

***Import risk analysis:***  
**horses and horse semen**

**Review of submissions**

**20 January 2000**

***Import risk analysis: horses and horse semen***

**Review of submissions**

**Biosecurity Authority  
Ministry of Agriculture and Forestry  
Wellington  
New Zealand**

**20 January 2000**

Ministry of Agriculture and Forestry  
Te Manatu Ahuwhenua, Ngaherehere  
ASB Bank House  
101-103 The Terrace  
P O Box 2526  
Wellington New Zealand

Telephone: +64 4 474 4100  
Facsimile: +64 4 474 4133

Animal Biosecurity  
Biosecurity Authority

*Import risk analysis: horses and horse semen* \*

Review of submissions

20 January 2000

Approved for general release

Dr B D O'Neil  
Group Director  
Biosecurity Authority

\* Author for correspondence: Matthew Stone, National Adviser International Trade, Animal Biosecurity, MAF Biosecurity Authority. Mail, phone and fax as above. E-mail stonem@maf.govt.nz

## TABLE OF CONTENTS

<b>INTRODUCTION .....</b>	<b>1</b>
<b>I. INITIAL CONSULTATION DRAFT.....</b>	<b>5</b>
1. Australian Quarantine and Inspection Service .....	5
2. Bundesamt fur Veterinärwesen, Switzerland .....	9
3. Prof. Allan Guthrie .....	10
4. Ministry of Agriculture, Fisheries and Food, United Kingdom .....	12
5. Animal Health Trust, United Kingdom.....	16
6. Professor William A. Ellis .....	17
7. United States Department of Agriculture.....	18
8. Swedish Board of Agriculture.....	19
9. Service de la Qualité Alimentaire et des Actions Vétérinaires et Phytoprotecteurs, France	20
10. Ministry of Agriculture and Forestry, Finland .....	21
11. Dr Rod Hoare .....	22
12. Professor Peter Timoney .....	23
13. International Horse Breeders Pty Ltd, Victoria, Australia.....	24
14. International Racehorse Transport Pty Ltd, Victoria, Australia.....	25
15. Australian Harness Racing Council.....	28
16. Ministry of Health, New Zealand .....	29
17. Department of Conservation, New Zealand .....	31
18. New Zealand Equine Health Association Inc .....	32
19. New Zealand Equestrian Federation.....	33
20. Exotic and Infectious Diseases Sub-Committee, Equine Branch, New Zealand Veterinary Association	35
21. New Zealand Arab Horse Breeders Society (Inc).....	36
22. Dr Gary Horner .....	38
23. Prestige Bloodstock Limited, Auckland, New Zealand .....	39
24. Dr Bart Thompson .....	40
25. Hanoverian Society of New Zealand .....	41
<b>II. LEPTOSPIROSIS .....</b>	<b>42</b>
26. Dr Roger Marshall.....	42
27. Dr Carole Bolin .....	43
28. Professor William Ellis .....	44
29. Dr David Miller.....	45
30. Dr Steve Hathaway.....	46
31. Australian Quarantine and Inspection Service.....	47
32. Dr Patricia Ellis, Victoria, Australia .....	48
33. Department of Conservation, New Zealand .....	50
34. Ministry of Health, New Zealand .....	51
35. Exotic and Infectious Diseases Sub-committee, Equine Branch New Zealand Veterinary Association	52
36. New Zealand Deer Farmers Association.....	53
37. Associate Professor Dave West.....	54

38.	Associate Professor Peter Wilson .....	55
	MAF'S CONCLUSIONS .....	56
	MAF'S RECOMMENDATIONS .....	58
<b>III.</b>	<b>EQUINE INFECTIOUS ANAEMIA.....</b>	<b>59</b>
39.	MAF Biosecurity Authority .....	59
40.	New Zealand Equine Health Association Inc. ....	61
<b>IV.</b>	<b>WEST NILE VIRUS .....</b>	<b>62</b>
41.	United States Department of Agriculture .....	62
	MAF'S CONCLUSIONS .....	63
	MAF'S RECOMMENDATIONS .....	63

## Acronyms

APHIS	Animal and Plant Health Inspection Service, USA
AQIS	Australian Quarantine and Inspection Service
HBLB	Horserace Betting Levy Board, UK
MAF	New Zealand Ministry of Agriculture and Forestry
OIE	Office International des Epizooties (International Organisation for Animal Health)
PAQ	post-arrival quarantine
SPS Agreement	Agreement on the Application of Sanitary and Phytosanitary Measures
UK	United Kingdom
USA	United States of America
USDA	United States Department of Agriculture
WTO	World Trade Organisation



## INTRODUCTION

### I Initial consultation draft

A consultation draft of the horses and horse semen import risk analysis was notified in the MAF publication *Biosecurity*, issue 3, 1 May 1998. The deadline for submissions was initially set as 31 July 1998, although several late submissions were accepted during the preparation of the final version of the risk analysis. MAF received submissions from the following:

#### Other countries

1. Australian Quarantine and Inspection Service. 30 July 1998. Letter from Sarah Kahn, Assistant Director, Animal Quarantine Policy Branch. 4 pages.
2. Bundesamt für Veterinärwesen, Switzerland. 29 July 1998. Fax from Dr P Dollinger Head, Permits and Inspections, comprising a 2 page letter and 4 attachments.
3. Equine Research Centre, University of Pretoria, South Africa. 23 July 1998. Letter from Professor Allan Guthrie, Director, comprising a 1 page covering letter, 3 pages of comments, and two attachments.
4. Ministry of Agriculture, Fisheries and Food, United Kingdom. 21 August 1998. Fax from Dr Robin A Bell, Head - Veterinary International Trade, comprising a covering note and 5 page letter.
5. Animal Health Trust, United Kingdom. 13 July 1998. Letter from Dr Andrew Higgins, Scientific Director and Chief Executive, 1 page.
6. Professor William A. Ellis, Veterinary Sciences Division, Department of Agriculture for Northern Ireland. 23 July 1998. One page letter.
- 7a. Animal and Plant Health Inspection Service, United States Department of Agriculture. 21 August 1998. Letter from Dr Thomas E. Walton, Acting Deputy Administrator, 1 page.
- 7b. Animal and Plant Health Inspection Service, United States Department of Agriculture. Verbal submission from Dr Lisa Ferguson, Senior Staff Veterinarian, Import-Export Animals Staff, delivered to Matthew Stone and Bill Jolly, MAF, during a meeting of 4 September 1998. The discussion was recorded in Matthew Stone's travel report (MAF file ref: 130-04).
8. Swedish Board of Agriculture. 20 August 1998. Letter from Dr Robert ter Horst, Director of Veterinary Service, Department of Animal Production and Health, 1 page.
9. Service de la Qualité Alimentaire et des Actions Vétérinaires et Phytosanitaires, France. 11 August 1998. Letter from Dr Monique Eloit, for the Chief of the Service,

to Dr Andrew McKenzie, Administrator, MAF Regulatory Authority, comprising a 2 page letter and attachment.

10. Ministry of Agriculture and Forestry, Finland. 21 July 1998. Fax from Riitta Heinonen, Senior Veterinary Officer, Veterinary and Food Department, 1 page.
11. Dr Rod Hoare, State Equine Veterinary Officer, Elizabeth Macarthur Agricultural Institute, New South Wales, Australia. 29 July 1998. E-mail, 1 page.
12. Professor Peter Timoney, Chairman & Director, Gluck Equine Research Center, University of Kentucky. 31 July 1998. Letter of 2 pages, and attachment.
13. Eildert Kingma, International Horse Breeders Pty Ltd, Victoria, Australia. 31 July 1998. One page fax.
14. Quentin Wallace, International Racehorse Transport Pty Ltd, Victoria, Australia. 31 July 1998. Letter, 3 pages.
15. Rod Pollock, Chief Executive, Australian Harness Racing Council. 12 May 1999. Letter to Barry O'Neil, MAF, 1 page.

#### **New Zealand**

16. Ministry of Health. 20 July 1998. Letter from Henry Dowler, Deputy Chief Technical Officer (Health), 2 pages.
17. Department of Conservation. 30 July 1998. Letter from Michael Cameron, for the Director-General, 2 pages.
18. New Zealand Equine Health Association Inc (NZEHA). 31 July 1998. E-mail from Bruce Graham, Chairperson, 1 page.
19. New Zealand Equestrian Federation. 16 September 1998. Letter from Sharon van Gulik, Chief Executive Officer, 3 pages.
20. Infectious and Exotic Disease Sub-Committee, Equine Branch, New Zealand Veterinary Association. Letter from Dr Murray Brightwell, Convenor, 1 page covering letter and 1 page of comments.
21. New Zealand Arab Horse Breeders Society (Inc). 31 July 1998. Fax from Dr Gabrielle Deuss, 1 page cover letter and 2 pages of comments.
22. Dr Gary Horner, MAF National Centre for Disease Investigation. 17 July 1998. E-mail, 1 page.
23. Greame Henley, Prestige Bloodstock Limited, Auckland. 14 July 1998. Letter, 2 pages, and 6 attachments.
24. Dr Bart Thompson, Stortford Lodge, Hastings. 11 June 1998. Letter, one page.

25. Patricia Dalrymple, Hanoverian Society of New Zealand, Bulls. Letter, two pages.

## **II Leptospirosis**

Analysis of submissions received during initial consultation indicated that the risk of introducing exotic serovars of leptospirosis required further investigation. MAF sought advice on this matter by sending a revised leptospirosis chapter to five experts for review. The experts' reviews were then released with the revised chapter for further public consultation on 28 July 1999, requesting comments by 15 September 1999. This process was notified in *Biosecurity* issue 13, 1 August 1999.

### **Experts' reviews**

26. Dr Roger Marshall, Info-Brok Technical Consultancy, Palmerston North, New Zealand. 28 May 1999. One page covering letter and 3 pages of comments.
27. Dr Carole Bolin, Zoonotic Diseases Research Unit, United States Department of Agriculture, Ames Iowa, USA. 1 June 1999. Fax, 2 pages.
28. Professor William Ellis, Department of Agriculture of Northern Ireland. 8 May 1999. E-mail from Liz Paterson, DANI, 1 page.
29. Dr David Miller, National Veterinary Services Laboratories, United States Department of Agriculture, Ames Iowa, USA. 28 April 1999. E-mail, 1 page.
30. Dr Steve Hathaway, MAF Food Assurance Authority. 4 June 1999. E-mail, 1 page.

### **Other countries**

31. Dr Robyn Martin, Animal Quarantine Policy Branch, Australian Quarantine and Inspection Service. 11 October 1999. E-mail, 2 pages. 13 October 1999. E-mail, 1 page.
32. Dr Patricia Ellis, Victoria, Australia. 16 September 1999. E-mail, 2 pages.

### **New Zealand**

33. Department of Conservation. 31 August 1999. Letter from Clare Miller, for the Director General, 1 page.
34. Ministry of Health. 12 October 1999. Dr Alison Roberts, Senior Adviser Public Health Medicine. Letter, 1 page and one attachment.
35. Dr John O'Flaherty, Exotic and Infectious Diseases Sub-committee, Equine Branch New Zealand Veterinary Association. 20 August 1999. Letter, 3 pages.
36. New Zealand Deer Farmers Association. 17 August 1999. Letter from Owen Jacobsen, 2 pages.

37. Associate Professor Dave West, Institute of Veterinary, Animal and Biomedical Sciences, Massey University. 3 August 1999. Letter, 2 pages.
38. Associate Professor Peter Wilson, Institute of Veterinary, Animal and Biomedical Sciences, Massey University. 3 September 1999. E-mail, 1 page.

### III Equine infectious anaemia

In mid-1999 a horse imported into New Zealand from Australia was found to have tested positive to equine infectious anaemia (EIA) prior to export. This prompted an exotic disease emergency response by MAF, including destruction of the horse. This response was eventually successful in re-establishing New Zealand's freedom from EIA through follow-up surveillance on properties with horses that had been in contact with the imported horse. These events lead to a re-examination of EIA safeguards for imports of horses from Australia. The process involved MAF preparing a briefing for the consideration of NZEHA, with discussion of the issue at an NZEHA meeting.

39. MAF Biosecurity Authority briefing paper *Measures for EIA during imports of horses from Australia*, 23 August 1999.
40. NZEHA response to MAF, taken from the minutes of the 1 September 1999 meeting.

### IV West Nile virus

West Nile fever is a zoonosis caused by a virus (WNV) in the genus *Flavivirus* in the family Flaviviridae. The virus has been isolated from vertebrates and/or arthropods in Africa, Europe and Asia. Birds are considered the primary reservoir hosts. Mammals are less important in the natural transmission cycles. Although susceptible to disease as a result of infection, humans and domestic mammals are generally considered dead-end hosts because of low or no viraemia. WNV is transmitted by a wide range of mosquitoes, and possibly some ticks.<sup>1</sup>

WNV is referred to in the risk analysis discussion of Japanese encephalitis, as are other related viruses that can cause cases of equine encephalitis. However, the discovery of WNV infections in the USA during 1999 caused some reaction by trading partners with respect to conditions for horse imports.<sup>2</sup> For this reason, some specific discussion of WNV in the context of this risk analysis was considered appropriate.

41. Dr Lisa Ferguson, Animal and Plant Health Inspection Service, United States Department of Agriculture. 20 November 1999. E-mail, with 4 attachments.

---

1 Malik Peiris JS, Amerasinghe FP. West Nile Fever. . In: Handbook of Zoonoses, Second Edition, Section B; Viral. Editor: George Beran. CRC Press, 139-148. 1994.

2 European Commission Decision 1999/707/EC of 29 October 1999.

## REVIEW OF SUBMISSIONS

### PART I: INITIAL CONSULTATION DRAFT

#### 1. AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

##### *Japanese encephalitis*

- 1.1 The risk analysis recognises that horses do not develop viraemias capable of infecting mosquitoes and are considered dead-end hosts. The proposed risk management measures are unwarranted.

MAF comment:

Risk management measures are considered warranted because single isolated cases of encephalitis in imported horses could have significant indirect consequences. The differential diagnoses for equine encephalitis would demand a full investigation with the possibility of interim trade effects.

- 1.2 Establishment and spread in Australia will mean horses exported to New Zealand would be subject to insect-proof isolation requirements, including returning racehorses temporarily exported from New Zealand to Australia.

MAF comment:

MAF recognises Australia's surveillance capability to monitor spread of JE in animals and humans, and to declare infected and free areas. The wording of relevant sections of the final risk analysis reflects this.

##### *Equine viral arteritis*

- 1.3 The similarity in health status between New Zealand and Australia, in that virus is present but clinical disease is not reported, makes testing all horses not warranted. Testing uncastrated male horses should involve either a single test to determine seronegativity, or a double test to determine serostability combined with semen testing by test mating or virus isolation.

MAF comment:

MAF agrees.

##### *Leptospirosis*

- 1.4 The treatment requirement utilising streptomycin or dihydrostreptomycin is of considerable concern because:
- severe local reactions can occur at injection sites
  - sole preparations are not registered for use in equines in Australia

- preparations in combination with procaine penicillin would be detectable on swabbing.

1.5 Horses are not maintenance hosts for the identified exotic serovars *canicola*, *grippotyphosa* and *icterohaemorrhagiae*, and so safeguards are not warranted.

MAF comment:

Instances of infection of horses by these serovars are identified in the risk analysis, indicating the susceptibility of horses as incidental hosts to exotic serovars. The duration and titre of shedding are unknown.

1.6 New Zealand has been importing horses for many years from Australia without testing or treatment for leptospirosis, and so the introduction of safeguards is not warranted.

MAF comment:

Refer to Part II for further discussion of issues regarding leptospirosis.

#### *Ectoparasites*

1.7 A single ectoparasite treatment should be required for horses outside the well-described *Boophilus microplus* areas of Australia.

MAF comment:

MAF agrees, and the wording of relevant sections of the final risk analysis reflect further correspondence between AQIS and MAF on the matter of zone-based tick treatment requirements.

#### *Equine ehrlichiosis*

1.8 Australia is considered free of Potomac horse fever. Seropositive results obtained using the indirect immunofluorescence test were not confirmed using direct ELISA and competitive ELISA. No clinical case has ever been recorded.

#### *African horse sickness*

1.9 European Union Commission Decision 92/160/EEC allows horses undergoing pre-export isolation to train outside the vector-proof facility under a specific set of conditions.

MAF comment:

MAF agrees that the risk of AHS can be addressed through measures such as those in Commission Decision 92/160/EEC.

### *Vesicular stomatitis*

- 1.10 What is the source of the statement regarding isolation of vesicular stomatitis virus from equine semen?

MAF comment:

The statement is referenced in the final risk analysis. MAF attempted to contact the authors of the referenced review article to determine the primary reference, but received no response.

In the absence of a viraemia in horses, MAF suggests that the only way semen could become contaminated would be if semen were to be collected from a stallion with lesions on its genitalia. The safeguards recommended in the final risk analysis reflect this consideration.

### *Equine influenza*

- 1.11 The recommended application of NP-ELISA during pre-export isolation of individual horses is inappropriate because the test is not commercially available at present, and test sensitivity suggests it is better suited to testing a group of animals.

MAF comment:

Further investigation led MAF to conclude that, at the present time, the available antigen ELISAs are not suited for use as a pre-export screening test.

MAF remains convinced that measures providing a high level of protection against equine influenza are justified by the high risk associated with this disease. The greatest potential for the failure of safeguards based on vaccination and isolation is considered to be subclinical cycling of virus amongst an isolation group, with horses that have responded poorly to vaccination being more likely to become infected and shed high viral titres. To address this risk MAF recommends all horses demonstrate a protective level of antibodies within 30 days of entry into isolation, using the single radial haemolysis method described in the OIE Manual.

- 1.12 The minimum 100 m separation requirement for the post-arrival quarantine facility may not be adequate in practice.

MAF comment:

There is insufficient information to define with certainty the distance by which equine influenza is likely to spread by aerosol. Any horse exhibiting clinical signs of respiratory disease will be required to be stabled until tested negative using the antigen ELISA. MAF considers these measures will provide an appropriate level of containment security. Further, the 100m is a minimum requirement and in practice separation could well be greater.

*Competition horses*

- 1.13 Requiring piroplasmosis seropositive competition horses to be subject to twice daily prophylactic ectoparasite treatments during their entire stay in New Zealand will potentially induce toxicity in horses and handlers, and affect performance.

MAF comment:

Further consideration of the exposure risk, in particular the lack of suitable tick vector species here, has lead MAF to conclude that prophylactic ectoparasite treatments are an unnecessary requirement for temporary imports of competition horses.

- 1.14 AQIS requests clarification of the post-arrival quarantine and transitional facility requirements for competition horses.

MAF comment:

A graphical illustration of these requirements has been included in the final risk analysis.

## 2. BUNDESAMT FÜR VETERINÄRWESEN, SWITZERLAND.

### *General*

- 2.1 The health status of the Swiss equine population is such that import conditions for horses and semen from Switzerland should be the same as the European Union. Data provided in support of this view include:
- A paper titled “Rabies in Switzerland- situation after the third quarter 1997”, by the Swiss Rabies Centre, describing surveillance data for foxes and dogs, and the oral vaccination programme;
  - Switzerland’s animal health status report to OIE for 1997;
  - Meler HP, Hauser R. The monitoring of infectious diseases in Switzerland. *Pferdeheilkunde* 12 (4), 569-570. 1996. (A paper describing the Equinella surveillance programme for equine infectious disease in Switzerland.); and
  - Equinella surveillance data for the years 1990-1997.

MAF comment:

While providing useful information, the Swiss document did not constitute a critical submission on the MAF analysis.

3 PROF. ALLAN GUTHRIE

*African horse sickness*

- 3.1 Under certain conditions, such as those present in Kruger National Park, zebra can definitely act as a reservoir for AHS. The following paper is provided in support of this statement:
- Barnard BJH. Circulation of African horse sickness virus in zebra (*Equus burchelli*) in the Kruger National Park, South Africa, as measured by the prevalence of type specific antibodies. Onderstepoort Journal of Veterinary Research, 60, p 111-117. 1993.
- 3.2 The draft safeguards make provision for export of donkeys, yet South Africa has no intention of exporting donkeys.
- 3.3 The NS3-ELISA differentiates between horses vaccinated with a formalin inactivated monovalent vaccine from those either exposed to field virus or polyvalent live attenuated vaccine. The formalin inactivated monovalent vaccine is no longer commercially available, and so the NS3-ELISA is probably of little practical use. The following paper is provided in support of this statement:
- Laviada MD, Roy P, Sánchez-Vizcaino JM, Casal JI. The use of African horse sickness virus NS3 protein, expressed in bacteria, as a marker to differentiate infected from vaccinated horses. Virus Research 38, 205-218. 1995.
- 3.4 Testing during pre-export isolation should involve determining negative or stable serological titres, on two samples collected at least 21 days apart using an OIE approved test (indirect ELISA or CFT).

MAF comment:

MAF agrees.

- 3.5 Permanently marking horses following vaccination is impractical, because all horses are vaccinated twice annually. Vaccination will be recorded on a certificate attached to the passport of the horse. All horses moving into the Metropolitan Cape Town AHS Free Zone are vaccinated. Those resident since birth are not.

MAF comment:

The vaccination requirement has been removed. MAF considers that protection from infection in the pre-export period can be more effectively achieved through regional, seasonal or isolation requirements.

- 3.6 Exports of horses should be able to occur all year round, rather than within a defined season of vector inactivity. The purpose of developing an AHS free zone was to facilitate year round exports.

MAF comment:

MAF agrees.

### *Equine influenza*

- 3.7 The commercially available NP-ELISA kit was developed for use in human influenza. In South Africa the kit is not registered for use in horses, and so could not be imported and used for this purpose.

MAF comment:

See comments at 1.11 .

### *Equine encephalosis*

- 3.8 Exports of horses should be able to occur all year round, rather than within a defined season of vector inactivity.

MAF comment:

MAF agrees. MAF considers that protection from infection in the pre-export period in countries where EE occurs can be achieved through seasonal or isolation requirements.

4. MINISTRY OF AGRICULTURE, FISHERIES AND FOOD, UNITED KINGDOM.

*Equine infectious anaemia*

- 4.1 Testing of donor stallions resident on approved semen collection centres for EIA could be done after a period of residence of 21 days on the centre, rather than requiring post-collection testing.

MAF comment:

MAF agrees that the health status requirements for all horses on the semen collection centre means that the health status of donor stallions at the time of collection can be assured through timing testing requirements relative to residence on the collection centre, rather than relative to the time of collection.

*Equine influenza*

- 4.2 The NP-ELISA has not been adopted by the OIE, although it is reported as effective for detecting antigen in horses and is commercially available. The logistics and specificity of the test could cause problems with testing within 48 hours of export.

MAF comment:

See comments at 1.11 .

- 4.3 Post-arrival quarantine of 14 days may not be necessary considering recommended 28 day period of pre-export isolation, and the known infectious period for infected horses.

MAF comment:

See comments at 1.11 .

The recommended pre-export isolation period for equine influenza is 21 days.

Equine influenza is considered the greatest risk to New Zealand when live horses are imported, both in terms of the likelihood of introduction and the consequences of establishment. Post-arrival quarantine is the measure considered to provide the most realistic prospect of controlling an outbreak of infection in imported horses.

*Equine viral arteritis*

- 4.4 EVA is notifiable in Great Britain, and the disease is subject to statutory control. Semen shedder stallions are identified by serological testing and virus isolation on semen samples, and are subject to breeding restrictions.
- 4.5 Although the nested PCR has a high sensitivity in experimental situations, it is highly susceptible to contamination leading to false positive results. Further, there has been no standardisation of the approach, the gene targeted, or the primer sequences, and

very few laboratories have tested sufficient isolates to be certain that the test would detect all strains. The OIE has not yet endorsed the nested PCR. We would not wish to use the test without first undertaking an inter-laboratory comparison of samples between our laboratory and the New Zealand reference laboratory.

MAF comment:

MAF agrees, and the nested PCR will not be offered as a means of routinely establishing the health status of stallions until such time as the test procedure has been standardised and validated. It may, however, be considered as a means of resolving import requests for frozen semen in situations when donor stallions were not tested at the time of collection.

- 4.6 Stallions in the UK may not be vaccinated until they are older than 12 months. We recommend MAF consider adopting the alternative vaccination programmes for live horses laid down by European Community rules.

MAF comment:

The principles for vaccinating stallions laid down in European Union directive 95/329/EC have been adopted in the risk analysis recommendations.

- 4.7 The pre-export testing and vaccination protocol should only apply for entire males over 6 months of age, in view of the relatively transient period infected females, entire males under 6 months of age, and geldings transmit disease.

MAF comment:

The primary role of carrier stallions in maintenance and spread is recognised in the risk analysis recommendations. However, managing the risk of respiratory cycling of virus in other horses from areas not of equivalent health status is considered necessary, because the New Zealand control programme manages this risk. Whereas the New Zealand control programme requires 21 day isolation of mares served by shedder stallions, the most practical means to determine that respiratory cycling is not occurring in a group of horses prepared for export is by vaccination or serological testing. The level of control prescribed for vaccination of stallions is not considered necessary for other horses.

### *Leptospirosis*

- 4.8 Antibodies to *Leptospira* serovars *canicola*, *icterohaemorrhagiae* and *grippotyphosa* have been found in horse sera at Central Veterinary Laboratory.
- 4.9 There are a limited number of products available in Great Britain to treat horses in accordance with the OIE Code, and we ask that treatment with either streptomycin or dihydrostreptomycin, or a combination of both, be considered.

MAF comment:

MAF has undertaken further investigation of leptospirosis, including treatment options. There are no specific data upon which to base recommendations for treatment of horses. The final risk analysis recommendations reflect MAF's acceptance that, in the absence of such information, extrapolation from demonstrated effective treatments in other species is a reasonable approach.

- 4.10 Leptospirosis is not notifiable in Great Britain, and so declarations in respect of the health status of any premises could not rely on official records, but would be based on the knowledge of the certifying veterinarian.

MAF comment:

Refer to Part II for further discussion of issues regarding leptospirosis.

#### *Contagious equine metritis*

- 4.11 Long term persistence of *Taylorella equigenitalis* in mares is generally confined to the clitoris, and has only rarely been observed in the uterus.
- 4.12 The treatment protocol is in excess of the OIE and Horserace Betting Levy Board (HBLB) requirements. It involves unnecessary handling in pre-export isolation and additional costs to exporters, and is not justified if horses have already been subjected to a test protocol with negative results.

MAF comment:

Treatment has been removed from the final risk analysis recommendations.

- 4.13 Import conditions should recognise the operation of a Code of Practice for CEM, such as that administered by the HBLB, as a risk reduction measure.

MAF comment:

MAF agrees. With the removal of treatment, the MAF recommendations become more closely aligned with the HBLB Code of Practice. MAF recognises that the number (3) and timing of swabs (within 60 days prior to export) may require extra testing for some horses over and above the HBLB Code of Practice. Such extra testing is commensurate with the known limitations of the diagnostic test and the potential consequences of disease introduction for New Zealand. For countries operating an approved Code of Practice, any testing in the breeding season prior to export may be used to fulfil the export test requirements. There must have been no sexual contact with horses not of equivalent health status since the time of the first swab considered to be for export purposes.

### *Equine piroplasmosis*

- 4.14 The disease is not endemic in Great Britain. Autochthonous infections have not been recorded. However, seropositive horses may be imported because there is no requirement in European Community law for horses imported into the EU or moving between member states to be seronegative.

MAF comment:

The risk analysis recommendations apply to all countries where the disease is endemic, as well as those countries that allow importation of seropositive horses.

- 4.15 There is no evidence that tick-borne transmission occurs in Great Britain, and so treatment for ticks in pre-export isolation should be considered unnecessary.

MAF comment:

MAF acknowledges this point with respect to the measures recommended specifically for equine piroplasmosis. However, all horses will be subject to ectoparasite treatments during pre-export preparations, reflecting biosecurity concerns regarding introduction of exotic livestock tick species.

### *Post-arrival quarantine*

- 4.16 There is no post-arrival quarantine requirement for horses imported into the European Community from New Zealand. Member States carry out veterinary checks on arrival in the Community, and random non-discriminatory checks at the premises of destination.

MAF comment:

The risk analysis covers the importation of horses into New Zealand from the European Community, not vice versa.

- 4.17 The advantage of post-arrival quarantine as a measure to reduce the risk of spread of an exotic disease must be balanced against the additional cost to the importer and interference with the movement of horses.

MAF comment:

MAF recognises this need for balance in discharging the responsibility to preserve New Zealand's animal health status while implementing least trade restrictive policies. Consultation is one means to achieve this balance, and submissions from stakeholders in the New Zealand equine industry's various sectors have generally indicated agreement with MAF's recommendations.

5. ANIMAL HEALTH TRUST, UNITED KINGDOM.

*General*

- 5.1 The document is of a high standard, is well produced and has been thoroughly researched. The approach can only help facilitate sensible international trade and transport in horses.

6. PROF. WILLIAM A. ELLIS

*Leptospirosis*

- 6.1 I think you have done a very good job with the chapter on leptospirosis, and would not alter it.

MAF comment:

Prof. Ellis was subsequently asked by MAF to review a further version of the leptospirosis chapter. His comments are summarised in Part II.

7. ANIMAL AND PLANT HEALTH INSPECTION SERVICE, UNITED STATES  
DEPARTMENT OF AGRICULTURE

*General*

- 7.1 The document is comprehensive and logical. The recommended measures are scientifically based, as required by the Agreement on the Application of Sanitary and Phyto-sanitary Measures.

*Equine influenza*

- 7.2 Application of the NP-ELISA in the 48 hours prior to export may cause logistical difficulties.

MAF comment:

See comments at 1.11 .

*Contagious equine metritis*

- 7.3 DNA studies have indicated 94-97% genetic homology between the recent USA donkey isolates and pathogenic strains from other countries. The organism has been submitted for registration as a separate species. The USA isolate appears non-pathogenic and there are differences in diagnostic aspects, with the USA isolate showing less fluorescence on IFAT. Researchers at University of California, Davis, are investigating a serological type-specific test and a PCR-assay to distinguish the USA isolate from previously known *T. equigenitalis*.

MAF comment:

Further evidence is required regarding the pathogenicity of the USA isolate and the availability of standardised tests for differentiating non-pathogenic and pathogenic isolates. The relative importance of the trans-Tasman trade suggests decisions in this regard should be taken in consultation with Australia.

*Leptospirosis*

- 7.4 Streptomycin and dihydrostreptomycin are not available for animal treatments in the USA, and consideration should be given to allowing the use of oxytetracycline as an alternative treatment.

MAF comment:

Dr Carole Bolin, USDA, submitted information on the efficacy of long-acting oxytetracycline in eliminating the chronic renal carrier state for serovar *hardjo* in cattle. See Part II.

## 8. SWEDISH BOARD OF AGRICULTURE

### *General*

- 8.1 The analysis provides a good review of the infectious diseases of horses and the critical points for protection of New Zealand's health status when importing horses.

9. SERVICE DE LA QUALITÉ ALIMENTAIRE ET DES ACTIONS  
VÉTÉRINAIRES ET PHYTOSANITAIRES, FRANCE

*General*

- 9.1 The document provides a scientific and reasonable approach to the importation of equines.
- 9.2 The annex showing health status of various countries contained some mistakes in relation to the health status of France. A copy of the French report to OIE for 1997 is provided.

*Post-arrival quarantine*

- 9.3 Is post-arrival quarantine conducted in government operated premises, or could private establishments with appropriate facilities and appropriate official supervision be designated?

MAF comment:

MAF does not own and operate quarantine facilities. All such premises will be privately owned, and operated in accordance with MAF standards. The relevant standards are referred to in the risk analysis and available from MAF Biosecurity Authority.

*Equine influenza*

- 9.4 The usefulness of the NP-ELISA in horses is yet to be proven, and its application in the 48 hours prior to export will create logistical difficulties. Vaccination in combination with a period of 28 days isolation is considered more than sufficient.

MAF comment:

See comments at 1.11 and 4.3 .

*Equine infectious anaemia*

- 9.5 Infection is very rare in France, with only 2 cases during 1997.
- 9.6 Restricting eligibility to those donor stallions tested in the period 21 days to 180 days after collection of semen is too restrictive, considering most horses will remain seropositive for at least a year and probably all their lives.

MAF comment:

See comments at 4.1.

10. MINISTRY OF AGRICULTURE AND FORESTRY, FINLAND

*General*

- 10.1 The risk analysis provides a good basis for development and review of import health standards.

## 11. DR ROD HOARE

### *General*

11.1 This is an authoritative review that I substantially support.

### *Post-arrival quarantine*

11.2 Australia would be pleased if New Zealand adopts post-arrival quarantine for horses. The system has served Australia well. There had been concerns in Australia that free access for New Zealand horses provided an opportunity for a horse to be imported while incubating a disease picked up from another horse imported into New Zealand.

11.3 Without a post-arrival quarantine requirement operating, Australia would be uncomfortable if horses from other nations used New Zealand as a backdoor for entry into the Sydney International Equestrian Centre for the 2000 Olympic competition.

### *Ticks*

11.3 Please clarify the requirement for horses from tick areas of Australia to be stabled at all times during the 14 days prior tot export.

MAF comment:

The requirement has been reduced to 3 days, but does require horses to remain within the stable complex. However, exercise on surfaces unlikely to harbour ticks, such as sand, could be considered by special arrangement.

### *Competition horses*

11.4 The isolation requirements for competition horses require clarification.

MAF comment:

See comments at 1.14.

12. PROF. PETER TIMONEY

*Equine viral arteritis*

- 12.1 Abortion can occur at any time beyond 2 months. It is not restricted to the last trimester of pregnancy, as formerly believed.
- 12.2 Shedding of EAV by carrier stallions is not intermittent. The following paper is provided in support of this statement:
- Timoney PJ, McCollum WH. Equine Viral Arteritis: further characterisation of the carrier state in the stallion. 7th International Symposium of Equine Reproduction, July 1998.
- 12.3 The PCR assay has not yet been approved by the OIE Standards Commission as an acceptable alternative to virus isolation or test-mating for detection of the carrier stallion.

MAF comment:

See comment at 4.5.

*Contagious equine metritis*

- 12.4 CEM caused by *T. equigenitalis* has not been diagnosed recently in the USA. The CEM-like organism isolated in California and Kentucky is a close look-alike but differs from other isolates by both pulsed-field gel electrophoresis and in sequence homology studies.

MAF comment:

Refer to comments at 7.3 above.

13. INTERNATIONAL HORSE BREEDERS PTY LTD

*Equine viral arteritis*

13.1 When frozen semen tests negative to EVA it should be allowed into the country.

MAF comment:

See comment at 4.5.

## 14. INTERNATIONAL RACEHORSE TRANSPORT PTY LTD

### *General comments*

- 14.1 Consideration will need to be given to transport routes and transit points when import protocols for horses from new countries are introduced.
- 14.2 Some recommendations in the OIE Code are flawed and out of date. Considerable thought needs to be given prior to adopting such conditions.

MAF comment:

This statement is considered too non-specific to be acted on. The OIE Code comprises the standards by which member countries trade in animals. New Zealand imposes standards different to those prescribed by the OIE only in those cases where such divergence is supported by a scientifically-based risk analysis. Indeed, this is an obligation of membership in the World Trade Organisation.

### *Equine infectious anaemia*

- 14.3 The period of testing prior to export should be increased to assist operational management.

MAF comment:

See Part III. The period prior to export in which testing must occur has been set at 21 days, following consultation with the New Zealand Equine Health Association.

### *Equine influenza*

- 14.4 Undertaking the NP-ELISA during the 48 hours prior to export introduces a significant financial risk. Cancellation of a shipment so close to departure would involve forfeiture of all freight costs and raise the possibility of litigation.

MAF comment:

See comment at 1.11.

### *Equine viral arteritis*

- 14.5 Although the OIE Code recommends vaccination of stallions between 6-12 months of age, most stallions are actually vaccinated immediately prior to entering stud. The New Zealand import protocol should recognise accepted industry practices.

MAF comment:

See comment at 4.6 above.

It is essential to establish that stallions are not already semen carriers prior to

vaccination, because vaccination will not clear the carrier-state.

- 14.6 The time taken to perform test-breeding does not make it a practical option. Collection of semen samples for virus isolation during pre-export isolation is generally also not feasible. Consideration should be given to allowing these tests to occur prior to entry into pre-export isolation.

MAF comment:

MAF agrees. Seropositive stallions that have been demonstrated not to be semen carriers will not revert to shedding status. The risk analysis recommends testing during the 1 year prior to export or collection.

### *Leptospirosis*

- 14.7 Injecting a horse with dihydrostreptomycin or streptomycin at the dose rate of 25 mg/kg within 48 hours of flight is dangerous.

MAF comment:

Treatment of horses is recommended on two occasions with an interval of not less than 14 days during the 30 day period prior to export.

- 14.8 Few equine veterinarians consider *Leptospira* to be significant equine pathogens.

MAF comment:

The consequences of introducing exotic serovars of leptospirosis potentially affect other livestock industries and also have implications for public health.

See Part II for further discussion of leptospirosis.

### *Contagious equine metritis*

- 14.9 The justification for testing of foals requires clarification. Consideration should be given to extending the exemption for testing up until 731 days of age. Testing of younger horses is stressful, difficult and dangerous.

MAF comment:

MAF accepts that horses less than 731 days of age are very unlikely to have been bred.

The requirements for horses less than 731 days of age recognise the possibility they may have been infected at birth by their dam. When the dam is available for testing, the health status of horses less than 731 days of age is taken to be the same as the dam. When the dam is not available, horses less than 731 days of age must be tested, although filly foals will not be subjected to the endometrial swab.

14.10 Testing for CEM should be performed during pre-export isolation, as it is logistically difficult to collect samples and muster paper work for earlier testing.

MAF comment:

MAF considers that testing during the 60 days prior to export (in the case of live horses) or during the breeding season in which semen is collected (in the case of semen) will provide an appropriate assurance of the health status of the horse at the time of export/collection, providing there is no sexual contact with horses of untested health status in the period between testing and export/collection.

If appropriate verification of test procedures undertaken prior to isolation is not available, testing can be repeated during pre-export isolation.

14.11 Treatment is unnecessary considering the test requirements.

MAF comment:

See comment at 4.12.

*Accompanying MAF veterinarians*

14.12 With the future use of post-arrival quarantine in New Zealand, IRT supports the policy of making it no longer necessary for a MAF veterinarian to accompany routine flights.

15. AUSTRALIAN HARNESS RACING COUNCIL

*Leptospirosis*

- 15.1 Recommended measures for leptospirosis will significantly restrict equine movements between New Zealand and Australia for racing and breeding purposes. The measures are unwarranted and unnecessary.

MAF comment:

See Part II for further discussion of leptospirosis requirements.

## 16. MINISTRY OF HEALTH

### *General*

- 16.1 The recommended measures are adequate to manage risks associated with the zoonoses discussed, providing there is surveillance and early information on disease outbreaks in Australia.

MAF comment:

MAF is satisfied that Australia has animal health surveillance systems that support international health reporting obligations.

### *Louping ill*

- 16.2 Distribution is stated as the British Isles, whereas actual distribution is Scotland, Northern England, Wales and Ireland.

### *Hendra virus*

- 16.3 The human clinical presentation included a case of delayed onset of progressive encephalitis.

### *Anthrax*

- 16.4 Consideration should be given to requiring documentation that there have been no cases in the source area and no unusual cases of animal deaths likely to be anthrax. Transmission via spores on the animal or equipment should be considered.

MAF comment:

The MAF risk analysis recommends following the OIE recommendations, which include certification by veterinarians approved by the competent veterinary authority that no cases have occurred on the premises of origin in the previous 20 days. Investigation of suspect cases is a basic requirement of OIE Code Chapter 1.4.5 Surveillance and Monitoring of Animal Health.

Importation of anthrax spores in the coats or equipment of horses from properties where there have been no recent cases of anthrax is not considered to present a risk.

### *Glanders*

- 16.5 Rare cases of glanders occur in humans.

### *Bovine brucellosis*

- 16.6 Humans are not themselves a source of introduction as there is no person to person transmission.

*Melioidosis*

- 16.7 The human clinical manifestation ranges from asymptomatic pulmonary consolidation to rapidly fatal septicaemia.

*Q fever*

- 16.8 The reference to human treatment is irrelevant.
- 16.9 The recommendation for no safeguards should be reviewed in light of comments made by Ministry of Health and others during the MAF Q fever review.

MAF comment:

The MAF Q fever review<sup>3</sup> and this risk analysis have found no information supporting horses as a source of infection for humans or other domestic animals, suggesting they do not play a significant role in Q fever epidemiology.

---

3 MAF. Q Fever – Review of importation quarantine policy. Ministry of Agriculture, Regulatory Authority. November 1997. 24 pp.

## 17. DEPARTMENT OF CONSERVATION

### *Seeds and spores of exotic plants and fungi*

- 17.1 All imported horses should be subjected to the following measures to ensure they do not introduce seeds and spores of exotic plants and fungi:
- brushing and cleaning of hair and hooves, followed by inspection;
  - external application of fungicide; and
  - control of food supply for a sufficient period prior to export to ensure all viable material has passed through the digestive tract (no grazing of pasture, and treatment of feed to inactivate seeds and spores).

MAF comment:

In May 1999 the Plant Biosecurity section of MAF conducted an import risk analysis examining the risk of introducing weed species by live animals.<sup>4</sup> The risk analysis noted that the actual risk was subject to a number of time-dependent factors, and would rapidly decrease as each factor combined. The following safeguards were recommended to ensure minimal risk:

- prior to shipment animals held in areas free of weed species;
- prior to shipment animals fed clean pasture or high quality feed with no weed contamination;
- during shipment similar high quality weed-free feed;
- during shipment all dung safely disposed off;
- after arrival monitoring around live animal quarantine sites.

There are many difficult practicalities within these recommendations. MAF considers it appropriate that the issue is dealt with in a generic manner, to avoid unfairly discriminating against any one particular livestock sector. MAF is presently investigating the recommendations and options for addressing the issues in relation to all livestock imports.

MAF suggests that it would not be possible or practical to decontaminate live animals of environmental fungal spores, just as this is not a realistic scenario for managing risks from human travellers. A survey of passengers arriving at international airports has demonstrated that fungal spores can be recovered from the clothing of a large proportion.<sup>5</sup>

---

4 Randall J. Import risk analysis: Importation of weed species by live animals and unprocessed fibre of sheep and goats. MAF Regulatory Authority, Ministry of Agriculture and Forestry, Wellington, New Zealand. May 1999. 25 pages.

5 Sheridan JE. The role of air passengers clothing and baggage in introducing plant pathogens into New Zealand. Mycology and Plant Pathology Report No. 25, Victoria University of Wellington Botany Department. March 1988.

18. NEW ZEALAND EQUINE HEALTH ASSOCIATION INC.

*General*

- 18.1 NZEHA supports submissions made by its member organisations, including the New Zealand Racing Conference, New Zealand Thoroughbred Breeders Association, and the Equine Branch of New Zealand Veterinary Association.
- 18.2 As a new organisation formed to represent the various sectors of the equine industries, particularly in negotiations with MAF on health matters, NZEHA requests to be kept fully informed of progress with the risk analysis.

## 19. NEW ZEALAND EQUESTRIAN FEDERATION

### *General*

- 19.1 Technical data should be subject to further peer review by independent virologists and epidemiologists to ensure information, assumptions and risk management strategies are valid.

MAF comment:

The majority of risk management recommendations within the risk analysis result in harmonisation with international standards within the OIE Code, which itself has been developed through consultation between member countries and working groups involving disease experts.

MAF's technical review and public consultation processes have ensured disease experts have had input into information and recommendations presented in the risk analysis.

- 19.2 Risk management recommendations should go beyond the conservative, particularly if insufficient information exists to accurately estimate the risk.

MAF comment:

As a member of the World Trade Organisation, the *Agreement on the application of sanitary and phyto-sanitary measures* obligates New Zealand to align measures for imports of animals and animal products with those recommended by the OIE, or to justify divergence through scientifically-based risk analysis. MAF recognises that in cases of uncertainty it is a matter for governments to decide the extent of a precautionary approach. In such cases, a further obligation exists to take steps to address the information requirements that would enable a complete assessment.

- 19.3 Are political factors in exporting countries taken into account when determining the level of risk and risk management?

MAF comment:

Political stability and other factors that potentially affect the credibility and reliability of official veterinary authorities are taken into account prior to issue of import health standards for specific countries, but not within this generic import health risk analysis.

- 19.4 The equine industry is poorly positioned to deal with an exotic disease outbreak. The document does not discuss the methods of control in the event of an outbreak.

MAF comment:

That is not the function of this import health risk analysis. MAF is in discussion with the New Zealand Equine Health Association, as the equine industry's representative, regarding emergency response to exotic disease.

19.5 Circumvention of quarantine processes by unscrupulous importers must be addressed.

MAF comment:

That is not the function of this import health risk analysis. MAF's Quarantine Service and Enforcement Unit are always vigilant.

#### *Endoparasites*

19.6 Endoparasite recommendations should preclude the importation of horses with drench resistant parasites.

MAF comment:

MAF has consulted a parasitologist and the final risk analysis contains revised endoparasite treatment recommendations to take account of concerns regarding anthelmintic resistance.

#### *Competition horses*

19.7 FEI veterinarians are required to be present at international level competition events, but they may not have the specific skills required to supervise horses that remain under quarantine supervision.

MAF comment:

Official supervision of competition horses will be performed by MAF-accredited veterinarians. Other persons involved in the management of such horses must only be aware and comply with recommendations to ensure sexual and/or iatrogenic transmission of disease does not occur.

19.8 Competition horses potentially are a higher risk situation than other horses, because of their travel and contact with a wide variety of other horses. Stress from competition can also affect health.

MAF comment:

The risk analysis acknowledges the special circumstances under which competition horses travel.

#### *Semen*

19.9 Importation of semen rather than live sires should be pursued as a risk reduction strategy.

20. INFECTIOUS AND EXOTIC DISEASE SUB-COMMITTEE, EQUINE BRANCH,  
NEW ZEALAND VETERINARY ASSOCIATION

*General*

- 20.1 If post-arrival quarantine is not to be required for imports of horses from Australia, we must ensure that importation of horses from third countries into New Zealand via Australia does not circumvent appropriate pre-export requirements.

MAF comment:

Point 11.2 above is relevant. Implementation of the risk management recommendations would result in substantial harmonisation of measures for imports from third countries into New Zealand and Australia, including post-arrival quarantine requirements.

*Post-arrival quarantine*

- 20.2 How will the risk management recommendations be implemented if no post-arrival quarantine facility is available? Location of the facility is very important, as are disinfection procedures for vehicles transporting animals to facilities.

MAF comment:

The 1995 review of MAF's policies for post-arrival quarantine acknowledged the potential for market failure if the private sector did not accept the commercial opportunity to develop privately owned facilities. To date this situation has not limited live animal imports for any other species (all other species are required to undergo post-arrival quarantine). MAF acknowledges that post-arrival quarantine is an extra cost for importers. However, the review has enabled other efficiencies in the import process, and the policy is consistent with the principle that importers should largely bear the costs of risk management.

Location and disinfection are addressed in MAF standards for post-arrival quarantine facilities.

## 21. NEW ZEALAND ARAB HORSE BREEDERS SOCIETY (INC).

### *General*

- 21.1 Further consultation should be undertaken whenever standards are proposed for imports from new countries.

MAF comment:

MAF agrees, and intends to publicly notify revised standards for consultation upon completion of the risk analysis.

### *Competition horses*

- 21.2 Relaxing controls for competition horses to facilitate the sport horse industry could expose New Zealand horses to risks. The proposals will work if all parties act in good faith, but possibly not in other circumstances.

MAF comment:

MAF agrees that there is no technical justification for a reduction in the total (combined pre-export and post-arrival) isolation period for competition horses. The relaxation in import requirements now only relates to the sexually transmitted disease and to equine piroplasmiasis. Alternative risk management is provided by post-arrival restrictions on use for breeding and the absence of vectors for equine piroplasmiasis here.

### *Post-arrival quarantine*

- 21.3 When horses are imported from countries where arthropod borne diseases are present, the location of post-arrival quarantine facilities should be restricted to reduce the likelihood of exposure to competent vectors here. For instance, facilities should not be permitted in Northland.

MAF comment:

MAF recommends that post-arrival risk management for arthropod-borne diseases include arthropod-vector proof quarantine facilities, to specifically address the risk of exposing competent vectors to imported animals. Under these circumstances, regional restrictions are not considered necessary.

- 21.4 Low security quarantine for all horses is supported.

### *MAF escort*

- 21.5 MAF escorts should accompany flights if routes involve transit in countries where exposure to arthropod-borne pathogens might occur. Otherwise, competent private grooms and vets would be adequate.

## *Semen*

- 21.6 The risk analysis should seek to recognise areas of equivalent health status to New Zealand for particular diseases to allow flexibility in the semen collection centre requirements.

MAF comment:

MAF agrees.

- 21.7 Under the principles of Closer Economic Relations (CER) and the Trans-Tasman Mutual Recognition Agreement (TTRMA), semen collection centres approved for collection and processing of semen for use in or export from Australia should automatically be approved for exports to New Zealand.

MAF comment:

Although mutual recognition of biosecurity controls has not been negotiated within the CER and TTRMA framework, MAF agrees in principle that Australia's health status, import health policies and export certification processes will provide appropriate protection during collection of semen for export without necessarily having to approve each semen collection centre on the basis of the proposed MAF standard.

22. DR GARY HORNER

*Post-arrival quarantine*

- 22.1 Agrees that horses imported from Australia should not be required to undergo post-arrival quarantine, so long as pre-export testing for equine infectious anaemia occurs.
- 22.2 Agrees that no equine diseases of concern warrant high security post-arrival quarantine.
- 22.3 Agrees that medium security post-arrival quarantine should be required when horses are imported from risk areas for vesicular stomatitis, Venezuelan equine encephalomyelitis, African horse sickness and surra.

MAF comment:

Further consideration of risks of African horse sickness, particularly the absence of *Culicoides* spp. from New Zealand, has resulted in the post-arrival quarantine recommendation being changed to low security for imports from risk areas.

- 22.4 Agrees that low security post-arrival quarantine should be required when horses are imported from risk areas for equine influenza, considering vaccination will reduce any viral excretion to low levels.
- 22.5 Post-arrival quarantine must be conducted in an all-in-all-out manner, with appropriate cleaning and disinfection between groups. Failure to conduct quarantine in this manner resulted in the introduction of equine influenza to South Africa.

*Competition horses*

- 22.6 Agrees with the proposal for importation of competition horses under special conditions.

MAF comment:

See 21.2 above. Whereas the draft risk analysis recommended a reduction in the duration of pre-export isolation for competition horses, the final risk analysis recommended the overall duration of isolation not be reduced. The final risk analysis recommends approval of training arrangements during isolation, if necessary outside isolation facilities, so long as isolation from other horses is maintained.

- 22.7 Agrees that MAF audit and escort should not be considered mandatory for imports of horses under import health standards that specify low-security post-arrival quarantine.

23. MR GREAME HENLEY

*Semen*

- 23.1 With regard to imports of semen, the risk analysis needs to address the practical difficulties being encountered during imports of fresh/chilled semen. These include:
- having to continually re-test stallions to meet certification requirements even though they have been continuously resident on approved semen collection centres;
  - having to replicate original certification requirements for each consignment, even though consignments may be from the same stallion collected only days apart;
  - having to re-apply for permits to import for each consignment.

MAF comment:

See comments at 4.1 above. Stallion testing requirements are now made with reference to residency on the semen collection centre. So long as the health status of the centre remains the same, there would be no need to continue testing resident stallions.

MAF requires original certification to accompany each consignment of imported risk goods to ensure the integrity of the information provided. There is no intention to change this requirement.

Permits to import equine semen will not be required in future, in accordance with MAF policy of only requiring permits when post-arrival measures have to be fulfilled.

24. DR BART THOMPSON

*Semen*

- 24.1 The Netherlands is a source of many of the best show-jumping stallions, and the New Zealand industry would benefit from access to their semen. MAF standards should allow for importation from that country.

MAF comment:

MAF intends to issue standards for imports of horses and semen from European Union member countries, including the Netherlands.

25. HANOVERIAN SOCIETY OF NEW ZEALAND

25.1 Provides brief comments endorsing the process and recommendations.

## PART II: LEPTOSPIROSIS

### 26 DR ROGER MARSHALL

- 26.1 Serology is not an accurate tool for determining an animal's infective status. An individual animal's immune system may not respond to infection even though it is currently shedding leptospirae. Indeed, their inability to mount an immune response may make them very successful long-term shedders.
- 26.2 Marshall strongly agreed with the need to protect New Zealand from exotic serovars. In particular, he considered serovar *grippityphosa* could have "unknown and possibly dire" consequences for the New Zealand cattle industry. Infection could establish in livestock and wildlife species.
- 26.3 Although serious attempts to isolate serovar *bratislava* from animals in New Zealand have failed, this does not mean that the organism is not present here. There is considerable serological evidence from horses, pigs and humans that it is present.
- 26.4 The statement that serovar *canicola* is not present in New Zealand is contestable because there has been a human case.
- 26.5 Serovar *australis* had been isolated on one occasion from a Northland farmer, although there was no evidence of infection in his livestock. The testing of animals was not carried out until 3 years after the infection had occurred.
- 26.6 The strict categorisation of serovars and hosts into maintenance and incidental hosts, and the difference in length of shedding in these two categories, was probably too simplistic. The length of time animals remain shedders and the number of organisms shed is very variable.
- 26.7 Marshall strongly emphasised comments made in the text regarding the difficulty of predicting interactions, and therefore consequences, of new serovars in the New Zealand context.
- 26.8 Premises freedom from clinical cases is not a complete safeguard because many shedders will not manifest clinical signs.
- 26.9 Streptomycin/dihydrostreptomycin is not available for use in livestock in many countries.
- 26.10 Doxycillin has been shown to be an effective drug to use as an alternative, although the precise regime is not available in the literature.
- 26.11 No mention had been made of equine recurrent uveitis associated with leptospirosis. Although leptospirosis is probably not the only infection that triggers the ocular immune response, it is present in over 50% of cases.

27 DR CAROLE BOLIN

- 27.1 Bolin agrees there is a high rate of seropositivity in horses to serovar *bratislava* in various parts of the world. However, serovar *bratislava* has not been isolated from many of these areas, so the 8% renal carrier rate may be overstated.
- 27.2 Recent studies in the USA have established use of long-acting oxytetracycline at 20 mg/kg is highly effective in eliminating the chronic carrier state of serovar *hardjo* in cattle. The regimen has not been tested in horses, but is becoming standard for negotiations of import/export regulations for livestock involving the USA because of the lack of availability of streptomycin and long-acting amoxicillin.
- 27.3 The attempt to describe a serological cut-off using the MAT overstated the utility of serology in identifying infected horses. Horses make anti-leptospiral antibodies at titres that are significantly higher than those found in other species. Consequently, cross-reactivity among serovars is considerable and confounds interpretation. Horse leptospiral titres are of no more than passing interest unless they are in the range of 1:640 to 1:1280, with the exception of titres in equine fetuses which are often very specific.
- 27.4 Premises freedom from clinical cases is not a complete safeguard because many shedders will not manifest clinical signs. What proof would be required for premises freedom to be accepted?
- MAF comment:
- The declaration would be made by the certifying veterinarian to the best of their knowledge. In the absence of official records (leptospirosis is rarely a notifiable disease), MAF considers such a statement implies due enquiry of the premises owner and their veterinarian.
- 27.5 There is likely to be a broad collection of serovars in the global equine population and the focus on particular serovars is not well argued.

28 PROF WILLIAM ELLIS

- 28.1 Ellis argued that serovars *grippotyphosa*, *canicola* and *icterohaemorrhagiae* would present a very low risk to the New Zealand agricultural economy.
- 28.2 The maintenance hosts for *grippotyphosa* in the USA (raccoon) and Europe (*Microtus arvalis* and *Apodemus agrarius*) were not present in New Zealand, so it would be unlikely to establish.
- 28.3 Serovar *canicola* has disappeared as a clinical infection in dogs in many parts of the world, including the United Kingdom. Should it get to New Zealand it would be managed by vaccination of dogs, and would present very low risk to domestic food producing species.
- 28.4 Serovars *copenhageni* (which is present in New Zealand) and *icterohaemorrhagiae* can be viewed as minor genetic variants competing for the same epidemiological niche. It matters little whether you have one or both variants as they represent a similar risk to human and animal health.
- 28.5 Ellis considered that allowing horses to be imported without treatment would be an acceptable risk.

29 DR DAVID MILLER

- 29.1 The decision regarding which serovars to include in import tests is not easy. It is difficult to set up a battery of antigens that covers serovars not documented in your country but occurring in others. The focus on particular serovars may be too narrow.
- 29.2 Miller disagreed with the attempt to describe a serological cut-off for the MAT. Serological titres do not always equate with infective status. The test requires a level of subjectivity to interpret, and the serological cut-off is “splitting the hair too finely”. The MAT is not a good predictor of infection in individuals, and is a better screening tool for herds.
- 29.3 In horses, titres at levels of 100 and 200 without other evidence are not dependable. Requiring serology to be negative at the 1:200 dilution may be something that New Zealand could “live with”.
- 29.4 Since antibiotic therapy has been shown not to stop long-term shedding and the MAT titre is not a good indicator of infection in individuals, Miller suggests the two should not be provided as alternatives but as two parts of an import programme.

30. DR STEVE HATHAWAY

- 30.1 Antibiotics in feed will not clear leptospirosis in pigs, and streptomycin is not 100% efficacious in cattle.
- 30.2 Antibiotic treatment of semen is likely to be effective. Semen is unlikely to be an important pathway for transmission.
- 30.3 The premises of origin requirement is largely cosmetic because most cases will be subclinical and clinical cases may not be diagnosed because of their rarity.
- 30.4 The MAT is virtually useless as a reliable screen for infected animals.
- 30.5 A rigorous literature search on the efficacy of dihydrostreptomycin and other drugs is a necessity.
- 30.6 Given the fact that horses are not a maintenance host for anything other than serovar *bratislava* (though this may be contentious on close scrutiny), their potential role in introducing exotic serovars to New Zealand would probably be very limited.

## 31 AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

- 31.1 If horses are a maintenance host for *bratislava*, and if they do have a “consistently high worldwide seroprevalence and a renal carrier rate of approximately 8%” (the latter is disputed by Dr Bolin), then it is very likely Australia and New Zealand have been importing infected horses for years. Given that Australia and New Zealand have had unrestricted (in terms of leptospirosis) importation of horses from a number of countries and remained free from firm evidence of a consequential introduction of exotic pathogenic leptospires leading to significant adverse consequences, the risks of this happening in future would seem to be low.
- 31.2 Serovar *bratislava* is not included in the list of leptospires isolated in New Zealand but that there is serological evidence of infection. This is consistent with Dr Bolin’s discussion of the international situation.
- 31.3 As in Australia, low titres have been found in New Zealand to serovar *canicola*. Dr Marshall points out that serovar *canicola* was isolated from a man near Auckland. Yet it is considered exotic in New Zealand.
- 31.4 As the levels of leptospirosis in horses are reported to be low and limited in duration, and as horses do not seem to have been clearly implicated in maintenance and transmission, risk of exposure from an imported horse must be low.
- 31.5 Given the known and listed problems with diagnosis and treatment as risk management measures, it is not possible to “ensure live horses are not infected”. The possibility of undesirable effects of treatment, and the likely loss of access to healthy horses as a result of the imposition of such measures, and given that adverse consequences are uncertain and unlikely to be great on a national scale, it could surely be argued that measures are not warranted.
- 31.6 The information on incidents in New Zealand - one mare aborted in 1989 and one outbreak in 1997 - supports the contention that adverse consequences of the introduction of infected horses will not be great.
- 31.7 An AQIS review of leptospirosis has noted some interesting information on investigations of abortion in mares in North America. Over 3 foaling seasons (1991-1993) in central Kentucky, 74 of 2264 abortions were diagnosed as leptospirosis. Leptospires were isolated from 45 of these cases and were identified as serovars *kennewicki* (43), *grippotyphosa* (1) and a serovar antigenically similar to *pomona* [Donahue et al (1995) J. Vet Diagn Invest 7: 87-91]. An earlier investigation over 4 foaling seasons (1987-1990) in the same area showed that 58 of 226 abortions were due to leptospirosis. Only 3 of 14 isolates cultured could be identified and were all serovar *kennewicki*. Serology suggested that other serovars, namely *grippotyphosa* and *bratislava* were involved as well [Poonacha et al (1991) Proc Ann Am Assoc Eq Pract 36: 397-402].

32 DR PATRICIA ELLIS

- 32.1 There are several references in the risk assessment paper to the abortion case in 1997 associated with an imported "carrier" horse from Australia. Is it possible that the imported mare was not the index case but became infected after arrival? No details were given of the history of the other 16 mares to which the imported mare was introduced or of any possible exposure to hedgehogs, rodents, pigs and dogs or other potential reservoir hosts in New Zealand.
- 32.2 The horse populations of Australia and New Zealand have been intimately linked since the early days of colonial settlement and the entry of equine diseases to both countries would have been concomitant, as in the early years no quarantine was imposed. Early imports to New Zealand were largely derived from Australia and over the years thousands of horses have travelled from Australia to New Zealand with minimal restrictions since the Reverend Samuel Marsden's pioneer imports to New Zealand in 1814. Surely by this time any perceived differences in country status with respect to leptospirosis must be due to environmental and management influences, as there has been free movement and neither country exercises any control program in horse populations.

MAF comment:

The risk analysis noted the leptospirosis serovars isolated from animals in New Zealand are serovar *hardjobovis*, serovar *pomona* (including subtype *kennewicki*), serovar *copenhageni*, serovar *ballum*, serovar *tarassovi* and serovar *balcanica*. Serovar *bratislava* is suspected to be endemic on serological evidence. Dr Marshall's review notes rare cases of human infection with serovars *australis* and *canicola*.

The leptospirosis serovars isolated in Australia are serovar *icterohaemorrhagiae*, serovar *copenhageni*, serovar *mankarso*, serovar *celledoni*, serovar *canicola*, serovar *broomi*, serovar *bindjei*, serovar *zanoni*, serovar *pomona*, serovar *australis*, serovar *grippotyphosa*, serovar *walbuzzi*, serovar *kremastos*, serovar *tarassovi*, serovar *bakeri*, serovar *szwalizak*, serovar *perameles*, serovar *bulgarica*, serovar *hardjo*, serovar *medanensis*, and serovar *balcanica*. Of these, only serovar *pomona* has been isolated from horses (Dr Lee Smythe, WHO/FAO Leptospirosis Reference Laboratory, Centre for Public Health Sciences, Queensland, Australia. Pers. comm. with M. Stone, 10 January 2000).

- 32.3 Serology is not a useful diagnostic tool in individuals.
- 32.4 Treatment with streptomycin is not an acceptable alternative due the irritant nature of the large volume doses of an oily solution and lack of proof of its efficacy. It tends to be used as a "Clayton's" risk reduction measure in other species to continue trade. The National Registration Authority will be introducing restrictions on the use of streptomycin in Australia.
- 32.5 Prolonged treatment of horses using oxytetracycline can cause fatal diarrhoea.
- 32.6 Dr Ellis notes that several reviewers point out that 3 months premises freedom

is "cosmetic". While accepting their arguments and the limitations of the certification, she agrees that horses originating from premises where cases of leptospirosis in any species are known to be occurring would increase the risk of introduction. Dr Ellis further notes the disease is notifiable in Victoria.

33 DEPARTMENT OF CONSERVATION

- 33.1 DoC requests MAF to consider potential risks to native fauna when setting safeguards for leptospirosis, and to be especially cautious in its approach if serovars carried by horses can infect endemic biota.

34 MINISTRY OF HEALTH

- 34.1 In New Zealand most cases of human leptospirosis acquire the infection occupationally. There were 117 cases diagnosed in 1998, including 2 cases of serovar *australis*.
- 34.2 The risk of an exotic serovar becoming established in New Zealand through importation of an infected horses and subsequent transmission to a reservoir is likely to be low.
- 34.3 The information provided suggests serological testing is unreliable and cutoffs in horses should be above 1:200.
- 34.5 This may not exclude all horses excreting the organism in urine, and so all horses should also be treated either before or after arrival in New Zealand.

35 DR JOHN O'FLAHERTY

- 35.1 The experts' comments are interesting but do not provide clear guidance.
- 35.2 Horses represent a very low risk of introducing exotic serovars, and very few imported horses are likely to graze with other species. The status quo (no safeguards) is therefore favoured.
- 35.3 The experts have indicated great care is required in interpreting serology in horses.
- 35.4 Blanket application of antibiotic treatment is a cause for concern due to the uncertain efficacy.
- 35.5 The use of tetracycline would be of particular concern because:
- there is no long acting preparation registered for horses;
  - short acting preparations are irritant when injected intramuscularly and must be given intravenously;
  - some short acting preparations can kill horses when given intravenously;
  - when given intravenously the action will only be 48-72 hours; and
  - they have been implicated in causing colitis.
- 35.6 There should not be any treatment of imported horses unless there is adequate information to suggest or diagnose the carrier state.
- 35.7 With regards to semen, antibiotics commonly used in extenders should eliminate any risk.

36 NEW ZEALAND DEER FARMERS ASSOCIATION.

- 36.1 Serology should not be offered as an alternative to treatment. Carriers may be seronegative, and testing presupposes you know what you are testing for and can include all possible serovars in the battery of antigens (whereas this may not be the case).
- 36.2 Treatment is the only practical solution, but relies on extrapolation from data obtained in other species. All horses should be treated prior to arrival in New Zealand or during post-arrival quarantine.
- 36.3 It would be more effective to give dihydrostreptomycin and/or streptomycin at 25 mg/kg daily for three days, and then repeat this 14 days later.
- 36.4 Oxytetracycline (short acting) or amoxycillin should be given daily for four days, or two doses of oxytetracycline (long acting) 48 hours apart. These could also be repeated after 14 days.
- 36.5 With respect to comments by Ellis regarding serovar *canicola*, dogs are not routinely vaccinated against leptospirosis in New Zealand. The introduction of serovar *canicola* and control by vaccination would be adverse for dog welfare and an unnecessary burden on dog owners.
- 36.6 With respect to comments by Ellis regarding serovar *icterohaemorrhagiae*, serovar *copenhageni* is not found throughout New Zealand and we do not want to bring in any more similar serovars that may be even more virulent.
- 36.7 With respect to comments by Ellis regarding serovar *grippityphosa*, who is to say that the ferret, stoat, weasel, cat, mouse, rat, rabbit or hare would not be a host?

37. ASSOCIATE PROFESSOR DAVE WEST
- 37.1 Semen poses less of a risk than live horses. The recommended measures for semen are considered appropriate.
- 37.2 On the issue of magnitude of risk, Prof. West believes MAF should be guided by Marshall's submission on this issue. Serovar *grippotyphosa* has been identified as a serovar of particular concern.
- 37.3 Despite the problems associated with serology, Prof. West considers it provides a useful risk reducing step and supports testing for all imported horses.
- 37.4 Prof. West supports the use of either oxytetracycline or streptomycin/dihydrostreptomycin based on extrapolation from other species. The issue of local tissue reactions should be largely accounted for by allowing treatment during the 30 day period prior to shipment, or by allowing administration intravenously.
- 37.5 Horses should be treated prior to shipment to remove the possibility of infecting rodents in New Zealand, even in quarantine.

38 ASSOCIATE PROFESSOR PETER WILSON

- 38.1 The leptospirosis chapter is logical and plausible. It is notable that many of the experts' comments were consistent.
- 38.2 Prof. Wilson agrees with the risk analysis, and endorses the risk management recommendations made.

## MAF'S CONCLUSIONS

- 1 No evidence has been presented against the view that the likelihood of horses importing exotic *Leptospira* serovars into New Zealand is very low.
- 2 There is uncertainty regarding the likelihood of establishment of exotic *Leptospira* serovars, and the associated consequences. In light of this uncertainty and the potential for adverse consequences for livestock, wildlife and human health, a conservative approach to risk management may be warranted.
- 3 Freedom from clinical cases on the premises of origin of the horse, ascertained by due enquiry and/or examination of any relevant records (such as private veterinary practitioner records of disease investigations), provides some level of assurance that horses have not been in contact with known sources of infection in the pre-export period. The high rate of subclinical infection and potential exposure to wildlife sources means premises freedom from clinical cases is not in itself an adequate safeguard.
- 4 The other available risk management options of serology and treatment are of uncertain efficacy.
- 5 Serology cannot determine the infecting serovar, nor give an absolute indication of the present infective status. Nonetheless, negative serology probably provides a strong (but not fool-proof) assurance that a horse is not currently infected, and therefore provides a useful pre-export measure. If used in this way, requiring serology to be negative (<50% agglutination) at the 1:200 titre may provide the most appropriate interpretation.
- 6 Because serology cannot be used to interpret the infecting serovar, requiring negative serology to a panel of antigens representing a wide range of serogroups is justified, even though this measure may mean horses infected with serovars endemic to New Zealand will be excluded on the basis of serology. For this reason, and to ensure consistency with measures applied for other livestock species, seropositive horses should be allowed to be imported after completing a treatment option.
- 7 Given the absence of information on treatment efficacy in horses, extrapolation of the information gained in trials in other species regarding streptomycin/dihydrostreptomycin and long-acting oxytetracycline is necessary and reasonable. Acceptance of other regimes (including other antibiotics, dosages and/or delivery routes) on the basis of extrapolation from trials in other species where they have been demonstrated to remove renal carrier states would also be reasonable.
- 8 While the potential adverse effects of some treatment regimes must be acknowledged, offering importers alternatives of test or treatment will minimise the number of horses requiring treatment. If treatment is necessary, the decision regarding which treatment options to use should be made by the owner after veterinary advice regarding potential adverse affects.

- 9 Addition of antibiotics to semen is accepted as an appropriate risk management measure in its own right.
- 10 A consequence of the recommended risk management measures may be disruption to trans-Tasman trade in horses. This trade is of relatively large volume, in the order of 500 horses a year. The trade has not been subject to measures for leptospirosis previously, so there has been ample prior opportunity for the trans-Tasman transmission that the new measures would seek to manage. There is no evidence that the trade has lead to introduction and establishment of exotic *Leptospira* serovars. Assuming an incursion of an exotic *Leptospira* serovar would be detected, this suggests we can be 95% confident that the likelihood of such an event in any year is less than 0.74%.
- 11 The trans-Tasman trade includes movement of competition horses expected to perform shortly after arrival, and the treatment measures may affect the performance of such horses.
- 12 Within the equine industries of Australia and New Zealand there appears to be widespread opposition to the proposed measures for leptospirosis.

## MAF'S RECOMMENDATIONS

- 1 In order to manage the risks of introducing exotic *Leptospira* serovars when horses are imported, the following measures are recommended:
  - 1.1. The horses were kept for the 3 months prior to export on premises where clinical cases of leptospirosis in livestock have not occurred during that period; *and*
  - 1.2. During the 30 day period prior to export:  
Either: i) The horses were subjected to the MAT employing antigens from serogroups representative of serovars known to infect livestock in the exporting country, with negative results (<50% agglutination at the 1:200 dilution);  
Or: ii) The horses were injected with dihydrostreptomycin and/or streptomycin (at a dose rate of 25 mg/ kg of live body weight) on two occasions with an interval of not less than 14 days;  
Or: iii) The horses were injected with long-acting oxytetracycline (at a dose rate of 20 mg/ kg of live body weight) on two occasions with an interval of not less than 14 days.
- 2 Horses imported from Australia should be exempt from the requirement at 1.2. above. The argument regarding the absence of evidence for introduction of exotic serovars despite ample prior opportunity is compelling. The measures have the potential for significant disruption to the existing trans-Tasman trade, so would only be warranted if evidence suggesting the trade poses a significant risk was forthcoming, and this is not the case.

### **PART III: EQUINE INFECTIOUS ANAEMIA**

#### **39 MEASURES FOR EIA DURING IMPORTS OF HORSES FROM AUSTRALIA** *A briefing paper prepared by MAF Biosecurity Authority for the urgent consideration of the New Zealand Equine Health Association (23 August 1999)*

- 1 Current measures for EIA in the import health standard for horses from Australia
  - 1.1 During the 21 days preceding export no case of equine infectious anaemia (EIA) has occurred on any property where the animal/s has/have been located or on any property within a radius of 30km from these locations; and
  - 1.2 Blood samples were collected from each horse in the consignment within 14 days of shipment and tested for equine infectious anaemia using the Agar Gel Immunodiffusion (AGID) test (Coggin's test) or the ELISA test with negative results.
- 2 MAF risk analysis recommendations for EIA (with respect to Australia, a low EIA prevalence country)
  - 2.1 EIA is a notifiable disease in the exporting country; and
  - 2.2 The horses were kept for the 3 months prior to export on premises where EIA has not occurred during that period; and
  - 2.3 The horses were subjected to the AGID or c-ELISA test for EIA during the 30 days prior to export, with negative results (unless being re-imported into New Zealand after a visit of less than 21 days).
- 3 Recommendation

The current measures for EIA in the import health standard for horses from Australia should immediately be replaced by the measures recommended in the draft MAF risk analysis.
- 4 Reasons for recommendation
  - 4.1 The lag phase between infection and seroconversion is up to 45 days. The incubation period may be much longer. A 21 day period would be insufficient even if we could rely on a compulsory surveillance requirement on premises following cases of EIA, which we cannot.
  - 4.2 It is virtually impossible for certifying veterinarians to establish that no cases have occurred within a 30 km radius of a property. We should be working towards removing such statements from our standards, on the basis that they defy all the principles of certification.
  - 4.3 The epidemiology of EIA is recognised as involving mechanical insect spread over short distances, probably no more than 100 m, such as would occur between horses in

close contact on the same premises. Transmission between premises is through movement of subclinically infected horses. The disease does not leap across boundaries, certainly not 30 kms, in the absence of livestock movements.

- 4.4 Testing during the 30 days prior to export (rather than current 14 days) provides more time to complete testing to avoid situations whereby results are unavailable at the scheduled time of export. Laboratories performing testing will have ample time to follow up and report positive results.
- 5 Background information
  - 5.1 On 13 August 1999 MAF was informed that a mare was being prepared for export from Emirates Park Stud, NSW, despite detection of a further case of EIA on that property during follow up testing subsequent to the export of the infected mare to New Zealand. MAF considered it was too early to resume imports from that property, and advised AQIS accordingly.
  - 5.2 The Australian Thoroughbred industry has initiated substantial testing in the Hunter Valley region of NSW, and approximately 5,600 horses have been tested in recent weeks. The two horses on Emirates Park Stud were the only horses returning positive test results. Although there is no real co-ordination of or structure to this testing and it is confined to a small group of Thoroughbred studs in a specific region, it does confirm that the prevalence of EIA in NSW is probably very low.
  - 5.3 The assurance provided by premises of origin health status declarations will differ for different classes of horse. Horses in active work or participating in competition events are likely to be exposed to horses whose health status the certifying veterinarian will have no knowledge of. For this reason, premises of origin health status declarations cannot be considered to provide an assurance of isolation from other animals not of equivalent health status. The only means to achieve such an assurance is through pre-export isolation. However, MAF believes it is industry's wish to avoid compulsory isolation requirements during trade in live horses with Australia.

40 EXTRACT FROM MINUTES OF THE MEETING OF NEW ZEALAND EQUINE HEALTH ASSOCIATION INC. (1 September 1999)  
*ITEM 5. EQUINE INFECTIOUS ANAEMIA*

Matthew Stone reported on his meeting at the Elizabeth Macarthur Agricultural Institute with AQIS and other officials on 17 August 1999.

Following his visit Matthew had circulated on 23 August 1999 a briefing paper detailing the current measures for EIA in the import health standard for horses from Australia, together with a recommendation of the draft MAF risk analysis to be immediately implemented for horses imported from Australia.

The meeting approved this recommendation for MAF implementation with respect to Australia, a low EIA prevalence country, as follows:

- (a) EIA is a notifiable disease in the exporting country; and
- (b) The horses were kept for the three months prior to export on premises where EIA has not occurred during that period; and
- (c) The horses were subjected to the AGID or c-ELISA test for EIA during the 21 days prior to export, with negative results (unless being re-imported into New Zealand from Australia after a visit of less than 21 days).

MAF comment:

Note that NZEHA recommended that testing occur during 21 days prior to export, rather than 30 days. The NZEHA recommendation has been adopted in the final risk analysis.

## **PART IV: WEST NILE VIRUS**

41. DR LISA FERGUSON, ANIMAL AND PLANT HEALTH INSPECTION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE.
- 41.1 Outbreaks of West Nile virus have occurred both in the EU and in immediately surrounding countries. Specifically, the literature states that the virus has been identified in the following areas: Italy, 1998 (horses); Spain, 1979 (rodents, human); France, 1975-80 (human, horses); Greece, 1970-78 (humans, domestic animals, birds); Austria, 1964-77 (birds, mammals, human); Romania, 1997 (human, birds, mammals); Czech Republic, 1980-97 (human, mosquitoes, birds, mammals); Poland, 1996 (birds); and former Yugoslavia (human).
- 41.2 Horses are a terminal host of the virus. There is no evidence that horses develop and maintain viral titres in blood sufficient to infect either mosquitoes or other animals.
- 41.3 The region of the USA affected by WNV includes limited areas of the northeastern USA, specifically parts of New York, New Jersey, and Connecticut. On 21 October the USDA notified the OIE that there had been confirmed cases in horses in one area of Long Island, New York. An attachment mapped the distribution of equine cases. Another mapped the distribution of human cases, infected mosquito pools, and mosquito sampling sites.
- 41.4 As of the time of writing (20 November 1999) there have been freezing temperatures in the affected areas, therefore the vector period is essentially over. An attachment mapped daily minimum temperatures throughout the zone where infections had been reported.
- 41.5 There are routine encephalitis surveillance programmes in place all along the east coast of the USA, which have been previously established due to human health concerns with other encephalitidies. Specific surveillance for WNV is continuing, and consists of investigation of equine neurological illnesses, testing of wild birds, mosquitoes and sentinel chickens.
- 41.6. The impact of the EC Decision is that USDA must certify that horses have not resided in the affected counties for 15 days prior to export. This means that those horses intended for export must move out of the area and will leave from other areas after waiting out their 15 day period. The biggest effect has been that horses cannot leave from JFK airport, even those which are only transiting through.

## MAF'S CONCLUSIONS

1. The temperature, mosquito trapping and human/animal surveillance information indicate that since late October 1999 the risk has substantially decreased, probably to negligible levels. This situation is likely to remain the same at least until spring 2000, and more probably summer, when surveillance will indicate whether WNV has become endemic.
2. Although susceptible to clinical disease as incidental hosts, horses are not significant in the epidemiology of WNV because they do not develop viraemic titres sufficient to re-infect mosquito vectors. The same is true for humans. The natural cycle involves birds and various mosquito species, with spillover to humans and various domestic and wild mammalian species during epidemics.
3. The incubation period for infections causing equine encephalitis is typically very short, which in itself reduces the likelihood of a clinically normal horse incubating disease being imported. Further, as with the other equine encephalitic diseases for which horses are not epidemiologically significant in maintaining transmission cycles (including EEE, WEE and Japanese encephalitis, which were specifically discussed in the risk analysis, as well as several other viruses related to these and mentioned only in passing), there is little or no risk that imports of horses will lead to introduction and establishment here. The only concern for New Zealand is associated with indirect consequences of an imported case.
4. In general, the measures recommended to be applied for specific diseases discussed in the risk analysis will further reduce the already low risk of releasing incubating cases of equine encephalitis. Nonetheless, ensuring horses residing on premises where recent cases of any infectious equine encephalitic disease have occurred are not eligible for importation would reduce the risk of exposure in the pre-export period.

## MAF'S RECOMMENDATION

1. The wording of safeguards relating to the health status of premises where horses for export are kept in the 21 day period prior to export should preclude the occurrence of any infectious equine encephalitic disease, in recognition of the many different agents that are potentially associated with such cases in different parts of the world.