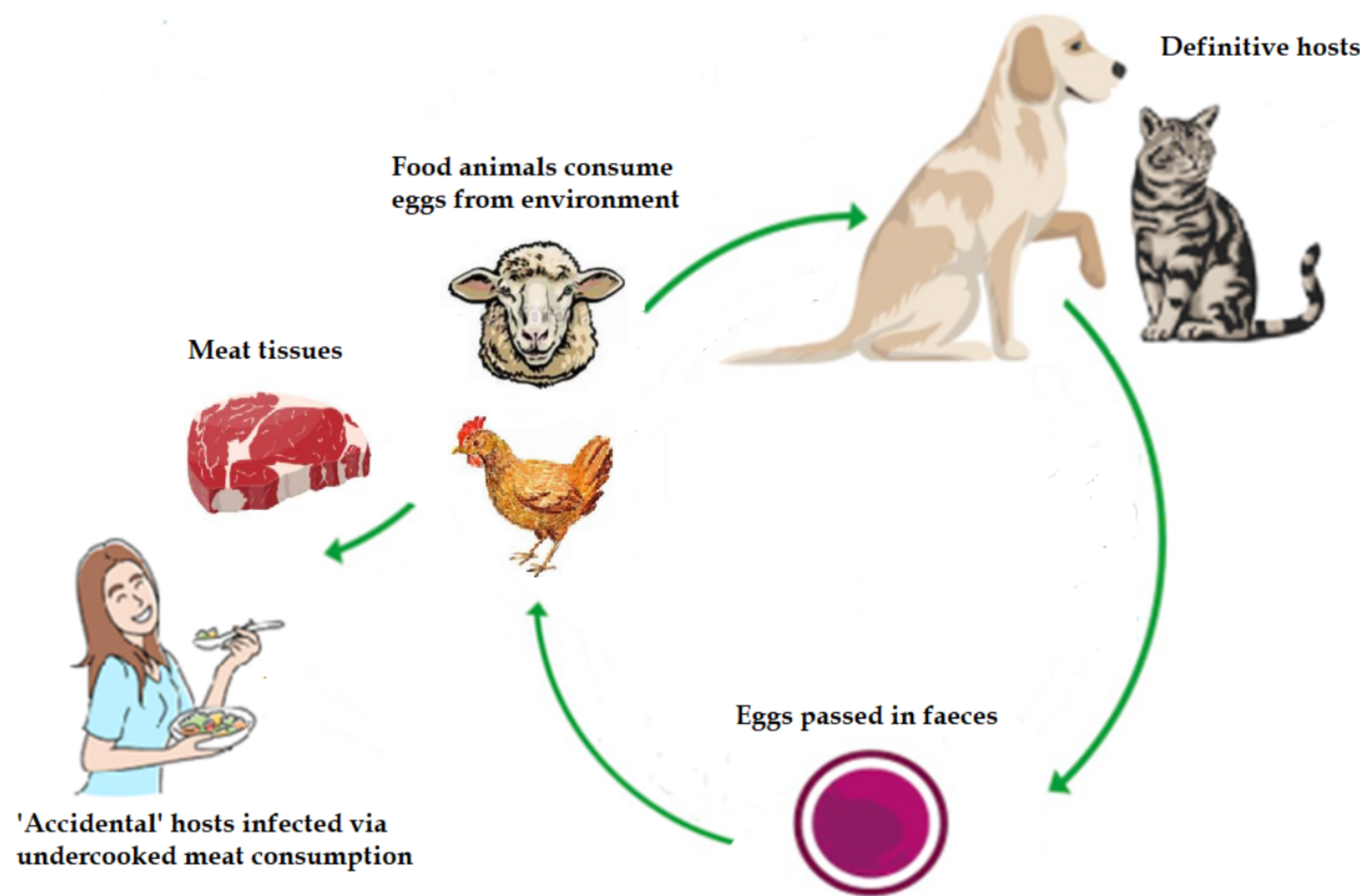


Toxocara in your T-bone? Investigating larval contamination of meat and associated public health risks



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Background



Toxocara is a common roundworm parasite, living in the intestines of infected **dogs, cats and foxes**. Two species can infect humans; *Toxocara canis* and *T. cati*

Eggs are passed in the faeces of infected animals, contaminating the environment. From here, **other animal species and humans** can become infected by accidental ingestion.

Food animals can become infected with *Toxocara* via grazing pastures. Larvae migrate to organs such as the liver, and skeletal muscles. **If these tissues are consumed undercooked, *Toxocara* infection can result¹**

Human infection with *Toxocara* is commonly asymptomatic, but can have serious consequences in some cases, for example, **blindness and brain disorders such as epilepsy²**.

This study will assess skeletal muscle and liver tissues from food animal species for the presence of *Toxocara* spp. larvae.

Methodology

3. MICROSCOPE EXAMINATION

50ml of fluid is collected from the bottom of the flask using the 3-way tap, and left to sediment for 15min. Following 3 washing steps with water, the sediment is examined for larvae using a stereomicroscope. The DNA is extracted from any larvae isolated using the DNeasy Blood & Tissue Kit (Qiagen) and analysed by RT-PCR to determine species.³

1. DIGESTION

Tissue samples (50g) are macerated and placed into 1L water containing 0.5% pepsin (1:10,000) +1% HCl (25%). The digestate is maintained at 45°C (+/- 2°C) for 30 minutes, with continuous magnetic stirring

2. SEDIMENTATION

The digestate is passed through a sieve (pore size 200µm) into a sedimentation funnel. The digestion beaker and sieve are rinsed with a little water and the digestate left to sediment for 30 minutes. Any larvae present will sink to the bottom of the funnel

Potential impacts

No country currently tests food animals or meat products for the presence of *Toxocara* spp.

If undercooked meat poses a risk of *Toxocara* transmission to humans, **consumer awareness regarding correct food preparation, such as freezing meat to be eaten rare, or thorough cooking is essential to kill any larvae present.**

The results obtained in this project could **inform UK food safety policy** and ultimately **protect public health**

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