Isoflavonoid phytoestrogen content of soy food products in the Australian market

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Phytoestrogens (plant estrogens) have been implicated in a number of health conditions, such as cardiovascular disease, cancer and menopause. The increase in research and consumer interest in the area of phytoestrogens, has recently brought these compounds under the spotlight. The Australian consumer and health professionals are now confronted with information about phytoestrogens, and what quantity of food we should consume in order to obtain "adequate levels" of phytoestrogens. To date, no one has examined the levels of phytoestrogens contained in foods currently in the Australian market.

Given that the majority of the interest has focused on the phytoestrogens found in soy products, the isoflavones, we selected a number of soy food products from our local Safeway supermarket. The products selected were a range of soy and linseed breads, soy milks and various other soy products such as tofu, miso, soy flour and soy sauce. The isoflavones measured were daidzin, genistin and their aglucones daidzein and genistein by using High Performance Liquid Chromatography (HPLC).

Table 1. Isoflavone levels in some of the foods assessed (as is).

Food	Daidzin mg/g or /ml	Genistin mg/g or /ml	Daidzein mg/g or /ml	Genistein mg/g or /ml	Total mg/g or /ml
Soy Bread	0.049	0.071	0.007	0.007	0.134
Soy Milk	0.024	0.058	0.002	0.005	0.089
Soy Flour	0.894	1.400	0.004	0.007	2.305
Tofu	0.112	0.144	0.013	0.013	0.282
Miso	0.053	0.124	0.058	0.071	0.306
Soy Sauce	ND	ND	0.009	0.004	0.013

ND - Not Detected

The levels of phytoestrogen in the food products selected vary. Not presented in the above table, is the variation in the level of phytoestrogen within the one product. There is potential benefit in including these compounds in our diet, but regular analysis of new products is needed given the variation in isoflavone levels.