



# THE PREVALENCE OF DIGESTIVE PARASITES OF PIGS IN SMALLHOLDERS FROM HÂRTIBACIU VALLEY, SIBIU COUNTY, ROMANIA

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# Introduction

- Parasitic diseases cause significant economic losses in pigs, but are often overlooked because of the apparent lack of clinical signs.
- An important number of pigs in Romania are raised on low-input farms (smallholders), with a share that remains high in the last decades.
- The raising of free-range pigs is common in rural areas of numerous developing countries despite its shortcomings such as poor food conversion, high mortality rates, and inferior products.
- **The current study aimed to identify the parasitic profile of swine raised in 14 smallholders from Hârtibaciu Valley, Sibiu county, Romania.**



**Fig. 1.** Pictures showing a smallholder.

# Introduction

**Hârtibaciului Valley** is also called “Green Valley”, it offers a unique view through the valley that crosses this wonderful area, rich in pastures, forests and crops.

- ❖ Iacobeni is a commune in Sibiu County, Transylvania, Romania, formed by the villages Iacobeni, Movable, Netuș, Noiștat, and Stejărișu.
- ❖ The commune is located 70 km from Sibiu, 12 km from Agnita, and 32 km from Sighișoara.
- ❖ The relief of the commune is hilly, and is crossed by the Hârtibaciu River.
- ❖ Fertile land, cultivated without the use of chemicals, makes the Green Valley one of the most favorable places for agriculture and especially for organic farming.



**Fig. 2.** Hârtibaciului Valley (location and agriculture).



# Materials and methods

- Animals - a number of approximately 700 pigs.
- Breeds: Pietrain, Great White, Duroc, Landrace, Mangalita, Bazna and their crossbreeds.
- Pigs are raised in individual or collective pens.
- The samples were collected from the villages of Iacobeni, Netuș and Stejarișu.



**Fig. 3.** Pig breeds raised in Hârtibaciu Valley.

# Materials and methods

- 260 faecal samples were collected from piglets, fatteners, and sows during two seasons: winter and spring, years 2021-2022.
- Coproparasitological examination methods: flotation (Willis, McMaster), active sedimentation, modified Ziehl-Neelsen stained fecal smear, modified Blagg technique and oocysts/eggs cultures.
- The number of cysts (CPG), oocysts (OPG), and eggs (EPG) was recorded.

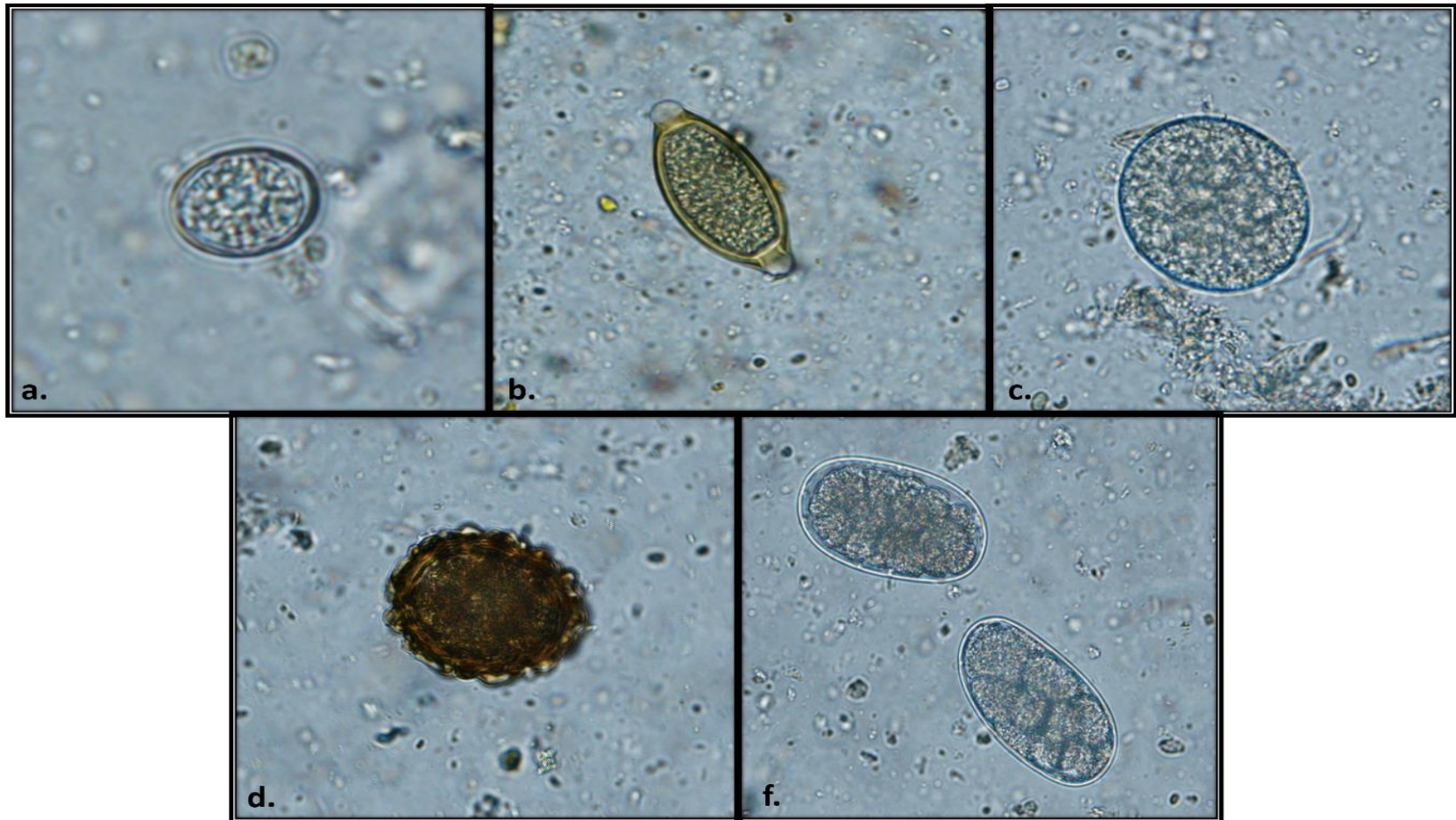


**Fig. 4.** Materials required for the coproparasitological methods.



# Results

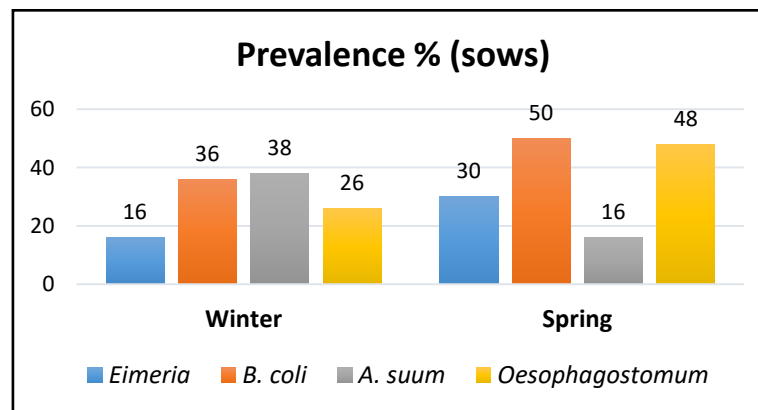
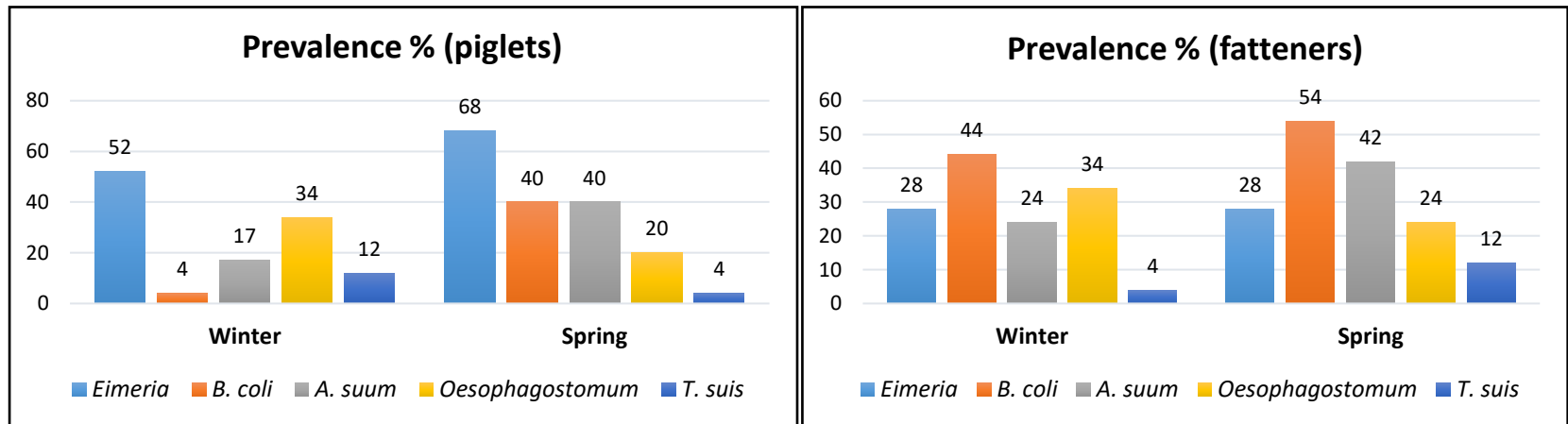
The examination revealed parasitic infections with *Balantioides coli*, *Eimeria* spp., *Ascaris suum*, *Trichuris suis*, and *Oesophagostomum* spp.



**Fig. 5.** Coproparasitological examination results: **a.** *Eimeria* spp. oocyst; **b.** *T. suis* egg; **c.** *B. coli* cyst; **d.** *A. suum* egg; **f.** *Oesophagostomum* spp. egg.

# Results

The prevalence (P) and average intensity (AI) of infections varied between farms, seasons and age group. The overall prevalence in all smallholders, according to the age category, was 60% for *Eimeria* spp., 29% - *A. suum*, 27% - *Oesophagostomum* spp., 22% - *B. coli*, and 8% - *T. suis*, in **piglets**. In **fatteners**, *B. coli* had a prevalence of 49%, *A. suum* - 33%, *Oesophagostomum* spp. – 29%, *Eimeria* spp. - 28% and *T. suis* - 8%, and in sows *B. coli* - 43%, *Oesophagostomum* spp. - 37%, *A. suum* - 27%, and *Eimeria* spp. - 23%.

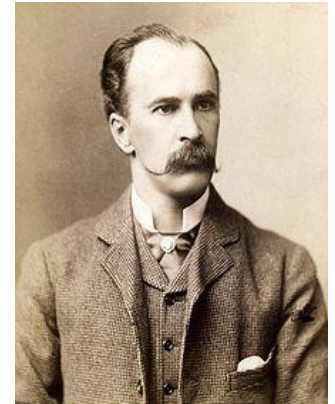


# "One health, one medicine" concept

- ❖ The presence of infections with *B. coli*, *A. suum* and *T. suis*, parasites with zoonotic potential, justifies their supervision and control, in the vision of the "One health, one medicine" concept.



- *"Between animal medicine and human medicine, there is no dividing line, and there shouldn't be. The object is different, but the experience gained is the basis of all medicine"* (R. Virchow, 1858);
- *William Osler (1848-1919) is credited with coining the term "One Medicine"*.

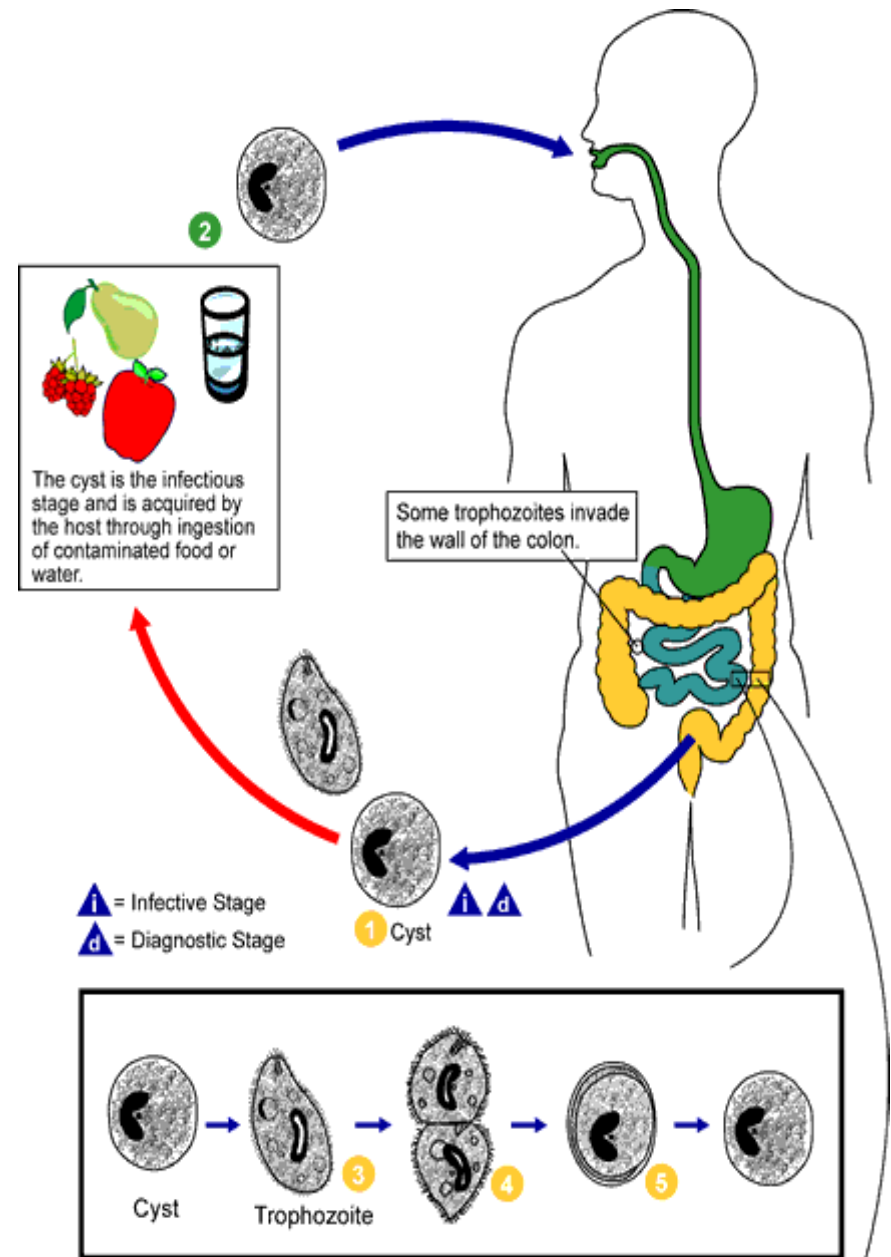




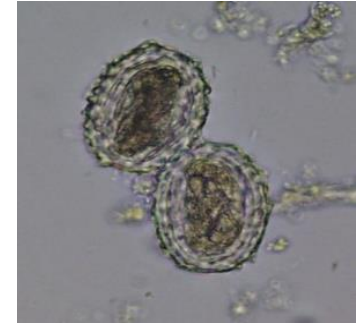
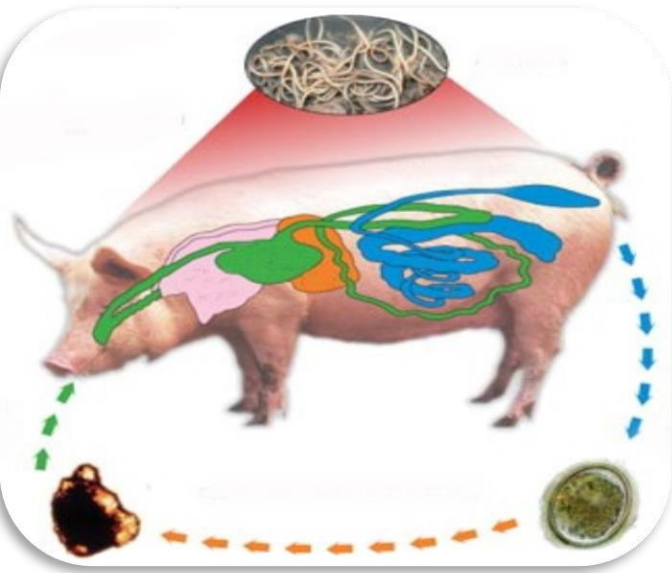
# Balantioides coli

## Pigs:

- Generally asymptomatic;
- Acute: neonatal diarrhea, mortality occurs rarely;
- Chronic: weight loss, hypotrepisia;
- Usually associated with other pathogens: *E. coli*, *Salmonella*, *Trichomonas*, *Eimeria* /*Isospora*;



# *Ascaris suum*



In humans the ingestion of embryonated eggs can lead to the syndrome « *Larva migrans* ».

An outbreak of visceral larva migrans due to *Ascaris suum* in Kyushu, Japan (Maruyama et al., 1996).



# *Trichocephalus suis* = *Trichuris suis* (swine; Human !)

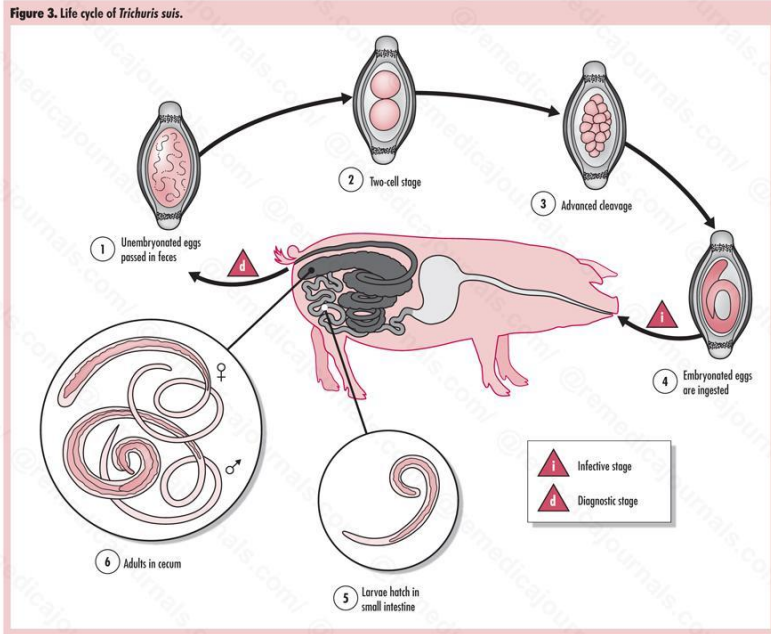
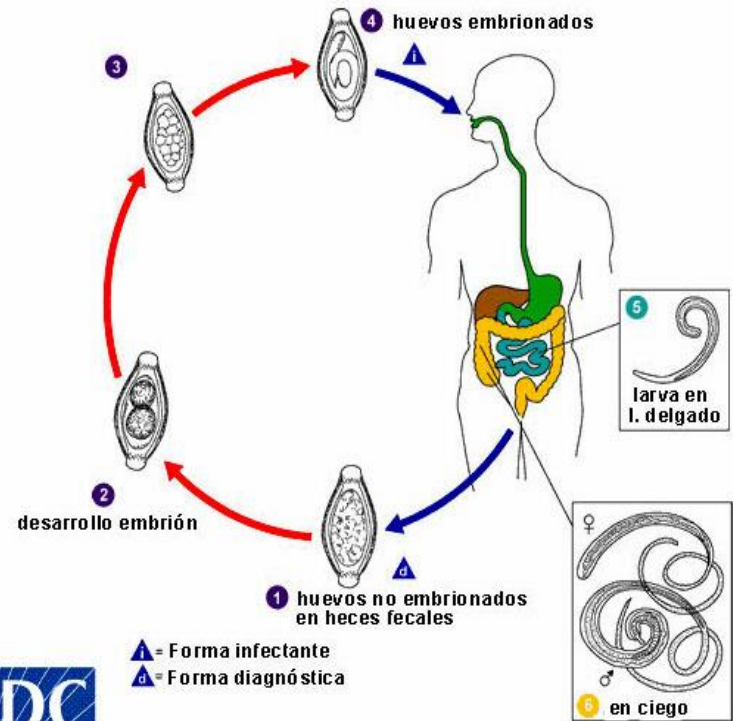


Image courtesy of Remedica Journals  
<http://www.remedicajournals.com/inflammatory-Bowel-Disease-Monitor/Browselsues/Volume-13-Issue-2/Article-Helminthic-Therapy-in-IBD>



*Trichuris trichiura* (Human)

*T. suis*, parasites with zoonotic potential.





## Conclusions

- This study provides essential information on Hârtibaciu Valley distribution of gastrointestinal parasites in pigs.
- Control strategies are needed to raise awareness among pig farmers about the impact of these parasites on the productivity and health of pigs as well as on human health.
- The presence of infections with *B. coli*, *A. suum*, and *T. suis*, parasites with zoonotic potential, justifies their supervision and control, in the vision of the "One health, one medicine" concept.
- However, further research is required for a better understanding of the epidemiology of these infections in pigs from Hârtibaciu Valley.



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**Thank you for your attention!**

