

Consumption pattern of pigs supplemented with ensiled tropical forages



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Introduction

- Forages and especially legumes may offer an alternative feed supplement for pigs in a smallholder context because of their high protein content and biomass yield.
- Ensiling forages allows to preserve the nutritional value. Smell and taste might be more appetizing than fresh herbage, and silage making requires less energy and time than producing forage meal.

Objective

The objective of this study was to assess the palatability of silages in fattening pigs of the following legumes and a grass:

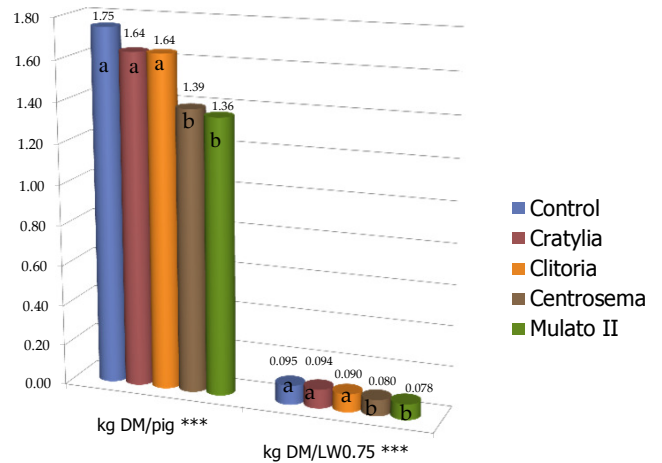


Fig. 7 Daily consumption of diets with silages by pigs
*** (P<0.001), ** (P<0.01), *(P<0.05)

Material and methods

- Silages:** Forage wilted to > 350 g/kg dry matter DM, chopped + sucrose (20 g/kg FM) and *Lactobacillus* CIAT S66.7 added. Material was compacted in plastic buckets (Fig. 5) and stored roofed at ambient temperature (Fig. 6)
- Animals:** 30 commercial male pigs (46.7 ± 4.7 kg live weight (LW)), were housed individually to evaluate the consumption of silages (Fig. 7).
- Experimental design:** A completely randomized block with 5 treatments, 3 replicates and two periods of 14 days each was applied.
- Feeding and diets:** 50 g dry matter/kg LW^{0.75} of the Control diet was offered and the silages ad libitum, starting with 30 g DM/kg LW^{0.75}. The refusals were weighed and a sample was frozen until analysis (Fig 8). Pigs were weighed weekly to adjust the diet (Fig. 9). The composition is shown in Table 1.



Fig. 5 Preparing *Clitoria* silage



Fig. 6 Storage of silages

Results and discussion

- Pigs receiving *Cratylia* or *Clitoria* silage consumed the same amount of DM compared to those fed only on Control diet (Fig. 7), despite the DM difference (Table 1). In *Cratylia* and *Clitoria* feeding regimes, silage corresponded to 55 and 50% of total DM consumption on average.
- Less consumption of *Mulato II* and *Centrosema* silage was possibly due to their lower nutritional quality and lower dry matter content (Table 1). This conforms to earlier observations that leaf meals were better consumed than fresh leaves (Leterme 2005).
- Growing pigs (>45 kg LW) ingested bulk food with >430 g DM/kg FM without presenting physiological constraints. The dry matter content in the silages was the factor that best explained the consumption by pigs, with a correlation coefficient of r=0.83 among silage treatments.



Fig. 7 Pig feeding on silage + control



Fig. 8 Storage of feed refusals



Fig. 9. Weighing pigs

Table 1. Nutritional content of control diet and forage silages (g/kg)

	Control	<i>Cratylia argentea</i>	<i>Clitoria ternatea</i>	<i>Centrosema brasilianum</i>	Mulato II
Dry matter	887	438	483	370	379
Crude protein	202	192	198	129	58.5
Neutral detergent fiber	188	476	490	463	732
Acid detergent fiber	74	349	380	349	468
Acid detergent lignin	29	157	109	113	200

* Control consisted of 593 g maize, 150 g wheat bran, 230 g soybean meal, 2.5 g L-lysine HCl, 3.5 g DL-methionine and 21 g mineral and vitamin supplements per kg total diet.

Conclusions

- Cratylia argentea* and *Clitoria ternatea* silages of high DM and good quality have the potential to serve as feed supplement in diets of growing pigs.
- Inclusion rates of around 500 g/kg DM were well consumed.
- Growth performance studies have to evaluate the effect on live weight gain.

This study was part of the project "More chicken and pork in the pot, and money in pocket: Improving forages for monogastric animals with low-income farmers".

