

Title Polyphenolic content and sensory properties of normal and high oleic acid peanuts
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Abstract

Peanuts are an important food crop with many health benefits of their consumption realized by consumers worldwide. Limited information is available on non-nutrient phytochemical composition of peanuts and their relative antioxidant values, knowledge that may serve to increase overall marketability of the crop. Shelled peanuts from eight cultivars and four experimental genotypes with either high or normal oleic acid contents were evaluated for phytochemical, antioxidant, and sensory properties (roasted only) before and after dry roasting under constant time and temperature conditions. Peanuts were evaluated for color, total and individual phenolics, and antioxidant capacity while a trained sensory panel evaluated the peanuts for roasted and burnt peanut flavor and aroma, sweetness, and bitterness. Overall, no meaningful differences were observed for phytochemical and antioxidant properties between high and normal oleic acid peanuts, but differences were present among cultivars. However, high oleic acid varieties had higher burnt peanut aroma and burnt peanut flavor compared to normal oleic peanuts but were not necessarily independent from roasted peanut aroma and flavor. Numerous polyphenolics were separated and characterized based on spectral similarities to *p*-hydroxybenzoic acid, tryptophan, and *p*-coumaric acid in both free and bound (esterified) forms. Peanuts were found to be a good source of antioxidant polyphenolics, such as *p*-coumaric acid, that may be contributing factors to potential health benefits of their consumption.