

## **Application of a powdered-internal-standard method to plant, seaweed and mushroom samples**

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### **Abstract**

A preparation method making use of liquid nitrogen has been established for seaweed, plant and mushroom samples, whose elemental concentration has been attracting attention in various research fields. It is found that a powdered-internal-standard method developed by ourselves is applicable to the powdered samples prepared by the present method with good accuracy and reproducibility. The results were compared with those obtained by a direct-powder method and by a chemical-ashing method. As a result, it is found that good agreement is obtained and the powdered-internal-standard method combined with the present preparation method is confirmed to be applicable to analyses of seaweed, plant and mushroom samples. Moreover, it becomes clear that the mushroom takes a specific element selectively depending on its species, and it is found that to analyze various kind of mushrooms is of great use as a way of monitoring environmental pollution. In addition, it is found that the whole sample of large quantities was almost uniformized by this preparation method. Moreover, it becomes possible to obtain concentrations of all the concerned elements including iodine, chlorine and bromine, which are essential elements in the fields of life-sciences and are difficult to be analyzed by the chemical-ashing method. It is expected that application to other biological samples is also promising.