

DETERMINATION OF **FRUCTOSE**, **GLUCOSE**, AND **SACCHAROSE** IN BEVERAGES, FRUIT AND VEGETABLE PRODUCTS, HONEY, AND BIOACTIVE FOOD ADDITIVES

LUMEX Method M 04-69 (2011)

ANALYTICAL EQUIPMENT

INTRODUCTION

The technical directives and regulatory requirements specify the total content and relative contents of fructose, glucose and saccharose in juices, nonalcoholic and alcoholic beverages (incl. wines and winemaking materials), fruit and vegetable products, honey, and bioactive food additives.

MEASUREMENT METHOD

The method is based on dilution of liquid samples with distilled water or extraction of saccharose-like compounds from solid samples by distilled water and subsequent quantitative determination of concentration of the analyzed components by capillary electrophoresis. The components are indirectly detected by measuring their absorbance at a wavelength of 254 nm.

MEASUREMENT RANGE

The measurement range of the concentration of the components is **2–800 g/l (0.2–80%)**.

EQUIPMENT AND REAGENTS

A CAPEL®-105/105M capillary electrophoresis system with a special capillary cassette for the sugar analysis is used in measurements.

Data acquisition, collection, processing and output are performed using a personal computer running under WINDOWS® 2000/XP operating system with installed dedicated software package for acquisition and processing of chromatography data.

All reagents must be of analytical grade or higher.

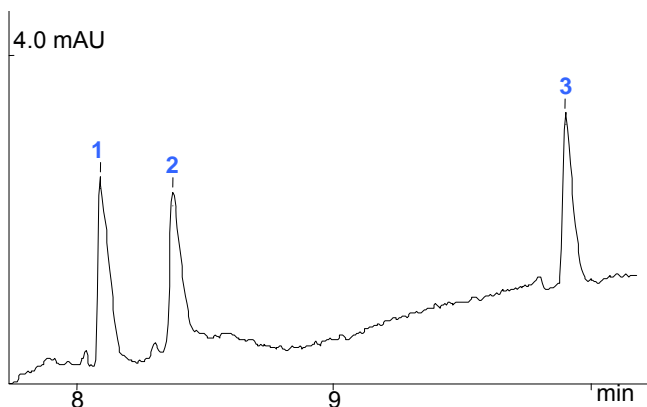
EXAMPLE OF A REAL ANALYSIS

Separation conditions:

Buffer: electrolyte based on potassium sorbate with CTAB (pH 12.1)
Capillary: $L_{\text{eff}}/L_{\text{tot}} = 65/75$ cm, ID= 50 μm
Sample injection: 150 mbar*sec
Voltage: - 25 kV
Temperature: 20°C
Detection: 254 nm

Sample: orange juice
(dilution 1:100)

- 1 – fructose
- 2 – glucose
- 3 – saccharose



The contents of this paper are subject to change without notice.