Title Polyphenol content and antioxidant activity of California almonds depend on cultivar and harvest year

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Abstract

The polyphenol content and antioxidant activity of Nonpareil, Carmel, Butte, Sonora, Fritz, Mission, and Monterey almond cultivars harvested over three seasons in California were examined. LC–MS was employed to quantify 16 flavonoids and two phenolic acids in acidified methanol extracts of almond skins. The 3-year mean polyphenol content of cultivars ranged from 4.0 to 10.7 mg/100 g almonds. Isorhamnetin-3-*O*-rutinoside was the most abundant flavonoid, present at 28–49% of total polyphenols among cultivars. Almonds from 2006 and 2007 had 13% fewer polyphenols than 2005, but FRAP and total phenols were comparable. Cultivar, but not season, had a differential impact on individual polyphenol synthesis. Using the results of polyphenol, total phenol, and FRAP, multivariate analysis distinguished harvest years and most cultivars with 80% confidence. Flavonoid content and antioxidant activity of almonds may be more dependent on cultivar than on seasonal differences.