

Endoparasite infections and hygiene management in organic fattening herds

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Introduction

Studies in different European countries have revealed that infections with endoparasites are one of the most important health problems in swine herds (Roepstorff et al., 1999; Eijck & Borgsteede, 2005). In organic pig farming, the Regulation (EC) No 889/2008 includes several specifications which are expected to have severe impacts on parasite infection, i.e. straw bedding, access to outdoor run, addition of roughage to the daily feed ration and no prophylactic anthelmintic medication. Organic pig farms are also characterised by heterogeneous management practices and a lack in control measures (Ebke & Sundrum, 2004; Werner et al., 2009) providing a non-assessable risk for helminth egg contamination in the environment. The aim of the study was to assess the prevalence of endoparasite infections in fattening pigs on organic swine herds and the effectiveness of management measures with respect to the reduction of endoparasite infections.

Materials and Methods

The study was performed in 17 organic farrow-to-finish herds in Germany. An interview with the farmer was performed using a standardised questionnaire, containing closed and open-ended questions on anthelmintic treatment, cleaning and disinfectant measures, documentation of production and management data and diagnostic measures on farm-level. Furthermore, 10 faecal samples per farm, taken twice during spring and autumn, were collected from fatteners. They were examined within 12-24 h after collection for nematode egg counts per gram of faeces (EPG) using the 'Concentration McMaster technique' with saturated sodium chloride solution (detection limit: 20 EPG; Roepstorff & Nansen, 1999). A total number of 326 fatteners were sampled. Data were categorised to evaluate the relationship between hygiene management and parasite infection using the Fisher-Yates-Test.

Results

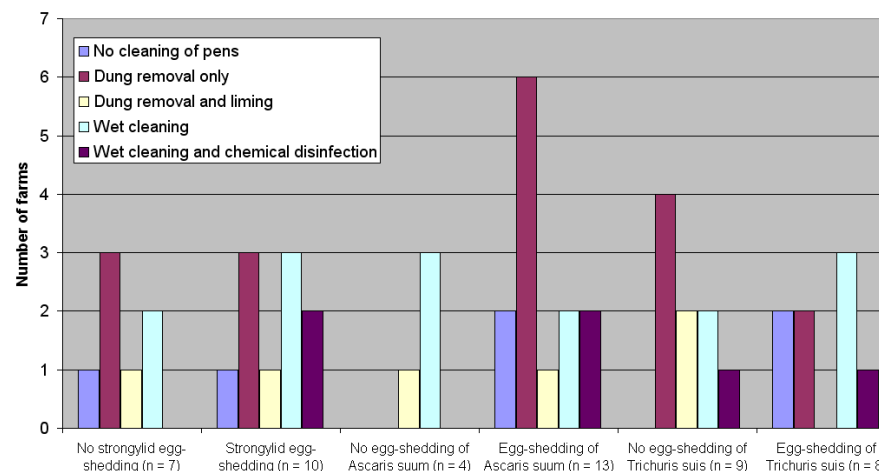
Fatteners were routinely treated with anthelmintics on 8 of the 17 farms. Anthelmintics most frequently used in fatteners were (pro)benzimidazoles (75%). Stronglylid infections were detected in 58.8% of the herds with a mean within-farm prevalence of 30.3% (Tab. 1). *Ascaris (A.) suum* and *Trichuris suis* eggs were detected in 21 and 9.8% of faecal samples of fatteners, respectively. Coccidia infections were diagnosed in 88% of the farms.

Tab. 1: Prevalence of gastro-intestinal infections in 20 organic fattening herds

Parasite	Fatteners (n = 326)		Farms (n = 17)		Within-farm prevalence (%)	
	Number affected	%	Number affected	%	Average	Range
None	124	38.0	1	5.9	-	-
Strongyles	103	31.6	10	58.8	30.3	0 - 100
<i>Ascaris suum</i>	68	20.9	13	76.5	20.7	0 - 70
<i>Trichuris suis</i>	32	9.8	8	47.1	9.4	0 - 40

The hygiene management showed a high variation between the farms (Fig. 1). Only half of the farmers performed wet cleaning in their fattening units (n=8), whereas two farmers did not clean the stables at all. 15 of the total number of 17 farmers made no use of chemical disinfectant measures versus endoparasites. However, no egg-shedding of *A. suum* and strongyles was detected in three of these 15 herds. Four additional herds were free of strongyles.

Fig. 1: Hygiene measures in 17 organic fattening herds, with or without egg-shedding of Strongyles, *Ascaris suum* and *Trichuris suis*



Discussion

Results show that farms varied to a high degree with respect to the prevalence of endoparasite infection and the implementation of hygiene measures. In contrast to expectancy, the prevalence rate of *Ascaris suum* infection was on a low level in comparison to other studies (Carstensen et al., 2002; Eijck & Borgsteede, 2005). No correlation was found between hygienic procedures and the occurrence of parasite infection, confirming previous results from Roepstorff et al. (1999). Thus, those farms who use comprehensive hygiene measures are not necessarily gaining the best results with respect to parasite infection. It is concluded that farm specific control and feedback mechanism are required to minimize both endoparasite infections and efforts to control them.

[References and Acknowledgements](#)