Abstract

The postharvest responses of Chinese bayberry (*Myrica rubra* Sieb. & Zucc.) at 20 °C were investigated using three red cultivars, 'Biqi', 'Hunanzhong' and 'Wuzhong'. Fruit from a single harvest for each cultivar were divided into three categories according to fruit colour, designated as 'immature', 'mature' and 'ripe'. Respiration rate, ethylene production, total soluble solids (TSS), titratable acidity (TA), fructose, glucose, sucrose and individual organic acids contents were determined over 48 h at 20 °C after harvest. Immature and mature fruit of all three cultivars underwent typical climacteric respiratory and ethylene behaviour, while ripe fruit did not exhibit any climacteric rise. TSS, TA, sugar and organic acid contents of all three cultivars substantially declined over the 48 h; changes in the ratios of TSS/TA and SS/organic acids indicated that acid content decreased more rapidly than sugar content. Citric, malic, oxalic and tartaric acids were the principle organic acids detected, and sugars were mainly sucrose, glucose and fructose. 'Biqi' and 'Hunanzhong' cultivars had very similar levels of sugars and acids, whereas the 'Wuzhong' cultivar had lower levels of both components. Postharvest life could be extended for up to 7 days by storage at 0 °C, but with only a short subsequent shelf life because of rot development. Chinese bayberry fruit should be classified as a climacteric fruit, and our results show the importance of fruit maturity in terms of postharvest response, and similar patterns of response among the three cultivars.