



Tropentag, September 14-16, 2010, Zurich

“World Food System —
A Contribution from Europe”

Growth of Pigs Fed with *Vigna unguiculata* Herbage Meal as Protein Supplement

PATRICIA I. SARRIA¹, LUIS FERNANDO RIVERA¹, ROBERTO ARAUJO¹, MICHAEL PETERS², SIRIWAN MARTENS²

¹Universidad Nacional de Colombia (UNAL), Sede Palmira, Department of Animal Science, Colombia

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

Abstract

Smallholder pig producers in tropical countries often have limited access to protein concentrates or are confronted with fluctuating, often high prices, which decrease their profit considerably. Thus, the suitability of cowpea (*Vigna unguiculata*), an herbaceous annual legume, which could be grown on-farm in a range of different subhumid and humid tropical environments, was assessed as a protein supplement.

Fourteen female pigs (Piétrain-Large White × Landrace-Large White) were utilised to evaluate the productive behaviour in the phase of 25–60 kg live weight, being fed with cowpea herbage meal (*Vigna unguiculata* 9611) as partial protein supplement. They were kept in individual units with feeder and sipper tubes. A completely randomised block design with 3 treatments and 5 replicates was employed. The diets were balanced in protein, energy and fiber according to their theoretical chemical composition to equally nutritive contribution for fattening pigs with high genetic potential, thus: Control (a mix of maize, soy, wheat bran and vegetable oil), cowpea 15 %, cowpea 30 % (cowpea meal representing 15 or 30 % of the protein of the diet). The adaptation period was 7 days, the measuring period 49 days. The diet was offered according to the appetite of the pigs during the week of acclimatisation, *i.e.*, 90 g dry matter (DM)/kg metabolic live weight ($LW^{0.75}$). This quantity was maintained throughout the experiment, distributed in 2 rations per day.

There were no significant differences ($p > 0.05$) between treatments for the variables dairy live weight gain (640 ± 100 , 570 ± 30 and 590 ± 50 g), daily feed consumption (1582 ± 82 , 1484 ± 91 and 1590 ± 35 g d⁻¹), daily feed consumption in terms of kg DM/ $LW^{0.75}$ (84.8 ± 1.8 , 84.1 ± 2.1 and 85.1 ± 1.0 g kg⁻¹ $LW^{0.75}$), nor in terms of feed conversion (2.49, 2.59 and 2.69). It was concluded that an inclusion of 33 % cowpea herbage meal in the total diet can give good growth results.

Keywords: Cowpea, growing pigs, herbaceous legume, herbage meal, protein, tropical forage, *Vigna unguiculata*