

Title Characteristics of ethylene producing 'Hort16A' kiwifruit (*Actinidia chinensis* Planch. var. *chinensis*)

Author J. Feng, A. White, A.B. Woolf, J. Adams, C. Kingston, A. McGlone, S. Olsson, M. Petley and J. Bowen

Citation ISHS Acta Horticulturae 880:325-330. 2010.

Keyword storage potential; physiological maturity; firmness; tissue zone; flesh colour; canonical discriminant analysis

Abstract

'Hort16A' kiwifruit (*Actinidia chinensis* Planch. var. *chinensis*) is sensitive to ethylene. Trace amounts of ethylene produced by small numbers of fruit could trigger softening and reduce storage life of all fruit in the same storage space (tray, bin or even cool store). Characterising ethylene-producing fruit before disorders become visible would allow early detection of at-risk fruit enabling differential inventory management. Commercially packed 'Hort16A' kiwifruit from three orchards were sampled and stored at 1.5°C. Ethylene production rate, flesh colour, penetrometer firmness, dry matter content, soluble solids content and firmness profiles of the outer pericarp, inner pericarp and core were measured at 1 to 2-week intervals using a sub-sample of 30 fruits per orchard each time. Fruits were equilibrated overnight at 20°C before measurement. Canonical discriminant analysis indicated that fruit producing detectable ethylene were characterized by a low percentage of solubilised dry matter, relatively low firmness profile toward the centre of the fruit (i.e. soft inner pericarp and core), low flesh hue, high flesh chroma, low flesh lightness and low flesh firmness. Potential use of such knowledge for inventory management is discussed.