

Animal Health Surveillance

The following tables present animal health data collected by MPI from various sources during 2014.

Table 1 is a summary of the numbers of laboratory submissions from sick farmed animals, from the major livestock and avian populations.

Table 2 lists the number of *Salmonella* serotypes by animal species diagnosed by veterinary pathology laboratories.

Table 3 presents a summary of the results from the salmon surveillance programme run annually in approved establishments

for the export of salmon for human consumption to Australia. Testing is conducted by the Animal Health Laboratory, Wallaceville.

Table 4a presents a cumulative list of investigations conducted by the MPI Incursion Investigation (Animals and Marine) Team more than once during the period 2009–2014 that have resulted in exclusion of OIE-notifiable diseases or other selected significant exotic diseases.

Table 4b presents a list of significant investigations conducted during 2014

by the MPI Incursion Investigation (Animals and Marine) Team into suspected exotic or emerging diseases that have been confirmed as positive. These include exotic disease incursions or newly emerged diseases, occurrences of diseases in new host species, first detections of disease agents established in New Zealand, and interceptions with no resulting transmission or establishment of organisms.

Table 1: Number of cases and diagnoses received from veterinary pathology laboratories during 2014

Cattle	
Total sick animal cases	21 038
Abnormalities of reproductive system	327
<i>Neospora caninum</i>	11
<i>C. fetus</i> ssp. <i>venerealis</i>	0
Pestivirus infection	4
Abortion	808
<i>Neospora caninum</i>	230
Mycotic abortion	25
Pestivirus infection	13
<i>Leptospira</i> spp.	11
Congenital defects	10
Ill thrift/diarrhoea	12 058
Pestivirus infection	302
Gastrointestinal parasitism	457
Johne's disease – suspicious and confirmed	2 627
Trace element deficiency	415
<i>Yersinia</i> spp.	616
Rotavirus	429
Nervous signs	505
<i>Listeria monocytogenes</i>	3
Hepatic encephalopathy	0
Metabolic disease	63
Malignant catarrhal fever	6
Polioencephalomalacia	14
<i>Histophilus somnus</i>	0
Sudden death	1 288
<i>Clostridium</i> spp.	5
Respiratory disease	768
Sheep	
Total sick animal cases	1 585
Abnormalities of reproductive system	193

<i>Brucella ovis</i>	13
Abortion	315
<i>Campylobacter fetus</i> spp. <i>fetus</i>	34
Other <i>Campylobacter</i> spp.	7
<i>Toxoplasma gondii</i>	30
<i>Salmonella</i> Brandenburg	49
Congenital defects	3
Ill thrift/diarrhoea	827
Johne's disease	32
Trace element deficiency	38
Gastrointestinal parasitism	145
Nervous signs	74
<i>Listeria monocytogenes</i>	8
Polioencephalomalacia	1
<i>Clostridium</i> spp.	1
Respiratory disease	64
Sudden death	384
Gastrointestinal parasitism	53
Farmed deer	
Total sick animal cases	174
Abortion	1
Congenital defects	0
Ill thrift/diarrhoea	111
Johne's disease	4
Trace element deficiency	10
<i>Yersinia</i> spp.	6
Nervous signs	11
Malignant catarrhal fever	0
Sudden death	52
Gastrointestinal parasitism	5
Malignant catarrhal fever	1
Horses	
Total sick animal cases	6 246
Abortion	60
<i>S. zooepidemicus</i>	2
Circulatory disease	195

Ill thrift/diarrhoea	995
Gastrointestinal parasitism	70
Nervous signs	140
Respiratory disease	531
Streptococcal infection	44
Sudden death	17
Pigs	
Total sick animal cases	55
Abortion	2
Ill thrift/diarrhoea	16
Nervous signs	1
Sudden death	17
Goats	
Total sick animal cases	417
Abortion	5
Ill thrift/diarrhoea	175
Gastrointestinal parasitism	66
Respiratory disease	9
Nervous signs	12
<i>Listeria monocytogenes</i>	1
Caprine arthritis encephalitis	1
Sudden death	29
<i>Clostridium perfringens</i> D (enterotoxaemia)	0
Gastrointestinal parasitism	8
Lamoids	
Total sick animal cases	305
Abortion	6
Ill thrift/diarrhoea	110
Gastrointestinal parasitism	19
Nervous signs	10
Respiratory disease	7
Sudden death	18
Avian species	
Total number of submissions	385

Table 2: Salmonella serotypes isolated from animals during 2014

Serotype	Bovine	Equine	Ovine	Caprine	Porcine	Avian	Canine	Feline	Reptile
Unspecified	5	1	0	0	0	0	3	0	0
<i>Salmonella</i> Agona	2	0	0	0	0	0	0	0	0
<i>Salmonella</i> Anatum	4	2	0	0	0	0	0	0	0
<i>Salmonella</i> Brandenburg	40	0	50	0	0	0	1	0	0
<i>Salmonella</i> Bovismorbificans	3	0	0	0	0	0	0	0	0
<i>Salmonella</i> Emek	1	0	0	0	0	0	0	0	0
<i>Salmonella</i> Enteritidis	3	3	1	0	0	0	0	0	0
<i>Salmonella</i> Hindmarsh	3	0	63	0	0	0	0	0	0
<i>Salmonella</i> Infantis	1	0	0	0	0	0	0	0	0
<i>Salmonella</i> Johannesburg	0	0	0	0	0	0	0	0	0
<i>Salmonella</i> Kottbus	1	0	0	0	0	0	0	0	0
<i>Salmonella</i> Kentucky	1	0	0	0	0	0	0	0	0
<i>Salmonella</i> Lexington	1	0	0	2	0	0	0	0	0
<i>Salmonella</i> Mbandaka	1	0	0	0	0	0	0	1	0
<i>Salmonella</i> Meleagridis	0	0	0	1	0	0	0	0	0
<i>Salmonella</i> Mississippi	0	0	0	0	0	1	0	0	0
<i>Salmonella</i> Montevideo	0	0	0	0	0	0	0	0	0
<i>Salmonella</i> Potsdam	0	0	0	0	0	0	0	0	0
<i>Salmonella</i> Ruiru	6	0	0	0	0	0	0	0	0
<i>Salmonella</i> Saintpaul	3	0	0	0	0	0	1	1	0
<i>Salmonella</i> Senftenberg	0	0	0	0	0	0	0	1	0
<i>Salmonella</i> Typhimurium	106	16	2	0	0	0	3	3	0
Total	181	22	116	3	0	1	8	6	0

Table 3: Salmon surveillance during 2014

Number of salmon farms visited				18
Number of farms with significant mortalities				0
Number of farms where significant infectious disease was found				0
Laboratory examinations	No of farms	No of samples	No of positives	
Viral cultures	18	1 920	0	
<i>Myxobolus cerebralis</i>	11	660	0	
<i>Yersinia ruckeri</i>	18	1 920	1	
<i>Aeromonas salmonicida</i>	18	1 920	0	
<i>Renibacterium salmoninarum</i>	6	360	0	

Table 4a: Cumulative list of significant(*A) negative investigations of suspected exotic diseases, 2009–2014

Disease agents investigated and confirmed as negative (1)	2009	2010	2011	2012	2013	2014	Total
<i>Aeromonas salmonicida</i> (fish)				3		2	5
African horse sickness					2		2
Africanised honeybee (<i>Apis mellifera scutella</i>)/ Cape bee (<i>Apis mellifera capensis</i>)	2	1	1				4
Akabane virus	1		2	1	1	1	6
Anaplasmosis				5	3	2	10
Anthrax	3	4	1	1	3	4	16
Aujeszky's disease	3	1					4
Avian influenza: highly pathogenic notifiable avian influenza & Newcastle disease *B	3	10	7	8	4	3	35
Avian influenza: low-pathogenicity notifiable avian influenza *B				6	2	2	10
Avian malaria *C	1	1					2
Avian polyomavirus *C	2			1	2		5
<i>Avibacterium paragallinarum</i> (infectious coryza)			*C 1		1		2
<i>Babesia canis</i> , <i>B. gibsoni</i> , <i>B. felis</i>	3	5		5	2	1	16
Bluetongue			4	6		2	12
<i>Brucella abortus</i>		2	2	3	2	2	11
<i>Brucella canis</i>	9	4	6	8	6	5	38
<i>Brucella melitensis</i>				2		1	3
Bovine herpes virus type 5			1	1	2	2	6
Bovine theileriosis/babesiosis (exotic strains)	1		2	3	6	1	13
Bovine viral diarrhoea type II	1	1	3	2		6	13
Canine distemper virus	1	1		1	1	2	6
Canine influenza		1	1				2
Canine transmissible venereal tumour			2				2
Classical swine fever	3	1	1				5
<i>Chlamydophila abortus</i> (enzootic abortion)	4		1	1		1	7
Colony collapse disorder (bees)		4	2				6
Contagious agalactia	1		2				3
Contagious bovine pleuropneumonia	1	1		2	1		5
<i>Ehrlichia canis</i>	3	7	3	1	1	1	16
Equine piroplasmiasis	6	8	5	2	3	2	26
Equine herpesvirus type 1 (abortifacient strains, neuropathogenic strains) *C		2		3	1	6	12
Equine infectious anaemia/Equine viral arteritis	11	14	7	14	17	4	67
Equine influenza			2	1	2	3	8
European foulbrood (bees)	3	4	4	4	3	7	25
Exotic ticks	3		6		3	3	15
Fish mortality (wild or managed, marine) – exclusion of exotic and novel infectious disease agents	3	6	4	6	5	4	28
Haemogregarine parasite (reptiles)	1					1	2
Haemorrhagic septicaemia (<i>Pasteurella multocida</i> – toxogenic strains)	7	4	9	7	3		30
Heartworm (<i>Dirofilaria immitis</i>)	2		3	2			7
Hydatids (<i>Echinococcus</i> spp.)	1	3	1	1			6
Infectious bovine rhinotracheitis (exotic strains)				1	4	1	6
Infectious bursal disease	1	4	3	2	5	1	16
Infectious haematopoietic necrosis (fish)						1	1
Iridovirus (fish)						3	3
Israeli acute paralysis virus (bees)	2	2	2	3	1	3	13
Leishmaniasis			1	1	2		4
<i>Leptospira</i> (exotic strains)	2	1	1	2	1	3	10
<i>Mycoplasma bovis</i>	1	3	4	3	1	4	16
<i>Mycoplasma mycoides mycoides</i> (large colony)				1	2		3
Myxomatosis	1		1	1	2		5
<i>Nosema ceranae</i> (bees)	3	*C	1	1	1	2	8
<i>Ornithobacterium rhinotracheale</i> (birds)	1	2		2	1	1	7
<i>Perkinsus marinus/olseni</i> (molluscs)	3		2	1	2	2	10
Pilchard herpesvirus	1	1					2
Porcine reproductive and respiratory syndrome	3	2	1			1	7
Poxviruses (sheep, goats, deer, camelids)						3	4
Psittacine herpesvirus (incl. Pacheco's disease)						2	2
Pulmonary adenomatosis virus						2	2
Q fever (<i>Coxiella burnetii</i>)	4					3	10
Rabies	4	1				1	7
Rinderpest				1	2		3
Ross River virus				1	1		2
<i>Salmonella</i> (exotic strains)	5	2	2	4	4	2	19
Small hive beetle (<i>Aethina tumida</i>) (bees)	1	2	5	1		2	11
Slow paralysis virus, acute bee paralysis virus (bees)	2	2					5
Tracheal mite (<i>Acarapis woodi</i>) (bees)	6	2	3	2	1	3	17
Transmissible spongiform encephalopathy agents (scrapie; BSE; chronic wasting disease; FSE) *B						3	4
<i>Trichinella spiralis</i>		1				1	2
<i>Tropilaelaps clareae</i> (bees)	5	2	3	3	1		14
Viral haemorrhagic septicaemia (fish)					1		2
Viral vesicular disease	2	6	12	7	5	4	36
West Nile virus	1	1	2	1			5
Total	127	120	130	161	112	107	757

Table 4b: List of significant positive investigations of suspected exotic diseases, 2014

Disease agents investigated and confirmed as positive ⁽¹⁾	2014
Equine herpesvirus myeloencephalopathy (equine herpesvirus type 1 neuropathogenic strain) *D	1
Exotic ticks *E	5
<i>Mycobacterium avium</i> ssp. <i>hominissuis</i> (birds)	1
<i>Mycoplasma ovis</i> (goats)	1
<i>Perkinsus olsenii</i> (green-lipped mussels <i>Perna canaliculus</i>)	1
Sporadic bovine encephalomyelitis (<i>Chlamydophila pecorum</i>) ⁽²⁾	2

Notes to tables 4a and 4b

- *A The investigations listed in Table 4A are those that have resulted in exclusion of an OIE-notifiable disease or other significant diseases investigated more than once in the time period. This is not a definitive list of all investigations conducted. Some investigations resulted in multiple exclusions using specific laboratory methods, and these are recorded against each disease. The data were retrieved and analysed from the Notification and Investigation Manager Application database. Regular quarterly investigation reports are published in *Surveillance* ⁽¹⁾.
- *B Investigations reported here are in addition to the testing occurring in the MPI active surveillance programmes for these disease agents. See Watts J, Kittelberger R (2012), *Surveillance* 39(3), 27–28 for a review of the TSE surveillance programme. See Stanislawek W *et al.* (2014), *Surveillance* 41(3), 22–23, for the annual report on New Zealand’s avian influenza surveillance programme.
- *C These previously exotic disease agents have become established in New Zealand, either during the year if indicated in a time column, or previously if indicated next to the disease agent name. They may remain the subject of exotic disease investigation for the purpose of

describing an emerging disease, owing to their having been found in new animal host species, or as suspected new incursions.

- *D An outbreak investigation involving several cases was conducted.
- *E These confirmed disease agents in Table 4B involve interception at the border or soon after entry into New Zealand. Transmission and establishment of organisms has not occurred.

References for Tables 4a and 4b

- (1) See Bingham P (2014), *Surveillance* 41(2), 16–20; Bingham P (2014), *Surveillance* 41(3), 52–58 & 63–64; Bingham P (2014), *Surveillance* 41(4), 15–18 & 23–24 and Bingham P (2015), *Surveillance* 42 (1), 10–16 & 18–19 (quarterly reports of investigations of suspected exotic disease and suspected exotic marine and freshwater pests and diseases), for summary investigation reports for confirmed disease agents and negative disease investigations in 2014.
- (2) Buckle K, Ha H (2015). Investigation of an unusual veterinary syndrome leading to confirmation of sporadic bovine encephalomyelitis (SBE) in New Zealand. *Surveillance* 42(2), 9–11.

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