



The effect of blends of organic acids on apparent faecal digestibility in weaned piglets

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Introduction and Objectives

Organic acids in pig diets enhance growth performance, reduce post-weaning diarrhoea, and increase nutrient digestibility by reducing gastric pH, increasing pepsin activity and reducing stomach passage rate.

The **objective** of this study was to determine the effect of two blends of organic acids on apparent faecal digestibility in weaned piglets.

Materials and Methods

- 24 piglets weaned at 26 days of age.
- Individually housed from day 6 post-weaning onwards.
- Experimental diets fed from day 6 to day 30 post-weaning.
- Faecal samples taken twice daily on days 21 and 22 post-weaning.
- Apparent faecal nutrient digestibilities calculated using the indicator method, i.e. the ratio between nutrient marker in the feed and faeces.
- Data analysed with ANOVA (Genstat).

Treatments

1. **Control diet (C)**
2. **FA/EO:** as C with 5kg/ton of a blend of formic acid and essential oils (thyme, clove, oregano, eugenol, carvacrol)
3. **FA/OA:** as C with 5 kg/ton of a blend of formic acid and propionic, lactic, citric and sorbic acid

Results

- No differences were found in animal performance from day 6 to 30 post-weaning.
- FA/OA resulted in a higher crude fibre digestibility than C.
- FA/EO resulted in a higher digestibility of crude fibre, carbohydrates, and NSP compared to C.
- No differences in calculated ME and NE values.

Table 1. Apparent faecal digestibility coefficients (%) of the experimental diets

	Treatments		
	C	FA/EO	FA/OA
Dry matter	77.3	78.7	77.8
Crude protein	76.2	77.3	76.0
Crude fat	77.7	80.8	77.3
Crude fibre	22.7 ^b	28.0 ^a	25.7 ^a
Ash	39.0	42.0	40.5
Organic matter	81.7	82.9	81.9
Carbohydrates	83.8 ^b	84.8 ^a	84.3 ^{a,b}
NSP	44.5 ^b	47.8 ^a	46.1 ^{a,b}

^{A,B} mean values without a common superscript within a row differ significantly (P<0.05); C: control; FA/EO: blend of formic acid and essential oils; FA/OA: blend of formic acid and other organic acids

Summary & Conclusion

1. Dietary supplementation of both formic acid in combination with essential oils or other organic acids increased digestibility of crude fibre.
2. Dietary supplementation of formic acid in combination with essential oils improved NSP and total carbohydrate digestibility.

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