

Abstract

The influence of bagging on aroma volatiles and skin coloration of 'Hakuho' peach (*Prunus persica*) was examined over a 2-year-period. In 2002, fruit were covered with orange paper bags before pit hardening, and with single and triple parchment paper bags and orange paper bags (percentage transmission of sunlight: 80%, 50%, and 15%, respectively) 15 days before harvest. Non-bagged fruit were used as controls. The fruit harvested at the firm-mature stage and stored for 3 days thereafter were evaluated. In both study years, bagging generally caused earlier ripening, particularly in 2002. However, fruit maturity did not show any significant differences among the treatments in 2003. Fruit weight, soluble solids content (SSC), and titratable acidity (TA) were not affected by bagging treatments. The area and intensity of the skin's red color were increased with increasing bag exposure to sunlight. The non-bagged fruit accumulated the largest amount of anthocyanin, whereas the fruit covered with orange bags had the smallest amount of anthocyanin. The high chlorophyll content and the brown blemishes on the skin of non-bagged fruit, as well as the low *L* values, were responsible for the low visual quality. By contrast, fruit covered with orange bags appeared bright red and had high *L* values, both of which accounted for the good visual quality. Whereas bagging did not affect total aroma volatile production by whole fruit, significant differences were observed in the aroma volatile content between skin and flesh. A significant difference was observed in the γ - and δ -decalactone levels among fruit with different bag treatments. The aroma volatile content was the lowest in non-bagged fruit that were exposed to full sunlight. The results indicate that bagging of 'Hakuho' peach can improve fruit skin color through the reduction of chlorophyll content and increase fruit flavor through the increase in aroma volatile content.