Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Trace-Element Analysis by Use of PIXE Technique on Agricultural Products A. TAKAGI, R. YOKOYAMA, K. MAKISAKA, K. KISAMORI, Y. KUWADA, D. NISHIMURA, R. MATSUMIYA, Y. FUJITA, M. MIHARA, K. MATSUTA, M. FUKUDA — In order to examine whether a trace-element analysis by PIXE (Particle Induced X-ray Emission) gives a clue to identify production area of agricultural products, we carried out a study on soy beans as an example. In the present study, a proton beam at the energy of 2.3MeV was provided by Van de Graaff accelerator at Osaka University. We used a Ge detector with Be window to measure X-ray spectra. We prepared sample soy beans from China, Thailand, Taiwan, and 7 different areas in Japan. As a result of PIXE analysis, 5 elements, potassium, iron, zinc, arsenic and rubidium, have been identified. There are clear differences in relative amount of trace-elements between samples from different international regions. Chinese beans contain much more Rb than the others, while there are significant differences in Fe and Zn between beans of Thailand and Taiwan. There are relatively smaller differences among Japanese beans. This result shows that trace-elements bring us some practical information of the region where the product grown.

Rin Yokoyama

Date submitted: 27 Jul 2009 Electronic form version 1.4