

## **Zinc isotopic variation among plants: what impact for paleodietary studies?**

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Most of Zn isotope ( $\delta^{66}\text{Zn}$ ) research in plants has focused on the isotopic fractionation from root to leaf, exploring the mechanisms of this fractionation. However, it is still unclear how other factors such as metabolism, phylogeny, climate or geology may influence the final  $\delta^{66}\text{Zn}$  values of plants. Moreover, while it is generally accepted that roots show the highest  $\delta^{66}\text{Zn}$  values and leaves the lowest, the  $\delta^{66}\text{Zn}$  values of fruits and seeds are still unknown. As Zn isotope ratios have been shown to be promising paleodietary tracers, that information is crucial to obtain in order to correctly interpret the  $\delta^{66}\text{Zn}$  of humans and animals with plant-based diets. For instance, studies report different Zn isotope ratios between browsers and grazers in open environments of Europe and Africa, but not in rainforests of Asia. We therefore conducted a wide range of zinc isotopic analyzes on edible plants from different families (nightshades, legumes, grasses, etc.), categories (leaves, tubers, seeds, nuts etc.), biotopes, soils and geographical origins, metabolism (C3, C4, CAM), Zn content, and agriculture (organic versus industrial). We will present the first  $\delta^{66}\text{Zn}$  database for plants and will discuss the likelihood of tracing certain types of plant consumption in hunter gatherers and farmers' diets