ABSTRACT

Taro (*Colocasia esculenta*) has great potential as an income generation, food and nutritional security crop in sub Saharan Africa. However, potential to bioaccumulate heavy metals is a food safety concern. In this study, variation and correlations of trace elements, anti-nutrients in raw taro corms and sensory attributes of taro crisps were evaluated. Trace elements were significantly ($p < 0.05$) influenced by corm source and varied between farms and counties. Ca, Mg and Pb, Zn, Fe and As, Cd and Cr content were positively correlated. Zn, Fe and As were negatively correlated with Cd and Cr. Crisps aroma was correlated with taste, crispiness and overall acceptability unlike colour. Zn, Ca and Mg content were negatively correlated with sweetness, taste, aroma and acceptability. Our results demonstrate; (i) Micronutrients Ca and Zn are bioavailable in taro corms but Fe is compromised, (ii) Corm microelements levels influenced sensory attributes of taro crisps, (iii) Edaphic factors, antagonistic or synergistic relationships of microelements influenced their accumulation in corms. Taro is a microelement dense crop and irrespective of genetic influence, edaphic factors can be targeted to manipulate essential microelements content and accumulation of toxic heavy metal to address micronutrient deficiency, food safety and sensory attributes of taro products.