Influence of light on nutrient content of Brassica sprouts

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It is well known that the consumption of a plant-based diet is highly recommended as one of the ways to lower the risk of human diseases. Seeds germination is a quite old processing method, used already for many centuries in far-East countries. Nowadays, sprouts became a fashionable food, recognized as ‘healthy food’ in western countries because of low caloric value, high biological activity, improved digestibility and increased bioavailability of essential minerals and trace elements like Selenium (Se) which is essential for humans and has been reported to play a beneficial role in the prevention of cardiovascular disease and cancer. Four varieties of Brassica oleracea (broccoli, galega kale, penca cabbage and red cabbage) were studied under two different photoperiod conditions (cycles of light and darkness and continuous darkness), resulting in the production of green and white sprouts, which were collected and lyophilized. Samples were analyzed for mineral composition by atomic absorption, protein content by Kjeldahl method and dietary fiber by AOAC 985.29 method. Photoperiod conditions showed discriminant effect on sprout nutrient composition and there were significant differences between brassica varieties. Green broccoli sprouts showed lower nutrient and trace element composition (Fe, Zn and Se) however for other varieties light increased their concentration resulting in food of higher quality. White sprouts showed higher content of dietary fiber and protein for all varieties except for penca cabbage protein content. It can be concluded that light can control nutritional quality of sprouts and the behavior of brassica varieties is different, especially on mineral composition.