

# Environmental and Analytical Toxicology: Editor's Picks 2021

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## Editorial Note

Environmental and Analytical Toxicology Journal provides a unique forum for scientists to publish research papers, reviews, case reports, and brief communications on a wide range of environmental and analytical toxicology concerns.

This publication discusses the adverse effects of numerous chemical, biological, and physical agents on individual living organisms. The Journal of Environmental and Analytical Toxicology has the highest quality and it is a scholarly Open Access journal with the goal of publishing the advanced and contemporary research topics.

I am honoured to discuss a few research publications that were published in the Journal of Environmental and Analytical Toxicology and had a significant influence on readership, citations, and altmetric score.

In one of the article entitled "Physicochemical, Pharmacokinetics, and Toxicity of South Africa Leaf (*Vernonia amygdalina Delile*) Sesquiterpene Lactone Compounds by In Silico.", the author very well elucidated about Sesquiterpene Lactone Compounds which are present mostly in *Vernonia amygdalina Delile*. Pharmacokinetics refers to the entire process that drug molecules go through from the time they enter the body until they are eliminated. Absorption, distribution, metabolism and excretion are the drug action mechanisms described sequentially in this pharmacokinetics, all of which impact the half-life (T<sub>1/2</sub>), peak time (T<sub>max</sub>), action onset, and action duration.

Toxicity is a material's capacity to produce a toxic effect (poison) in the body for a fixed period of time as a result of chemical reactions in the body. To evaluate risk factors, toxicity testing on a substance is specific or alternative in nature. Preclinical studies and clinical trials that show safety, effectiveness and quality are all part of the process of bringing novel medications to market.

The South Africa Leaf (*Vernonia amygdalina Delile*) is an Asteraceae plant native in Africa, particularly Zimbabwe and Nigeria, and may be grown wild or cultivated in a tropical environment. The phytochemical composition of South Africa Leaf (*Vernonia amygdalina Delile*) has a variety of pharmacological effects,

comprising sesquiterpenes, triterpenes, flavonoids, alkaloids, saponins, tannins, and glycosides.

Comparison of the physicochemical profile, pharmacokinetic profile, and toxicity profile of South Africa Leaf (*Vernonia amygdalina Delile*) sesquiterpene lactone compounds with that of cyclophosphamide is done and author concluded that the South Africa Leaf (*Vernonia amygdalina Delile*) sesquiterpene lactone compounds meet Lipinski's rule (rule of five), have a better pharmacokinetic profile, and have lower toxicity levels.

Another article namely "Evaluation of the Methodology for the Chemical Extraction of Phorbol Esters contained in *Jatropha Curcas* Oil" [1] describes biodiesel extraction methods and the Evaluation. *Jatropha* has been farmed in Brazil by farmers in the Northeast, Midwest, and Southeast with the primary goal of producing biodiesel, and theoretical biodiesel output ranging from 1,100 to 1,700 litres. Besides biodiesel production, the growth of physic nut and utilisation of its fruit might have a variety of other uses. The manufacture of agroecological chemical pesticides that are organic and biodegradable is an option, but the seed's nature forces them to focus on other applications.

In order to have an effective control, pesticides are commonly used in the crop. The consequences in improper handling of these harmful substances are harmful to health, as well as overdosing in order to eradicate existing pests, likely to result in contamination of food that will be passed on to consumers. The goal of this study is to see whether there are any poisonous chemicals in this species that may be used as a natural agroecological defence. In addition to achieving consistency in seed oil extraction, improved seed conservation, and the use of their products and by-products in the agroecological management of pests that compete with food crops,

The determination of phorbol esters was promising, as it indicated the presence of a small concentration of these molecules in *Jatropha curcas* oil in the first solvent extraction. However, a more in-depth analysis using HPLC and a better fragment resource mother in the mass spectrum would favour the elucidation of these molecules in *Jatropha curcas* oil. A more in-depth study of solvent extraction methods, varying the composition and types of solvents, as well as a better analysis of the oil obtained, for quantitative

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validation of phorbol esters molecules, will be essential for the isolation of these molecules as well as, in the future, the application as natural agroecological pesticides improving planting and harvesting, will be essential.

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