CHAPTER 15.4.

**INFECTION WITH *TAENIA SOLIUM*(PORCINE CYSTICERCOSIS)**

Article 15.4.1.

**General provisions**

*Taenia solium (T. solium)* is a zoonotic cestode (tapeworm) parasite of pigs and occasionally of other animals. *~~T. solium~~* ~~is a cestode (tapeworm) that is endemic in large areas of Latin America, Asia and sub-Saharan Africa~~. The adult cestode occurs in the small intestine of humans (definitive host) causing taeniosis. The larval stage (cysticercus) occurs in striated muscles, subcutaneous tissues and central nervous system of pigs (intermediate hosts), causing cysticercosis. Other suids and ~~dogs~~ some carnivores can be infected but are not epidemiologically significant. Humans may also become infected with the larval stage through the ingestion of eggs shed in faeces of infected humans. The most severe form of human *infection* by the larval stage is neurocysticercosis which causes neurological disorders including seizures (epilepsy) and sometimes death. Cysticercosis, although normally clinically inapparent in pigs, is associated with significant economic losses due to carcass condemnation and decreased value of pigs, and causes a major disease burden in humans.

In humans, taeniosis occurs following ingestion of pig *meat* containing viable cysticerci and can be prevented by avoiding consumption of raw or undercooked contaminated pig *meat*. In humans, cysticercosis occurs following ingestion of *T. solium* eggs and can be prevented by avoiding exposure to *T. solium* eggs through detection and treatment of human tapeworm carriers, community health education, appropriate sanitation, personal hygiene, and good food hygiene. Collaboration between the *Veterinary Authority* and the public health authority is essential in preventing and controlling *T. solium* transmission.

In pigs, cysticercosis occurs by ingestion of *T. solium* eggs from faeces, or environments contaminated with faeces of humans harbouring adult *T. solium*.

For the purposes of the *Terrestrial Code*, *infection* with *T. solium* is defined as an *infection* of pigs.

The aim of this chapter is to reduce the risk of *infection* with *T. solium* of humans and pigs and to minimise the international spread of *T. solium*. The chapter provides recommendations for prevention, control and *surveillance* of *infection* with *T. solium* in pigs.This chapter should be read in conjunction with the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005).

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 15.4.2., *Veterinary Authorities* should apply the recommendations in this chapter.

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

[…]

Article 15.4.3.

**Measures to prevent and control infection with *T. solium***

The *Veterinary Authority* and other *Competent Authorities* should carry out community awareness and education programmes on the risk factors associated with transmission of *T. solium* emphasising the role of pigs and humans.

The *Veterinary Authority* or other *Competent Authorities* should promote the comprehensive *animal health management* of pigs, which should include the following measures:

1. Prevention of infection in pigs

Transmission of *T. solium* eggs from humans to pigs can be avoided by:

a) preventing the exposure of pigs to environments contaminated with human faeces;

b) preventing the deliberate use of human faeces as pig *feed* or the use of pigs as a means of human faeces disposal;

c) preventing the use of untreated sewage effluent to irrigate or fertilise land to be used by pigs for forage or for food crops;

d) ensuring that any treated sewage effluent used to irrigate or fertilise land to be used by pigs for forage or for food crops has been treated in a manner shown to inactivate *T. solium* eggs;

e) providing adequate toilet and sanitation facilities for people in areas and *establishments* where pigs are kept to prevent the exposure of pigs and their environment to human faeces~~.~~;

f) where indicated, vaccinating pigs in combination with an anthelmintic treatment in accordance with the *Terrestrial Manual*.

2. Control of infection in pigs

a) The *Veterinary Authority* should ensure that all slaughtered pigs are subjected to post-mortem *meat* inspection in accordance with Chapter 6.3., and with reference to Chapter 3.9.5. of the *Terrestrial Manual*.

b) When cysticerci are detected during post-mortem *meat* inspection:

i) if cysticerci are detected in a carcass of a pig in multiple locations (systemic infection), that carcass and its viscera, as well as all pigs from the same *establishment* of origin should be disposed of in accordance with Article 4.13.6.;

ii) if only localised cysticerci are detected in a carcass of a pig, the *meat* from that carcass and from all pigs from the same *establishment* of origin should be treated in accordance with Article 15.4.6. or may be disposed of in accordance with Article 4.13.6.;

iii) an investigation should be carried out by the *Veterinary Authority* and the public health authority to identify the possible source of the *infection* in order to target an intervention;

iv) post-mortem examination of pigs at *slaughter* from known infected *establishments* should be intensified until evidence has been obtained indicating that the *infection* has been eliminated from the *establishment*.

An optimal control programme should include detection and treatment of human tapeworm carriers and control of sewage used for agricultural production.

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