Potential Pathogens in Pet Poo

Tape Worms and Round Worms

Whilst researching this topic I have thought about potential pathogens present in cat and dog faeces. Regularly worming cats and dogs should deal with regular tape and round worms – vets recommend that you worm cats and dogs every 3 months. Worming has become easier with the advent of ‘spot on’ wormers these days making it easier to worm reluctant pets. However, it needs to be remembered that your pet can contract worms immediately after being wormed.

The most healthful and environmentally-friendly way to worm, is to only give wormer when your pet actually has worms. Stool samples can be sent off for assessment; you need then only worm if worms are present (www.wormcount.com). Alternatively, worming prophylactically every 3-6 months, works well for most pets. Keeping your pet healthy by boosting their own immunity and the addition of garlic to the diet will help fend off parasites.

Toxicara

Some parasitic worms such as the round worm Toxicara cansis and Toxicara cati produce oocysts which can survive in the environment and remain infectious for a long time, lying dormant waiting for a suitable host. Toxicara can cause blindness. Although this is rare, there has been some hysteria surrounding this.

Protozoan Pathogens

Other single cell organisms or protozoans also produce resistant cysts. These are not treatable by regular worming and the host is likely to be asymptomatic and may not know that they are infected. Some of these protozoan pathogens also specifically require dog or cat hosts. For example, Neosporosis which can cause abortion in cattle and Sarcocystitis which can cause neurological disease and death in sheep, both of which have to cycle through the dog (you should ALWAYS pick up dog waste on grazing land).

Other pathogens found in poo include unfriendly bacteria such as E.Coli. However, whilst dangerous when first released into the environment these single cell pathogens quickly denature and become harmless.

So, there are many pathogens present in poo, however for the purposes of this article and to demonstrate the issue surrounding safe disposal of poo the focus is on a particular protozoan, the parasitic pathogen Toxoplasmosis gondii which cycles through the cat.

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Toxoplasmosis gondii

T. gondii’s secondary hosts include humans, cattle, sheep, pigs, rodents and birds. Following the initial infection, the host tends to be asymptomatic and T. gondii is not easy to treat. Most people with a healthy immune system suffer no ill effects. The most serious issue in humans is if a woman suffers an acute infection during pregnancy, which can result in foetal blindness. There is also an issue of a dormant infection becoming active where the individual is immune-compromised such as with HIV.

Following a successful immune response, dormant parasites remain encysted in the host tissues for years. The active proliferating forms of the organism are called tachyzoites. They can be found in any organ but occur most commonly in the brain, skeletal muscle and heart muscle.

The life cycle is completed by cats eating infected animal tissue. Domestic cats are the main source of infection. Infectious oocysts are excreted by the cat for up to two weeks after the initial infection and can survive in warm, moist soil for more than one year. However, the majority of humans are infected by eating under-cooked meat rather than by cat faeces.

16–40% of the population in the United States are infected and it is likely that a similar proportion of the UK’s population is infected (http://www.patient.co.uk/doctor/toxoplasmosis). Interestingly, studies have reported subtle changes in behaviour, personality and psychomotor performance in infected individuals. Research suggests that T. Gondii changes host behaviour, for example rats almost asking cats to catch them so that T. Gondii can get back into the cat and breed. (Flegr J1 et al 1996 J). This research has also suggested parasite can change human behaviour. Initially peers were sceptical but recently more research has backed up the findings.

T. gondii oocysts are destroyed within 10 minutes by temperatures greater than 66°C (150°F), and can be killed with boiling water. Tachyzoites are also inactivated at pH < 4.0. Freezing at -15°C for more than three days or -20°C for more than 2 days destroys a high percentage of the cysts. http://www.cfsph.iastate.edu/Factsheets/pdfs/toxoplasmosis.pdf. Freezing raw meat before feeding it to pets will kill any oocysts present in meat.