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## Extraction techniques of anti-nutritive and toxic factors in the leaves of the white flowering *Nerium oleander L.*

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Plant poisoning is a serious concern across the globe. However, most livestock animals in the sub-Saharan African countries still depend on browsing on tree fodders to maintain their normal physiological processes due to high costs of animal feeds and all resources required for feed production. Conversely, plants contain endogenous toxins commonly referred to as anti-nutritive factors (ANFs) that often interfere with utilization of nutrients and/or feed/food intake of plants or plant products. Their abundance frequently leads to massive clinical trauma resulting in high morbidities and mortalities. Hence, the objective of the study was to do preliminary screening of the extraction techniques of the white flowering *Nerium Oleander L.* (Apocynaceae) and commercial feeds. Organic (hexane, acetone and methanol) sequential and aqueous (infusion and decoction) extractions were explored. Subsequently, a qualitative and HPLC quantitative analysis was carried out to compare contents of ANFs where the Mann Whitney U statistical tool was used at a threshold level of 0.05. The results showed higher extraction yields in all aqueous extractions. Therefore, an infusion may be considered as the best approach to mitigate plant poisoning due by ANFs in plants since it proved to be an efficient, safe and reliable method. Furthermore, although the results were not so significant ( $p < 0.05$ ), a high saponin content of  $0.113 \pm 0.104$  mg/g in diosgenin equivalent was obtained in commercial feeds. In addition, LC-MS will be conducted to characterise the quantified ANFs from the sample.

### Biography

Kedibone Gloria Kgosana has her expertise in Natural Science. During the development of her career, she explored various fields of study such as chemistry, biochemistry, plant biotechnology and phytomedicine. After few years of experience in research and veterinary toxicology, the recent climatic change in South Africa which had major implications on the feeding patterns of livestock in the rangelands where there is no proper management prompted her to find solutions to mitigate the effects. Hence she developed strategies to remove or reduce the anti-nutritive and toxic factors in plants that pose a major risk in the livestock. The strategies are responsive to all stakeholders and would improve animal health and production.

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