Animal & Plant Health Agency

Information Note

Taenia saginata

Transmission of tapeworms between humans and cattle

July 2020

Transmission of tapeworms between humans and cattle

Humans can carry a tapeworm called *Taenia saginata* that can be transmitted to cattle. This can cause significant economic loss to the beef industry, due to the reduced value of carcasses. Cattle become infected by accidental ingestion of the tapeworm eggs, which are excreted in human faeces. Cattle are usually exposed via contaminated pasture, feed or water.

Once ingested by cattle, the tapeworms travel to various muscles where they can be visible as small, sometimes calcified, cysts (less than 1 cm) – these are called cysticerci (see figure 1) and the disease in cattle is called cysticercosis. Cysticerci become infective to humans after approximately ten weeks. The tapeworm is then transmitted back to people by eating inadequately cooked infected meat.

Infected cattle do not show any signs of disease until they are slaughtered and the infection is detected during abattoir inspection.

Infected people may develop abdominal discomfort, mild diarrhoea, weight loss and anal irritation. Some estimates suggest that, in Europe, 11 million people are affected by this disease.

Figure 1a - *T. saginata* cyst in bovine muscle

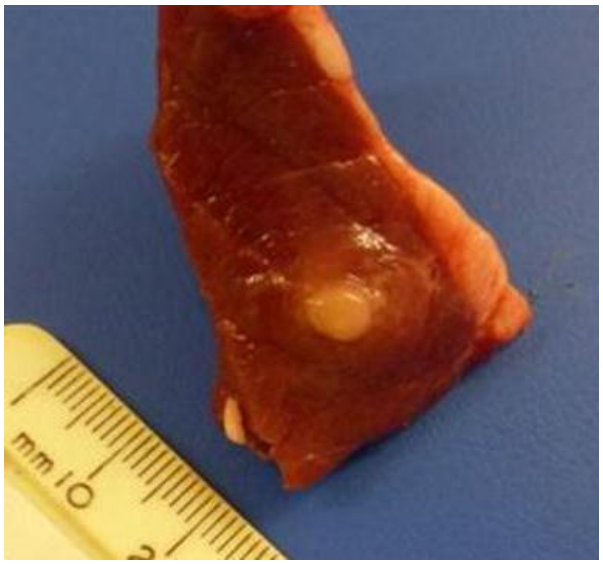
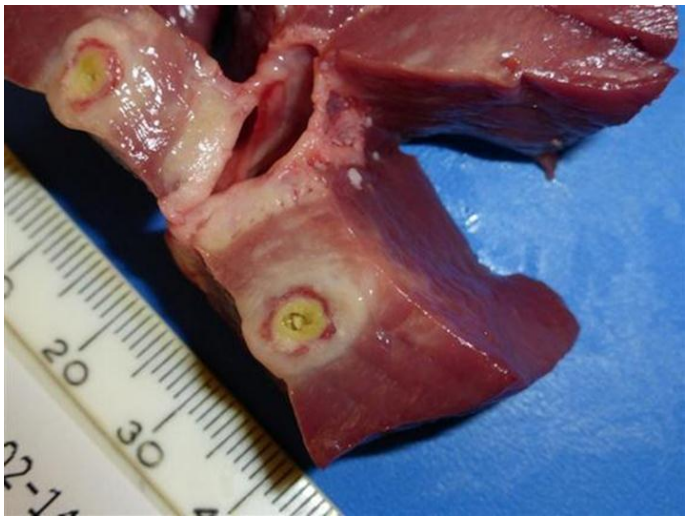


Figure 1b - Sectioned *T. saginata* cyst



The rates of detection from UK meat inspection data are very low - in 2019 analysis of FSA meat inspection data from England indicated an annual rate of detection of 0.02%; however, this is likely to be an underestimate as the cysts can be difficult to detect.

Large outbreaks can occasionally occur. APHA investigated five farms in 2013 where high levels of infection were detected at meat inspection of cattle at a single abattoir. In these cases, a common factor was the feeding of potatoes from a single supplier and it was thought possible that these had been contaminated with human faeces. In another outbreak, that had 18 infected carcases, the APHA investigation identified homemade grass silage as the most likely source of infection. The field from which the silage was produced had public access, which might have allowed opportunity for faecal contamination.

Control

There is no treatment for cysticercosis in cattle.

Control is by minimising the risk of cattle accessing human faeces.

Risks identified have included

- The use of sewage sludge on grazing fields and fields used to produce cattle feed; appropriate use is published in the Defra Code of Practice
- Farm workers should have access to toilets and ensure good hygiene practices
- If there is public access, e.g. from nearby camp sites, car parks, beaches, etc., then use signs to educate them on the public health risk if they contaminate your fields
- Avoid cattle drinking from water courses that are downstream from camp sites and other recreational areas where human contamination might occur

Public health protection is based on identification of infected cattle at meat inspection. Total rejection of the carcase occurs if there is generalised or heavy infestation, while light or localised infection leads to condemnation of the infected parts with the remainder of the carcase subject to cold storage at temperatures not exceeding −7°C for up to three weeks.

References

Guidance **Sewage sludge in agriculture: code of practice for England, Wales and Northern Ireland:**

https://www.gov.uk/government/publications/sewage-sludge-in-agriculture-code-of-practice/sewage-sludge-in-agriculture-code-of-practice-for-england-wales-and-northern-ireland

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