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Food and Chemical Toxicology 45 (2007) 797–803



Food and Chemical
Toxicology

www.elsevier.com/locate/foodchemtox

Canavanine content in sword beans (*Canavalia gladiata*): Analysis and effect of processing

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Received 8 September 2005; accepted 30 October 2006

Abstract

The amino acid canavanine is a potentially toxic constituent of leguminous seeds. The aim of the present study was to determine the ability of different processing methods to reduce canavanine in sword beans (*Canavalia gladiata*). For this purpose a method for the detection and quantification of canavanine was developed using reversed-phase high-performance liquid chromatography of the dabsylated derivatives. The recovery of canavanine using this method was 88–91%. Optimum extraction of canavanine from raw and processed beans was obtained by addition of hot water prior to overnight soaking. The results obtained with this method agree well with previously published values for raw seeds. The method is sensitive, specific and can successfully be applied to the detection of canavanine in legumes.

Overnight soaking and boiling in excess water followed by decanting gave the most pronounced reduction in canavanine content (around 50%), followed by boiling and decanting excess water (34%). Roasting as used in this study and autoclaving were less effective in reducing the canavanine content.

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Keywords: Canavanine; Processing; Dabsyl derivative; HPLC; Sword beans
