



Performance Characteristics of Turkeys Fed Full-Fat Soybean or Soybean Meal Based Diets

Supplemented with Varying Levels of Protease Enzyme and Related Feed Costs

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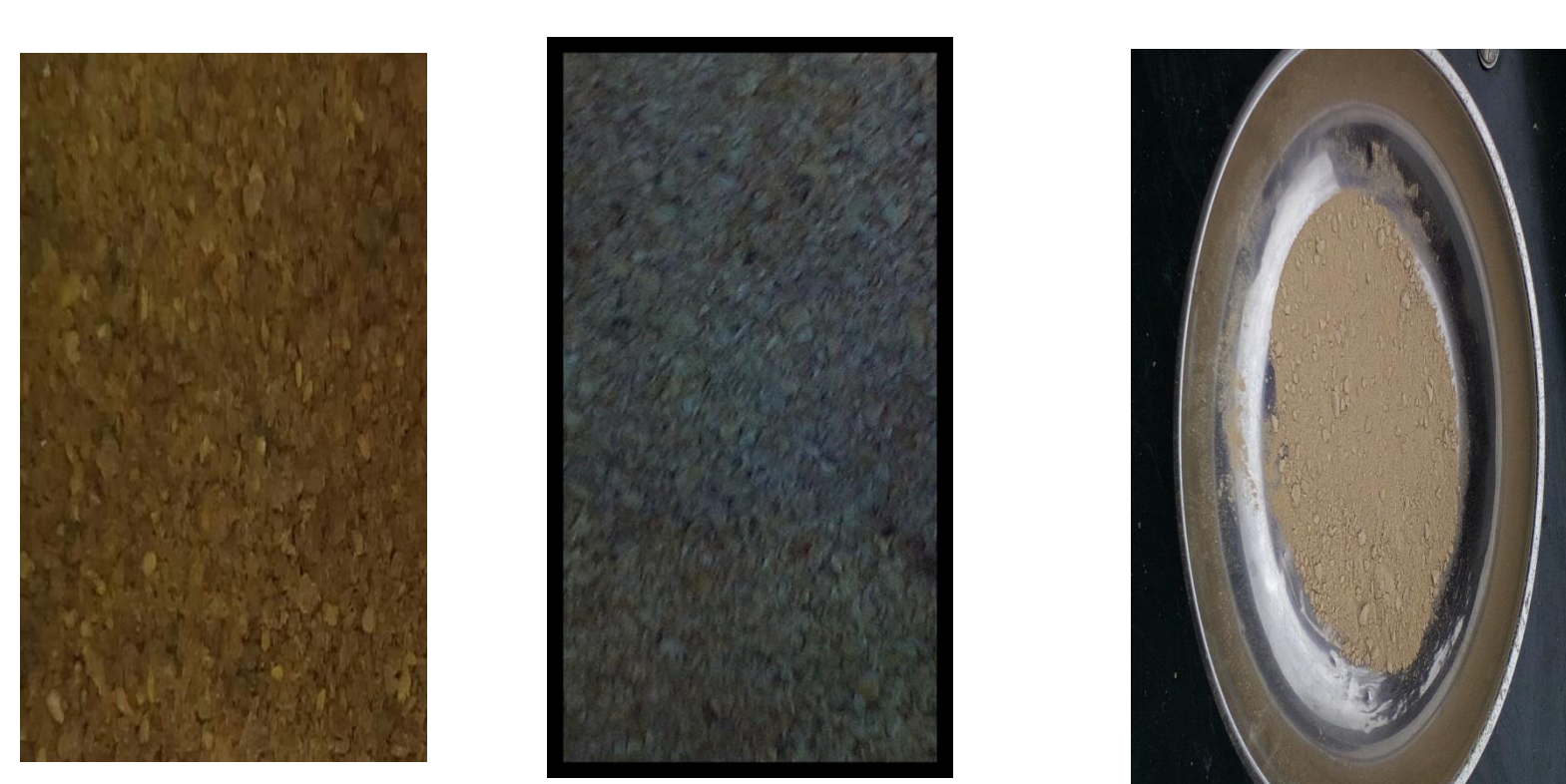
PURPOSE

JUSTIFICATION

- Soybean is the most important plant protein source for poultry feed formulation in Nigeria and most developing countries of Africa south of Sahara.
- No viable plant protein alternative to it have been found in terms of its nutrient profile, protein quality and utilization by poultry.
- The need to maximize the available soya bean for both human consumption and livestock feeding with minimal negative impact on the environment such as deforestation, destruction of biodiversity and pollution, therefore arises
- Enzyme-mediated improvement of feed digestibility has a direct effect on the amount of feedstuffs needed to satisfy nutritional requirements of animals, reduce manure output and cost of production (Péron and Partridge, 2009; Ao *et al.*, 2011).

OBJECTIVE

- To evaluate the performance characteristics and feed cost benefits of turkeys fed either full-fat soybean (FFSB) or soybean meal (SBM) based diets supplemented with a commercial protease enzyme at varying levels.



Full-fat soya bean

Soya bean meal

Protease enzyme

MATERIALS AND METHODS

LOCATION

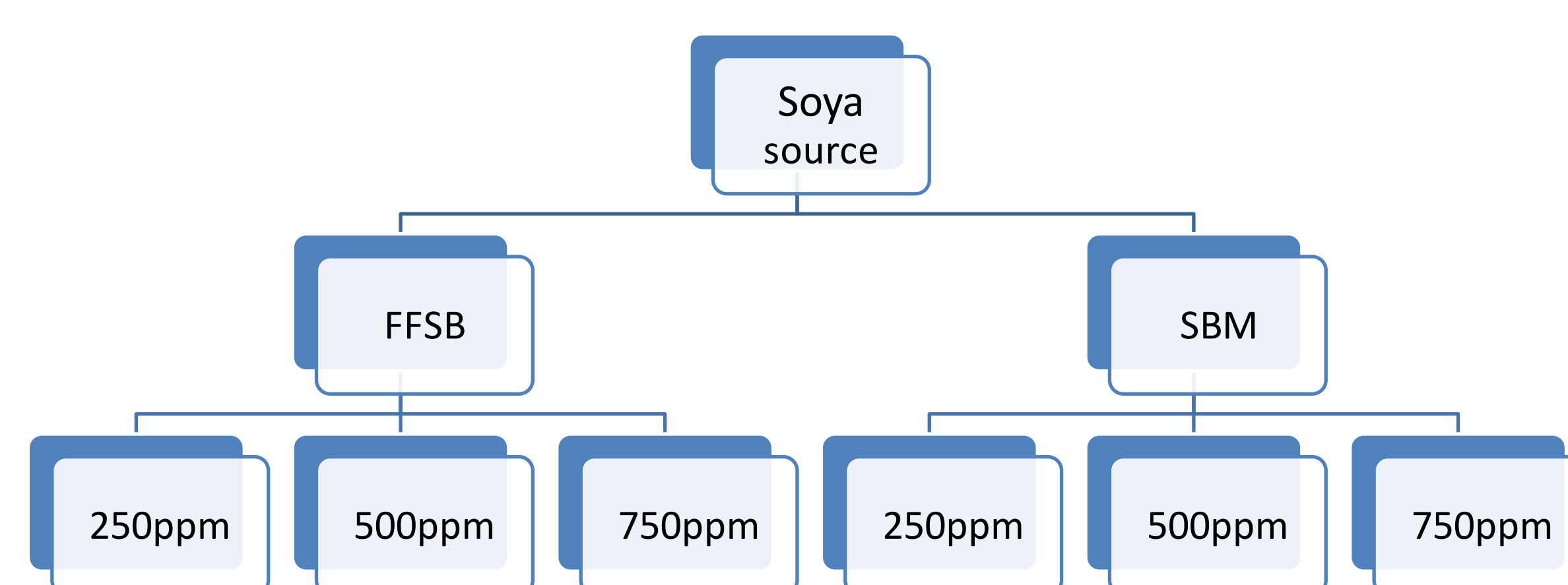
The experiment was conducted at the Turkey Unit, Teaching and Research Farm, Directorate of University Farms (DUFARMS), Federal University of Agriculture, Abeokuta, Ogun State, Nigeria, West Africa

EXPERIMENTAL BIRDS AND MANAGEMENT

- A total of 300 one-day old unsexed British United turkeys were purchased from a reputable hatchery in Ibadan, Oyo State, South West Nigeria. They were brooded together and allotted on weight equalization basis on day 55 prior to the commencement of the feeding trial on day 56 into six treatment groups
- Two practical diets were formulated according to NRC, (1994) using FFSB or SBM and other conventional feedstuffs to meet the requirements for each phase, protease enzyme was supplemented at 3 levels of 250g, 500g or 750g/Ton
- Feed and water were offered *ad-libitum* during the 56 day's feeding trial divided into grower (56-84 days) and finisher (84-112 days) phases

DATA COLLECTION AND STATISTICAL ANALYSIS

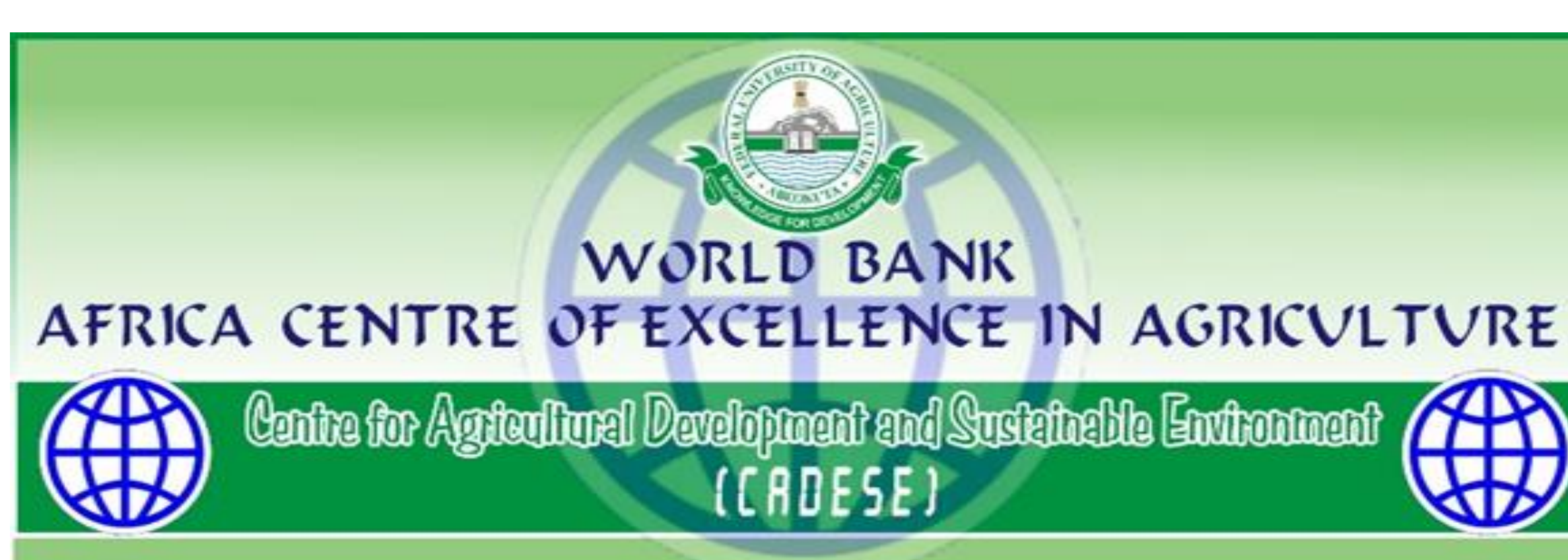
- Performance indices collected included initial weight, final weight, daily weight gain, feed intake, feed conversion ratio and percentage mortality, while feed cost was calculated.
- Data collected was arranged in a 2 x 3 factorial (2 sources of dietary soya and 3 levels of enzyme supplementation) and analysis was done using Analysis of Variance in a Completely Randomized Design



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RESULTS

- Birds fed SBM diets had higher daily weight gain (122.65g) and better FCR (3.14) than those fed FFSB (116.57g: 3.30) at the grower phase.
- At the finisher phase, turkeys fed FFSB based diets had higher daily weight gain (125.07g) and better FCR (3.53) compared with those fed SBM based diets (119.52g: 3.91).
- Results obtained showed that at the end of the grower phase, feed cost per kg weight gain (₦ 474.43) of birds fed SBM based diets was lower compared with those fed FFSB diets (₦497.26).
- The reverse was the case at the end of the finisher phase; costing ₦ 584.44 for SBM diets and ₦517.26 for FFSB.
- No significant difference ($p > 0.05$) was observed as a result of varying levels of enzyme supplementation on performance indices recorded
- **1 Euro = 354.18 Nigerian Naira as at 12th Sept 2016**

CONCLUSION

It was concluded that soya bean meal based diet was better for growing turkeys, while Full-fat soya bean based diet was better for turkeys at the finisher phase as it reduced the feed cost per kg diet and increased the weight gain. No significant difference in all performance indices measured could be appropriated to the varying inclusion levels of protease enzyme in the diets of turkeys fed either SBM or FFSB. This gives credence to the fact that the manufacturer's recommended level (500g/ton) is ideal.



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