



UNIVERSITY OF NAIROBI
FACULTY OF VETERINARY MEDICINE
DEPARTMENT OF ANIMAL PRODUCTION

WEBINAR ANNOUNCEMENT

PhD. Proposal presentation

Presenter: Faith Wairimu Wakibia

Topic: Effects of postbiotic-essential oil blend on gut health, immunity and production performance of broiler chicken

JOIN US LIVE ON

<https://meet.google.com/rdm-zmhf-yiw>

WEDNESDAY 13th SEPTEMBER 2023

TIME 12.30 PM – 1:30 PM.

ALL ARE WELCOME!

Seminar Coordinator

Dr. F. M. Kibegwa
Dept. of Animal Production

Approved by Ag. Chairman

Dr. R. C. Bett
Dept. of Animal Production

EFFECTS OF POSTBIOTIC-ESSENTIAL OIL BLEND ON GUT HEALTH, IMMUNITY AND PRODUCTION PERFORMANCE OF BROILER CHICKEN

Wakibia F.W, Maina, J.G, Gachuiri, C.K and Serem, J.K

Abstract

The broiler meat industry in Kenya is faced by numerous challenges including variable raw material quality, mycotoxins, contaminations, and disease challenges. All these challenges affect the gut health of the broiler chicken resulting in poor health and reduced performance. To improve feed utilization, inclusion of feed additives that enhance gut health in broiler rations has been recommended. Postbiotics have been shown to enhance gut health while essential oils have been shown to enhance digestibility of feed through increased secretory enzymes. Essential oil compounds and postbiotics have been widely researched on broilers, however, the synergistic effects of the blend of two compounds have not been researched therefore presenting the need for this research. This proposed study has been designed to achieve the following specific objectives: 1) To determine the effects of postbiotic-essential oil blend in broiler chicken diets on feed intake, body weight gain, feed conversion ratio and carcass characteristics. 2) To determine the effects of postbiotic-essential oil blend in broiler diets on digestibility of energy and nutrients. 3) To evaluate the effects of postbiotic-essential oil blend in diets of broiler chicken on gut morphology and intestinal microbiota, and 4) To evaluate effects of postbiotic-essential oil blend on hematological parameters and immune response to Newcastle disease Virus (NCD) and Infectious Bursal disease (IBD) vaccination. Eight-Hundred-day old straight run Cobb 500 chicks will be obtained from a commercial hatchery, placed into four houses of 200 chicks, with 20 cages of ten birds each. Birds in each house will be assigned four treatment diets, control and postbiotic-essential oil blend at 300grams per metric tonne (g/mt), 400g/mt and 500g/mt in a completely randomized block design (CRBD) experiment. The Experiment will run for 49 days. Production performance, energy and nutrient digestibility, carcass parameters, hematological parameters, response to NCD and IBD vaccination, gut morphology, cecal lactobacilli and Coliform counts and metagenomic analysis will be evaluated. All data collected will be analyzed by descriptive statistics and comparison will be made using parametric or non-parametric tests depending on the distribution of the outcome of interest.

Key Words: Essential Oil Blend, Gut Health, Metagenomics, Postbiotic.