

## ANIMALS

# International animal trade

### Risk analysis

The Ministry for Primary Industries (MPI) Animals and Aquatic Risk Analysis Team has the primary function of developing science-based biosecurity risk assessments that support the development of import health standards (IHSs), which govern how risk goods (e.g. animals and animal products) are to be safely imported into New Zealand. Where requested by the Animal Imports Team, the Animals and Aquatic Risk Analysis Team also provides technical advice to support amendments to IHSs as needed.

The team also supports post-border activities such as surveillance, animal disease emergency readiness, incursion response and risk advice for the Government Industry Agreement (GIA) by providing science and technical advice and risk assessments. The team works with internal and external stakeholders by identifying and characterising emerging animal health and aquatic health biosecurity issues, suggesting risk management options and reporting on them.

The process of drafting risk analyses includes internal and external peer review, with the draft risk analysis including options for managing any hazard. Draft risk analyses are published on the MPI website, and IHSs are subsequently developed from them.

Import risk assessments (IRAs), rapid risk assessments (RRAs), and technical advices completed during the 2018-2019 financial year are published on the MPI website at [mpi.govt.nz/importing/overview/import-health-standards/risk-analysis/](https://mpi.govt.nz/importing/overview/import-health-standards/risk-analysis/) and were as follows:

### RRA to evaluate the change in risk profile from importation of bovine germplasm

#### RRAs: *Mycoplasma bovis* in bovine semen (2019) and *M. bovis* in bovine in-vivo-derived and in-vitro-produced frozen bovine embryos (2018)

An IRA for cattle germplasm from all countries was completed in 2009 to assess the risk posed by pathogenic

agents associated with importing cattle semen and embryos. This risk assessment concluded that the risk estimate for exotic mollicutes including *M. bovis* was non-negligible<sup>1</sup> and risk mitigation measures were implemented.

Following the detection of *M. bovis* in a dairy herd in the South Island in July 2017, and subsequent efforts to eradicate *M. bovis* from New Zealand, qualitative rapid risk assessments were conducted to re-assess the risk of *M. bovis* associated with the importation of bovine semen and in-vivo-derived and in-vitro-produced bovine embryos from any country.

These RRAs considered new evidence of transmission of *M. bovis* in semen and embryos. The RRAs also considered eradication costs and societal impacts when estimating the risk. Both RRAs found that the risks from *M. bovis* in semen and embryos to be non-negligible and propose additional risk mitigation measures.

#### IRAs: Enzootic bovine leucosis virus (BLV) and *Campylobacter fetus* ssp. *venerealis* (Cfv) (2019)

The IRA for cattle germplasm from all countries (2009) also assessed the risks from BLV and Cfv associated with the importation of bovine semen and embryos. These pathogens were assessed to be hazards in this IRA. The IRA regarded BLV and Cfv as endemic in New Zealand at that time.

MPI's passive surveillance system has had no confirmed reports of BLV since 2008, nor Cfv since 1992. These were added to the New Zealand Biosecurity (Notifiable Organisms) Order in 2016. BLV and bovine genital campylobacteriosis have been absent since 2008 and 1993 respectively from both national dairy and beef herds.

In 2019, an IRA was developed in response to a request from the Animal Imports Team to review the risk of BLV

and Cfv associated with the importation of bovine semen and in-vivo-derived and in-vitro-produced embryos. Both BLV and Cfv were considered to pose non-negligible risks in imported semen, and risk management measures were suggested. However, they were considered to pose negligible<sup>2</sup> risks in bovine in-vivo-derived and in-vitro-produced embryos, and risk management measures were not justified.

#### RRAs: Formalin/alcohol preserved molluscs containing pearls (2018)

The risk analysis completed in 2005 for non-viable biological products, micro-organisms and other viable cells determined that non-viable low-risk biological products could be imported without restriction. The IHS (INESSPEIC.ALL) based on this risk assessment allows for the unrestricted importation of non-viable biological products identified as low-risk organisms.

The Animal Imports Team requested advice to confirm that this IHS is appropriate for importing molluscs preserved in formalin/alcohol and containing cultured pearls grown in fresh or salt water. In this RRA, pathogens identified in the preliminary hazard list were assessed as unlikely to remain viable in a vacuum-packed formalin/alcohol mixture.

#### IRA: Crocodilia from Malaysia, Singapore, Indonesia, Thailand, Papua New Guinea, northern Australia and the European Union (2019)

This qualitative risk analysis considered biosecurity risks associated with the importation of captive hatched and reared saltwater and freshwater crocodiles. From a preliminary list of potential diseases of concern associated with crocodilians, 16 were identified as hazards. Of these, seven were assessed as negligible risks on the basis

1 Non-negligible risk is defined as worth considering; significant

2 Negligible risk is defined as not worth considering; insignificant

of demonstrated host specificity. The remaining nine organisms were subject to risk assessment and three of them were assessed as moderate risks. Risk mitigation measures were suggested.

### IRA: Eviscerated or trunked fish for human consumption (2019)

This is an IRA for non-viable fresh, chilled or frozen fish intended for human consumption, sourced from all countries. Commodities include eviscerated teleosts (bony fishes) and “trunked” (headed, gutted, fins and tail removed) elasmobranchs (cartilaginous fishes) and their products (including minced, salted, smoked or mechanically recovered fish) imported for human consumption. These fish could be sourced from fresh, brackish or marine waters in any country.

This IRA considered 569 potential hazards, of which 20 viruses or viral species complexes, 13 bacterial pathogens or species complexes, three fungal and four microsporidean pathogens, and five groups of metazoan pathogens, were identified as representing a non-negligible risk and risk management options were proposed.

### Crustaceans for human consumption (2018)

This is an IRA for non-viable crustaceans intended for human consumption. They may be imported into New Zealand chilled, frozen or processed.

This IRA considered 141 organisms (or groups of organisms) of concern, based on expert advice and the scientific literature. A preliminary list of potential hazards included 141 organisms (or groups of organisms), of which 25 (including two zoonotic species) were identified as requiring risk assessment. Four of these were assessed as presenting a non-negligible risk.

### Technical advice

The Animals and Aquatic Risk Analysis Team also provided technical advice to help develop a number of import health standards:

- bovine viral diarrhoea virus type 2 in bovine semen and in-vivo-derived embryos from European Union member states, and BVDV in cervine semen from all countries (September 2018);
- response to an inquiry from Deer Industry New Zealand regarding detection of chronic wasting disease in deer in Finland (November 2018);
- risk of Angara disease as a result of increasing the egg content in imported mayonnaise (November 2018);
- effectiveness of novel non-topical external parasiticides on ticks and fleas and the ability to block transmission of vector-borne diseases of relevance (March 2019);
- consumer-ready aquatic animal products for human consumption (April 2018);
- shelf-stable fish bait (April 2019); and
- ornamental fish mortalities in quarantine: *Gymnogeophagus balzanii*, *Thorichthys meeki*, *Corydoras* spp., *Capoeta tetrazona* and *Epalzeorhynchus frenatus*.

### Animal imports

The MPI Animal Imports and Animal Trade (Imports) teams are responsible for developing and amending IHSs that stipulate biosecurity requirements for importation of live animals, germplasm and animal products. The teams also provide advice to the public and technical advice to staff at the border.

Some IHSs require that the animal or animal product is accompanied by a current import permit, to assist with clearance at the border. The imports teams are responsible for issuing these permits, and 3,255 permits were issued during 2018 (Table 1). The number of permits is not necessarily related to the volume of trade: for example, a single permit might be issued for several horses.

Numbers of live animal imports in 2018 are listed in Table 2. These are estimates based on importers’ stated intentions and may differ from the numbers actually imported.

Table 1: Number of import permits issued by Animal Imports Team, 2018

Category	Product type	
Animal products	Animal feed	29
	Animal product	105
	Bee	15
	Dairy	2
	Egg	12
	Equine	2
	Fibre	13
	Fish	10
	Hides/skins	4
	Meat	6
	Porcine	27
	Poultry	1
	Wool	1
	<b>Total</b>	<b>227</b>
Biologicals	General	330
	Restricted	183
	<b>Total</b>	<b>514</b>
Embryos	Bovine	18
	Laboratory animals	2
	Ovine	14
	<b>Total</b>	<b>35</b>
Live animals	Bovine	0
	Butterfly	4
	Caprine	5
	Dog/cat	63
	Dog/cat – quarantine	1,876
	Equine	24
	Fish	10
	Hatching eggs	9
	Insect	4
	Invertebrate	79
	Laboratory animals	54
	Marine invertebrates	7
	Ovine	3
	Rabbit	3
	Small animals	2
Zoological	23	
	<b>Total</b>	<b>2,167</b>
Semen	Bovine	99
	Canine	5
	Caprine	2
	Equine	21
	Ovine	17
	Zoo animals	3
	<b>Total</b>	<b>147</b>
Transit	All	165
	<b>Total permits issued</b>	<b>3,255</b>

**Table 2: Live animal imports by species, 2018**

Species	
Alpacas	47
Fish	31,461
Cats	1,733
Zoo animals	12
Dogs	4,191
Horses	1,582
Guinea pigs	24
Invertebrates	11,487
Laboratory animals	1,516
Ovine	5
Rabbits	3
<b>Total</b>	<b>52,061</b>

The following is a summary of new or amended IHSs issued during 2018.

### Poultry hatching eggs and specific-pathogen-free chicken eggs

This IHS was re-issued on 4 October 2018. It was updated to reflect the change in the name of the Transitional Facility standard.

### Egg products

This IHS was issued on 23 January 2018. It combines all egg-product IHSs into a single IHS and includes types of products not previously included.

### Semen from zoo Asian elephants

The IHS was amended to include semen from approved zoos in the European Union. This amendment was made at the request of the New Zealand zoo industry, and re-issued on 10 April 2018.

### Third-country processing

This IHS was reissued on 5 November 2018. The amendment was to incorporate a country approval process and clarify import requirements for animal products that have undergone third-country processing.

### Exports of live animals and germplasm

Export figures for live animals and germplasm for 2018 are presented in **Tables 3 and 4**.

**Table 3** compares live animal and germplasm exports from 2009 to 2018,

and **Table 4** shows the global distribution by region, of exports for 2018.

There is continued growth in exports of poultry day-old chicks, with higher export volumes than in 2017. In total, 2,838,496 day-old chicks were exported in 2018 (**Table 3**). Hatching-egg exports decreased by just over 2 million in 2018, to a level more consistent with the period from 2014 to 2016 (**Table 3**).

There has been a significant increase in the exports of bumble bees to Asia, with 11,500 exported in 2018 (**Table 4**). While the demand for honey bees remains, in particular from Canada, continued poor weather in New Zealand meant fewer bees were available for export.

Bovine semen exports were slightly lower than the previous year, but remain strong (**Table 3**).

Live cattle exports have continued to fall since the 2014 peak of just over 85,000, and 17,319 animals were exported in 2018 (**Table 3**). Most of the cattle exported in 2018 went to China (**Table 4**).

**Table 3: Comparison of live animal and germplasm exports from 2009 to 2018**

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Bees (packages [kg], queen and bumble)	31,906	18,646	31,211	40,675	44,116	36,737	8,776	37,180	37,523	34,621
Bovine embryos	222	196	457	437	536	850	1,801	950	943	1,077
Bovine semen	1,525,086	1,628,656	1,253,030	1,251,776	1,596,560	1,573,105	1,160,455	1,085,082	1,073,877	1,237,044
Canine semen	129	200	33	47	420	9	41	12	166	56
Caprine semen	5,556	40	4,439	300	1,266		50		Included in ovine semen	Included in ovine semen
Cats & dogs	4,349	4,164	3,507	4,045	4,278	5,980	6,151	5,873	4,247	3,999
Cervine semen	1,803	633	2,275	1,557	816	325	220	275	2,590	3,001
Equine semen	3,086	4,418	6,324	4,119	3,032	3,265	3,324	2,362	2,670	5,195
Live alpacas & llamas	126	41	80	228	200	156	456	404	198	375
Live cattle	17,319	27,306	40,506	21,186	85,732	36,573	39,636	30,499	16,150	12,847
Live deer				28			65	31	15	46
Live goats	757	18	1,184		35			979	58	190
Live horses	2,999	2,655	2,706	2,713	2,622	2,853	2,886	3,308	2,292	2,469
Live sheep	239	123	300	45,166	1,082	380	421	177	307	124
Ovine embryos	200	809	2,778	825	1,836	1,737		320	114	230
Ovine semen	3,960	9,569	6,492	5,049	5,518	1,877	7,271	11,819	4,954	10,374
Poultry (day-old chicks)	2,838,496	2,787,409	2,442,609	2,221,689	1,700,483	1,270,703	1,136,530	1,342,542	1,324,543	1,098,192
Poultry (hatching eggs)	3,563,890	5,705,973	3,700,891	4,076,927	3,036,075	2,536,565	2,365,466	3,173,403	5,185,128	3,860,755

**Table 4: Volume of live animal and germplasm exports to various regions in 2018**

	Africa	Asia	Australia	Canada	Central & South America	Europe	Middle East	Pacific Islands	United States	Total
Bovine embryos			186						36	222
Bovine semen	304,109	22,881	148,806	2,510	634,700	371,719		1,518	38,843	1,525,086
Canine semen	2	7	120							129
Caprine embryos		24								24
Caprine semen		5,000			68				488	5,556
Cats & dogs	18	365	2,712	91	16	705	13	109	320	4,349
Cervine embryos				110					154	264
Cervine semen			160	120		843			680	1,803
Equine semen			3,086							3,086
Live alpacas & llamas						126				126
Live cattle		17,319								17,319
Live goats		752	4		1					757
Live horses		832	2,045			34	9	6	73	2,999
Live pigs								23		23
Live sheep		162	12		41	24				239
Ornamental birds		220	2			4				226
Other		3	47						2	52
Ovine embryos		200								200
Ovine semen		86	411	413	2,769		281			3,960
Porcine semen								10		10
Poultry (day-old chicks)		1,684,498						1,153,998		2,838,496
Poultry (hatching eggs)		175,680					140,220	3,247,990		3,563,890
Zoo animals		51	7						21	79
Bees (packages [kg])				19,007						19,007
Queen bees & bumble bees		11,500		1,399						12,899

### Number of export certificates agreed

During 2018 there were 48 Overseas Market Access Requirements (OMARs) or export certificates agreed, issued and notified as notices under the Animals Products Act 1999. Of these, 13 notices represent requirements for new markets, while the rest were amendments to existing OMARs.

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