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Nutritional Value of *Canavalia brasiliensis* CIAT 17009 Herbage Meal in Growing Pigs

PATRICIA I. SARRIA¹, DIEGO A. BUITRÓN¹, ANDREA RENDÓN¹, LEIDY J. TORRES¹, SIRIWAN
MARTENS²

¹Universidad Nacional de Colombia (UNAL), Dept. of Animal Science, Colombia

²International Center for Tropical Agriculture (CIAT), Tropical Forages, Colombia

Abstract

In different tropical regions, forage legumes may offer an alternative feeding option for pigs because of their high protein content, good biomass yield and other ecological and economic advantages. Since 2000, CIAT in collaboration with farmers and national partners has identified a number of promising legume species especially adapted to the soils and the climate of the hillsides in Colombia, Nicaragua, and other countries. *Canavalia brasiliensis* is a legume selected by farmers for its high productivity, good soil cover and outstanding level of drought tolerance based on green forage yield. It is a weak perennial legume and can be grown on a wide range of soil pH (4.3–8.0) on low fertile soils up to a height of 1800 m asl and has a good regrowth up to the second year. In Palmira, Colombia, *Canavalia brasiliensis* yields 6.1 t ha⁻¹ dry matter (DM) at 16 weeks, with 19 % crude protein content.

The objective was to study the consumption and total digestibility of canavalia herbage in growing pigs. Twenty-four commercial animals of 39±5.4 kg body weight (BW) were utilised to study 0, 10, 20 and 30 % of canavalia herbage meal (CLM) inclusion in the total diet. Digestibility coefficients were measured by total collection of feces and coefficients of digestibility of CLM alone was estimated by the “difference” method. The inclusion of CLM did not affect DM intake (101; 96; 101 and 96 g kg^{-0.75} BW, respectively; ($p > 0.05$)). The inclusion of CLM decreased both coefficients, apparent digestibility of the DM (%; 84.5^a; 81.8^{ab}; 76.4^{bc} and 74.7^c) and GE (gross energy; %) (85.7^a; 81.5^{ab}; 70.0^{bc} and 66.8^c) ($p < 0.05$). In contrast, the apparent digestibility of crude protein (CP) was similar in all treatments (83.1; 81.9; 77.0 and 76.5 %) ($p > 0.05$). The average apparent digestibility coefficients of the CLM alone were 51.0 % DM, 61.4 % CP and 14.0 % GE. Thus, CLM was well accepted by growing pigs without affecting the apparent digestibility of CP. However, the digestibility of DM and GE decreased in a curvilinear way. Based on the results, a CLM inclusion of up to 10 % of the diet in growing pig diets offers an alternative protein supplement option.

Keywords: Consumption, digestibility, dry matter, energy, pigs, protein, tropical forage legume