In vivo digestibility of Vigna unguiculata grain meal in broilers

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1. INTRODUCTION

Investigating alternative feed of broiler chickens for small producers, the coefficient of apparent digestibility of milled Vigna unguiculata grain in raw and cooked form was determined using male chickens in the finisher phase.

2. MATERIALS & METHODS

A completely randomized design with three treatments and six repetitions was applied, substituting weight for weight and using male chickens (line COOB 500) in the finisher phase. They were confined in metabolic cages with 8 days acclimatization to the ambient and 5 days to the experimental diet previous to the measurement of digestibility (10 days). The following treatments were applied: T0 control diet (balanced, non-commercial), T1 70% control diet and 30% raw V. unguiculata grain, and T2: 70% control diet and 30% cooked (5') V. unguiculata grain. The apparent fecal digestibility of the meal of raw and cooked grain was determined, as well as of single nutrients of the diet.

3. RESULTS

The coefficients of apparent dry matter (DM) digestibility of milled raw and cooked grains of V. unguiculata were 67 and 73 %, respectively (Figure 1). The apparent DM digestibility of the complete diets (Table 1 and figure 2) did not show significant differences between T0 (78.3%) and T2 (76.6%), nor between T2 and T1 (74.9%) (P>0.05) (Table 2).

In crude protein, the digestibility did not differ significantly (Table 2), while in metabolizable energy the digestibility of T0 and T2 was similar, and higher than T1. The three treatments differed significantly in the digestibility of the crude fiber (48.1%, 31.9% and 62% for T0, T1 and T2 respectively).

4. CONCLUSION

The similarity observed for the digestibility and consumption of V. unguiculata grain compared to control suggests it as an excellent supplement of diets in unconventional broiler farming systems. The comparison of cooked and raw grain suggests a slightly better utilization of the cooked one by broilers.