Study on the prevalence of *Oesophagostomum* spp. in pigs in randomly selected small-scale farms in northern Poland

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The pig rearing system creates favorable conditions for the development of certain parasitic infections. Esophagostomosis is caused by cosmopolitan nematodes of pigs and wild boar of the genus *Oesophagostomum* – *Oesophagostomum dentatum* and the morphologically similar species *O. quadrispinulatum.* In Poland the presence of the *O. quadrispinulatum* was confirmed by Nosal et al.

Table 1. Results of microscopic examination of pigs faeces

	Farms	Herd size (number of animals)	Medication used			Results and prevalence (%)					
						Weaners		Fattening pigs		Sows	
			Lev	Fen	Ivm	O.d.	A.s.	O.d.	A.s.	O.d.	A.s.
1	CZE	156	+	–	+	nf	50%	100%	100%	2%	100%
2	ROG	176	+	–	+	nf	nf	nf	nf	nf	nf
3	GOL	92	+	–	+	nf	nf	–	–	–	–
4	TOD	25	+	–	–	45%	nf	–	–	69%	nf
5	DUD	30	–	–	+	nf	nf	–	–	23%	nf
6	TAD	80	+	–	–	nf	nf	70%	nf	–	–
7	ZAP	110	+	–	–	–	–	nf	75%	70%	75%
8	PRZ	90	+	–	–	–	–	100%	nf	70%	nf
9	CZR	120	–	–	+	–	–	nf	30%	–	–
10	EDE	140	–	+	+	nf	nf	nf	nf	20%	nf
11	NOZ	280	–	–	+	30%	nf	40%	nf	42%	nf
12	KAP	176	–	–	+	nf	nf	30%	nf	45%	nf
13	CIE	626	–	–	+	nf	nf	nf	nf	55%	nf
14	BAM	600	–	+	+	nf	nf	nf	nf	35%	nf
15	URB	500	–	–	+	nf	nf	nf	nf	60%	nf

Explanations: O.d. – *Oesophagostomum dentatum*, A.s. – *Ascaris suum*, nf – not found, Lev – levamisole, Fen – fenbendazole, Ivm – ivermectin

The mentioned species are locating in the large intestine lumen. Clinically, a severe course of the disease is observed with strong and very strong intensity (10.000 to 130.000 larvae) in young, 3-4 week old piglets. This may be accompanied by loss of appetite, diarrhea and inhibition of weight gain. After an invasion, resistance to reinvasion is not developed.

The research material was randomly collected faecal samples from weaners, porkers and sows from small-scale pig farms in northern Poland. The faecal samples were tested by the flotation method according to Fülleborn (using a saturated solution of NaCl and $MgSO_4$ – comparative) and the sedimentation method. Nematode eggs were scored based on their morphological features using a Jenaval GFP microscope (12.5x and 25x).

Swine infection with *O. dentatum* in individual technological groups was found in 12 farms out of 15 selected for the study (80%). Only two cases of infection were recorded in the group of weaners, 5 cases (33.3%) in the group of fattening pigs, and 11 cases (73.3%) in the group of sows. The infection intensity in the group of fattening pigs ranged from 30 to 100%, in the group of sows from 2 to 70% and from 30 to 45% in the group of weaners. Mixed infections with *O. dentatum* and *A. suum* were found in the group of fattening pigs and sows in 6.7% and 13.3% of cases, respectively. The most frequently used nematocidal drugs were ivermectin (73.3%) and levamisole (46.7%). In 20% of farms, levamisole and ivermectin were used alternately.

1. Among randomly collected faecal samples from 15 farms pigs in northern Poland, the infection of *Oesophagostomum dentatum* was found in 80% of the researched farms, in 13.3% it coexisted with the *Ascaris suum* infection.

2. High prevalence of *O. dentatum* is presumably caused by: gradually increasing resistance of nematodes to the routinely used nematocidal drugs – levamisole and ivermectin, underestimating the body weight of animals, which causes underdosing of the drug or uneven uptake of the correct dose of the drug by individual animals, inadequate selection of the date of deworming and the lack of regular testing of stool samples in order to evaluate and control the effectiveness of the performed deworming treatments.