

NIGER DELTA UNIVERSITY DEPARTMENT OF ANIMAL SCIENCE, FACULTY OF AGRICULTURE



Potential of phytogenics in filling gaps and removing traps for sustainable livestock production without antibiotics

Christabel Aghorowei, Amamieghaye Edum, Ruth Tariebi S. Ofongo

Message:

Medicinal plants and spices may fill gaps and remove potential traps for sustainable livestock production



without antibiotics. Introduction:

- Sustainable livestock production without antibiotics makes issues of pathogenic bacteria infections in farmed animals of utmost concern to farmers with regard to mortality and profitability.
- Secondary plant metabolites such as tannins, saponins, flavonoids, anthraquinones and other compounds with antimicrobial, antibacterial, antifungal, antiviral and immune response inducing potential can successfully fill gaps in sustainable livestock resource development without antibiotic growth promoters.

Secondary metabolites	Level / concentration/gm of extract
Terpenoids	+++ (heavily detected)
Phenolic compounds	╋ ╋ ╉
Tannins	+++
Flavonoids	++ (detected)
Total phenolic	37.45mg Gallic acid equivalent
Flavonoid	25 17mg Rutin equivalent

Materials and method:

- Freshly harvested Ocimum gratissimum (lyn) leafs were separated from the stalk placed in zip lock bags and sent to the laboratory for analysis. The leafs were washed lightly with distilled water and oven-dried at a temperature of 40°C for 72 hours to constant weight.
- The dried leafs were then ground to powder form with an electric milling machine.

Extraction

Methanolic extract of *O. gratissimum* leaf powder was obtained by using cold maceration method using 80 % methanol (Sigma-Aldrich Analytical grade). *Phytochemical analysis*

Qualitative analysis for specific phytochemical was carried out as follows: terpenoids (Liebermann –

JJ.I. Mathe Cyarvarent

Conclusion:

Ocimum gratissimum (lyn) has secondary metabolites with potential to fill gaps and remove traps for sustainable Livestock production in the absence of antibiotics.



Burchard test); phenolic compound (Lead acetate test); Tannins (Ferric chloride test); flavonoids (Shinoda's test) and reducing sugars (Fehling's test).
Total flavonoid content was expressed as Rutin equivalents (mg Rutin Equivalents /g of extract).
Total phenolic content of the extract was estimated using the Folin Ciocalteau reagent method and result obtained reported as Gallic acid equivalent /g of extract. All analysis was carried out in triplicates.

Acknowledgement: Mr Usman, Mr Yusuf and Samuel Ofongo are gratefully acknowledged for their contribution to this work.



Email: <u>tariruth@live.de;</u> <u>ruthofongo@gmail.com</u> Telephone: +234 (0) 8038827764 ORCID ID: https://orcid.org/0000-0002-2156-55 POULTRY NUTRITION AND ANIMAL BIOTECHNOLOGY RESEARCH GROUP

Tropentag, September 18-20, 2019, Kassel "Filling gaps and removing traps for sustainable resource management"