

**Title** Postharvest studies beyond fresh market eating quality: Phytochemical antioxidant changes in peach and plum fruit during ripening and advanced senescence

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### **Abstract**

Postharvest studies were conducted under the concept that fruit that do not qualify for the fresh market may be used as a source of bioactive compounds. One peach (*Prunus persica*, cv 'Rich Lady') and one plum (*Prunus salicina*, cv 'Black Splendor') were evaluated for their phytochemical content and antioxidant capacity during the ripening and over-ripening periods (advanced senescence) for 12 and 15 d, respectively. Carotenoids increased substantially in peach (100%) and anthocyanins in plums (76%) during the first 4 d of ripening at room temperature, while firmness decreased rapidly during this period from an initial pre-ripe stage of 58 N for peach and 35.5 N for plums until the fruit reached the fully ripe stage of 4.5 N. Fruit firmness remained unchanged afterwards. Anthocyanin synthesis in plum fruit continued during the over-ripening period (88%, days 4–15), while no further change in carotenoids was observed in peaches (days 4–12). In addition, the phenolic content, antioxidant capacity, pH and soluble solids in peach and plum fruit were basically similar during the ripening and over-ripening periods. Further research on secondary metabolism regulation during ripening and advanced senescence is needed to obtain fruit as enriched dietary sources of bioactive compounds or for its use in alternative high value health markets including dietary supplements, functional foods, cosmetics and pharmaceutical.