

Effects of extraction system on antioxidant attributes of mungbean [*Vigna radiata* (L.) Wilczek].

ABSTRACT

The effects of three extraction techniques (shaking, soaking, and stirring) and two solvents (80% methanol and 80% ethanol) on the antioxidant attributes of extracts from seeds of mungbean have been investigated. The yield of mungbean extracts varied between 6.90 and 9.65 g/100 g of dry matter. Mungbean extracts contained a considerable amount of phenolics (0.78–1.12 g GAE/100 g) and flavonoids (1.23–1.78 g CE/100 g). An appreciable level of reducing power (1.46–2.18) at 10 mg/mL extract concentration, inhibition of linoleic acid peroxidation (85.2–90.4%), and DPPH radical scavenging activity (IC₅₀ value 16.4–42.9 µg/mL) were also documented. Overall, the efficacy of an extraction system in isolating potent antioxidant components from mungbean seeds followed the order: shaking, 80% methanol > shaking, 80% ethanol > stirring, 80% methanol > stirring, 80% ethanol > soaking, 80% ethanol > soaking, 80% methanol. The yield and antioxidant activity of the mungbean extracts varied significantly ($p < 0.05$) as function of extraction techniques and solvents employed.

Keyword: Mungbean antioxidants; Extraction regime; Linoleic acid oxidation; DPPH radical; Total phenolic contents; Flavonoids