

## News &amp; Comments

***D. edulis* Plant Positively Impacted the Apparent Digestibility of the Feed***Asif Ali*

Increases in chicken production in emerging nations are constrained by several factors. The primary barrier is the high cost of feed, which makes up to 70% of the cost of producing chicken. Feed additives like growth promoters are a significant factor in the high cost of feed. Feed costs could be reduced by utilizing locally accessible resources like plant-based growth boosters. Furthermore, the presence of antibiotic residues in poultry products raises the possibility of public health issues. Safe alternatives to in-feed antibiotic growth promoters must be developed. Innovative methods, like the use of plant-based compounds, are desired. Additionally, *D. edulis* plant/part extracts contain hepatoprotective, antioxidant, antifungal, antiviral, bactericidal, hypoglycemic, and antiviral activities. These characteristics serve as reliable predictors of a plant's potential for usage as prebiotics and growth promoters to replace antibiotics in chicken feed. Studies investigated the effects of *D. edulis* plant sections on the blood parameters, ceca microbiota, and chicken growth features. As part of the effectiveness and safety experiments required to establish the potential for employing *D. edulis* in chicken diets without adversely affecting human or animal health or welfare, this study sought to determine the apparent digestibility and gut integrity.

At the start of this study, ethical approval for the use of animals was sought from the Animal Ethics Review Committee of Jomo Kenyatta University of Agriculture and Technology. The feeding trials and laboratory analyses were done at Jomo Kenyatta University of Agriculture and Technology (JKUAT), where the hens were sent. Before introducing the experimental beginning meal for a further 7 weeks, the negative control diet was fed to all chicks for a week. Up until the end of the 14-week experiment, the growing chicks were fed the finisher diet starting in week 8. According to the method, proximate analyses of the *D. edulis* plant parts and experimental diets were done for moisture, crude protein, ash, and ether extract. Every cage's excrement was collected every three days. The official approach advised by the was used to conduct the proximate analyses. The statistical analysis was performed using RStudio software version 3.6.13.

The zinc content of *D. edulis* plant seeds was higher than that of the leaves and stem bark, but it was lower than that of the magnesium, calcium, and iron. In every case, the stem bark and leaves were rich in iron, calcium, and magnesium. The DM, ash, fat, crude fibre, and crude protein all varied significantly. Additionally, there were variations in the treatment meals' nutritional digestibility. According to the gut histology, the mucosa, muscularis mucosa, submucosa, muscularis externa, and serosa were discernible



for all dietary regimens. Different methods have been employed to assess the effectiveness and security of using *D. edulis* in animal feeds. The presence of nutrients or chemicals in the sample under examination, or how they affect the established limitations, is the most important consideration for the evaluation. *D. edulis* was chosen because of its widespread use in traditional African human and veterinary medicine, as well as its application in supplying nutritional and mineral limits in human diets. No research has been done to investigate the effectiveness and safety of employing plant/parts as feed additives in chicken diets in Africa, where *D. edulis* is a common plant and poultry production is constrained by the high cost of feed additives. The *D. edulis* plant is distinguished by elements that have nutritional (proximate and digestibility) and therapeutic (gut integrity) capabilities, as shown by the study's findings. According to the research, the *D. edulis* stem bark has high levels of DM, ash, fibre, and calcium, whereas the seed powder is superior in fat and Zinc and is more digestible.

The *D. edulis* plant's proximate and mineral content varied across and among its many portions, suggesting that the various parts can be used to meet the various needs of poultry feeds. The stark contrasts between the mineral contents of the chicken excreta and the proximate analysis of the droppings serve to emphasize this even more. This study also demonstrated that whereas *D. edulis* plant components appear to improve feed digestibility, they may, over time, negatively affect the intestinal histology of local chicken.

#### JOURNAL REFERENCE

Armel Ngnintedem Tangomo, Mathew Gitau Gicheha, John Maina Kagira and Christian Keambou Tiambo, 2021. Apparent digestibility and gut integrity of chicken fed a diet supplemented with African safou (*Dacryodes edulis*). Int. J. Poult. Sci., 20: 13-26.

#### KEYWORDS

*Dacryodes edulis*, African Safou, digestibility, gut health, blood parameters, minerals, chicken

