

An increased hindgut fermentation promoted major changes on the VFA profile but not on the total VFA concentration of the digesta contents

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INTRODUCTION

Volatile fatty acids, principally acetate, propionate and butyrate, are produced in the caecum-colon of pigs as end products of the microbial fermentation. The present abstract tries to explore on the changes on the VFA concentration and profiles observed in Landrace and Iberian pigs fed on different sources of carbohydrates (high v. low digestible starch).

MATERIALS AND METHODS

- Animals**
12 LANDRACE (Initial BW 89.8 ± 5.6 kg)
12 IBERIAN (Initial BW 86.9 ± 6.9 kg).
- Diets**
CORN-BASED (corn, 75.0%)
SORGHUM-ACORN BASED (corn, 37.2%; sorghum, 27.5%; acorn, 12.5%).
- Slaughter weight 107-108 Kg BW.
- VFA were determined by GLC, following Jouany, (1982).

RESULTS

| (g/day) | LANDRACE | | IBERIAN | |
|---------------------|----------|--------------|---------|--------------|
| | Corn- | Sorg./acorn- | Corn- | Sorg./acorn- |
| OM intake | 2820 | 2970 | 3710 | 3790 |
| Fermented OM | 384 | 493 | 668 | 1555 |

- Significant changes were observed among treatments on the amount of OM flowing to, and fermenting in hindgut compartment.
- Quantitative changes on the OM fermented were not associated with significant changes on the VFA concentration.

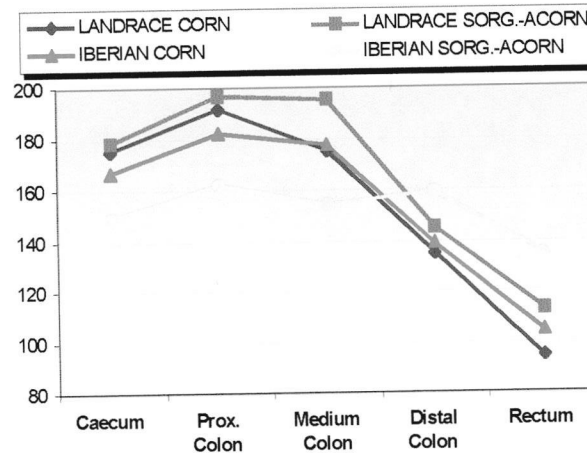


Figure 1. VFA concentration ($\mu\text{mol/g FM}$) in Landrace and Iberian hindguts.

- Iberian pigs showed v. Landrace high propionate percentage (31.0 v. 24.4%) on the proximal hindgut.
- Butyrate was significantly higher in Landrace fed on sorghum-acorn.

- An inverse correlation between BCVFA percentage and fermented OM is suggested.

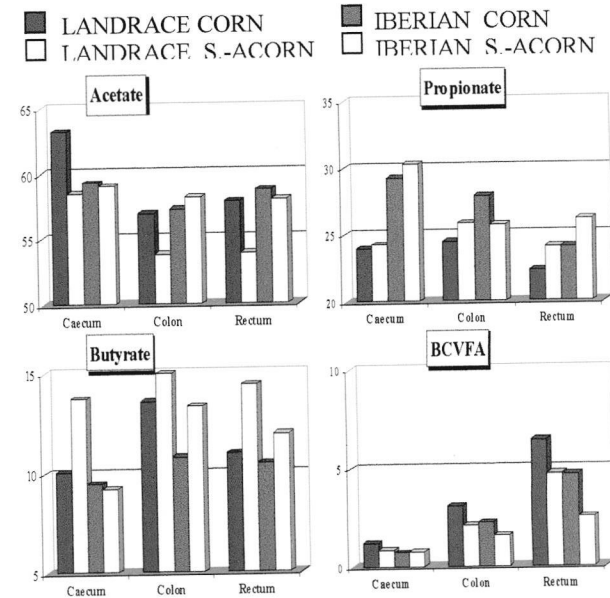


Figure 2. VFA profiles in Caecum, Colon and Rectum

CONCLUSION

Present results suggest main differences on the pattern of hindgut fermentation depending on BREED and DIET characteristics