

ANTIOXIDANT CAPACITY OF PLASMA AND URINE FOLLOWING A PECAN CONTAINING MEALS

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Rational & Objective: Pecans (*Carya illinoensis*) are rich in bioactive substances which may contribute to antioxidant defenses. The purpose of this study was to examine the postprandial effect of pecan consumption on plasma and urine antioxidant capacity.

Material & Methods: Test meals containing 100 g of whole pecans, ground pecans, or refined olive oil as control were administered in a randomized crossover design to 16 healthy volunteers. Plasma was sampled before and at intervals up to 24 hours after eating the test meal. Urine samples were collected at 8 hours and 24 hours after the meals. Oxygen radical absorbance capacity (ORAC) assays used procedure described by Prior et al. (2003). Mixed model statistical analyses with repeated measures were applied.

Results & Findings: Least square means \pm SE for the 5-hour area under the curve (AUC) after the whole pecan, ground pecan and control meals were 80.0 ± 3.0 , 77.2 ± 3 , 72.8 ± 8 mmol·h/L ($p < 0.001$) trolox equivalents for the hydrophilic test. ORAC values in 12-hr urine were higher following whole and ground pecan meals compared to control (236.6 ± 45.2 , 226 ± 44.6 , and 195.0 ± 44.6 mol/g creatinine respectively) but these changes were not significantly different.

Conclusion: The consumption of pecan-enriched meal may increase postprandial antioxidant capacity and further study is needed.

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