

**Characterization of ellagitannins, gallotannins, and bound proanthocyanidins from California almond (*Prunus dulcis*) varieties.**

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**Abstract:**

Extractable and bound proanthocyanidins and hydrolyzable tannins were characterized in Nonpareil, Carmel, and Butte almond varieties from California, with n = 3 samples/variety. Bound proanthocyanidins were recovered from extracted defatted almond residue by hydrolysis with 4 N sodium hydroxide and represented 3–21% of the total proanthocyanidin content among varieties. The bound proanthocyanidins were recovered primarily as monomers and dimers. In contrast, acid hydrolysis of extracted almond residue did not yield bound proanthocyanidins. Hydrolyzable tannins were characterized in aqueous acetone extracts of defatted almond using two-dimensional TLC and further quantitated by HPLC following acid hydrolysis. Almond hydrolyzable tannin content was  $54.7 \pm 2.3$  mg ellagic acid and  $27.4 \pm 7.3$  mg gallic acid per 100 g almond among varieties. The tannin contents of Nonpareil, Carmel, and Butte almond varieties were not significantly different. Thus, bound proanthocyanidins and hydrolyzable tannins significantly contribute to almond polyphenol content.