

Title Antioxidant capacity and pungency of 'Horcal' onion under refrigerated storage
Author N. Díez, M. de las Heras, I. Jaime, J. Rovira, M. Collado-Fernández and A. Fombellida
Citation ISHS Acta Horticulturae 858:267-272. 2010.
Keyword *Allium cepa* L.; pyruvic acid; total polyphenols; soil type; nutrient; nitrogen

Abstract

Onions (*Allium cepa* L.) are beneficial for human health. This benefit is attributed to the polyphenol and sulphur containing compounds and the source of dietary flavonoids. The aim of this study was to determine pungency expressed as pyruvic acid, total polyphenols and antioxidant capacity of 'Horcal' onions stored at 4°C and 70% RH for four months. 'Horcal' is a typical onion cultivar grown in Castilla y León in northern Spain. Three variables were investigated: a) chemical distribution within the onion (inner, outer and a mixture), b) fertilization levels, and c) soil type. All parameters were evaluated at the beginning and at the end of the refrigerated storage. The antioxidant capacity, total polyphenols and pyruvic acid contents were higher in the outer than in the inner layers of the onion. During storage, 'Horcal' onions decreased in antioxidant capacity and total polyphenol contents but increased in pyruvic acid. The pyruvic acid contents increased in the presence of a higher nitrogen concentration. The antioxidant capacity and the total polyphenols contents were not affected. The soil type affected all the parameters studied. In conclusion, the pungency is affected by nitrogen content and soil type. The antioxidant capacity and total polyphenols level were only affected by soil type.