Analysis of rice grains harvested in Japan by PIXE

R. Sugita[1], S. Murao[2], S. Goto[3] and K. Sera[4]

[1] National Research Institute of Police Science
6-3-1 Kashiwanoha, Kashiwa-shi, Chiba 277-0882, Japan

[2] The National Institute of Advanced Industrial Science and Technology
1-1-1 Higashi, Tsukuba-shi, Ibaraki 305-0046, Japan

[3]Nishina Memorial Cyclotron Center, Japan Radioisotope Association
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

[4]Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

Abstract

Rice (*Oryza Sativa* L.) is staple diet in Japan, and discrimination of rice grains can be required in the course of crime investigation. Elemental analysis is expected to contribute to development of both discrimination and estimation of origin for the forensic purpose. Preliminary analysis by PIXE on 21 rice samples collected in Japan was performed. As the result, elements are classified into two groups, which obviously affected by polishing (Mg, P, K, Mn, Fe) or not (Ca, Cu, Zn). Elements that were not affected by polishing and Mn showed difference in content among samples. Relation to region of harvest and/or agricultural methods is presumed as the reason of difference.