

Brazil Nuts and Selenium

One Brazil nut is said to have a complete minimum daily requirement of selenium and contains up to 5000 times the selenium of any other nut.

Bioactivity of selenium from Brazil nut for cancer prevention and selenoenzyme maintenance.

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Brazil nut (*Bertholletia excelsa*) is one of very few consumable products with exceptionally high levels of selenium. The mean selenium concentrations of two shipments of Brazil nut used in the present study were determined to be 16 and 30 micrograms/g. In contrast, most common foods contain much less selenium, from 0.01 to 1 micrograms/g. Previous research on selenium cancer chemoprevention invariably used a pure compound, whereas little information is available on the efficacy of selenium delivered naturally in a food form. This paper reports the results of two mammary cancer prevention experiments in the rat dimethylbenz[a]anthracene model by continuous feeding of selenium-rich Brazil nut (processed to a smooth-textured nut material for mixing in the diet). A dose-dependent inhibitory response was observed at dietary selenium concentrations of 1-3 micrograms/g. Interestingly, Brazil nut was found to be just as powerful as sodium selenite, if not more so, at similar levels of dietary selenium intake. Mammary cancer protection gland, and plasma. The magnitude of tissue selenium accumulation was proportional to the amount of Brazil nut added to the diet. The nutritional biopotency of selenium in Brazil nut was also evaluated by the repletion of two selenoenzymes, glutathione peroxidase and type I 5'-deiodinase, in selenium-deficient rats. Supplementation with Brazil nut as the sole source of selenium produced an efficient gradient of enzyme restoration at 0.05-0.2 microgram/g of dietary selenium. A parallel comparison with sodium selenite indicated that the selenium in Brazil nut and selenite selenium were equally bioactive. Although at this point it can only be inferred that the above biologic effects are likely to be attributable to the high selenium content of Brazil nut, there is persuasive evidence to suggest that the models under investigation are responding to the selenium rather than to the other components of Brazil nut.

Selenium content of Brazil nuts from two geographic locations in Brazil.

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Brazil nuts (*Bertholletia excelsa*) natively contain very high concentrations of selenium. Since dietary selenium, including Brazil nuts, have been associated with protection against tumor development in laboratory animal studies, it was of interest to determine the selenium content of the nuts from different nut-growing regions of Brazil. In the work reported, 162 nuts from each of two regions (Acre-Rondonia and Manaus-Belem) were individually analyzed for selenium. The average \pm standard deviation and range of selenium concentrations in ppm, fresh weight for nuts from Acre-Rondonia and Manaus-Belem regions were, respectively, 3.06 \pm 4.01 (0.03-31.7) and 36.0 \pm 50.0 (1.25-512.0). The toxicology of Brazil nut consumption is discussed.