

Abstract

Antioxidant Properties of Hass Avocado Waste Fractions †

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† Presented at the Nutrition Society of New Zealand Annual Conference in Napier, New Zealand, 28–29 November 2019.

Published: 16 December 2019

Avocado production is a growing industry in New Zealand. Processing of avocado generates considerable waste that may have biological value. In this study we looked at the potential of mature (>24% dry matter) and ripe (based on hand firmness ripeness scale) avocado peel and seed extracts' antioxidant ability. Mature and ripe avocado seed and peel extracts were fractionated into low water soluble and high water soluble extracts. The effective concentration to reduce 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical-scavenging assay by 50% were determined (EC50) for each extract. For the low polarity extracts the ripe seed extract showed the strongest radical scavenging ability at the lowest concentration (0.014 ± 0.03 mg/mL) followed by ripe peel (0.047 ± 0.04 mg/mL), mature seed (0.129 ± 0.01 mg/mL) and mature peel (0.178 ± 0.01 mg/mL). The high polarity mature seed extract showed the strongest free radical scavenger ability (0.693 ± 0.02 mg/mL) followed by the ripe seed (0.706 ± 0.02 mg/mL). The ripe peel and the mature peel did not achieve an EC50 concentration. Our results suggest that there are compositional differences especially between the low polarity mature seed extract and high polarity mature seed that dramatically increases the antioxidant ability. Further studies are needed to precisely determine the compositional differences between avocado extracts with different antioxidant abilities and potential food applications.



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