

Title Evaluating antioxidants in fresh Asian vegetables and California dates

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Abstract

Background. Coronary heart disease is the leading cause of death among Americans and the oxidation of low density lipoproteins (LDL) plays a key role in the development of coronary heart disease. The purpose of this research was to evaluate the capacity of polyphenolic antioxidants in certain fresh Asian vegetables and California dates to inhibit LDL oxidation and potentially reduce heart disease risk.

Materials and methods. Samples of freshly harvested cilantro, bok choy, Kradon bok, a vegetable grown and consumed primarily in Thailand, and California dates were obtained. All samples were dried, then ground into a fine powder. Polyphenols were extracted from each sample by methanol extraction. The total polyphenol content, and the ability of polyphenols from each sample to inhibit LDL oxidation were then measured.

Results. Kradon bok had the highest total polyphenol content, and Kradon bok polyphenols were most effective at inhibiting LDL oxidation. In contrast, California dates had lowest polyphenolic content, but the date polyphenols were highly potent antioxidants, and were able to inhibit LDL oxidation at relatively low concentrations.

Conclusion. Polyphenols are a diverse group of compounds that are not easily studied. Food polyphenols have been shown to be potent antioxidants, and appear to be able to inhibit LDL oxidation which is linked to coronary heart disease risk. This study found the Thai vegetable Kradon bok to be rich in polyphenols, and highly effective at inhibiting LDL oxidation, while dates were found to have the lowest polyphenol content, and to be least effective at inhibiting LDL oxidation. Additional information on the polyphenolic content of food, and their antioxidant capacity is needed before the relative importance of polyphenols in reducing coronary heart disease can be fully appreciated.