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HAPTOGLOBIN LEVELS IN FATTENING PIGS RECEIVING CONVENTIONAL ANTIBIOTIC PROPHYLAXIS IN COMPARISON TO A VITAMIN SUPPLEMENTATION

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Introduction

In pig production antibiotics are used in prevention as well as therapy since decades. The emphasis of medical treatment is mainly at weaning as well as stabling into the fattening. Thereby the use of antibiotics is increasingly criticized because

- with inappropriate application food might be loaded with residue
- antibiotic resistances in humans might be induced
- the spectrum of the effective medicaments for application in livestock production increasingly limits itself.

The aim of the work was to look at the effect of a vitamin supplementation in contrast to an antibiotic prophylaxis using the acute phase protein haptoglobin (Hp) as an indicator for pig's health.

Materials and Methods

120 fattening pigs from one rearing farm were divided into two groups (A/B) and 10 clinical healthy pigs of each group were marked individually. In the fattening farm the pigs were housed in the same partition. Group A got an antibiotic prophylaxis (Tetracyclin, Amoxicilin, Neomycinsulfat) for on week whereas group B was fed with a vitamin supplementation (Miravit, AGRAVIS Raiffeisen AG) for three weeks. Blood sampling was performed three times:

- 3 days before moving the pigs into the fattening (Hp 1)
- 21 days after housing (Hp 2)
- 42 days after housing (Hp 3)

Hp was determined using the method of HISS and co-authors (Vet. Immunol. Immunopath., 2003). Furthermore performance data were recorded.

Results

Table 1 shows the Hp levels as well as the performance data per pig group. Pigs of group A had significantly lower Hp levels at the first sampling time. Three weeks after housing pigs of group A showed significant higher Hp concentrations (2.34 mg/ml) than pigs in group B (1.29 mg/ml). At the last sampling time Hp levels did not differ significantly. Furthermore pigs of group B showed a better performance in the fattening period.

Table 1: Overview over determined Hp concentration (mean $\pm$ s) as well as performance data in the two pig groups

Parameter	Group A Antibiotic prophylaxis	Group B Vitamin supplementation	Significance (p)
Hp 1 (mg/ml)	1.02 $\pm$ 0.48	1.46 $\pm$ 0.38	0.026
Hp 2 (mg/ml)	2.34 $\pm$ 0.73	1.29 $\pm$ 0.65	0.004
Hp 3 (mg/ml)	1.61 $\pm$ 0.63	1.48 $\pm$ 0.58	0.633
Daily weight gain (g)	748	800	
Losses (%)	8,9	0	
Feed efficiency	1 : 2,94	1 : 2,75	
Fattening days	120	116	

Discussion

Francisco and coauthors (Swine Health and Production, 1996) found higher Hp levels in piglets after treatment with enrofloxacin and tiamulin in comparison to the control group. In addition no benefit in performance in the nursery phase was observed. Our study confirms this phenomenon. Nevertheless the reason for significantly higher Hp levels after antibiotic prophylaxis versus vitamin supplementation can not be determined from this study.5