

**Title** Fructo-oligosaccharides in table grapes and response to storage  
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#### **Abstract**

Fructo-oligosaccharides (FOS) have been recognized as health food ingredients with a protective effect against environmental stresses in plants. We have analyzed the profiles of individual FOS in Cardinal tablegrape pulp, until now undetected, and quantified their changes in response to low temperature and high CO<sub>2</sub> levels. FOS separation and quantification was carried out using anion-exchange chromatography with pulsed amperometric detection (HPAEC-PAD), and the glucose, fructose and sucrose content of the grapes was also determined. Five FOS were identified and quantified: 1-kestose, neokestose, nystose, nystose b and kestopentaose. While in non-treated tablegrapes the endogenous FOS remained at steady state levels during storage at 0 °C, exposure to 20% CO<sub>2</sub> for 3 days significant increases the levels of 1-kestose and kestopentaose, members of the inulin series. Considering the competitive advantage afforded by CO<sub>2</sub>-treated grapes, this transitory FOS accumulation could provide protection against damage caused by low temperature storage.