

**NEW ZEALAND'S COMMENTS
ON
THE REPORT OF THE FEBRUARY 2011 MEETING
OF
THE OIE TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION**

31 May 2011

New Zealand thanks the Terrestrial Animal Health Standards Commission (TAHSC) for its work and for the opportunity to offer comment on proposed revisions to *Terrestrial Animal Health Code* texts.

Chapter 3.3. Veterinary Legislation

Article 3.3.1., paragraph 4

Proposed alternative text:

The competent authorities should ensure communication of veterinary legislation and subsequent documentation to stakeholders and the general public.

Rationale: The legislation applies to everyone and the general public is not considered to be a stakeholder.

Article 3.3.2., paragraph 6

Proposed alternative text:

Veterinary legislation should include additional specific sanctions which would be applied on the basis of a decision from the court, notably a ban on the use or possession of animals or the conduct of activities posing a risk to public or animal health or animal welfare.

Rationale: In New Zealand, a sanction that is often used by the Court on offenders is to ban the offender from possession of animals, rather than banning the "use" of animals.

Article 3.3.2., paragraph 9

Proposed alternative text:

The ~~rights~~ powers and functions of inspectors should be explicitly and thoroughly listed to protect the rights of stakeholders and the general public against any abuse of authority.

Rationale: The word "rights" is at odds with the title and "powers and functions" is more appropriate. The legislation applies to everyone and the general public is not considered to be a stakeholder.

Article 3.3.3., paragraph 1

Proposed alternative text:

c. define the minimum initial and continuous educational, competence and fitness to practise requirements for the professionals

Rationale: Ensuring the quality of Veterinary Services requires more than just veterinarians having the right qualifications and continuing to engage in educational activities. Quality can be seriously compromised if veterinarians are not competent or fit to practise.

Article 3.3.3., paragraph 2

Proposed alternative text:

d. prescribe the ~~disciplinary~~ powers to deal with conduct, competence or health impairment that apply to the relevant professions

Rationale: Discipline is expensive, legalistic, does not necessarily work and should be reserved for serious conduct issues. To ensure quality Veterinary Services the regulatory body needs to have additional powers to be able to deal more appropriately with, for example, health and competence impairment amongst veterinarians.

Article 3.3.5., title

Proposed alternative text:

Delegation of powers and functions

Rationale: Some of the tasks are functions rather than powers and often these get delegated in New Zealand law. Note that clause 3 discusses delegating functions.

Article 3.3.5.

Proposed alternative text:

2. Animal health, delegation of authority

Rationale: This better reflects the contents of the Article.

Article 3.3.5., paragraph 2

Proposed alternative text:

e. ~~define the conditions of~~ provide for withdrawals of delegations.

Rationale: There are numerous reasons why a delegation should be withdrawn or revoked and prescribing these in legislation is just not feasible. New Zealand law provides for revoking delegations and the reasons can be political or because of a change in circumstances. It is much better to leave the basis for the ability open, but to provide that it may be done.

Article 3.3.5., paragraph 3

Proposed alternative text:

e. ~~define the conditions of~~ provide for withdrawal of the delegation.

Rationale: There are numerous reasons why a delegation should be withdrawn or revoked and prescribing these in legislation is just not feasible. New Zealand law provides for revoking delegations and the reasons can be political or because of a change in circumstances. It is much better to leave the basis for the ability open, but to provide that it may be done.

Article 3.3.5., paragraph 4

Proposed alternative text:

b. Veterinary legislation should ~~define the conditions of~~ provide for withdrawal of the delegation.

Rationale: There are numerous reasons why a delegation should be withdrawn or revoked and prescribing these in legislation is just not feasible. New Zealand law provides for revoking delegations and the reasons can be political or because of a change in circumstances. It is much better to leave the basis for the ability open, but to provide that it may be done.

Article 3.3.10., paragraph 1

Text as presented:

b. requirements to assure food safety for the purpose of (i).

Comment: It is not clear what this refers to. It needs to be clarified.

Article 3.3.11., paragraph 1

Text as presented:

a. the coordinates of importers and, as appropriate, their approval by the competent authority of the importing country;

Comment: It is not clear what is meant by “the coordinates of importers”. If this means the name and address of importers then it should be stated in plain English.

CHAPTER 6.8. MONITORING OF THE QUANTITIES AND USAGE PATTERNS OF ANTIMICROBIAL AGENTS USED IN FOOD PRODUCING ANIMALS

Article 6.8.2.

Text as presented:

~~Members may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food *animal*, agricultural and other antimicrobial use data in a single programme. A consolidated programme would also facilitate comparisons of animal use with human use data for relative *risk analysis* and help to promote optimal usage of antimicrobials.~~

Proposed alternative text:

Members may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food *animal*, agricultural and other antimicrobial use data in a single programme. A consolidated programme would also facilitate comparisons of animal use with human use data for relative *risk analysis* and help to promote optimal usage of antimicrobials.

Rationale: The TAHSC proposes that this paragraph be moved to the end of Article 6.8.3. However, we consider it is more logical to retain it in its original position in Article 6.8.2.

Article 6.8.3., section 1 a)

Proposed alternative text:

Sources of data will vary from country to country. Such sources may include customs, import and export data, manufacturing and sales data.

Rationale : Export data are not relevant to domestic usage.

Article 6.8.3., section 1, last paragraph

Proposed alternative text:

~~Members may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food producing animal, agricultural and other antimicrobial use data in a single programme. A consolidated programme would also facilitate comparisons of animal use with human use data for *risk analysis* purposes and help to promote optimal usage of antimicrobials.~~

Rationale: The TAHSC proposes that this paragraph be moved here from Article 6.8.2. However, we consider it is more logical to retain it in its original position.

Article 6.8.3., section 2 a)

Proposed alternative text:

The data collected at minimum should be the weight in kilograms of the active ingredient of the antimicrobial(s) used in food animal production per year. It is possible to estimate total usage by collecting sales data, prescribing data, manufacturing data, export/import data or any combination of these.

Rationale : Export data are not relevant to domestic usage.

CHAPTER 6.7. HARMONISATION OF NATIONAL ANTIMICROBIAL RESISTANCE SURVEILLANCE AND MONITORING PROGRAMMES

Article 6.7.2.

Proposed alternative text:

Surveillance and monitoring of antimicrobial resistance and its determinants is necessary to:

Rationale: To cover point 2 of this Article, “detect the emergence of new antimicrobial resistance mechanisms”.

Article 6.7.2., section 5

Proposed alternative text:

provide information on antimicrobial prescribing practices, and useful for development of prudent use recommendations.

Rationale: Grammar.

Article 6.7.3., section 1

Proposed alternative text:

b) ~~routine~~-sampling and testing of food producing animals on the farm, at live animal market or at slaughter;

Rationale: Routine sampling is often not science-based.

Article 6.7.3., section 2

Proposed alternative text:

a) Sampling should be conducted on a statistical basis, wherever possible. The sampling strategy should ensure:

Rationale: While statistically based sampling is the ideal, it is not always attainable and so sampling has to be practical also.

Article 6.7.3., section 2

Proposed alternative text:

- b) The following criteria are to be considered:
- ~~sample size~~;
 - sample source (e.g. food producing animal, food, animal feed);
 - animal species;
 - category of *animal* within species (e.g. age group, production type);
 - health status of the *animals* (e.g. healthy, diseased);
 - random sample (e.g. targeted, systematic);
 - type of sample (e.g. faecal, carcass, food product).
 - sample size;

Rationale: Logical flow.

Article 6.7.3., section 6, b), i)

Proposed alternative text:

Surveillance and monitoring programmes may also include bacterial isolates obtained from designated national *laboratories* originating from other sources. Isolation and identification of bacteria and bacterial strains should follow nationally or internationally standardised procedures.

All *Salmonella* isolates should be serotyped and, where appropriate, phage-typed according to standard methods used at the nationally designated *laboratories*.

Serovars of public health importance such as *S. Typhimurium* and *S. Enteritidis* should be included. The inclusion of other relevant serovars will depend on the epidemiological situation in each country.

~~All *Salmonella* isolates should be serotyped and, where appropriate, phage-typed according to standard methods used at the nationally designated *laboratories*. For those countries that have the capabilities, *Salmonella* could be genotyped using genetic finger-printing methods.~~

Validated antimicrobial susceptibility testing methods should be used.

Rationale: The logical flow is improved by moving the paragraph “All *Salmonella* isolates...” up. It is excessive to require routine genotyping when monitoring for antimicrobial resistance.

Article 6.7.3., section 6, b), iii)

Proposed alternative text:

~~iii) — Enterohaemorrhagic *Escherichia coli*~~

~~Enterohaemorrhagic *Escherichia coli* (EHEC), such as the serotype O157, which is pathogenic to humans but not to *animals*, may be included in resistance surveillance and monitoring programmes.~~

~~Validated antimicrobial susceptibility testing methods should be used.~~

Rationale: There is no valid reason to be monitoring EHEC when generic *E. coli* are being monitored (in c) below). Our public health expert states that human infections with EHEC should not be treated with antibiotics.

Article 6.7.3., section 7

Proposed alternative text:

If possible, isolates should be preserved at least until reporting is completed. Preferably, appropriate isolates should be permanently stored. Bacterial strain collections, established by storage of all isolates from certain years, will provide the possibility of conducting retrospective studies.

Rationale: Storing all isolates identified as part of a programme monitoring antimicrobial resistance is excessive.

Article 6.7.3., section 10

Proposed alternative text:

10. Recording, storage and interpretation of results

~~a) Because of the volume and complexity of the information to be stored and the need to keep these data available for an undetermined period of time, careful consideration should be given to database design.~~

~~b)a) The storage of raw (primary, non-interpreted) data is essential to allow the evaluation of the data in response to various kinds of questions, including those arising in the future.~~

~~e)b) Consideration should be given to the technical requirements of computer systems when an exchange of data between different systems (comparability/compatibility of automatic recording of laboratory data and transfer of these data between and within resistance monitoring programmes) is envisaged. Results should be collected in a suitable national database. They should be recorded quantitatively:~~

- ~~i) as distributions of MICs in milligrams per litre;~~
- ~~ii) or inhibition zone diameters in millimetres.~~

~~c) Because of the volume and complexity of the information to be stored and the need to keep these data available for an undetermined period of time, careful consideration should be given to database design.~~

d) The information to be recorded should include, where possible, the following aspects:

- ~~i) sampling programme;~~
- ~~ii) sampling date;~~
- ~~iii) animal species/category;~~
- ~~iv) geographical origin (geographical information system data where available) of herd, flock or animal;~~
- ~~v) animal factors (e.g. age, condition, health status, identification, sex).~~
- ~~iv) type of sample;~~
- ~~v) purpose of sampling;~~
- ~~vi) type of antimicrobial susceptibility testing method used;~~
- ~~vii) geographical origin (geographical information system data where available) of herd, flock or animal;~~
- ~~viii) animal factors (e.g. age, condition, health status, identification, sex).~~

e) The reporting of laboratory data should include the following information:

- i) identity of *laboratory*,
- ii) isolation date,
- iii) reporting date,
- iv) bacterial species,
- v) antimicrobial susceptibility result/resistance phenotype.

and, where relevant, other typing characteristics, such as:

- v) serotype/serovar,
 - vi) phage type,
 - ~~vii) antimicrobial susceptibility result/resistance phenotype,~~
 - viii) molecular genotype.
- f) The antimicrobial susceptibility testing standards and guidelines used should be recorded.
- g) The proportion of isolates regarded as resistant should be reported, including the defined interpretive criteria used.
- g)h) In the clinical setting, breakpoints are used to categorise bacterial strains as susceptible, intermediate or resistant. These clinical breakpoints may be elaborated on a national basis and may vary between Members.
- ~~h) The antimicrobial susceptibility testing standards and guidelines used should be recorded.~~

Rationale: Logical flow

Article 6.7.3., section 11, b)

Proposed alternative text:

- i) information on the structure of the monitoring system;
- ii) information on the chosen laboratory methods.
- iii) raw data;
- iv) complete results of quality assurance and inter-laboratory calibration activities;
- v) inter-laboratory proficiency testing results;
- ~~iv) information on the structure of the monitoring system;~~
- ~~v) information on the chosen laboratory methods.~~

Rationale: Logical flow.

CHAPTER 8.4. ECHINOCOCCOSIS/HYDATIDOSIS

General comment: New Zealand, as a country which has eradicated echinococcosis/hydatidosis, welcomes the development of a revised *Code* chapter for this disease. The current chapter is quite inadequate for minimising the risk of spreading echinococcosis/hydatidosis through trade. However, this revised chapter is also inadequate for protecting countries like New Zealand and Iceland which have eradicated echinococcosis/hydatidosis. There are three possible routes by which this infestation could be re-introduced into a country which has eradicated it. One route would be via the importation of infested definitive hosts (that is, dogs) and the draft text gives recommendations to mitigate this risk. However, the disease could also be re-introduced through importation of offals, or secondary hosts such as sheep and goats. While we recognise that the risks posed by importation of secondary hosts might not be easily mitigated, we believe that an expert group, such as has been tasked with developing the new chapter, should be able to formulate recommendations on how to mitigate this risk. We request that the *ad hoc* group be asked to develop recommendations for mitigating the risk posed by sheep and goats, possibly through screening with an ELISA, as reported by Hashemi Tabar, Haghparast and Borji (2010) or enzyme-linked immunoelectrotransfer blot (EITB), as reported by Simsek and Koroglu (2004). This possibility of screening on a flock basis is discussed below under our proposal for a new Article 8.4.6.

Hashemi Tabar G, Haghparast A, Borji H (2010). Serodiagnosis of sheep hydatidosis with hydatid fluid, protoscolex, and whole body of *Echinococcus granulosus* antigens. *Comparative Clinical Pathology*.
Url: <http://dx.doi.org/10.1007/s00580-010-1112-4>
Doi: 10.1007/s00580-010-1112-4

Simsek S, Koroglu E (2004). Evaluation of enzyme-linked immunosorbent assay (ELISA) and enzyme-linked immunoelectrotransfer blot (EITB) for immunodiagnosis of hydatid diseases in sheep. *Acta Tropica* 92 (1): 17-24.

Article 8.4.1.

Proposed alternative text: *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~~ Infestation 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~~ infestation 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 f~~ 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~~ Infestation follows the ingestion of eggs via contact with ~~infected~~ infested dogs and/or by consumption of food (mainly vegetables) or water contaminated with ~~infected~~ (egg-contaminated) dog faeces. Prevention of human ~~infection~~ infestation is achieved by preventing ~~infection~~ infestation 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.~~

Rationale for proposed alternative text: (a) The introduction is repetitive and too discursive for a *Code* text. We propose the deletion of repetitive text and detail which is more appropriate for inclusion in the *Manual* and, indeed, is already adequately covered in the *Manual*. (b) 'Infection' and 'infestation'; the correct term to use when discussing metazoan parasites is 'infestation' rather than 'infection'. We suggest that the TAHSC review this text carefully to insure that the correct terms are used consistently.

General comment: The introduction states "the adult stages occur in ... canids and felids, and the larval stages in ... other mammalian hosts, including humans. Transmission of parasites from this genus occurs ... between canids and less commonly ... felids ... and ... herbivores ..." The *Manual* states (Chapter 2.1.4.) that **wild** felids may be infested with *Echinococcus oligarthrus*. This parasite is confined to wild felids in neotropical regions. The intermediate hosts are described as neotropical rodents. Human infestation with cysts of *E. oligarthrus* is very rare. When the proposed deletion of repetitive text in the introduction is made, the remaining text states only that "*E. granulosus* and *E. multilocularis* are recognised to be infective for humans."

Further, the introductory text specifies that "... 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."

Despite the restricted environmental and host range of *E. oligarthrus*, Article 8.4.6. recommends treating imported cats with praziquantel. We consider this measure to be unnecessary when considering echinococcosis/hydatidosis. It may be desirable to treat cats with praziquantel for other parasites, but a sanitary measure for other parasites should not be included in a *Code* chapter on echinococcosis/hydatidosis.

New Zealand eradicated echinococcosis/hydatidosis without ever applying any controls to cats.

Article 8.4.2.

Proposed alternative text:

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

Rationale: 'Infestation' is the correct term. Slaughterhouse 'surveillance' is touched on in the Chapter but not slaughterhouse 'security'.

Proposed new Article 8.4.2. bis

Safe trade

When authorising import or transit of the following commodities, Veterinary Authorities should not require any echinococcosis related conditions regardless of the status of the ruminant population of the exporting country or zone:

1. skeletal muscle meat and meat products;
2. sausage casings of ruminant origin;
3. hides and skins;
4. embryos, oocytes and semen.

Rationale: In keeping with other chapters of the *Code*, this chapter should have an Article listing safe commodities. Hydatid cysts are found only in viscera and not in muscle tissue (Acha and Szyfres 2003, MacDiarmid and Thompson 1997). The safety of sausage casings derived from small ruminants has been demonstrated in a recent import risk analysis (MacDiarmid 2010).

Acha PN, Szyfres B (2003). *Zoonoses and Communicable Diseases Common to Man and Animals*. Third edition. Volume III. Parasitoses. Pan American Health Organization, Washington DC: Pp 395.

MacDiarmid SC, Thompson EJ (1997). The potential risks to animal health from imported sheep and goat meat. *Revue Scientifique et Technique de l'OIE* 16: 45-56.

MacDiarmid SC (2010). *Import risk analysis: Sausage Casings from Small Ruminants*. MAF Biosecurity New Zealand. Wellington, New Zealand. Pp 40. Available at; <http://www.biosecurity.govt.nz/files/regs/imports/risk/sausage-casings-eu-ra.pdf>

Article 8.4.3.

These definitions are the same as some given in Article 7.7.2. They should not be repeated in this chapter but, rather, should be moved into the glossary in volume 1 of the *Code* and then referred to in Chapters 7.7. and 8.4.

Article 8.4.4.

Proposed alternative text:

~~Both Owned dogs, stray dogs and wild canids are important ...~~

Rationale: It is grammatically incorrect to use 'both' for a list of three items.

Article 8.4.4., section 1, 1st bullet point

Comment: Administration of praziquantel is a treatment for infested dogs, not a means of preventing infestation.

Article 8.4.4., section 1, 4th bullet point

Proposed alternative text:

- 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;~~

Rationale for proposed alternative text: The title of the chapter is not necessary.

Article 8.4.4., section 1, 6th bullet point

Proposed alternative text:

- people, and especially farmers and farm workers, should be made aware of the risk factors of for 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.

Rationale for proposed alternative text: Punctuation. Correct preposition.

Article 8.4.4., section 1 and section 2

Comment: There is no need to have separate recommendations for stray dogs and wild canids as the principles are exactly the same. It is merely the practicalities which may differ.

Article 8.4.4., section 2, 1st bullet point

Proposed alternative text:

- compliance with relevant aspects of Chapter 7.7. ~~Stray dog population control;~~

Rationale for proposed alternative text: The title of the chapter is not necessary.

Article 8.4.4., section 2, 2nd bullet point

Proposed alternative text:

- ~~where possible, dogs should be dewormed at least every 4-6 weeks with praziquantel (5 mg/kg);~~

Rationale: In New Zealand we have had 50 years of experience in the eradication of hydatids and our country is one of the few that has been successful in eradicating this disease. While this recommendation is reasonable for owned dogs, it is an unrealistic recommendation to make with respect to stray dogs and should be deleted.

Article 8.4.4., section 2, 6th bullet point

Proposed alternative text:

- community health education programmes should be carried out regarding to inform people of the risk factors ~~of~~ for 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.

Rationale for proposed alternative text: Better English. Correct preposition.

Article 8.4.4., section 3, 4th bullet point

Proposed alternative text:

- community health education programmes should be carried out regarding to inform people of the role of wild canids in the transmission of hydatid disease to humans and animals.

Rationale for proposed alternative text: Better English.

Article 8.4.5., title

Proposed alternative text:

Surveillance for ~~the prevention of~~ hydatid disease

Rationale: Surveillance does not 'prevent' disease; it detects disease and monitors its prevalence.

Article 8.4.5., section 1

Proposed alternative text:

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

Rationale for proposed alternative text: *Veterinary Services* is the appropriate term to use here. With metazoan parasites, the correct term is 'infestation' rather than 'infection'.

Comment: Abattoir surveillance for hydatids is about looking for cysts in the offals of ruminants, especially sheep. The question is what action is appropriate on detection of cysts? Trace back to the property of origin is useful so long as “appropriate remedial actions” are taken. However, this Code chapter ought to offer some guidance on what constitutes “appropriate remedial action” in such cases.

Article 8.4.5., section 2

Proposed alternative text:

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

Rationale for proposed alternative text: Correct preposition. *Veterinary Services* is the appropriate term to use here. ‘Infestation’ rather than ‘infection’ is the correct term. ‘Control programme’ rather than ‘prevention programme’ fits with OIE terminology. The second ‘copro-antigen’ is unnecessary repetition.

Article 8.4.5.

Proposed additional text:

3 In people

Veterinary Services should liaise with national public health authorities to insure they receive timely surveillance information on human cases of hydatidosis and work with those authorities to align education and control measures that target geographic and demographic risk factors.

Rationale: New Zealand is one of the few countries in which eradication of echinococcosis/hydatidosis has been achieved. One of the lessons learned from that successful national eradication programme was the benefits of close liaison between Veterinary Services and public health officials.

Article 8.4.6.

Proposed alternative text:

Recommendations for the importation of dogs, ~~cats~~ and wild canids

Rationale: Article 8.4.1. specifies that “... 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.” Furthermore, Article 8.4.2. states “This chapter deals with methods for the prevention of *Echinococcus* infection in dogs, hydatidosis in livestock and *slaughterhouse /abattoir* security.”

Cats play no role in the epidemiology of these two parasites and recommending the treatment of imported cats with praziquantel is unnecessary when considering echinococcosis/hydatidosis. It may be desirable to treat cats with praziquantel for

other parasites, but a sanitary measure for other parasites should not be included in a Code chapter on echinococcosis/hydatidosis.

Proposed new Article 8.4.7.

Recommendations for the importation of sheep, goats and New World camelids

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

1. a) The animals have been resident since birth in an establishment which has, on the basis of a surveillance programme as described in Article 8.4.5., been shown to be free from all evidence of Echinococcus infestations during the 5 years immediately prior to the date of export, or:
b) The animals have been resident since birth in an establishment in which all sheep, goats and New World camelids over the age of 12 months have, within the past 12 months, been subjected to a serological test (under study) and all results were negative or were shown by post-mortem examination to be false positives.

And

2. For the last 5 years the establishment has undertaken a prevention programme in canids in accordance with Article 8.4.4.

Rationale: This chapter should provide recommendations for the safe importation of sheep and goats. New World camelids may also be intermediate hosts to *E. granulosus* and so recommendations should also cover them. We recognise the limitations of current serological tests but believe some at least are suitable for whole-of-flock screening (Kittelberger *et al* 2002). Some ELISAs currently available for detection of hydatidosis in sheep have a diagnostic sensitivity in excess of 60%. It has been shown that a diagnostic test with a sensitivity of 60% has a very high probability of detecting the presence of infection when applied as a whole-of-herd test (MacDiarmid 1987). Enzyme-linked immunoelectrotransfer blot (EITB) may have higher sensitivity than ELISA, perhaps as high as 88% (Simsek and Koroglu 2004). Problems with relatively low specificity could be overcome by the recommendation that seropositives could be discounted if demonstrated by post mortem examination to be false positives.

Kittelberger R, Reichel MP, Jenner J, Heath DD, Lightowlers MW, Moro P, Ibrahim MM, Craig PS, O'Keefe JS (2002) Evaluation of three enzyme-linked Immunosorbent assays (ELISAs) for the detection of serum antibodies in sheep infected with *Echinococcus granulosus*. *Veterinary Parasitology* 110: 57-76.

MacDiarmid, S C (1987) 'A theoretical basis for the use of a skin test for brucellosis surveillance in extensively managed cattle herds.' *Revue Scientifique et Technique de l'Office International des Epizooties* 6: 1029-35.

Simsek S, Koroglu E (2004). Evaluation of enzyme-linked immunosorbent assay (ELISA) and enzyme-linked immunoelectrotransfer blot (EITB) for immunodiagnosis of hydatid diseases in sheep. *Acta Tropica* 92 (1): 17-24.

CHAPTER 8.13. *TRICHINELLA* INFECTION

General comment: ‘Infection’ and ‘infestation’; the correct term to use when discussing metazoan parasites is ‘infestation’ rather than ‘infection’. We suggest that the TAHSC review this text carefully to insure that the correct terms are used consistently, including in the title of the chapter.

We note that the *ad hoc* group believes that no country can claim freedom from trichinellosis. However, some experts consider mainland Australia to be free. Further, detection of *Trichinella* in pigs in New Zealand is an extremely rare occurrence. For these reasons, we believe that the *ad hoc* group should have formulated an Article giving recommendations to mitigate the risk of introducing *Trichinella*-infested pigs through trade. We note that the *Manual*, Chapter 2.1.16., states “For surveillance or verification of *Trichinella*-free herds or regions, serological methods are acceptable.” We recognise that sensitivity of ELISA may not be perfect, but it should be possible to develop helpful recommendations for application on a herd-of-origin basis.

Title.

Proposed alternative text: *TRICHINELLA* ~~INFECTION~~ INFESTATION

Rationale: Use of the correct term.

Article 8.13.1., second paragraph

Proposed alternative text:

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

Rationale: Deletion of unnecessary words. ‘But’ better conveys the contrast between the two situations.

Article 8.13.1., third paragraph

Proposed alternative text:

... 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~~ infested meat including uncooked food waste, rodents and other wildlife.

Rationale: The second ‘of meat’ is redundant. The correct term is ‘infested’.

Article 8.13.2.

Proposed alternative text:

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

Rationale: The correct term is 'infestation'. 'Equine' is an adjective, not a noun. The noun is 'equids', as is used elsewhere in the *Code*.

Proposed new Article 8.13.2. bis

Safe trade

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

1. hides and skins:
2. embryos, oocytes and semen.

Rationale: In keeping with other chapters of the *Code*, this chapter should have an Article listing safe commodities.

Article 8.13.3.

Proposed alternative text:

Prevention of trichinellosis in pigs kept under confined conditions

~~This article applies to pigs kept under confined conditions~~

Rationale for proposed alternative text: A more specific heading.

Article 8.13.3., section 4 a)

Proposed alternative text:

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.~~

Rationale: Deletion of unnecessary words.

Article 8.13.3., section 4 b)

Proposed alternative text:

Garbage dumps should not be located near pig farm(s) in order to minimise the risk of ~~infected~~ infested rodents entering the farm(s).

Rationale: The correct term is 'infested'. The brackets around the two letters 's' are unnecessary.

Article 8.13.3., section 6

Proposed alternative text:

Either:

- a) ~~It is preferable to obtain new animals~~ Whenever possible pigs should be obtained from *Trichinella*-free farms or compartments; or

- b) if ~~new animals~~ pigs 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~~ 5 weeks after arrival. Weaner pigs should be tested serologically once ~~five~~ 5 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) pigs 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.~~

Rationale: Improved language. “Pigs” should be used rather than “animals” as it is unrealistic to expect that the measures recommended should apply to equids, but the use of “animals” could create the mistaken impression that the measures are intended to apply to equids. Equids do not play a significant role in the epidemiology of trichinellosis. Article 8.13.1. states that diagnostic tests are described in the *Manual*. It is not necessary to repeat that in this Article. The brackets around the two letters ‘s’ are unnecessary. It is unnecessary to carry out pepsin digestion on pigs slaughtered following a positive serological test. Modern commercially-available antibody detection ELISA kits for *T. spiralis* have a high diagnostic sensitivity and specificity and are easier to perform than the pepsin digestion method. The requirement to confirm seropositives by pepsin digestion imposes unwarranted costs.

Article 8.13.4.

Proposed alternative text:

Recommendations for Prevention of trichinellosis in pigs exposed to outdoor environments

Rationale for proposed alternative text: A more specific heading, consistent with the heading of Article 8.13.3.

Article 8.13.4., last sentence

Proposed alternative text:

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

Rationale for proposed alternative text: The deleted words are not necessary as the heading of Article 8.13.3. is explicit. The correct word in English is ‘wherever’.

Article 8.13.5.

Proposed alternative text:

Official recognition for of a *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 for *Trichinella*, or to an antibody ELISA of serum or meat juice, 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 using antibody ELISA should be conducted annually with a sample size providing at least a 95% confidence interval for detecting *Trichinella* at a target prevalence of 1% (~~refer to the *Terrestrial Manual*~~); Alternatively, an appropriate sample could be collected at the slaughterhouse/abattoir to provide the same confidence of detecting *Trichinella*.
- d) documentation of all management practices undertaken on farm.

If a ~~positive animal~~ pig infested with *Trichinella* is detected by a digestion method, or serology which is confirmed by digestion ELISA, 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 infestation 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.~~

Rationale: In the title, the correct preposition is 'of'. Throughout, the (s) is unnecessary. The title and opening sentence make it clear that the Article refers to "pig farms" and so it is not necessary to keep specifying that the farms are "pig farms". "Farms" is sufficient. There are a number of commercially-available antibody detection ELISA kits for *T. spiralis*. They have a high diagnostic sensitivity and specificity and are easier to perform than the pepsin digestion method. Reference to the *Manual* is unnecessary as it has already been referred to in Article 8.13.1. It is meaningless to specify that a sample size must give a specific confidence interval without also specifying a target prevalence. If the TAHSC considers that this requirement be retained, then it needs to also specify a certain target prevalence. We tentatively propose a target prevalence of 1%. Slaughterhouse/abattoir surveillance should be recognised as a valid tool for demonstrating farm or compartment freedom and the *Manual* makes it clear that ELISAs can be used on serum, blood or tissue fluid before or after slaughter. "Infested" is the correct term. The requirement that isolates be sent to an OIE Reference Laboratory is excessive. This could have significant resource implications for Members which have to despatch samples internationally.

Article 8.13.6.

Proposed alternative text:

- 2. was subjected to post mortem sampling and the samples were subjected to a digestion assay for *Trichinella*, or to an antibody ELISA of serum or meat juice, 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

Rationale: There are a number of commercially-available antibody detection ELISA kits for *T. spiralis*. They have a high diagnostic sensitivity and specificity and are easier to perform than the pepsin digestion method. Reference to the *Manual* is unnecessary as it has already been referred to in Article 8.13.1. The brackets around 's' are unnecessary.

Article 8.13.7.

Proposed alternative text:

2. was subjected to a digestion assay for *Trichinella*, or to an antibody ELISA of serum or meat juice with negative results, ~~in accordance with the provisions in the *Terrestrial Manual*~~; OR

Rationale: There are a number of commercially-available antibody detection ELISA kits for *T. spiralis*. They have a high diagnostic sensitivity and specificity and are easier to perform than the pepsin digestion method. Reference to the *Manual* is unnecessary as it has already been referred to in Article 8.13.1.

Article 8.13.8.

Proposed alternative text:

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

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~~ equids 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*, or to an antibody ELISA of serum or meat juice with negative results, ~~in accordance with the provisions in the *Terrestrial Manual*~~; OR

Rationale: 'Equine' is an adjective, not a noun. The correct term is 'equid', as used elsewhere in the *Code*. There are a number of commercially-available antibody detection ELISA kits for *T. spiralis*. Reference to the *Manual* is unnecessary as it has already been referred to in Article 8.13.1.

Article 8.13.9.

Proposed alternative text:

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

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~~ equids that have been inspected in accordance with the provisions in Chapter 6.2; AND

2. was subjected to a digestion assay for *Trichinella*, or to an antibody ELISA of serum or meat juice with negative results, in accordance with the provisions in the *Terrestrial Manual*; OR

Rationale: 'Equine' is an adjective, not a noun. The correct term is 'equid', as used elsewhere in the *Code*. There are a number of commercially-available antibody detection ELISA kits for *T. spiralis*. Reference to the *Manual* is unnecessary as it has already been referred to in Article 8.13.1.

Proposed new Article 8.13.11.

Recommendations for the importation of pigs

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

1. The pigs come from a *Trichinella*-free farm or compartment in accordance with the recommendations in Article 8.13.5.; OR
2. The pigs have been subjected to an antibody ELISA for *Trichinella*, with negative results.

Rationale: This chapter should provide recommendations for the safe importation of pigs. However, given the insignificant role of equids in the epidemiology of *Trichinella*, there should be no Article for trade in equids as this is likely to lead to the imposition of barriers to trade where none currently exist.

