

**Title** Delayed harvest improves red blush development and quality of ‘Cripps Pink’ apple  
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#### **Abstract**

The poor red blush development on ‘Cripps Pink’ (*Malus x domestica* Borkh.) apple fruit at commercial maturity (CM) reduces the economic return to apple growers in warmer regions of the world. The effects of delayed harvest maturity up to 6 weeks following CM on the development of red blush and fruit quality of ‘Cripps Pink’ apple were investigated at two locations in Western Australia during 2003 and 2004. The red blush, export-grade fruit, total anthocyanin, cyanidin 3-galactoside, chlorogenic acid, catechin, and epicatechin of apple fruit skin tissues increased with advancement of harvest maturity at both locations in both years, whereas hue angle, concentration of phloridzin, fruit firmness, and titratable acidity (TA) of apple fruit tissues decreased with delayed harvest. The internal ethylene concentration was elevated with the delayed harvest. The concentrations of quercetin 3-galactoside, quercetin 3-arabinoside, quercetin 3-rutinoside, quercetin 3-rhamnoside, and quercetin 3-glucoside increased up to 2 weeks following CM, and then declined in 2003 at both locations and at Perth Hills in 2004. Delayed harvest resulted in improved development of red blush on the fruit surface, accumulation of total anthocyanin, cyanidin3-galactoside, chlorogenic acid, catechin, epicatechin, and quercetin glycosides in fruit skin, SSC:TA ratio and reduced fruit firmness possibly due to the increased ethylene production.