The efficacy of plant based diets on growth potential, energy utilization, nutrient digestibility, leg bone development and litter quality of meat chickens

ABSTRACT

Both plant and animal ingredients are used commonly to formulate balanced diets for poultry. Although many changes have been occurred in the genetics, nutrition and feeding of modern meat chickens, free selection and indiscriminate uses of feedstuffs for the non-ruminant animal diets can be hazardous due to the emerging threat of diseases outbreak via animal by-products. Besides this, many other concerns of including animal ingredients in poultry diets such as high price, zoonotic effects, ban on uses, food safety and product quality etc., encourage the poultry integrators to use merely vegetable feedstuffs for diet formulation excluding animal by-products. Exclusive use of plant ingredients into poultry diets might offer potential beneficial effects for optimizing poultry products. Poultry industry may be benefitted by using these cheap sources of vegetable ingredients for quality, safe and organic meat production. After all, most poultry integrators are looking for alternative ways to streamline production. This is why, currently the search for and the appropriate use of vegetable ingredients demand more research to explore their potential uses in poultry diets including other farm animals. However, despite the advantages of using vegetable feedstuffs in poultry diets, there are some associated problems that can affect the performance of meat chickens. So our current study is focused on to review these limitations of meat chickens fed vegetable-based diet, which include productivity, feed utilization and nutrient digestibility, leg bone health and litter quality of meat chickens.

Keyword: Broiler chickens; Digestibility; Energy utilization; Growth; Leg bone health; Litter quality; Vegetable diets