

Using Sr isotopes to determine the contribution of volcanic ash to Sr and Ca in stream waters –an attempt to evaluate endmembers in a chert watershed –

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The sources of Ca in Japanese forest ecosystems have been assumed to be sea salt, weathering product of bedrock, and weak-acid soluble minerals in Kosa (Asian dust). Volcanic ash may also be an important contributor of Ca in volcanic areas, especially in the regions where the Ca supply from parent materials is anticipated to be low. We reported the significant contribution of volcanic ash to stream waters and plants in a granite watershed of Tsukuba area, using stable isotope of Sr, a good proxy of Ca (Koshikawa et al. 2016). In order to evaluate the contribution of volcanic substances to soil-vegetation system, we conducted a similar study in Mt Amamaki mountainous area where volcanic sources are closer than the Tsukuba area and chert with high resistance to chemical weathering is widely distributed. In this presentation, we report the concentrations of Sr and Ca and the isotope ratio of Sr in the stream water of the Amamaki watershed, and those of precipitation, basement rock and volcanic ash which are considered to be the end component.

Keywords: Volcanic ash, Sr isotopes, Stream water, Ca sources, Chert