0163–4984/00/7301–0019 $12.25

# Rare-Earth Element Distribution Characteristics of Biological Chains in Rare-Earth Element–High Background Regions and Their Implications

Hui Zhang,*[,1] Jia Feng,[1] Weifang Zhu,[1] Congqiang Liu,[1] Dongsen Wu,[2] Wenjiao Yang,[2] and Jianghong Gu[1]

*[1]State Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, 550002 People's Republic of China; and [2]Geological Exploratory Team No. 2, Jiangxi Nonferrous Metal Company, Gan Zhou, 341000 People's Republic of China*

Received March 5, 1999; Accepted May 10, 1999

## ABSTRACT

The rare-earth element (REE) contents of water and vegetables from two typical REE–high background regions and a normal region in Gannan, Jiangxi Province, indicated that the REE contents were significantly different from those of water and vegetables, respectively. The average values are 0.03 mg/L and 0.11 mg/L REE for water from regions A and B. As the REE contents of vegetables from region A are different from region B, it is suggested that there are a number of factors controlling the REE distribution from those among plants. By comparing with the normal region, the soluble REE contents of water from the REE–high background regions are higher than those of the normal region by factors of 18 and 68, respectively. The REE contents of most plants and crops from regions A and B are higher than those of the normal region. It is clear that the REEs are the indispensable elements of plants during their growing period. Why are the REE contents of some plants from regions A and B usually higher than those from the normal region? The answer is that the plants and crops have passively absorbed REE during their growth.

*Author to whom all correspondence and reprint requests should be addressed.