

Heavy metal accumulation by *Amaranthus hybridus* L. grown on waste dumpsites in South-Eastern Nigeria.

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ABSTRACT:

The accumulation of some heavy metals by *Amaranthus hybridus* grown on two waste dump sites within Abakaliki metropolis, South-Eastern Nigeria was studied using atomic absorption spectrophotometer. The results indicate that Cd, Cu and Pb in the two dump sites were above the stipulated standard, while Zn was within the stipulated standard in the soil. The two dumpsites had high level of Pb in the plant leaves; in Site 2, Cu and Zn showed the highest value while Zn in site 2 has the lowest value. Although all the values obtained in the leaves of *Amaranthus hybridus* were within recommended limits, but it may be dangerous to consume *Amaranthus hybridus* grown on dump sites since it can accumulate most of these toxic metals. The BCF value was >2 for Pb and Cd in site 1 while in site 2 the BCF value was >2 for Pb, Cu, Zn and Cd, showing that *Amaranthus hybridus* can tolerate and sequester these metals from soil and translocate them to the shoots. The TLF in *Amaranthus hybridus* indicate the following: in Iyudele stream (Site 1) the rate of Cd and Zn in *Amaranthus hybridus* up take is >1 and in site 2 the rate of Pb, Cd, Cu, and Zn up take in *Amaranthus hybridus* were >1. The results obtained from this study showed that heavy metals in soils at the waste dump sites ended up in the studied plant, *Amaranthus hybridus*, cultivated on such land. Therefore farmers should be discouraged from cultivating their crops on these waste dump sites.

Keywords:

Heavy metal, *Amaranthus hybridus*, accumulation, pollution, Safety risk.