Comments to the review “Selenium – fascinating microelement, properties and sources in food”

Major comments

1) The authors pay much attention to Se supplements- but the title of the review deals only with food products
2) Not complete information is given about chemical forms of Se in food. In particular- Se-containing sugars and small molecular weight (S-analogs) and especially methylated forms of amino-acids typical for Allium cepa and Brassica plants with pronounced anti-carcinogenic activity
3) As far as food products are concerned the author should mention Se-enriched sprouts as an important functional food and give wider information of Se-eggs (that is feed supplementation with Se-yeast)
4) It is necessary to empathize that changing the import of cereals from endemic regions of the world may significantly decrease the human selenium status (Great Britain)
5) Nothing is said that animal organs (liver and kidney) are especially rich with Se
6) Much is spoken about the toxicity of Se but nothing of the possibility of toxicity as a result of mistakes in Se-doses during production of Se-supplements (USA data). In this respects vegetables supplemented with Se seems to be safer compared to artificial supplements as plants may be considered as a buffer between soil Se and humans
7) Line 106- speaking about the essentiality of Se it is necessary to indicate that a) SeCys is encoded genetically in mammals and b) Se- is not an essential element for plants but is a powerful antioxidant in all organisms including plants, c) biofortification of plants with Se results in the increase of antioxidants content
8) Line 278- “A rich source of selenium is found in the sea salt, salt from the salt mine, eggs, yeast, bread, mushrooms, tomatoes, garlic, asparagus, kohlrabi, and nuts”
   - ‘salt from the salt mine”- often contains only trace amounts of Se;
   -“garlic, asparagus, kohlrabi”- grown on soil with low Se bioavailability or low soil Se contain low Se concentrations
   -“eggs”- only in case of Se-yeast supplementation of feed
   -“yeast”- only Se-enriched yeast
   -“bread”- only from grain rich in Se
   -“mushrooms”- not all of them, exclusively Boletus, Agaricus, etc
   -in ordinary conditions of vegetation “tomatoes” contain only trace amount of Se
   In this respect nothing is said about plants- hyper accumulators of Se (Astragalus for example)

Minor comments

There are some misprints:
Line 77- “It” should be omitted
Line 177- “Organic selenium compounds can substitute sulfur amino acids in proteins”- may be “Se may substitute S in amino acids”