

Anti-dog fouling campaigns and meat condemnation

There are five parasites for which canines are definitive hosts, which are a significant source of economic impact for the cattle and sheep market in the British Isles. Dogs infected with these parasites shed infective stages which, when consumed by sheep and cattle, lead to cyst formation. Therefore, these parasites should be considered when discussing the need for anti-dog fouling measures in relation to reducing adverse economic impact.

Parasites that can be controlled in dogs by anthelmintics and anti-dog fouling measures

Echinococcus granulosus

This parasite is a significant zoonosis as well as a source of cattle and sheep offal condemnation. It is limited to endemic foci in Wales and the Western Isles of Scotland but has been found in abattoirs in other parts of the country. These cases have been exported from the endemic regions so it is unlikely that *Echinococcus granulosus* will be imported into Guernsey.

Taenia ovis* and *Taenia hydatigena

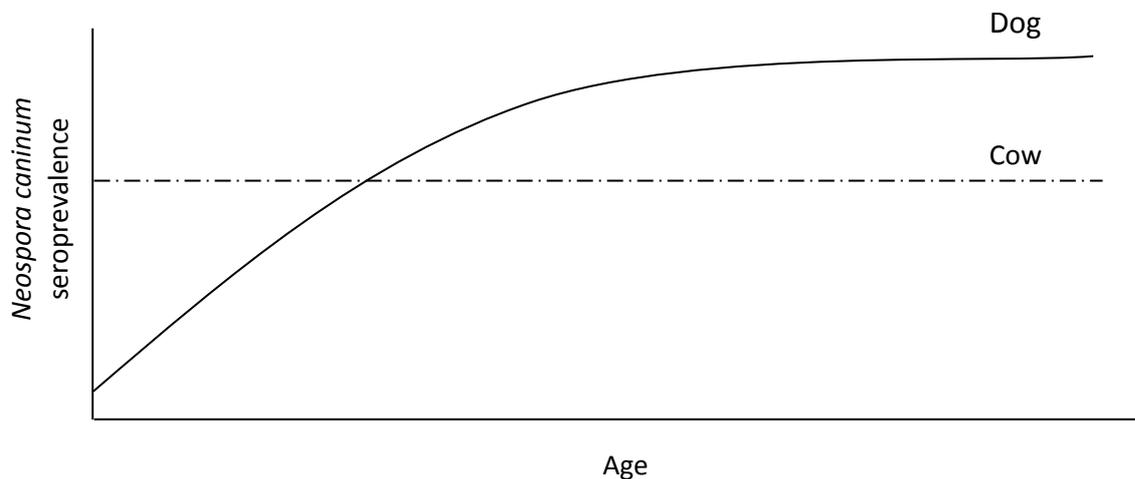
Taenia hydatigena and *Taenia ovis* are of little clinical significance in sheep which develop a strong immunity and carry a low parasite burden. There is considerable economic loss however from liver condemnation in the case of *T. hydatigena* with the English food standards agency (FSA) reporting 742,000 ovine livers being condemned in 2012 alone, costing approximately 1 million pounds to the sheep industry that year. Similarly, *T. ovis* cysts (sheep measles) can lead to meat and whole carcass condemnation with FSA figures showing 66,500 lamb carcasses being rejected in 2012 at a cost of 5 million pounds. Control can be achieved by using one of more of a combination of measures.

1. **Regular tapeworm treatments** - Treatment with praziquantel will be effective if used monthly but any gap in treatment may lead to reinfection and shedding of infective stages.
2. **Preventing consumption of raw or undercooked sheep meat** – This prevents dogs being exposed to infection but is not always practical if dogs are able to access sheep carcasses in remote locations, are fed raw diets or supplemented with raw sheep meat on farm.
3. **Preventing environmental contamination with tapeworm eggs** – Anti-dog fouling measures will help to reduce environmental contamination where dogs are walked in the vicinity of sheep and sheep housing.

Parasites where anti dog fouling measures have little economic or health impacts

Neospora caninum

Neospora caninum is the most common cause of infectious abortion in cattle and seropositive dogs are often implicated in causing infection on farms. In reality, dogs rarely shed oocysts and the majority of infection in cattle is vertical rather than horizontal transmission. In the 1990s no definitive host had been identified and age to seroprevalence graphs suggested that there might not be one. The seroprevalence of *N. caninum* in most herds of cattle without new cows being imported is stable in relation to age. This suggests that most or all infection is transmitted at birth. In comparison, in dogs who are infected predominantly from ingestion of infected stages (aborted placenta, undercooked or raw meat), prevalence increases with age.



Dogs were subsequently demonstrated to be the definitive host and the cause of 'point source outbreaks' with a sudden increase in abortion incidence in a herd. These events are uncommon with the prevalence of *N. caninum* being stable in most herds and control consisting of good environmental hygiene and culling persistently aborting cattle.

Nevertheless, it is important to stop contamination of feed stores with dog faeces to prevent abortion storms and anti-dog fouling measures feed into this message.

***Sarcocystis* spp.**

Sarcocystis spp. are a cause of meat condemnation in cattle and sheep with dogs acting as intermediate hosts in a similar way to *Neospora* spp. Unlike *Neospora* spp. however, oocyst shedding is common after exposure to infection through ingestion of raw or undercooked meat. Anti-dog fouling campaigns are vital in reducing *Sarcocystis* spp. meat condemnation where preventing dog access to carcasses/raw diet components is impractical. There is no preventative treatment for *Sarcocystis* spp. in dogs so prevention of faecal contamination and prevention of infection is vital to reduce the economic burden of this parasite.