Section 8

MULTIPLE SPECIES

CHAPTER 8.5

INFECTION WITH *ECHINOCOCCUS GRANULOSUS*

Article.8.5.1

General provisions

Echinococcus granulosus (E. granulosus) is a widely distributed cestode (tapeworm). The adult worms occur in the small intestine of canids (definitive host). Larval stages (hydatid) occur in tissues of liver, lung and other organs of other mammals (intermediate host), 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 purposes 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).

For the purposes of this chapter, offal is defined as internal organs of ungulates and macropod marsupials.

Transmission of *E. granulosus* to canids occurs through ingestion of hydatid-infected offal.

Infection in intermediate hosts, as well as in humans, occurs by ingestion of *E. granulosus* 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 canine faeces.

Infection in humans can be prevented by good food hygiene and personal hygiene, community health education and preventing *infection* of canids. Collaboration between the *Competent Authority* and the public health authority is an essential component in preventing and controlling *E. granulosus* transmission.

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

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 8.5.2., *Veterinary Authorities* should apply the recommendations in this chapter.

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

Article.8.5.2

Safe commodities

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

1. skeletal muscle *meat* and skeletal muscle *meat products*;

2. processed fat;

3. *casings*;

4. *milk* and *milk* products;

5. hides and skins;

6. semen, oocytes and embryos.

Article.8.5.3

Programmes for the prevention and control of infection with *E. granulosus*

In order to prevent and control *infection* with *E. granulosus*, the *Veterinary Authority* or other *Competent Authority* should carry out community awareness programmes about the *risk* factors associated with transmission of *E. granulosus*, the role of dogs (including *free-roaming dogs*) and the importance of *responsible dog ownership*. The *Veterinary Authority* or other *Competent Authority* should also implement the following prevention and control measures.

1. Prevention of infection in dogs

    a. Dogs should not be fed offal unless it has been treated in accordance with Article 8.5.6.

    b. Dogs should be prevented from scavenging on dead ungulates and macropod marsupials. Dead animals should be disposed of in accordance with Article 4.13.6.

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

    d. When livestock cannot be slaughtered in a *slaughterhouse/abattoir* and are slaughtered on-farm, dogs should be prevented from having access to raw offal, and not be fed offal unless it has been treated in accordance with Article 8.5.6.

2. Control of infection in dogs

    a. For control of *free-roaming dog populations*, the *Veterinary Authority* or other *Competent Authority* should implement 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* and other *Competent Authority* should collaborate to identify the possible origins of the *infection*, and review and amend the control programme, as appropriate.

3. Food safety and 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 6.3., including inspection of offal for hydatids.

    b. When hydatids are detected during post-mortem *meat* inspection:

i. offal containing hydatids should be disposed of in accordance with Article 4.13.6., or treated in accordance with Article 8.5.6.;

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

c. Where indicated, control programmes should include the *vaccination* of livestock with the objective of decreasing the prevalence of *infection* in livestock.

Article.8.5.4

Surveillance and monitoring for infection with *E. granulosus*

An *animal identification* and *animal traceability* system should be implemented in accordance with Chapters 4.2. and 4.3.

1. Monitoring in dogs

   a. *Monitoring* for *infection* with *E. granulosus* in dogs should be undertaken at regular intervals as it is an essential activity for assessing the *risk* of transmission to dog *populations* and for evaluating the success of control programmes. This can be achieved through testing of faeces from dogs, and canine faecal samples from the environment.

   b. *Monitoring* strategies should be appropriate to local conditions, in particular where large *populations* of *free-roaming dogs* and wild canids exist. Under these circumstances testing of environmental samples (faeces, soil) may provide a useful indicator of *infection* pressure.

2. Surveillance in slaughterhouses/abattoirs

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

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

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

Article.8.5.5

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:

1. the animal has been treated between 24 and 72 hours prior to embarkation with praziquantel (5 mg/kg), or another cestocidal product with comparable efficacy against intestinal forms of *E. granulosus*;

2. adequate precautions have been taken to avoid reinfection of the animal between treatment and embarkation.

Article.8.5.6

Procedures for the inactivation of *E. granulosus* hydatids in offal

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

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

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

NB: FIRST ADOPTED IN 1982; MOST RECENT ADOPTION IN 2022.