TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION

FEBRUARY 2012 REPORT

CHAPTER 8.4.

INFECTION WITH *ECHINOCOCCUS GRANULOSUS*

Article 8.4.1.

General provisions

Echinococcus granulosus is a cestode (tapeworm) found worldwide. The adult worms occur in the intestines of canids, and larval stages (hydatid cysts) in tissues of various organs of other mammalian hosts, including humans. Infection with the larval stage of the parasite in the intermediate host, referred to as 'cystic echinococcosis' or 'hydatidosis', is associated with significant economic losses in livestock production and causes a major disease burden in humans.

For the purpose of the *Terrestrial Code*, infection with *E. granulosus* is defined as a zoonotic parasitic infection of canids, ungulates, and macropod marsupials with *E. granulosus* (ovine, bovine, cervid, camelid and porcine strains).

Transmission of *E. granulosus* to canids (definitive hosts) occurs through ingestion of hydatid-infected offal from a range of domestic and wild species of herbivores and omnivores (intermediate hosts).

Infection in intermediate hosts, as well as in humans, occurs by ingestion of parasite eggs from contaminated environments. In humans, infection may also occur following contact with infected canids or by consumption of food or water contaminated with *E. granulosus* eggs from canid faeces.

Preventing transmission can be achieved by targeting both the definitive and intermediate hosts. Infection in humans can be prevented by good food and personal hygiene, community health education and preventing infection of canids. Good communication and collaboration between the *Competent Authority* and the public health authority is an essential component in achieving success in the prevention and control of *E. granulosus* transmission.

This chapter provides recommendations for prevention of, control of, and surveillance for infection with *E. granulosus* in dogs and livestock.

Standards for diagnostic tests are described in the *Terrestrial Manual.*

[NOTE: The following terms 'owned dog', 'responsible dog ownership' and 'stray dog' used throughout this chapter are defined in Chapter 7.7. Once this chapter is adopted, this note will be deleted and these definitions will be moved to the glossary of the *Terrestrial Code*.]

Article 8.4.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *E. granulosus* related conditions regardless of the status of the animal population of the *exporting country* or *zone*:

– skeletal muscle meat and skeletal muscle meat products;

– casings;

– *milk* and *milk products*;

– hides and skins of livestock;

– embryos, oocytes and semen.

Article 8.4.3.

Prevention and control of infection with *Echinococcus granulosus*

In order to achieve success in the prevention and control of infection with *E. granulosus,* the *Competent Authority* should carry out community awareness programmes to inform people of the risk factors associated with transmission of *E. granulosus* and the importance of hydatidosis in animals and humans, the role of dogs (including stray dogs), the need to implement preventive and control measures, and the importance of responsible dog ownership.

1. Prevention of infection in dogs (owned and stray)

   The following measures should be undertaken:

   a) Dogs should not be fed offal from any animal species unless it has been treated in accordance with Article 8.4.6.

   b) Dogs should not have access to dead animals of any animal species, including *wildlife* species; all dead animals should be disposed of in accordance with provisions in Chapter 4.12.6.

   c) The *Veterinary Authority* or other *Competent Authority* should ensure that *slaughterhouses/abattoirs* have implemented measures that prevent access of dogs to the premise, and to animal carcasses and waste containing offal.

   d) When livestock cannot be slaughtered in a *slaughterhouse/abattoir,* and are home-slaughtered, dogs should be prevented from having access to offal, and not be fed offal unless it has been treated in accordance with Article 8.4.6.

2. Control of infection in dogs (owned and stray)

   a) For control of stray dog populations, the *Competent Authority* should ensure compliance with relevant aspects of Chapter 7.7.

   b) Dogs known to be infected or suspected of having access to raw offal, or in contact with livestock should be dewormed at least every 4-6 weeks with praziquantel (5 mg/kg) or another cestocidal

product with comparable efficacy; where possible, faeces excreted up to 72 hours post treatment should be disposed of by incineration or burial.

c) In areas of persistent transmission, the *Veterinary Authority* should identify the possible origins of the infection, and review and amend, as appropriate, the control programme.

3. Control of infection in livestock

a) The *Veterinary Authority* should ensure that all slaughtered livestock are subjected to post-mortem meat inspection in accordance with Chapter 6.2., including inspection of offal for hydatid cysts.

b) When hydatid cysts are detected during post-mortem meat inspection:

i) offal containing hydatid cysts should be destroyed by incineration or burial, or rendered, or treated in accordance with Article 8.4.6.;

ii) an investigation should be carried out by the *Veterinary Services* to identify the possible origin of the infection, and review and amend, as appropriate, the control programme.

Article 8.4.4.

Surveillance and monitoring for infection with *Echinococcus granulosus*

An *animal identification* and *traceability* system should be implemented in accordance with the provisions of Chapters 4.1. and 4.2.

1. Monitoring in dogs

a) Monitoring for infection with *E. granulosus* in dogs should be undertaken as it is an essential component for assessing the current situation regarding transmission within different dog populations and for evaluating the success of control programmes.

b) Appropriate monitoring strategies should be designed according to local conditions, in particular, where large populations of stray dogs and wild canids exist. Under these circumstances surveillance of environmental samples (faeces, soil) may provide a useful indicator of infection pressure.

c) Where control programmes are conducted, regular monitoring for infection status should be undertaken. This can be achieved through testing of faeces from dogs, and canid faecal samples from the environment.

2. Surveillance in slaughterhouses/abattoirs

a) The *Veterinary Services* should carry out systematic surveillance for hydatid cysts in livestock in *slaughterhouses/abattoirs.*

b) Data collected should be used for the design or adaptation of control programmes.

Veterinary Authorities should use any information on cases of human hydatidosis, provided by the public health authorities, in initial design and any subsequent modification of surveillance and monitoring programmes.

Article 8.4.5.

Recommendations for the importation of dogs and wild canids from an infected country

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *animal* has been treated between 48 and 72 hours prior to shipment with praziquantel (5 mg/kg), or another cestocidal product with comparable efficacy against intestinal forms of *E. granulosus*.

Article 8.4.6.

Procedures for the inactivation of *Echinococcus granulosus* cysts in offal

For the inactivation of *E. granulosus* cysts present in offal, one of the following procedures should be used:

1. heat treatment to a core temperature of at least 80°C for 10 minutes or an equivalent time/temperature;

2. freezing to minus 20°C for at least 2 days.