

Title Effect of cold storage and ozone treatment on physicochemical parameters, soluble sugars and organic acids in *Actinidia deliciosa*

Author Toussaint Barboni, Magali Cannac and Nathalie Chiaramonti

Citation Food Chemistry, Volume 121, Issue 4, 15 August 2010, Pages 946-951

Keywords Kiwi fruit; Soluble sugars; Organic acids; HPLC; Storage; Ozone treatment

Abstract

The production of kiwi fruits is a dynamic agricultural activity in Corsica (France). The fruits are either consumed directly or used to produce kiwi wine. They are often stored for 4-6 months in industrial freezer chambers at 0 °C or industrial ozone chambers. The aim of this study was to measure physical, chemical and fungicidal parameters, soluble sugars and non-volatile organic acids during storage in each of these types of chamber. Various standard and instrumental methods (physicochemical techniques, HPLC) in conjunction with statistical analysis were used. During storage, the kiwi mass, firmness and acidity decreased, whereas reducing sugar, °Brix and pH increased. There were statistical differences between the two chambers regarding reducing sugar and acidity. The ozone gas treatment had a fungicidal effect on *Botrytis cinerea*. The major soluble sugar present in the kiwi fruit was fructose, followed by glucose and sucrose. The concentrations of these sugars increased during storage in both air at 0 °C and ozone-enriched air. Organic acids are one of the important factors influencing fruit flavour. Citric and quinic acids predominated over malic, tartaric and ascorbic acids. During storage in the ozone chamber, concentrations of non-volatile organic acids decreased sharply after 25 weeks. Storage at 0 °C enabled better retention of organic acids.