

Cases of invasion of *Oesophagostomum* spp. in pigs on small-scale farms

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Pig breeding system often creates favorable conditions for the development of some parasitic invasions. Oesophagostomiasis is caused by cosmopolitan nematodes of the genus *Oesophagostomum* – *O. dentatum* (Rudolphi, 1803) and the morphologically similar species *O. quadrispinulatum* (Marcone, 1901). These species are located in the lumen of the large intestine. Clinically particularly dangerous course of the disease is observed in strong and very strong invasions (from 10,000 to 130,000 larvae) in 3–4 week old piglets. Such invasions may be accompanied by loss of appetite, diarrhea, stagnation of weight gains or even weight loss. *O. dentatum* is a relatively weakly pathogenic parasite for pigs, hence the described symptoms are clearly visible only in cases of strong invasions, while weak invasions are usually latent. Nematodes cause allergic conditions in the host, facilitating the activity of other pathogens. Primary invasion causes a poorly marked reaction, while subsequent infections cause inflammation of the mucous membrane. After the invasion, resurrection resistance is not produced. Medicinal substances used in the treatment do not show any effect on the histotropic stages of the larvae.

MATERIAL AND METHODS. The material for examination were stool specimens taken from weaners, pigs and sows on pig farms in the provinces kujawsko-pomorskie and warmińsko-mazurskie, stored until the day of testing at about 4–5°C. Faecal samples were examined using thickening methods - the Fülleborn flotation method modified by Willis (using a saturated solution of NaCl and MgSO4 – comparative). Nematode eggs were determined based on their morphological characteristics.

RESULTS AND DISCUSSION. Invasion of *O. dentatum* in diverse technological groups was found on 14 out of 21 farms (67%). Infected piglets were found only on 2 farms (less than 10%), infected weaners on 4 farms (19%) and sows on 12 farms (57%). The prevalence of invasion (E.i.) in weaners ranged from 50 to 100%, in sows 2–100% and in piglets 45–50%. Mixed invasions of *O. dentatum* and *A. suum* were found in weaners and sows, in approx. 4% and 14% of cases, respectively. The most frequently used anthelmintic preparations were levamisol and ivermectin. Alternating treatment with levamisole and ivermectin was used on three (14%) farms (Tab. 1). High *O. dentatum* E.i. is presumably due to gradually increasing resistance of nematodes to the above two routinely used anthelmintic drugs or due to underdosing and unequal/incomplete intake by individual animals. Additional flaws may include inadequate deworming dates and lack of regular examinations of faecal samples before and after drug administration to evaluate treatment effectiveness.

Table 1. Research results in individual farms, in particular age groups of pigs

Lp.	Farms	The size of the herd (pieces of animals)	Preparations used			Results and E. i.					
			LEV	FEN	IVM	Piglets		Weaners		Sows	
						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	MAZ	300	+	–	–	–	–	nf	nf	–	–
12	MAZ1	600	–	–	–	–	–	nf	nf	–	–
13	KLE	190	+	–	–	nf	60%	nf	nf	nf	17%
14	TRZ	160	–	–	+	–	–	50%	nf	–	–
15	DAN	200	–	–	+	nf	nf	nf	nf	100%	nf
16	ROZ	240	–	–	+	50%	nf	nf	nf	40%	nf
17	WAL	150	–	–	+	nf	nf	nf	nf	–	–
18	GRA	200	y	y	y	nf	nf	nf	20%	20%	40%
19	LUB	250	y	y	y	–	–	–	–	60%	nf
20	GOŁ	100	y	y	y	nf	nf	–	–	100%	nf
21	CZA	180	+	+	–	–	–	nf	nf	100%	nf

EXPLANATION. *O. d.* – *Oesophagostomum dentatum*, *A. s.* – *Ascaris suum*, *nf* – not found, LEV – levamisole, FEN – fenbendazole, IVM – ivermectin, y – have not been dewormed over the last year, E. i. – prevalence of invasion (%)