

## **Elemental analysis of the vegetables on the market -Comparison with wild plants-**

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### **Abstract**

We have measured concentration of multi elements in vegetables on the market and a wild plant gathered around Nishina Memorial Cyclotron Center in Iwate prefecture by means of PIXE. Elemental concentration in vegetables cultivated by spraying mineral-rich waters was also analyzed. As a result, it is found that the mineral-supplying vegetables abundantly contain essential elements for body such as K, Ca, Fe, Cu, Zn and Zn in comparison with ordinary ones. With regard to a wild plant, concentration of essential elements such as Ca, Cu and Zn shows no clear difference in comparison with that in commercially available one of the same kind, while that of toxic elements such as Cr and Pb is relatively higher. Moreover, it is suggested that the wild plant has a certain property of concentrating a specific element depending on its growing period. The relation between elemental concentration in the plants and that in their growing environment, such as water and soil, was also examined. It is also suggested that elemental concentration in vegetables reflects elemental constituent not only of the soil but also of the sprayed water as well as of the fertilizer.