

Modulatory of effect of fresh *Amaranthus caudatus* and *Amaranthus hybridus* aqueous leaf extracts on detoxify enzymes and micronuclei formation after exposure to sodium arsenite

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ABSTRACT

Vegetables are the cheapest and most available sources of important proteins, minerals, vitamins, and essential amino protein. These vegetables are commonly used in Africa for the treatment of illness. This study evaluated the protective effects of *Amaranthus caudatus* and *A. hybridus* against sodium arsenite-induced toxicity in rats. The effects of sodium arsenite and/or the plant extracts were assessed using bone marrow micronucleus assay and by measuring the activities of tumour maker enzymes such as gamma glutamyl transferase (GGT) and alkaline phosphatase (ALP) in white albino Wister rats. The study showed that sodium arsenite significantly ($P < 0.05$) induced the formation of micronucleated polychromatic erythrocytes and the activities of ALP and GGT when compared with control. The levels of white blood cell, hemoglobin, and lymphocyte count were altered in sodium arsenite fed rats and were reverted back to near normal levels in rats pretreated with the plant extracts. *A. caudatus* and *A. hybridus* showed significant role in protecting the detoxifying enzymes; also, *A. caudatus* has a more protective effect on reducing the micronuclei formation when compared with *A. hybridus*. This study suggests that *A. caudatus* and *A. hybridus* possess anticarcinogenic effect.

KEYWORDS

Amaranthus caudatus . *Amaranthus hybridus* . chemoprotective . detoxify enzymes . micronuclei . sodium arsenite

REFERENCES

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