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Antioxidant and analgesic activities of leaf stem and root essential oils of C*orchorus olitorius* L. (Tiliaceae) from Nigeria

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ABSTRACT

Objectives: *Corchorus olitorius* (Linn.) (Tiliaceae) (Jute is an edible fibre crop found in Asia and Africa. It has medicinal value and is very nutritious. This research was designed to investigate the antioxidant and analgesic properties of the essential oils of *Corchorus olitorius* in the leaf, stem, root, fruit and flower.

Methodology and Results: Corchorus olitorius plant was collected from cultivated farmlands in Ibadan, Nigeria. Essential oils from parts of plant were extracted by hydro-distillation, using all glass Clevenger apparatus. The oils were analysed using GC-MS. Its antioxidant activity was determined by measuring the decrease in the visible absorbance of 2, 2, diphenyl-1-picrylhydrazyl (DPPH) on addition of the plant essential oils and compared with synthetic and natural standards such as vitamin C, garlic, bitter kola, ginger and carrots. Analgesic property of essential oil was investigated by measuring the number of acetic acid induced writhing in mice. IC_{50} values were as follows; leaf; 82.0 µg/ml, stem; 51.0 µg/ml and root essential oils; 49.0µg/ml, vitamin C; 33.0 µg/ml, garlic; 49.0µg/ml, bitter kola; 31.0 µg/ml, ginger; 31.0 µg/ml and carrots; 31.0 µg/ml. The best analgesic activities were recorded for root (100%) on 15 ml/kg; stem (93.67%) on 5 ml/kg; leaf (79.27%) on 5 ml/kg and root essential oil (78.69%) on 5 ml/kg bodyweight of mice.

Conclusions and Application of findings: This shows that root has highest antioxidant activity and is comparable to garlic. The compounds present are suggested to be responsible for antioxidant and analgesic activities of the essential oils of *Corchorus olitorius* either synergistically or individually, which agrees with ethno medicinal claims on the plant.

Keywords: *Corchorus olitorius,* essential oil, antioxidant, analgesic activity, 2, 2 diphenyl-1-picrylhydrazyl, Diclofenac sodium.