Ministry for Primary Industries
Manatū Ahu Matua

Risk Management Proposal

Animal Fibre

August 2015

Disclaimer

This risk management proposal does not constitute, and should not be regarded as, legal advice. While every effort has been made to ensure the information in this document is accurate, the Ministry for Primary Industries does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

Requests for further copies should be directed to:

Ministry for Primary Industries
Regulations & Assurance
Animal Imports
PO Box 2526
WELLINGTON 6140

Email: animalimports@mpi.govt.nz
Telephone: 04 890 0134
Facsimile: 04 894 0733

Contents

1 Purpose

This document summarises the biosecurity risks associated with the importation of animal fibre from all countries and seeks stakeholder feedback on the recommended measures proposed in the import health standard for animal fibre.

2 Background

This import health standard (IHS) has been developed under Section 24A of the Biosecurity Act (the Act). IHSs specify the risk management measures that must be applied to risk goods to ensure that biosecurity risk organisms are not associated with those risk goods.

There were 16 IHSs that applied to imported animal fibre and associated packaging. These standards were written for a multitude of commodities, species, and countries. In July of 2011 MPI began work on a review and these standards were amalgamated into a single animal fibre IHS. As a result, the IHS Animal Fibre (ANIFIBRE.ALL) was issued on September 25, 2014.

ANIFIBRE.ALL was based on the MPI import risk analysis (IRA): *Unprocessed Fibre of Sheep and Goat* dated November 1998 (IRA 1998). The IRA 1998 assessed the biosecurity risks associated with greasy wool being imported into New Zealand. As MPI does not have an IRA for scoured wool, ANIFIBRE.ALL has been amended to reflect international standards (The *OIE Terrestrial Animal Health Code*) for the trade in scoured wool in relation to foot and mouth disease and sheep/goat pox.

The guidance document issued by MPI provides commodity-specific guidance information and will include the bilaterally-agreed format for veterinary certification for trade in animal fibre as they become available.

3 Objective

The objective of this risk management proposal is to propose measures to manage all biological risks associated with the import of animal fibre consistent with New Zealand's domestic legislation and international obligations.

4 Commodity Scope

For the purposes of this IHS animal fibre is defined as the natural external fibrous appendages that form part of the integument of an animal. They can be derived from ruminants (e.g. sheep, goats, alpacas, llamas, and yaks), swine, poultry, and fur–bearing mammals (e.g. rabbits, kangaroos, wallabies, possums, minks). Examples of animal fibre are wool, cashmere, angora, mohair, fur, bristles, hair and feathers.

Animal fibre can be processed (e.g. scoured, dyed yarn) or unprocessed (e.g. greasy wool) and is mostly imported for spinning, dyeing into yarn, and/or manufacture into other goods.

4.1 Exclusions

This IHS excludes hides and skins with fibre attached and game trophies. These commodities are covered by the IHSs *Hides and Skins from All Countries* and *Ornamental Animal Products from All Countries*, respectively. This IHS also excludes deer/elk velvet as the end use of this commodity is generally for human consumption.

5 Biological Risks

5.1 Biological risks associated with animal fibre

1) The biological risks associated with the importation of animal fibre have been examined in four MPI IRAs:
   a) *Unprocessed Fibre of Sheep and Goats* – issued November 1998
   b) *Possum Fibre from Australia* – issued May 1999
   c) *Macropod Fibre and Skins from Australia* – issued December 1998

d) *Weed Species by Live Animals and Unprocessed Fibre of Sheep and Goats* – issued May 1999.

2) The IRA *Hides and Skins from Specified Animals* published in April 2008 examined the biological risks posed by hides and skins (with fibre attached) of farmed production animals (e.g. ruminants, horses, pigs, lamoids, and ratites). This IRA was considered in addition to the four IRAs identified above. These IRAs are available on MPI's website: http://www.biosecurity.govt.nz/regs/imports/ihs/risk.

3) The MPI rapid risk assessment (RAA) for *Feather Pillows, Sleeping Bags and Duvets from Asian Countries with Highly Pathogenic Avian Influenza* was done in February 2004. This RAA was considered in the proposed measures for feathers.

5.2 Potential biological risks

1) The potential biological risks associated with imported fibre for which risk mitigation measures should be applied are detailed in Table 1.This table also includes the susceptible species for each risk.

Table 1: Potential Biological Risks

Biological risk	Specified ruminants	Equine	Swine	Avian	Rabbit, Possum, Kangaroo	Risk mitigation measure
Anthrax (*Bacillus anthracis*)	✓	✓	✓		✓	**6.1.1(1)**
Foot and mouth disease	✓		✓			**6.1.2(1)**
Pox viruses (Lumpy skin disease, sheep and goat pox)	✓					**6.1.3(3) and (6)**
Q fever (*Coxiella burnetii*)	✓	✓	✓		✓	**6.1.4(3), 6.2(3)**
Ectoparasites (e.g. *Psoroptes ovis*, ticks)	✓	✓	✓		✓	**6.1.4(2), 6.2(3)**
Exotic *Salmonella* spp.	✓	✓	✓	✓	✓	**6.1.4(3)**
Plant material and weed seeds	✓		✓			**6.1.4(3)**
Brucellosis (exotic *Brucella* spp.)	✓		✓			**6.1.4(2)**
Enzootic abortion of ewes (*Chlamydophila abortus)*	✓					**6.1.4(2)**
Melioidosis (multiple species)	✓	✓	✓		✓	**6.2(3)**
African swine fever			✓			**6.3(1)**
Classical swine fever			✓			**6.3(1)**
Swine vesicular disease			✓			**6.3(1)**
Porcine enteroviruses			✓			**6.3(1)**
Bovine viral diarrhoea	✓		✓			**Unstable in environment, if**

(type 2)						present scouring effective
Contagious caprine pleuropneumonia	✓					Unstable in environment
Contagious agalactia	✓					Unstable in environment
Newcastle disease				✓		6.4(4), 6.4(5)
Avian influenza				✓		6.4(4), 6.4(5)
Myxomatosis					✓	6.2(3)

6 Proposed Risk Management Measures

6.1 Proposed risk management measures for specified ruminants (cattle, sheep, goats, camels, alpacas and llamas)

6.1.1 Anthrax risk management measures

1) The risk management options for anthrax have been modified from the existing standards to align with the OIE C*ode* (the *Code*) where possible. These include certification for anthrax freedom or anthrax spore inactivation treatments.

   a) Fibre originates from live animals that, at the time of shearing, were part of a flock that was not subject to movement restrictions for the control of anthrax (Article 8.1.6); or

   b) Fibre is derived from animals that have been slaughtered to produce meat for human consumption and come from establishments that are not placed under movement restrictions for the control of anthrax and where there has been no case of anthrax during the 20 days prior to slaughter (Article 8.1.4); or

   c) Fibre is derived from an anthrax-free area; or

   d) Fibre is treated by immersion in hot water at 90°C for 45 minutes, 95°C for 25 minutes or 100°C for 15 minutes (Article 8.1.10); or

   e) Fibre is gamma irradiated with a dose of 25 kGy or 2.5 Mrad in accordance with the *Code* (Article 8.1.11); or

   f) Fibre is treated with a five-step washing procedure in accordance with the *Code* (Article 8.1.11).

2) For clause 6.1.1(1)(c), an anthrax-free area is defined as an area or areas where no cases of anthrax have occurred in the six months prior to date of shipment, or an area(s) where establishments are not subject to restrictions imposed in the control of anthrax at the time of fibre collection. The area(s) must have procedures that ensure the detection of outbreaks, effective quarantining of premises, and destruction of all parts of the animals with anthrax.

3) The time and temperature recommendations in clause 6.1.1(1)(d) are based on inactivation of anthrax spores in meat and bone in the *Code*. MPI considers these conditions to be adequate for the inactivation of anthrax in fibre.

6.1.2 Foot and mouth disease (FMD) risk management measures

1) The risk management options below for FMD in unprocessed fibre are based on existing standards and the *Code*. These include certification for freedom from FMD or FMD virus inactivation treatments.

   a) Fibre originates from a country or zone that is officially free from FMD in accordance with the *Code* (Articles 8.7.2, 8.7.3, 8.7.4 and 8.7.5) as referenced in the MPI List of FMD-Free Countries or Zones; or **[Amendment to ANIFIBRE.ALL August 2015]**

b) Fibre originates from animals resident in a zone in which no case of FMD has occurred within a 10 km radius within the last 30 days AND from holdings that have been FMD free for the previous three months (Article 8.7.10); and

   i) Fibre has been at least four weeks in transit to New Zealand or has been stored for at least four weeks (Article 8.7.35).

c) Fibre has been subjected to commercial aqueous scouring (Article 8.7.35); or **[Amendment to ANIFIBRE.ALL August 2015]**

d) Fibre has been fumigated with formaldehyde in a hermetically sealed chamber for at least 24 hours (e.g. formalin (37% formaldehyde) at a rate of 50 ml/m^3 mixed with potassium permanganate at a concentration of 35 g/m^3) (Article 8.7.35). **[Amendment to ANIFIBRE.ALL August 2015]**

2) The newly issued Animal Fibre IHS (ANIFIBRE.ALL dated 25 September 2014) specifies that the 'country or zone is officially free from FMD without vaccination'. Upon further consideration of the MPI List of FMD-Free Countries and Zones, this document does not indicate the vaccination status of these FMD-free countries and zones. Hence, it is proposed that the vaccination status statement be removed from ANIFIBRE.ALL. **[Amendment for ANIFIBRE.ALL August 2015]**

3) The *Code* procedures for the inactivation of FMD virus in wool and hair were reviewed in the IRA *Unprocessed Fibre of Sheep and Goats* (Article 8.7.35). Storage of the fibre for at least four weeks was the only procedure considered appropriate for the inactivation of FMD virus. The other procedures were not adequately specified to allow for certification or were considered to offer inadequate protection against FMD.

4) It should be noted that the IRA *Unprocessed Fibre of Sheep and Goats* was written specifically for unprocessed fibre being treated in New Zealand. It is unlikely that fibre which has been scoured or fumigated prior to import into New Zealand would contain FMD virus. As the treatments would occur offshore, there would be no effluent (e.g. scouring waste) to dispose of. Thus, it is proposed that the certification requirements for treated fibre be amended to be consistent with the *Code* recommendations for the importation of (Article 8.7.30) and the inactivation of FMD virus in (Article 8.7.35) fibre. **[Amendment for ANIFIBRE.ALL August 2015]**

5) The two other procedures for the inactivation of FMD virus in wool and hair in the *Code* are inadequately specified to allow for certification (Article 8.7.35).

6.1.3 Lumpy skin disease (LSD), sheep and goat pox risk management measures

1) The IHS *Unprocessed Specified Animal Fibre from all Countries* (dated 2 September 2004) requires no cases of LSD and sheep and goat pox to have occurred in the country of origin during the previous 12 months. There are, however, no criteria for how this is to be verified. In addition, the timeframe for being disease free is a lower level of protection than that prescribed by the *Code*.

2) Given the high impact these organisms would have in New Zealand the proposed certification change is that fibre must originate from a country or zone free from LSD and sheep and goat pox in accordance with the *Code*.

3) For a country to be considered free from LSD, the *Code* (Article 11.11.2) requires that three criteria be met (***Note***: Certification for LSD only applies to cattle and water buffalo per the *Code*):

   a) LSD is notifiable in the country; and

   b) No case of LSD has been confirmed for at least the previous three years; and

   c) No vaccination against LSD has been performed for at least three years.

4) For sheep and goat pox, the *Code* recommendations for skins, fur, wool and hair allow these commodities to be imported from animals which have been kept in a sheep and goat pox free zone or where the fibre has been processed to destroy the virus (Article 14.9.9). However, the *Code* does not specify procedures for the inactivation of sheep and goat pox virus. The IRA *Unprocessed Fibre of Sheep and Goats* concluded that scouring with a detergent at (60-65˚C for an average of three minutes) would be sufficient to destroy the majority of pox virus, but indicated some heat resistant strains might remain after scouring.

5) It is likely that commercial aqueous scouring with a detergent followed by further washing or drying would effectively mitigate the risks associated with sheep and goat pox in fibre. As the washing would occur

offshore, there would be no effluent (scouring waste) to dispose of. There may be solid waste associated with scoured and uncarded fibre; however, this fibre will be processed at a transitional facility with adequate procedures for waste disposal (e.g. deep burial, incineration), ensuring that waste is not readily accessed by sheep and goats (i.e. no exposure pathway).

6) For sheep and goat pox the risk management options are (***Note***: Certification for sheep and goat pox only applies to sheep and goats):
   a) Fibre originates from animals in a country or zone where sheep and goat pox have not been present for at least the past three years in accordance with the *Code* (Article 14.9.2); or
   b) Fibre has been subjected to commercial aqueous scouring (60-70˚C for at least three minutes); and
      i) After scouring fibre is subject to:
         1) Washing in water at a temperature of at least 75˚C for at least one minute; or
         2) Drying at a temperature of at least 70˚C for at least two minutes. **[Amendment to ANIFIBRE.ALL August 2015]**

6.1.4 Risk management measures for remaining risk organisms in ruminant fibre

1) Requirements for anthrax, FMD and pox viruses must be met prior to importation.
2) For unprocessed ruminant fibre, further processing is required post arrival in a transitional facility for the remaining risks. Commercial aqueous scouring (at 60-70°C for at least three minutes) effectively mitigates the risks of brucellosis, enzootic abortion of ewes and ectoparasites (*Psoroptes ovis*, ticks, etc).
3) However, scouring alone does not mitigate the risks of Q fever, *Salmonella* species and weed seeds/plant hazards. Risk analyses have determined the following treatments will destroy the remaining organisms by either:
   a) Scouring and dyeing:
      i) Commercial aqueous scouring (at 60-70°C for at least three minutes); and
      ii) Hot water dyeing (at least 85-100°C for at least one hour); or
   b) Scouring and carding:
      i) Commercial aqueous scouring (at 60-70°C for at least three minutes); and
      ii) After scouring fibre is subject to:
         1) Washing in water for at least one minute at a temperature of at least 75°C; or
         2) Drying for at least two minutes at a temperature of at least of 70°C; and
      iii) Processing to remove seeds and plant material by:
         1) Carding and combing; or
         2) Carding using a carding machine incorporating a high pressure crushing roller; or
         3) Acid carbonising.
4) The waste products generated from scouring may still contain viable Q fever, *Salmonella* species and weed seeds/plant. This waste needs to be further treated and disposed of as outlined in the 'Post Entry' section below.

6.1.5 Third country processing of ruminant fibre

1) Currently, there are two IHSs that allow for New Zealand and Australian origin wool to be processed offshore in China/Germany (i.e. third country) and subsequently returned to New Zealand.
2) It is proposed that a substitution of the country of origin and country of processing is acceptable such that fibre originating from any country and then processed in a third country can be imported if the following documentation is provided.

a) An original veterinary certificate (or certified copy) from the country of origin with a requirement for anthrax disease freedom attestations. **[Amendment to ANIFIBRE.ALL August 2015]**

b) A government-endorsed manufacturer's declaration from the third country which links the fibre to the veterinary certificate and certifies that the fibre has been treated in accordance with clause 6.1.4(3)(b). **[Amendment to ANIFIBRE.ALL August 2015]**

6.1.6 Private consignments (<20kg) of ruminant fibre

1) The IRA *Hides and Skins* concluded that the likelihood of organisms being present in fibre is reduced if it is clean and not visibly contaminated. Thus, private consignments of ruminant fibre (less than 20 kg) can be given biosecurity clearance if they have been washed and spun into yarn and are free of visible contamination when inspected.

2) Visibly contaminated or unprocessed fibre must be treated in the following manner:

   a) Removal of any visible contamination (e.g. faeces, soil, seeds/plant material, etc); and

   b) Fibre is:

      i) Gamma irradiated at a dose of 25 kGy or 2.5 Mrad; or

      ii) Autoclaved at 120˚C for at least 30 minutes; or

      iii) Heated to 85˚C at 40% relative humidity for at least 15 hours; or

      iv) Fumigated with formalin (37% formaldehyde) at a rate of 50 ml/m^3 mixed with potassium permanganate at a concentration of 35 g/m^3 in a sealed container for 24 hours in accordance with the *Code* (***Note***: This option is only for fibre with no embedded seeds); and

   c) If live insects are present and the fibre has not been heat treated as described in 6.1.6(2)(ii) and (iii), fibre must be fumigated with methyl bromide at a dosage of 32 g/m^3 at 21˚C (normal atmospheric pressure) for 24 hours. (Note: For each 5˚C decrease below 21˚C, 8 g/m^3 must be added to the dosage rate.)

3) See clause 6.1.1(1)(e) – a gamma radiation dose of 25 kGy dose is recommended for anthrax in the *Code*. The *Code* recommends a gamma radiation dose of 20 kGy for FMD in skins and trophies; hence, MPI considers a gamma radiation dose of 25 kGy to be appropriate to mitigate anthrax and FMD associated with fibre.

6.2 Proposed risk management measures for kangaroo, wallaby, possum and rabbit fibre

1) The risks associated with these fibre are anthrax, Q fever, and ectoparasites. Additionally, melioidosis was identified as a risk in macropod fibre.

2) Anthrax freedom declarations are required in accordance with clause 6.1.1. As fibre from macropods and possums is derived from slaughtered animals, clause 6.1.1(1)(a) for fibre originating from live animals has been removed as a risk mitigation option.

3) If fibre has not been hot water treated (i.e. immersion in hot water at 90°C for 45 minutes, 95°C for 25 minutes or 100°C for 15 minutes), then the fibre must be treated as described below to mitigate the risk associated with Q fever, ectoparasites and melioidosis:

   a) Immersion in water heated to a temperature of at least 75°C for at least 5 minutes, in the presence of a non-ionic detergent at a concentration of at least 1 g per litre; or

   b) Commercially scoured (at 60-70°C for at least three minutes) and then dried at a temperature of at least 70°C for at least two minutes.

6.3 Proposed risk management measures for commercial consignments of bristles, hair and mink fibre

1) Animal fibre that has been immersed in hot water at 90°C for 45 minutes, 95°C for 25 minutes or 100°C for 15 minutes can receive biosecurity clearance as this treatment is sufficient to mitigate all hazards (e.g. anthrax, ASF, CSF, etc) associated with these fibre.

2) A veterinary certificate or government-endorsed manufacturer's declaration for verification is required.

6.4 Proposed risk management measures for commercially manufactured and ornamental feathers

1) Commercially manufactured items containing feathers (e.g. pillows, sleeping bags, duvets, quilts) are considered to be of negligible risk and can be given clearance.

2) Feathers associated with musical instruments and articles for cultural performances can be given biosecurity clearance.

3) Feathers that have been manufactured into articles that require no further processing (e.g. shuttle cocks, dyed feathers, fishing flies) and on inspection are free of visible contamination (e.g. blood, skin, manure, soil, plant material, and pest infestation) can be given biosecurity clearance.

4) Loose feathers that have been commercially washed can receive biosecurity clearance when accompanied with a manufacturer's declaration that the feathers have been commercially washed or the feathers must be clean on inspection.

5) Individual feathers that are washed or are clean on inspection can receive biosecurity clearance.

6) Feathers associated with handicrafts and artifacts (e.g. dream catchers, mats) from any country can be considered of similar risk to commercially manufactured items as they would be unlikely to come into contact with susceptible avian species in New Zealand. These items would be subject to inspection.

7) If the feathers appear contaminated, then they must be treated in the following manner to receive biosecurity clearance:

   a) Fumigation with formalin (10% formaldehyde) for 8 hours in accordance with the *Code*; or

   b) Gamma irradiation at a dose of 20 kGy or 2.5 Mrad in accordance with the *Code*.

6.5 Proposed risk management measures for commercially processed products from animal fibre

6.5.1 Wool grease and lanolin

1) Commercially packaged lanolin or lanolin based products from any country can receive biosecurity clearance.

2) Bulk wool grease is eligible for biosecurity clearance if it has been further processed and purified following aqueous scouring (acid treatment at 95°C for six hours). MPI considers the risks associated with wool grease to be mitigated under these conditions.

3) A manufacturer's declaration is required for verification.

6.5.2 Other commercially processed products from animal fibre

1) The IHS *Specified Animal Products and Biologicals* (8 June 2011) includes some fully processed animal fibre products which have been previously assessed to be of negligible risk. It is proposed that these be included in ANIFIBRE.ALL and can be given clearance under the conditions outlined.

2) Animal bristles and hair on commercially manufactured paint brushes, shaving brushes, hair brushes, musical instruments (e.g. bows, bow strips), etc from any country can be given clearance.

3) Raw/unreeled silk (excluding cocoons) and other processed silk fibre from any country can be given clearance.

4) Commercially manufactured items (e.g. apparel, carpets, fabric, dyed and spun yarn) containing animal fibre such as wool, mohair, angora, cashmere, alpaca, etc from any country may be given clearance. Numdah rugs must be inspected to ensure they are free of contaminants such as seeds.

5) Horse tails (washed horse hair plaited onto webbing tape intended for cosmetic use in show horses) from any country may be given clearance provided they are free from visible contamination.

6.6 Proposed post entry requirements

1) Proposed measures for certification and onshore treatment in a transitional facility mitigate all risks in processed fibre. However, waste products generated from scouring treatments at a transitional facility may still contain Q fever, Salmonella, and seeds/plant material.

2) The IHS *Unprocessed Specified Fibre from all Countries* (2 September 2004) states that liquid effluent from scour cannot be used to irrigate land or drain into natural water ways, but does not have specific guidelines for effluent disposal.

3) The post entry requirements have been adapted from the IRA *Hides and Skins* as the risks posed by animal fibre are similar to that of hides and skins. Liquid waste must be:

   a) Discharged into a municipal sewage system; or

   b) Discharged into a securely fenced and isolated soak-pit; or

   c) Treated with a MPI-approved biocide.

4) Solid waste can be disposed of by incineration, autoclaving (at least 120°C for at least 30 minutes to inactivate seeds) or deep burial. Weed seeds and plant material that has been hot water dyed can be disposed of in a commercial landfill. Solid waste may be composted provided that it has first been approved by MPI.

Appendix 1 – Import Health Standards for Animal Fibre

Full Title	Short code	Species covered
Scoured cashmere/mohair/wool from the People's Republic of China - issued 14 January 1998	fibcmwic.prc	Goat and sheep
Private consignments of animal fibre from all countries - issued 11 November 2002	fibfleic.all	Goat, sheep and camelid
Scoured, uncarded specified animal fibre from all countries - issued 02 September 2004	fibsucic.all	Goat, sheep, camelid and yak
New Zealand/Australian origin wool tops from Germany - issued 15 May 2001	fibtopic.ger	Sheep
Unprocessed specified animal fibre from all countries - issued 02 September 2004	fibunpic.all	Goat, sheep, camelid and yak
Scoured New Zealand/Australian origin animal fibre from People's Republic of China - issued 15 May 2001	fibwooic.prc	Goat, sheep and camelid
New Zealand origin animal fibre (returned) from all countries - issued 28 November 2000	fibnzoic.all	All
Scoured and carded specified animal fibre from all countries - issued 02 September 2004	fibscoic.all	Goat, sheep, camelid and yak
Mink fibre from United Kingdom - issued 15 May 2001	fibminic.uk	Mink
Possum fibre from Australia - issued 15 May 2001	fibposic.aus	Possum
Unprocessed rabbit fibre from all countries - issued 26 June 2001	fibrabic.all	Rabbit
Scoured rabbit fibre from all countries - issued 26 June 2001	fibsraic.all	Rabbit
Macropod hides and fibre from Australia - issued 15 May 2001	hidmacic.aus	Kangaroo, wallaby and wallaroo
Specified animal products and biologicals - issued 08 June 2011*	ineproic.all	Goat, sheep, camelid and yak
		Horse
		All
Feathers for commercial, fly-tying, and ornamental purposes from all countries - issued 07 October 2004	feacfoic.all	Avian
Wool packs (used) from all countries - issued 28 November 2000	fibwpic.all	Sheep