Variation in the flavonol glycoside composition of almond seedcoats as determined by MALDI-TOF mass spectrometry.

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Abstract:
Seedcoats of 16 almond varieties were screened for flavonol glycosides by using matrix-assistedlaser desorption/ionization time-of-flight mass spectrometry (MALDI-TOFMS). Flavonol glycosideswere extracted by a simple methanolic extraction followed by a quick cleanup procedure with a Sep-Pak C18 cartridge. Each of the 16 seedcoat samples exhibited a unique composition. Four flavonolglycosides, isorhamnetin rutinoside, isorhamnetin glucoside, kaempferol rutinoside, and kaempferolglucoside, were detected and quantified with use of rutin as an internal standard. Individual peakratios were very consistent across triplicate analyses of all samples; the average standard deviationwas 9%. In all almond varieties, isorhamnetin rutinoside was the most abundant flavonol glycoside,and the total content ranged from 75 to 250 Mg/g.