

SAPONIN CONTENT OF FOOD PLANTS AND OF SOME  
PREPARED FOODS COMMONLY EATEN IN AUSTRALIA

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Saponins are steroid or triterpene glycosides which occur in certain plants, a few of which are used as food (Oakenfull 1981). Dietary saponins lower plasma cholesterol levels in a number of animal species (Malinow et al. 1977; Oakenfull et al. 1979), and it has been suggested that they may be important in human diets to reduce the risk of heart disease (Potter et al. 1980). It was therefore of interest to determine the saponin content of some food plants common in Australia and to investigate the extent to which saponins are lost by cooking or food processing.

The procedure was to extract the dried material in a Soxhlet with acetone to remove lipids, pigments, etc., and then to extract with methanol. The concentration of saponins in the methanolic extract was estimated by quantitative thin-layer chromatography and the saponin content of the original material could then be calculated. Results for the four food plants which we found to be richest in saponins are presented in the Table. Other plant foods containing significant quantities are haricot beans, kidney beans, mung beans, silver beet, lentils, broad beans and asparagus.

Material	Moisture (g/kg)	Saponin content (g/kg)	
		Dry	As eaten
Chickpeas ( <i>Cicer arietinum</i> )	112	56	50
Falafels (prepared from chick peas)	467	21	6.2
Soya beans ( <i>Glycine max</i> )	97	43	39
Tempe (a fermented soya bean product)	568	19	8.4
Lucerne ( <i>Medicago sativa</i> )	94	56	-
Lucerne (alfalfa) sprouts	866	87	12
Navy beans ( <i>Phaseolus vulgaris</i> )	137	21	18
Canned baked beans	758	4.5	1.1

Saponins appear not to be destroyed by processing or cooking. They were present in canned baked beans (and other canned beans) and also in falafels - a Lebanese dish made from chickpea flour and flavourings, moistened, rolled into balls and deep fried.

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