

Anthelmintic Potential of *Cucurbita pepo* Seeds and in-Vitro Tests Against *Lumbricoides*

Denis Kiragu

Department of Mathematics and Physical Sciences, Maasai Mara University

P.O. Box: 861-20500, Narok, Kenya

Tel:

Email: deniskiragu003@gmail.com

Abstract

Cucurbita pepo is widely used both as food and as traditional medicine. Cucurbita pepo and other Herbicides are promising in minimizing certain human diseases, they have been proven to be effective, have minimal side effects, and are less expensive compared to synthetic drugs. In Kenya, the Kikuyu community uses Cucurbita pepo seeds to eliminate human intestinal worms. The present research aimed to screen phytochemicals, determine the concentrations of zinc, calcium, and magnesium in Cucurbita pepo seeds, and test in vitro the anthelmintic potential of these seeds against lumbricoides. The seeds components were extracted using methanol and preconcentrated in a vacuum rotatory evaporator. The extracts were characterized by gas chromatography for mass spectrophotometry (GCMS), atomic absorption spectrometry (AAS), and Fourier transform infrared (FTIR) techniques. Lumbricus rubellus were used to study the bioefficacy potential of the extracts in vitro, the worms mimic the characteristics of the human parasite lumbricoides. The most abundant of the three essential elements analysed was zinc (2.5858 ppm). A significant number of essential oils from the GCMS studies were reported, with methyl 10-trans and 12-cis-octadecadienoate being the most abundant in the oil (53.93%). Alkaloids and saponins were the most concentrated phytochemicals in the sample. A significant amount of the macrocyclic lactone 7,9-ditert-butyl-1-oxaspiro [4.5] deca-6,9-diene-2,8-dione (0.58%) in the seeds was observed. Macrocyclic lactones are generally a class of anthelmintic drugs. We concluded that macrocyclic lactones and fatty acids, as well as their derivatives such as linoleic acid esters and palmitic acid, are responsible for the anthelmintic actions of the seeds, providing a basis for further research.

Keywords: *C. pepo*, helminths, antihelminth, macrocyclic lactones, GC-MS