ADULTICIDAL ACTIVITY AND TOXICITY OF EXTRACTIVES FROM *TECLEA TRICHOCARPA* AGAINST ADULT MAIZE WEEVIL (*SITOPHILUS ZEAMAIS*)

Erastus S. Kamau Mwangi[1]*, Joseph M. Keriko[1], Alex K. Machocho[2], S.C. Chhabra[2], Alphose W. Wanyonyi[2], Paul K.Tarus[3]
[1] Jomo Kenyatta University of Agriculture and Technology, Department of Chemistry, P.O Box 62000 Nairobi, Kenya
[2] Kenyatta University, Department of Chemistry, P.O. Box 43844 00100, Nairobi, Kenya
[3] Chepkoilel University College (Moi University), Department of Chemistry and Biochemistry, P.O.Box 1125 30100, Eldoret, Kenya.
*E-mail:eskmwangi@yahoo.com

Abstract
With a growing world population and increased affluence leading to demand for more and higher quality foods, and given environmental problems such as soil degradation, water scarcity, and biodiversity loss, new and innovative solutions are required to minimize food losses caused by pests. Organic solvent extracts and thereof isolated compounds of Teclea trichocarpa Eng. were evaluated for adulticidal activity against maize weevil, Sitophilus zeamais Motchulsky, and for brine shrimp, Artemia salina, lethality. Hexane extract of the leaves of T. trichocarpa displayed mild brine shrimp toxicity (LD_{50} =153.2 µg/ml), while the other extracts showed no significant toxicity (LD_{50}> 240 µg/ml). Both hexane and dichloromethane extracts of leaves of T. trichocarpa showed dose dependent mean percentage adulticidal activity. At 600 and 800 ppm these extracts, respectively, were comparable to the positive control, actellic super, a synthetic pesticide which is in the market today. Considering the cost, increasing incidence of pesticide resistance and environmental concerns posed by synthetic pesticides, several pressures have accelerated the search for more environmentally and toxicologically safe, more selective and efficacious pesticides. Results discussed with regard to the use of the plant extractives as suitable and sustainable alternative to synthetic insecticide in maize grain storage and could be incorporated in integrated pest management.

Keywords: brine shrimp; *Teclea trichocarpa*; adulticidal activity; maize weevil, *Sitophilus zeamais*