

## **ABSTRACT**

### **Background**

There is an exponential rise in the use of farming chemicals in agricultural practices ostensibly to increase food production. The chewing of fresh khat leaves and shoots has spread across the world from ancient khat producing regions in East Africa and the Arabian Peninsula. Khat is a well-established socialization substance with stimulating characteristics. In this work, we have reviewed the deleterious impacts of several heavy metals such as lead, cadmium, iron in the khat plant and their health impacts. Survey on the health complications of farming chemicals used in khat production is also presented.

### **Main body of the abstract**

The toxic effects of heavy metals and farming chemicals in plant matter such as khat leaves are a serious health concern. Heavy metals including cadmium (Cd) and lead (Pb), for instance, bio-accumulate in the body and the food chain as precursors for disease. It has been established that blood that has lead levels of 40–60 ug/dL is a precursor for serious health illnesses such as cardiac arrest and cancer. On the other hand, cadmium is reported to bind itself onto metallothioneins hence forming cadmium–metallothionein complex that is transported to all body organs causing deleterious cell damage. The entry of farming chemical into the food chain especially via the chewing of contaminated khat has been known to contribute to health problems such as cancer, hypertension and liver cirrhosis. khat is branded a ‘substance of abuse’ by the World Health Organization (WHO) because of the adverse health risks it causes to humans. Relevant articles published between 2010 and 2021, and archived in PubMed, Google Scholar, Medley, Cochrane, and Web of Science were used in this review.

### **Short conclusion**

The health implications of heavy metals and farming chemicals arising from the consumption of contaminated khat shoots are a serious concern to the khat chewing community. Consequently, there is need to develop better farming practices that may minimize the absorption of heavy metals and farming chemicals by the khat plant. Information presented in this review is also important in sensitizing policy makers to advance control measures towards safer khat farming practices.