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Annex 34

Original: English
October 2010

REPORT OF THE MEETING OF THE OIE *AD HOC* GROUP ON ZOOONOTIC PARASITES

Paris (France), 5–7 October 2010

The OIE *ad hoc* Group on Zoonotic Parasites (the *ad hoc* Group) met at the OIE Headquarters in Paris from 5 to 7 October 2010.

The members of the *ad hoc* Group and other participants are listed at [Annex I](#). The Agenda and Terms of Reference adopted are given at [Annex II](#) and [Annex III](#), respectively.

Dr Vallat, Director General of the OIE, joined the *ad hoc* Group meeting and thanked members for their support of the OIE and their work that will improve both animal health and public health. Dr Vallat noted that zoonotic parasites are involved in important public health problems worldwide and that the OIE will continue to increase its contribution to improving public health through the development of standards for zoonotic parasitic diseases.

Dr Vallat proposed that the *ad hoc* Group develop the existing OIE *Terrestrial Animal Health Code* (*Terrestrial Code*) chapters for trichinellosis and echinococcosis/hydatidosis, and develop a new chapter for porcine cysticercosis, also an OIE-listed disease. Dr Vallat suggested that it could be important for Members to have guidelines for good on-farm practices to prevent and control key non OIE-listed parasites such as *Taenia saginata* as these parasites, although not always a significant public health concern can result in significant economic losses due to condemnation of affected tissues. Dr Vallat encouraged the *ad hoc* Group to discuss these proposals as they develop their work plan during their meeting.

Dr Vallat informed the *ad hoc* Group that zoonotic aquatic parasites may also be of interest, and the OIE would explore this area if relevant in future work.

1. Trichinellosis

The *ad hoc* Group reviewed the current *Terrestrial Code* Chapter 8.13. Trichinellosis and decided to draft a new chapter as much of the existing text was out of date.

The *ad hoc* Group did not include articles on the establishment of a *Trichinella*-free country or zone as they considered that this was not feasible, since a number of wildlife species are known to be reservoirs of *Trichinella*, and it would be very difficult to reliably document their *Trichinella*-free status in a geographical area (country or zone), as well as to document the maintenance of such a status over time. The *ad hoc* Group

discussed extensively the issue of whether to recommend conducting on-going surveillance of wildlife as a component of control programmes. The *ad hoc* Group considered that it was not practical to conduct on-going surveillance of wildlife in the area around a *Trichinella*-free pig farm. The *ad hoc* Group considered that in this case, providing that appropriate barriers to the entry of rodents and wildlife are in place and maintained, surveillance of wildlife is not warranted.

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The *ad hoc* Group did not make any recommendations for risk management of horses at the farm level because horses entering the food chain come from a wide range of sources, including farmed and non-farmed, and it was not feasible to make recommendations that would cover all possibilities. In relation to horses, public health protection could be assured by post mortem sampling and testing or by inactivation of the parasite by treatment of the meat.

The *ad hoc* Group noted that trichinellosis is prevalent in farmed crocodiles and recommended that the OIE address the associated public health issue.

The *ad hoc* Group also noted that trichinellosis affects many other species (both domestic and wild), and that exposure to meat from those species (for example, consumption by hunters of raw or undercooked meat from wild animals) could pose additional public health risks. The Group did not have time to discuss trichinellosis in wildlife in any detail. The revised Chapter 8.13. *Trichinella* Infection is presented in Annex IV.

2. Echinococcosis/hydatidosis

The *ad hoc* Group reviewed the current *Terrestrial Code* Chapter 8.4. Echinococcosis/hydatidosis and decided to draft a new chapter as the current text was scant and there was a need for more advice to Members.

The *ad hoc* Group noted the development the EG95 vaccine against hydatid infection in sheep, which has been shown to be highly effective in field trials. The *ad hoc* Group encouraged the commercialisation of this vaccine as an important adjunct to strategies to control hydatid disease in many parts of the world.

The *ad hoc* Group highlighted the importance of cooperation between the Veterinary Authority, the public health sector and other relevant entities such as wildlife services and local authorities responsible for abattoir waste management in the control of this disease, because management of the human/domestic animal/wildlife interface is key in the mitigation of public health risk.

The revised Chapter 8.4. Echinococcosis/hydatidosis is presented in Annex V

3. Porcine cysticercosis

Due to lack of time, the *ad hoc* Group was not able to draft new text on porcine cysticercosis but members agreed to do some preparatory work prior to the next meeting.

4. Bovine cysticercosis

The *ad hoc* Group discussed briefly the feasibility of developing recommendations for bovine cysticercosis, and agreed that this was possible. However, they requested guidance from the OIE Terrestrial Animal Health Standards Commission as to the format and mode of publication/placement of an appropriate document.

5. Other zoonotic parasites of farmed animals

Agenda Item 3 was carried over to the next *ad hoc* Group meeting.

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MEETING OF THE OIE AD HOC GROUP ON ZONOTIC PARASITES

Paris (France), 5–7 October 2010

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UNOFFICIAL REPORT

MEETING OF THE OIE AD HOC GROUP ON ZONOTIC PARASITES**Paris (France), 5–7 October 2010**

Agenda

Welcome

1. Confirmation of Terms of Reference.
 2. Discussion of working documents and other relevant documents provided by *ad hoc* Group Members.
 3. Prepare a report to the APFSWG for consideration at its meeting on 2–4 November 2010 covering:
 - a) Proposals for revision of the text of *Terrestrial Code* chapters on echinococcus/hydatidosis (Chapter 8.4.) and trichinellosis (Chapter 8.13.) and for a new chapter on porcine cysticercosis, dealing with the management of these pathogens in animals in order to manage risks to human health.
 - b) The need for guidance to OIE Members on bovine cysticercosis, including the feasibility and form of such guidance.
 - c) The need for guidance to OIE Members on any other zoonotic parasite of farmed animals, including the feasibility and form of such guidance.
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UNOFFICIAL REPORT

MEETING OF THE OIE AD HOC GROUP ON ZONOTIC PARASITES

Paris (France), 5–7 October 2010

Adopted Terms of Reference

Background

The 3rd OIE Strategic Plan (2001–2005) recommended that "OIE should be more active in the area of public health and consumer protection," and noted that this should include "zoonoses and diseases transmissible to humans through food, whether or not animals are affected by such diseases", with the object of improving the safety of the food production to consumption continuum worldwide. In 2002, the Director General of the OIE established a permanent Working Group on Animal Production Food Safety (APFSWG) to coordinate the food safety activities of the OIE.

Since 2008 the OIE *Terrestrial Animal Health Code (Terrestrial Code)* has included a section on Veterinary Public Health, containing animal production food safety standards with a primary focus on measures applicable to food-borne/zoonotic hazards arising at the production level of the food chain.

In a OIE discussion paper 'Animal production food safety: priority pathogens for standard setting by the OIE', *Taenia solium*, *T. saginata*, *Echinococcus granulosus* and *Trichinella spiralis* were identified as zoonotic pathogens with a very significant impact on human health, particularly in Africa, South America and the Middle East. Echinococcosis/hydatidosis, trichinellosis and porcine cysticercosis are OIE listed diseases. The *Terrestrial Code* contains some recommendations on trade measures for Echinococcosis/hydatidosis and trichinellosis but no information on appropriate measures at the animal level to avoid human infection with these zoonotic pathogens. The *Terrestrial Code* does not contain any recommendations on porcine cysticercosis.

In 2005, the WHO/FAO/OIE published guidelines on the control of *Echinococcus*¹, *Trichinella spiralis*² and *Taenia solium*³. The Control of Neglected Zoonotic Diseases⁴ publication also includes some information on cysticercosis and Echinococcosis.

It is timely for the OIE to consider developing specific guidance to help Members manage the risks associated with these pathogens at the production level in order to prevent human illness.

Relevant considerations:

- The OIE has a mandate to develop international standards for animal production food safety, with a primary focus on measures applicable to zoonotic pathogens, for which measures can most effectively be implemented at the animal production level.

1 WHO/OIE, WHO/OIE manual on Echinococcosis in humans and animals: a public health problem of global concern, OIE, 2001. Available at <http://whqlibdoc.who.int/publications/2001/929044522X.pdf>

2 FAO/WHO/OIE, FAO/WHO/OIE guidelines for the surveillance, management, prevention and control of trichinellosis, in: Dupouy-Camet J., Murrell K.D. (Eds.), FAO/WHO/OIE, Paris, 2007. Available at <ftp://ftp.fao.org/docrep/fao/011/a0227e/a0227e.pdf>

3 WHO/FAO/OIE Guidelines for the Surveillance, Prevention and Control of Taeniosis/Cysticercosis, OIE, Paris, 2005. Available at <ftp://ftp.oie.int/imprimeur/OLD%20divers/Guidelines%20Taeniosis%20%20juin%20imprimeur.pdf>

4 *The Control of Neglected Zoonotic Diseases*. A report of a joint WHO/DFID-AHP Meeting with the participation of FAO and OIE 2006. Available at http://www.who.int/zoonoses/Report_Sept06.pdf

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- Standards for zoonotic pathogens at the animal production level should take into account:
 - feasible and cost effective means of controlling the pathogen at the animal level;
 - feasible and cost effective measures for animals and animal products that are internationally traded;
 - existing Codex standards and guidelines of the WHO and FAO.
- The *Terrestrial Code* contains general recommendations on veterinary public health and specific recommendations on controlling salmonellosis in poultry.
- The existing recommendations in the *Terrestrial Code* (2010) on Echinococcosis/hydatidosis (Chapter 8.4.) and trichinellosis (*Trichinella spiralis*) (Chapter 8.13.). There is no *Terrestrial Code* chapter on porcine cysticercosis.
- The OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (2010) recommendations on the diagnosis of animal infection with Echinococcosis/hydatidosis (Chapter 2.1.4.), trichinellosis (Chapter 2.1.16.) and cysticercosis (Chapter 2.9.5.).
- The ad hoc Group is required to prepare a report to the APFSWG for consideration at its meeting on 2–4 November 2010 covering:
 - Proposals for revision of the text of *Terrestrial Code* chapters on echinococcosis/hydatidosis (Chapter 8.4.) and trichinellosis (Chapter 8.13.) and for a new chapter on porcine cysticercosis, dealing with the management of these pathogens in animals in order to manage risks to human health.
 - The need for guidance to OIE Members on bovine cysticercosis, including the feasibility and form of such guidance. Note: Bovine cysticercosis was delisted in 2005 as it did not meet the criteria for listing⁵ and therefore it would not be appropriate to develop a *Terrestrial Code* chapter on this pathogen.
 - The need for guidance to OIE Members on any other zoonotic parasite of farmed animals, including the feasibility and form of such guidance.

⁵ 'The disease is not of cattle health concern. Although it is a zoonosis, the consequences in humans do not meet the criteria for inclusion and the disease can be excluded from the list' - extract from the report of the OIE *ad hoc* Group on Disease Listing (2005).

CHAPTER 8.13.

TRICHINELLA INFECTION

Article 8.13.1.

Introduction

Trichinellosis is a cosmopolitan zoonosis caused by eating raw or undercooked meat from *Trichinella*-infected food animals or game. The parasite lives in the small intestine (adults) and muscles (larvae) of many mammalian, avian and reptile host species, including humans, pigs, rodents, horses, bears and walrus. Within the genus *Trichinella*, twelve genotypes have been identified, eight of which have been designated species. *Trichinella* genotypes may vary considerably between localities, districts, regions and countries.

Trichinellosis can be a fatal disease in humans and is clinically inapparent in animals.

Breaking the transmission cycle to humans currently relies on the provision of *Trichinella*-free meat for human consumption. This is achieved by post mortem inspection and inactivation of the parasite in domestic or wild sourced meat. Processing of meat which ensures inactivation of *Trichinella* includes cooking, freezing and curing of meat (using specified time-temperature combinations). In addition, appropriate measures should be taken to prevent the exposure of food animals to infected meat including uncooked food waste, rodents and other wildlife.

Game meats should always be considered a potential source of infection, and should be tested or cooked properly. *Trichinella* found in game meats may be resistant to freezing (depending on the genotype present) and therefore untested, frozen game poses a public health risk.

Testing methods for the detection of *Trichinella* infection in pigs and other animal species include either directly demonstrating the parasite in muscle samples or indirectly demonstrating the parasite by detecting specific circulating antibodies to *Trichinella* spp., although the latter method is not always reliable, because of certain situations where cross-reactive antibodies are present due to co-infections with other nematode parasites or infection is in the early stages and detectable antibodies are not yet present.

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

Article 8.13.2.

Purpose and scope

This chapter deals with methods for on farm prevention of *Trichinella* infection in pigs and for safe trade of *fresh meat* and *meat products* derived from pigs and equines. This chapter complements the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005).

Article 8.13.3.

Prevention of trichinellosis in pigs

This article applies to pigs kept under confined conditions.

1. Constructing buildings and environmental barriers

- a) Buildings used to house pigs should be constructed to prevent entry of rodents (e.g. openings, such as those for air ventilation or water pipes should be covered with wire or specific devices) and wildlife.

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- b) Areas within 100 metres of pig buildings should be free from rubbish and rodent harbourage.
- c) A 2 metre perimeter consisting of gravel or vegetation mowed to a height of less than 10 cm should be maintained around all pig buildings.

2. Feed and feed storage

- a) Feed should be stored and contained in closed silos or bins, which do not allow rodents to enter.
- b) Purchased feed should be obtained from an approved facility, which produces feed following approved Good Manufacturing Practices.
- c) Waste food containing meat products should be cooked to inactivate trichinae and in accordance with the provisions in the *Terrestrial Manual* (under development).

3. Rodent control

An ongoing approved programme for the control of rodents should be implemented.

4. Farm hygiene

- a) Dead animals should be removed from pig buildings immediately after detection to prevent exposure to other pigs and rodents, and disposed of as soon as possible in accordance with the provisions of Chapter 4.12. Disposal of animals.
- b) Garbage dumps should not be located near pig farm(s) in order to minimise the risk of infected rodents entering the farm(s).

5. Identification and traceability

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

6. Introduction of animals

- a) It is preferable to obtain new animals from *Trichinella*-free farms or compartments; or
- b) if new animals are obtained from farms of unknown *Trichinella* status, they should be held in isolation and tested serologically to ensure the absence of antibodies to *Trichinella* (refer to the *Terrestrial Manual*). Adult pigs should be tested serologically on arrival and again five weeks after arrival. Weaner pigs should be tested serologically once five weeks after arrival.

If seropositive animal(s) are detected, all newly introduced pigs should be placed in quarantine and retested serologically. If positive, the animal(s) should be slaughtered and the meat processed or rendered according to national regulations on the handling of unsafe meat. The meat should also be tested directly by the pepsin digestion procedure (refer to *Terrestrial Manual*) to monitor the reliability of the serological test procedure and the validity of the test results.

Article 8.13.4.

Recommendations for pigs exposed to outdoor environments

While confinement production systems can be managed in a manner to reduce or eliminate the risk of exposure of pigs to *Trichinella*, pigs exposed to outdoor environments, or under conditions that facilitate contact with wildlife will always be at risk of *Trichinella* infection.

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Annex IV (contd)

Pigs raised under these conditions should be tested at slaughter by detection methods, in accordance with the provisions in the *Terrestrial Manual*.

Recommendations in Article 8.13.3. for the prevention of *Trichinella* in pigs kept under confined conditions should also be applied where ever possible.

Article 8.13.5.

Official recognition for *Trichinella*-free pig farm(s) or compartment(s)

The *Veterinary Authority* may officially recognise pig farm(s) or compartment(s) already complying with Article 8.13.3. as *Trichinella*-free if the following additional requirements are met:

- a) muscle samples from all pigs sent for slaughter during the 12 months preceding recognition of the pig farms within the compartment as *Trichinella*-free should have been tested by a digestion method and found to be negative for *Trichinella* (refer to the *Terrestrial Manual*);
- b) at least two visits, at a minimum of 6 months apart, should have been made in the 12 months preceding recognition of the pig farms in the compartment as *Trichinella*-free and annually thereafter to verify compliance with good management practices described in Article 8.13.3;
- c) a serological survey of the on farm pig population in the compartment should be conducted annually with a sample size providing at least a 95% confidence interval for detecting *Trichinella* (refer to the *Terrestrial Manual*);
- d) documentation of all management practices undertaken on farm.

If a positive animal is detected by a digestion method, or serology which is confirmed by digestion, the pig farm(s) or compartment(s) will lose its *Trichinella*-free status. An investigation should be carried out by the *Veterinary Services* to identify the origin of the infection and appropriate remedial actions to be implemented. Isolates that are obtained from an infected pig should be sent to an OIE Reference Laboratory for genotyping in order to provide epidemiological information.

Article 8.13.6.

Recommendations for the importation of fresh meat or meat products of domestic pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1. comes from domestic pigs that have been slaughtered in an approved *abattoir*; AND
2. was subjected to post mortem sampling and the samples were subjected to a digestion assay for *Trichinella* with negative results, in accordance with the provisions in the *Terrestrial Manual*; OR
3. comes from domestic pigs that originated from a *Trichinella*-free farm(s) or compartment(s) in accordance with the recommendations in Article 8.13.5.; OR
4. has been processed to ensure the inactivation of the larvae of the parasite *Trichinella* in accordance with the recommendations in Article 8.13.10. (under development).

Article 8.13.7.

Recommendations for the importation of fresh meat or meat products of wild pigs

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

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1. comes from wild pigs that have been inspected in accordance with the provisions in Chapter 6.2.; AND
2. was subjected to a digestion assay for *Trichinella* with negative results, in accordance with the provisions in the *Terrestrial Manual*; OR
3. has been processed to ensure the inactivation of the larvae of the parasite *Trichinella*, in accordance with the recommendations in Article 8.13.10. (under development).

Article 8.13.8.

Recommendations for the importation of fresh meat or meat products of domestic equines

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1. comes from domestic equines that have been slaughtered in an approved *abattoir*; AND
2. was subjected to post mortem sampling and the samples were subjected to a digestion assay for *Trichinella* with negative results, in accordance with the provisions in the *Terrestrial Manual*; OR
3. has been processed to ensure the inactivation of all the larvae of the parasite *Trichinella* in accordance with the recommendations in Article 8.13.10. (under development).

Article 8.13.9.

Recommendations for the importation of fresh meat or meat products of wild equines

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1. comes from wild equines that have been inspected in accordance with the provisions in Chapter 6.2; AND
2. was subjected to a digestion assay for *Trichinella* with negative results, in accordance with the provisions in the *Terrestrial Manual*; OR
3. has been processed to ensure the inactivation of all the larvae of the parasite *Trichinella*, in accordance with the recommendations in Article 8.13.10. (under development).

Article 8.13.10.

Inactivation of muscle larvae

(under development)

CHAPTER 8.4.

ECHINOCOCCOSIS / HYDATIDOSIS

Article 8.4.1.

Introduction

Echinococcus is a genus of parasitic zoonotic cestodes (tapeworms) found worldwide in which the adult stages occur in the intestines of canids and felids, and the larval stages in tissues of various organs of other mammalian hosts, including humans. Transmission of parasites from this genus occurs in a predator/prey interaction between canids and less commonly to felids (definitive hosts) and a range of domestic and wildlife species of herbivores (intermediate hosts). Intermediate hosts may also include omnivores (humans and pigs). Infection with the larval stage (hydatid) of the parasite in the intermediate host, referred to as hydatidosis or hydatid disease, is associated with major economic losses and causes severe clinical disease in humans.

Echinococcosis is a zoonotic infection caused by larval (metacestode) stages of cestodes belonging to the genus *Echinococcus*. At present, four zoonotic species of *Echinococcus* are recognised, namely *Echinococcus granulosus*, *E. multilocularis*, *E. oligarthrus* and *E. vogeli*. *E. shiquicus* has recently been identified but its zoonotic status is not known.

Echinococcus granulosus has a global distribution and *E. multilocularis* which occurs in wide areas of the Northern Hemisphere are the two most important causes of human hydatid infection. There are at least ten genetic variants of *E. granulosus* of which six have been shown to be infective for humans.

At present, four species of *Echinococcus* are recognised, namely *E. granulosus*, *E. multilocularis*, *E. oligarthrus* and *E. vogeli*. *E. granulosus* and *E. multilocularis* are recognised to be infective for humans, while the zoonotic status of *E. shiquicus* which has recently been identified is not known.

The two most important causes of human hydatid disease are *Echinococcus granulosus*, that has a global distribution and *E. multilocularis* which occurs in wide areas of the Northern Hemisphere. There are at least ten genetic variants of *E. granulosus* of which seven (sheep strain G1, Tasmanian sheep strain G2, buffalo strain G3, cattle strain G5, camel strain G6, pig strain G7 and cervid strain G8) have been shown to be infective for humans. (NOTE: A recent proposal divides *E. granulosus* into several species, i.e., *E. granulosus* s.s. [G1-3], *E. equinus*, *E. ortleppi*, *E. canadensis* [G6-G10] and *E. felidis*). However, a broad consensus on this has not yet developed, and for the purposes of this chapter, the target species are *E. granulosus* and *E. multilocularis*, the most important causes of hydatid disease in important livestock.

Hydatidosis is not a foodborne disease in the classical sense. Infection occurs by ingestion of eggs via contact with infected dogs and/or by consumption of food (mainly vegetables) or water contaminated with infected (egg-contaminated) dog faeces. Prevention of human infection is achieved by preventing infection of dogs and intermediate hosts (mainly ruminants and especially sheep).

The long term goal should be the prevention of human and ruminant infection through prevention and control programmes.

Article 8.4.2.

Purpose and scope

This chapter deals with methods for the prevention of *Echinococcus* infection in dogs, hydatidosis in livestock and slaughterhouse / abattoir security.

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

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Article 8.4.3.

Definitions

Owned dog: means a dog with a person that claims responsibility.

Responsible dog ownership: means the situation whereby a person (as defined above) accepts and commits to perform various duties according to the legislation in place and focused on the satisfaction of the behavioural, environmental and physical needs of a dog and to the prevention of risks (aggression, *disease* transmission or injuries) that the dog may pose to the community, other *animals* or the environment.

Stray dog: means any dog not under direct control by a person or not prevented from roaming. Types of stray dog:

1. free-roaming owned dog not under direct control or restriction at a particular time;
2. free-roaming dog with no owner;
3. feral dog: domestic dog that has reverted to the wild state and is no longer directly dependent upon humans for successful reproduction.

Article 8.4.4.

Prevention of *Echinococcus* infection in canids

Both *owned dogs*, *stray dogs* and wild canids are important in the transmission of hydatid disease to humans and livestock because of the close inter-relationship between humans, dogs and livestock. The prevention of *Echinococcus* infection in dogs is the key element in breaking the transmission pattern of this parasite and is a fundamental aspect in the success of a hydatid control programme.

1. Owned dogs

To prevent echinococcosis in *owned dogs*, the following measures should be undertaken:

- dogs should be dewormed at least every 4-6 weeks with praziquantel (5 mg/kg);
- dogs should not be fed raw offal from any animal species;
- dogs should not be allowed to roam freely;
- dogs should not have access to dead animals or offal of any animal species, including wildlife species. All dead animals and offal should be disposed of in accordance with provisions in Chapter 4.12. Disposal of animals;
- dogs should be prevented access to carcasses, offal and waste at *slaughterhouses/ abattoirs*;
- people, and especially farmers and farm workers should be made aware of the risk factors of transmission and the importance of the disease in animals and humans, the role of dogs and wild canids in transmission, the need to implement control measures, and the importance of responsible dog ownership.

2. Stray dog populations

To prevent echinococcosis in stray dog populations, the following measures should be undertaken:

- compliance with relevant aspects of Chapter 7.7. Stray dog population control;
- where possible, dogs should be dewormed at least every 4-6 weeks with praziquantel (5 mg/kg);
- stray dogs should not be fed raw offal from any species;

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Annex V (contd)

- stray dogs should be prevented access to carcasses, offal and waste at *slaughterhouses/ abattoirs*;
- stray dogs should not have access to dead animals or offal of any animal species, including wildlife species;
- community health education programmes should be carried out regarding the risk factors of transmission and the importance of the disease in animals and humans, the role of dogs (including stray dogs) and wild canids in transmission, the need to implement control measures, and the importance of responsible dog ownership.

3. Wild canid populations

To prevent echinococcosis in wild canid populations, the following measures should be undertaken:

- wild canids should be prevented access to dead animals or offal of any animal species;
- wild canids should be prevented access to carcasses, offal and waste at *slaughterhouses/ abattoirs*;
- wild canids should be prevented from entering areas of human habitation and farms, and contaminating the environment with eggs of *Echinococcus*;
- community health education programmes should be carried out regarding the role of wild canids in the transmission of hydatid disease to humans and animals.

In addition, the *Veterinary Authority* or other *Competent Authority* should ensure that *slaughterhouses/ abattoirs* have in place measures that prevent access of dogs and wild canids to animal carcasses, offal and waste.

Article 8.4.5.

Surveillance for the prevention of hydatid disease

1. In slaughterhouses/abattoirs

The *Veterinary Authority* should carry out surveillance for hydatid infection in livestock species in *slaughterhouses/ abattoirs*. When hydatid infection is detected an investigation should be carried out by the *Veterinary Authority* to identify the origin of the infection and appropriate remedial actions to be implemented.

2. In dogs

Surveillance of *Echinococcus* infection in dogs using the copro-antigen test is a useful tool for monitoring the effectiveness of prevention programmes. The *Veterinary Authority* should use the copro-antigen test for surveillance in dogs. Positive results indicate failure of a control programme. In such a case, the *Veterinary Authority* should identify aspects of the prevention programme that should be reviewed and those for which remedial actions should be implemented.

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

Annex 34 (contd)

Annex V (contd)

Article 8.4.6.

Recommendations for the importation of dogs, cats and wild canids

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the *animal* has been treated, in accordance with the manufacturer's instructions, between 24 and 48 hours prior to export with a praziquantel-based product (5mg/kg) that is effective against *Echinococcus granulosus* and *E. multilocularis*.

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