
- 2) 5 g jam was stirred in 50 mL deionized water for 10 min and then made up to 1000 mL with deionized water.
- 3) 135 g of mashed potatoes were stirred in 100 mL of deionized water for 10 min and then made up to 250 mL with deionized water. After filtering off, the measurements were made.
- 4) 4 g potato flakes were dissolved in 100 mL deionized water.

IMPORTANT: The glucose/fructose values are found in very good agreement with the photometric method. However, due to the hydrolysis of sucrose (which is often used as a sweetener in the samples), there may be deviations compared to the values shown here. Over time, sucrose hydrolyzes to invert sugar (equal parts glucose and fructose), which is detected by this test.

Conclusion

QUANTOFIX® Total sugar can be used to determine the glucose and fructose content in a wide variety of samples. In many beverages, syrup, jam and potatoes very good matching results could be obtained compared to a photometric method.

Contact

If you have further questions, please do not hesitate to contact us:

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