Surveillance Report

Animal Disease Notification and Surveillance

March 2023

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1. Compulsory notification and general surveillance

On behalf of the Icelandic Food and Veterinary Authority (MAST), district veterinary officers are responsible for monitoring animal health within each district. All private practicing veterinarians are obliged to be alert and to report any suspicion regarding the diseases, to MAST. Furthermore, according to Act No 25/1993, any person who has a reason to believe that an animal is suffering from an infectious disease covered by the legislation, shall immediately report this to any veterinarian who can be reached or to the police, who shall immediately contact a veterinarian. If a veterinarian sees a reason to take action, he/she shall immediately take steps to confirm the diagnosis and prevent the disease from spreading. If testing shows or a suspicion arises of an infectious disease, previously unknown in the country or specified in Regulation No 52/2014, MAST shall immediately be informed, and precautionary biosecurity measures applied.

Serious notifiable animal diseases (Regulation No 52/2014)

Multiple species:		
B052	Aujeszkys-veiki	Aujeszky´s disease – Pseudorabies – Herpesviridae
A090	Blátunga	Bluetongue – Reoviridae
A010	Gin- og klaufaveiki	Foot and Mouth Disease – Picornaviridae
B352	Hérasótt	Tularemia – Francisella tularensis
B058	Hundaæði	Rabies – Rhabdoviridae
B051	Miltisbrandur	Anthrax – Bacillus anthracis
A020	Munnblöðrubólga	Vesicular stomatitis – Rhabdoviridae
A080	Rift Valley veiki	Rift Valley fever – Bunyaviridae
B103/B253	Smitandi fósturlát/Brúsellósa	Brucellosis – Brucella-abortus/B. suis/B. melitensis
Horses		
A110	Afríkönsk hrossapest	African horse sickness – Reoviridae
B202	Dúrín	Dourine – Ondartet beskjelersyke – Trypanosoma equiperdum
B205	Smitandi blóðleysi	Equine infectious anemia (EIA) – Retroviridae
B209	Sníf	Glanders – Pseudomonas mallei
Cattle:		
B105	Berklar	Tuberculosis – Mycobacterium bovis/tuberculosis
A070	Húðþrimlaveiki	Lumpy skin disease – Poxviridae
A060	Illkynja brjósthimnubólga	Contagious bovine pleuropneumonia – Mycoplasma mycoides mycoides
B115	Kúariða	Bovine spongiform encephalopati (BSE) – Prion
A040	Nautapest	Rinderpest – Kvegpest – Pestis bovum – Paramyxoviridae
B110	Smitandi barkabólga/fósturlát	IBR/IPV – Herpesviridae
B108	Smitandi hvítblæði	Enzootic bovine leucosis (EBL) – Retroviridae
Sheep and goats		
I301	Bítlaveiki	Border disease – Hairy shaker disease – Flaviviridae
A100	Fjárbólusótt/geitabólusótt	Sheep pox and goat pox – Poxviridae
A050	Fjárpest	Peste des petits ruminants (PPR) – Paramyxoviridae
B156	Fósturlát í ám	Enzootic abortion of ewes (EAE) – Chlamydia psittaci
B155	Geitakregða	Contagious caprine pleuropneumonia – Mycoplasma F38
B154	Kregðujúgurbólga	Contagious agalactia – Mycoplasma ssp.
B161	Mæði (þurramæði)/Visna	Maedi/Visna – Retroviridae
B160	Riðuveiki	Scrapie – Prion
B159	Salmonella-fósturlát	Salmonellosis – Salmonella abortus ovis
B153	Smitandi liða- og heilabólga í geitum	Caprine arthritis and encephalitis (CAE) – Retroviridae
B157	Votamæði	Jaagsiekte – Ovine pulmonary adenomatosis – Retroviridae
Pigs		
A120	Afríkönsk svínapest	African swine fever (ASF) – ASF-like virus

I401	Blöðruþot í svínum	Vesicular exanthema of swine (VES) – Caliciviridae
A140	Illkynja grísalömun	Teschen disease – Picornaviridae
B254	Smitandi maga- og garnabólga	Transmissible gastroenteritis (TGE) – Coronaviridae
A030	Svínafár	Swine vesicular disease (SVD) – Picornaviridae
A130	Svínapest	Classical swine fever – Hog cholera – Flaviviridae
Dogs, cats and fur animals		
B353	Lifrardrep	Rabbit haemorrhagic disease (VHD) – Parvoviridae
I501	Maurakláði	Sarcoptes mange – Sarcoptes spp.
I502	Plasmacytósa	Plasmacytosis – Aleutian disease – Parvoviridae
I503	Refafár/Minkafár	Distemper – Paramyxoviridae
I504	Sullaveikifár	Echinococcosis – Echinococcus multilocularis
Poultry		
A150	Hænsnapest	Avian influenza (AI) – Fowl plague – Orthomyxoviridae
B313	Hænsnatyfus	Fowl typhoid – Salmonella gallinarum
B308	Kjúklingasótt	Pullorum disease – Salmonella pullorum
I601	Nef- og barkabólga	Avian rhinotracheitis (ART) – Pneumoviridae
A160	Newcastle-veiki	Newcastle Disease (ND) – Paramyxoviridae
B302	Smitandi kverka- og barkabólga	Infectious laryngotracheitis (ILT) – Herpesviridae
B305	Veirugarnabólga í öndum	Duck virus enteritis (DVE) – Herpesviridae
B304	Veirulifrarbólga í öndum	Duck virus hepatitis (DVH) – Picornaviridae
Fish		
B413	EHN-veiki	Epizootic haematopoietic necrosis – Iridoviridae
B415	Herpesveiki/OMV-veiki	Herpesvirus salmonis/H. scophthalmi Oncorhynchus masou virus disease
B405	IHN-veiki	Infectious haematopoietic necrosis – Rhabdoviridae
I701	IPN-veiki	Infectious pancreas necrosis – Birnaviridae
I702	ISA-veiki	Infectious salmon anemia – Orthomyxoviridae
I703	Roðflyðrusýki	Gyrodactylosis – Gyrodactylus salaris
B404	SVC-veiki	Spring viraemia of carp – Rhabdoviridae
B401	VHS-veiki	Viral haemorrhagic septicaemia – Rhabdoviridae
I704	VNN-veiki	Viral nervous necrosis – Nodaviridae
Molluscs		
B434	Marteilíuveiki	Marteiliosis – Marteilia refringens/M. sydneyi
B436	Mykrocytos-veiki	Mikrocytosis – Mykrocytos mackini/M. roughleyi
B431	Ostruveiki	Bonamiosis – Bonamia ostreae/B. sp.
B433	Perkinsus-veiki	Perkinsosis – Perkinsus marinus/P. olseni
B432	Sumarveiki í ostrum	Haplosporidiosis – Haplosporidium costale/H. nelsoni
I801	Velar-veiki	Oyster velar virus disease – Iridoviridae
Crustaceans		
I901	Humarveiki	Gaffkemi – Aerococcous viridans
I902	Krabbapest	Crayfish plague – Aphanomyces astaci

Other notifiable animal diseases (Regulation No 52/2014)

Multiple species		
I001	Blóðsviti	Parafilariosis – *Parafilaria* spp.
C702	Fótrot	Footrot – *Fusobacterium necrophorum*
B059	Garnaveiki	Paratuberculosis – *Mycobacterium avium paratuberculosis*
I002	Hringskyrfi	Ringworm – *Microsporum* spp./*Trichophyton* spp.
B107	Hrýfi	Dermatophilosis – *Dermatophilus congolensis*
B056	Leptóspírósa/Gulusótt	Leptospirosis – *Leptospira* spp.
I003	Neosporosis	Nesosporosis – *Neospora caninum*

B057	Q-hitasótt	Q-fever – *Coxiella burnetii*
C619/C855	Salmonella-sýkingar	Intestinal salmonella infections – *Salmonella* spp. (Other than *Salmonella gallinarum/S. pullorum*)
B104	Smitandi fósturlát	Bovine genital campylobacteriosis – *Campylobacter fetus fetus*
B053	Sullaveiki	Echinococcosis – Hydatidosis – *Echinococcus granulosus*
B255	Tríkínuveiki	Trichinosis – *Trichinella spiralis*
Horses		
B206	Hestainflúensa	Equine influenza – *Orthomyxoviridae*
B210	Hrossabóla	Horse pox – *Poxviridae*
B213	Hrossakláði	Sarcoptic mange – *Sarcoptes scabiei var equi*
C753	Kverkeitlabólga	Strangles – *Streptococcus equi equi*
B208	Smitandi háls- og lungnakvef	Equine viral rhinopneumonitis/Equine abortion virus (EHV-1/EHV-4) – *Herpesviridae*
B204	Smitandi heilabólga	Eastern & Western equine encephalomyelitis – *Alphaviridae*
B201	Smitandi legbólga	Contagious equine metritis (CEM) – *Taylorella equigenitalis*
B211	Smitandi slagæðabólga	Equine viral arteritis (EVA) – *Arteriviridae*
B203	Smitandi sogæðabólga	Epizootic lymhangitis – *Histoplasma farciminosum*
B216	Venezuela-heilabólga	Equine Venezuelan encephalomyelitis – *Alphaviridae*
Cattle		
B112	Fósturlát í kúm	Trichomonosis – *Trichomonas foetus*
B114	Illkynja slímhúðarbólga	Malignant catarrhal fever (AHV-1) – *Herpesviridae*
C652	Smitandi slímhúðarpest	Bovine viral diarrhea/Mucosal disease (MD/BVD) – *Flaviviridae*
I201	Smitandi öndunarfærabólga	Bovine respiratory syncytial virus (BRSV) – *Paramyxoviridae*
I202	Veiruskita	Viral diarrhea – *Coronaviridae*
B106	Vöðvasullur	Bovine cysticercosis – *Taenia saginata*
Sheep and goats:		
I302	Fellilús	Sheep biting louse – Damalinia ovis
I303	Fjárkláði	Sheep scab – Psoroptes ovis
C706	Fótakláði	Sheep mange – Chorioptes ovis
I304	Færilús	Sheep keds – Melophagus ovinus
B151	Lyppudrep	Ovine epididymitis – Brucella ovis
I305	Vöðvasullur	Ovine cysticercosis – Taenia ovis
Pigs		
I402	Illkynja lungnabólga	Pleuropneumonia – *Actinobacillus pleuropneumonia*
B257	PRRS-veiki	Porcine respiratory and reproductive syndrome (PRRS)
I403	Smitandi veiruskita	Porcine epidemic diarrhea (PED) – *Coronaviridae*
B252	Svínabandormur	Porcine cysticercosis – *Taenia solium*
I404	Svínainflúensa	Swine influenza – Hog flue – *Orthomyxoviridae*
B256	Ælu- og vanþrifapest	Vomiting & wasting disease – Hemagglutinating encephalomyelitis virus (HEV) – *Coronaviridae*
Dogs, cats and fur animals		
I505	Hundafár	Canine distemper – *Paramyxoviridae*
B501	Leishmaníu-veiki	Canine leishmaniosis – *Leishmania* spp.
I506	Lungnafár í mink	Hemorrhagic pneumonia – *Pseudomonas aeruginosa*
I507	Refavanki	Nosematosis – *Encephalitozoon cuniculi*
I508	Veiruskita í mink	Mink viral enteritis – *Parvoviridae*
Poultry		
B303	Fuglaberklar	Avian tuberculosis – *Mycobacterium avium*
B307	Fuglabólusótt	Fowl pox – *Poxviridae*
B306	Fuglakólera	Fowl cholera – *Pasteurella multocida*
B311	Fuglakregða	Avian mycoplasmosis – *M. gallisepticum/M. meleagridis*

B309	Gumboro-veiki	Gumboro disease – Infectious bursal disease (IBD) – *Birnaviridae*
B310	Hænsnalömun	Marek's disease – *Herpesviridae*
C853	Mænubólga	Avian encephalomyelitis (AE) – *Picornaviridae*
I602	Paramyxóveirusýkingar	Avian paramyxovirus (other than Newcastle disease) – *Paramyxoviridae*
B312	Páfagaukaveiki	Avian chlamydiosis – Psittacosis – Ornithosis – *Chlamydia psittaci* – (annað en fósturlát í ám)
B301	Smitandi berkjubólga	Infectious bronchitis (IB) – *Coronaviridae*
I603	Varpröskun	Egg drop syndrome (EDS) – *Adenoviridae*
Fish		
I705	Blóðfrumuveirusótt	Erythrocitic inclusion body syndrome (EIBS) – *Togaviridae*
I706	Hindberjaveiki	Proliferative kidney disease (PKD)
I707	Hitraveiki	Coldwater vibriosis – *Vibrio salmonicida*
I708	Hvirfilveiki	Whirling disease – *Myxobolus cerebralis*
I709	Kýlaveiki	Furunculosis – *Aeromonas salm.* spp. *salmonicida*
I710	Laxalús/Fiskilús	Salmon louse infection – *Lepeophtheirus salmonis*
		Marine louse infection – *Caligus elongatus*
I711	Nýrnaveiki	Bacterial kidney disease (BKD) – *Renibacterium salmoninarum*
I712	PD-veiki/Brisveiki	Pancreas disease (PD) – *Togaviridae*
I713	Piskirikketsíuveiki	Piscirickettsiosis – *Piscirickettsia salmonis*
I714	Rauðmunnaveiki	Enteric red mouth (ERM) – Yersiniosis – *Yersinia ruckeri*
I715	Spírónúkleusveiki	Systemic spironucleosis – *Spironucleus barkhanus*
I716	Sundmagasótt	Swimbladder nematode of eel – *Anguillicola crassus*
Molluscs		
I802	Sæeyrnaskelormur	Sabellid polychaete – *Terebrasabella heterouncinata*
Crustaceans		
I903	Postulínsveiki	Porselenssyke – *Thelohania contejeani*
I904	Sveppablettaveiki	Brannflekksyke – *Ramularia astaci*
Bees		
B453	Evrópsk býflugnapest	European foulbrood – *Streptococcus pluton*
B452	Illkynja býflugnapest	American foulbrood – *Bacillus larvae*
B451	Loftsekkjaveiki	Acariosis of bees – *Acarapis woodii*
B454	Þarmaveiki	Nosemosis of bees – *Nosema apis*
B455	Varróaveiki	Varroosis – *Varroa jakobsonii*

Diseases subject to compulsory registration (Regulation No 52/2014)

Multiple species		
C612	Bogfrymlasótt	Toxoplasmosis – *Toxoplasma gondii*
I003	Bólusótt	Pox disease – *Poxviridae*
C615	Bótulismi	Botulism – *Clostridium botulinum*
C616	Clostridíasýkingar	Clostridiosis – *Clostridium* ssp. (Other than *Clostridium chauvoei, Cl. perfringens* type C og *Cl. botulinum*)
C620	Hníslasótt	Coccidiosis – *Eimeria* spp./*Isospora* spp.
C611	Hvanneyrarveiki	Listeriosis – *Listeria monocytogenes*
C613	Ígerðarsótt	Melioidosis – *Burkholderia pseudomallei*
C618	Kjálkabris	Actinomycosis – *Actinomyces* ssp.
C705/C752	Kýlapest	Caseous lymphadenitis – Ulcerative lymphangitis – *Actinobacillus lignieresii/Corynebacterium pseudotuberculosis*
I004	Lungnapest	Pasteurellosis – *Pasteurella multocida/P. haemolytica*

C617	Lungnadrep	Other pasteurellosis – *Pasteurella* ssp. (Other than *Pasteurella multocida*)
C614	Pestbjúgur	Blackleg – *Clostridium chauvoei*
C621	Ögðuveiki	Liver fluke disease – Distomatosis – *Fascicola hepatica*
Horses		
I101	Herpeskvef	Equine herpesvirus 2 (EHV-2) – *Herpesviridae*
C751	Herpesútbrot	Equine coital exhanthema (EHV-3) – *Herpesviridae*
I102	Húðsveppur	*Trichophyton equinum/T. mentagrophytes*
Sheep and goats		
C701	Smitandi munnangur	Orf – Contagious echtyma (CE) – *Poxviridae*
I306	Tannlos	Broken mouth
Pigs		
I405	Bjúgveiki	Edema disease – *E. coli* O138/O139/O140/O141
I406	Blóðskita	Swine dysentery – *Brachyspira hyodysenteriae*
I407	Garnadrep	Necrotic enteritis – *Clostridium perfringens* type C
I408	Gothiti	Mastitis-metritis-agalactia syndrome (MMA)
C801	Rauðsýki	Swine erysipelas – *Erysipelothrix rhusiopathiae*
I409	Smitandi fósturdauði	Porcine parvovirus (PPV) – *Parvoviridae*
B251	Snúðtrýni	Atrophic rhinitis of swine – *Pasteurella multocida* tox +
I410	Svínakláði	Sarcoptes mange – *Sarcoptes scabiei* var. *suis*
I411	Svínakregða	Endemic pneumonia (EP) – *Mycoplasma pneumonia*
I412	Þarmabólga	Porcine intestinal adenomatosis (PIA) – *Lawsonia intracellularis*
Dogs, cats and fur animals:		
I509	Eyrnamaur	Ear mites – *Otodectes cynotis*
I510	Kattafár	Feline leukemia virus – *Retroviridae*
I511	Kattamaur	Cheyletiellosis – *Cheyletiella parasitovorax*
I512	Smáveirusótt	Canine parvovirus – *Parvoviridae*
I513	Smitandi heila- og lifrarbólga	Hepatitis contagiosa canis (HCC)/Fox encephalitis – (CAV-1) – *Adenoviridae*
Poultry:		
I604	Blávængjaveiki	Chicken infectious anemia (CIA) – *Parvoviridae*
C856	Hvítblæði	Avian leucosis – *Retroviridae*
I605	Fuglakregða	Avian mycoplasmosis – (Other than *M. gallisepticum* and *M. meleagridis*)
Fish		
I718	Fiskaberklar	Mycobacteriosis – *Mycobacterium marinum*
I719	Kýlaveikibróðir	Ulcer disease – *Aeromonas salm.* spp. *achromogenes*
I720	Klamydíuveiki	Epitheliocystis – *Chlamydia* spp.
I721	Roðdrep í klaklaxi	Ulcerative dermatic necrosis (UDN)
I722	VEN-veiki	Viral erythrocytic necrosis – *Iridoviridae*
I723	Vetrarsár	Winter ulcers – *Moritella viscosa*
I724	Víbríuveiki	Vibriosis – *Vibrio anguillarum*
I725	Vörtuveiki	Papillomatosis – *Herpesviridae*

2. Animal disease surveillance

Infections which can be latent and diseases which do not have clear clinical symptoms are monitored by routine sampling. Farms are selected at random with the limitation that samples must be taken on all farms within a certain time interval. The aim of the surveillance is to detect with 95% confidence at least one positive unit (animal or farm) if the infection is present at a maximum of 5% prevalence. The expected prevalence may vary based on the nature of the disease. The within-herd sample size is determined by the number of animals available for blood sampling. The following sections contain information about sampling and results of analyses for the active surveillance.

2.1. Cattle diseases

2.1.1. Enzootic bovine leucosis

Enzootic bovine leucosis has never been detected. It is a notifiable disease, according to Act No 25/1993. At slaughterhouses, all tumours, suspected to be lymphosarcoma, are reported and sent for diagnosis at the official laboratory at Keldur. In 1993 a serological survey was carried out. Systematic surveillance has been carried out since 2007. See table below.

Table 1 Number of samples analysed for enzootic bovine leucosis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1993	51	21	51	0
2001	35	-	35	0
2007	-	97	97	0
2008	-	75	75	0
2009	-	79	79	0
2010	-	87	87	0
2011	-	80	80	0
2012	-	80	80	0
2013	-	70	70	0
2014	-	78	78	0
2015	-	63	63	0
2016	-	73	73	0
2017	-	70	70	0
2018	-	75	75	0
2019	-	70	70	0
2020	-	65	65	0
2021	-	74	74	0
2022	-	81	81	0

2.1.2. Infectious bovine rhinotracheitis/ Infectious pustular vulvovaginitis

Infectious bovine rhinotracheitis/infectious pustular vulvovaginitis is a notifiable disease, according to Act No 25/1993. It was detected for the first time in Iceland in September 2012 in a bulk tank sample from one farm, taken according to the annual surveillance programme; no clinical symptoms were detected at the farm. Immediate notification was sent to OIE. Decision was made to cull all infected animals. In 1993 a serological survey was conducted, and a systematic surveillance has been carried out since 2007. See table below.

Table 2 Number of samples analysed for IBR/IPV

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1993	51	21	51	0
2000	10	1	10	0
2001	39	-	39	0
2007	-	97	97	0
2008	-	76	76	0
2009	-	79	79	0
2010	-	87	87	0
2011	-	80	80	0
2012	-	80	79	1*
2013	36	7	36	0
2014	-	78	78	0
2015	-	63	63	0
2016	-	73	73	0
2017	-	70	70	0
2018	-	75	75	0
2019	-	70	70	0
2020	-	65	65	0
2021	-	74	74	0
2022	-	81	81	0

* In response to this positive result, samples were taken at all dairy farms in the country (656). One additional sample was positive. All infected animals were slaughtered and a year later it was confirmed that the infection had been eradicated.

2.1.3. Bovine virus diarrhoea

Bovine virus diarrhoea has never been detected. It is a notifiable disease, according to Act No 25/1993. In 1992 and 1994 serological surveys were conducted. Systematic surveillance has been carried out since 2007. See table below.

Table 3 Number of samples analysed for bovine virus diarrhoea

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1992	-	120	120	0
1994	-	167	167	0
2000	10	1	10	0
2001	39	-	39	0
2007	-	97	97	0
2008	-	75	75	0
2009	-	79	79	0
2010	-	87	87	0
2011	-	80	80	0
2012	-	80	80	0
2016	-	73	73	0
2017	-	70	70	0
2018	-	75	75	0
2019	-	70	70	0
2020	-	65	65	0
2021	-	74	74	0
2022	-	81	81	0

2.1.4. Salmonella Dublin

Salmonella Dublin has never been detected. It is a notifiable disease according to Act No 25/1993. Serological surveillance was initiated in 2012, see table below.

Table 4 Number of samples analysed for Salmonella Dublin

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2012	-	80	80	0
2013	-	70	70	0
2014	-	78	78	0
2015	-	63	63	0
2016	-	73	73	0
2017	-	70	70	0
2018	-	75	75	0
2019	-	70	70	0
2020	-	65	65	0
2021	-	74	74	0
2022	-	81	81	0

2.1.5. Q-fever

Coxiella burnetti has never been detected in animals. It is a notifiable disease, according to Act No 25/1993. Serological surveillance was initiated in 2012, see table below.

Table 5 Number of samples analysed for Coxiella burnetti

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2012	-	80	80	0
2013	-	70	70	0
2014	-	78	78	0
2015	-	63	63	0
2016	-	73	73	0
2017	-	70	70	0
2018	-	75	75	0
2019	-	70	70	0
2020	-	65	65	0
2021	-	74	74	0
2022	-	81	81	0

2.1.6. Bovine brucellosis

Bovine brucellosis has never been detected in Iceland. It is a notifiable disease, according to Act No25/1993. In 1993 a serological survey was carried out. Systematic surveillance has been carried out since 2007. See table below.

Table 6 Number of samples analysed for bovine brucellosis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1993	51	21	51	0
2008	80	16	80	0
2009	75	15	75	0
2010	90	18	90	0
2011	80	16	80	0
2012	45	9	45	0
2013	36	7	36	0
2014	76	15	76	0
2016	82	16	82	0
2017	83	17	83	0
2018	84	18	84	0
2019	81	16	81	0
2020	75	15	75	0
2021	80	20	80	0
2022	75	15	75	0

2.1.7. Bovine spongiform encephalopathy

Bovine spongiform encephalopathy has never been detected. It is a notifiable disease, according to Act No 25/1993. Since 1968, it has been prohibited to import meat- and bone meal and greaves for use in feeding stuffs for livestock, and there has been a ban on feeding meat- and bone meal to ruminants since 1978 and all food producing animals since 2001. In 2004, Iceland was recognized as a negligible BSE risk country, by the OIE International Committee. Since 2000 samples have been taken systematically every year, see table below. Until 2009 samples were taken from cattle displaying behavioural or clinical signs consistent with BSE and cattle more than 24 months of age within the categories of fallen stock, casualty slaughter and routine slaughter. Since 2010 the age criterium has been 30 months for fallen stock and casualty slaughter and 36 months for the category routine slaughter. Only in 1999, 2000, 2006, 2009, 2010 and 2014 cattle were tested due to clinical symptoms, one each year.

Table 7 Number of samples analysed for BSE

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2000	28	-	28	0
2001	422	-	422	0
2002	64	-	64	0
2003	73	-	73	0
2004	120	-	120	0
2005	191	-	191	0
2006	65	-	65	0
2007	91	-	91	0
2008	148	-	148	0
2009	99	-	99	0
2010	101	-	101	0
2011	120	-	120	0
2012	99	-	99	0
2013	100	-	100	0
2014	240	170	240	0
2015	75	43	75	0
2016	140	87	140	0
2017	897	266	897	0
2018	91	36	91	0
2019	12	11	12	0
2020	14	12	14	0
2021	10	9	10	0
2022	216	146	216	0

2.1.8. Paratuberculosis

In cattle, paratuberculosis was first diagnosed in 1945. Samples are taken from cattle when suspicion of the disease arises and in connection with movement of cattle between surveillance zones. See table below.

Table 8 Number of cattle samples analysed for paratuberculosis

Year	Number of samples from ileum	Number of blood samples (farms)	Number of positive farms
2000	1356	945	1
2001	1705	427	3
2002	450	349	2
2003	1940	455	0
2004	32	649	0
2005	450	684	1
2006	52	430	0
2007	?	231	0
2008	10	0	0
2009	2	23	0
2010	14	111	1
2011	1	40	0
2012	0	43	0
2013	69	69 (1)	0
2014	19	2 (1)	1
2015	19	0	1
2016	18	1	2
2017	5	0	0
2018	3	0	0
2019	19	0	0
2020	1	0	0
2021	0	51 (20)	1

2.2. Sheep diseases

2.2.1. Scrapie

Scrapie has been endemic since 1878. A decision was made in 1986 to start an eradication programme. On farms where scrapie is detected, all sheep are culled. Areas where scrapie has been detected are kept under special surveillance for 10 years. Samples are taken annually from sheep at slaughter and sheep displaying clinical signs compatible with scrapie. See table below.

Table 9 Number of samples analysed for scrapie

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples	Number of positive farms
2000	7826	-	7822	4	3
2001	7647	-	7638	9	1
2002	5621	-	5609	12	2
2003	7208	-	7189	19	5
2004	9590	-	9569	19 + 2 NOR98	7 + 1 NOR98
2005	3551	-	3542	9	4
2006	3815	-	3794	21	2
2007	5057	-	5041	15 + 1 NOR98	3 + 1 NOR98
2008	3087	-	3029	57 + 1 NOR98	1 + 1 NOR98
2009	1717	123	1710	7	2
2010	3666	353	3661	5	1
2011	3527	197	3526	0 + 1 NOR98	0 + 1 NOR98
2012	2732	-	2732	0	0
2013	3664	155	3662	0 + 2 NOR98	0 + NOR98
2014	3949	193	3947	2	1
2015	5172	294	5142	29 + 1 NOR98	3 + 1 NOR98
2016	2742	127	2731	11	2
2017	3678	217	3669	9	1
2018	3630	291	3609	21	2
2019	3909	313	3888	21	1
2020	7612*[1]	260	7559	53	6
2021	6239*[2]	262	6183	56	3
2022	4230	378	4230	0	0

*[1] Including 2412 samples analysed in connection with culling of herds due to scrapie
*[2] Including 1452 samples analysed in connection with culling of herds due to scrapie

2.2.2. Paratuberculosis

In sheep, paratuberculosis was first diagnosed in 1933. In 1966 a vaccination programme was established. Blood samples are taken if suspicion arises in live animals. At the slaughterhouses, ileum of all adult sheep is inspected and if considered necessary samples are submitted to the official laboratory at Keldur. See table below.

Table 10 Number of sheep samples analysed for paratuberculosis

Year	Number of samples from ileum (farms)	Number of blood samples (farms)	Number of positive farms
2000	15482	138	5
2001	21417	846	12
2002	8353	161	10
2003	11681	231	11
2004	2922	118	7
2005	20400	262	7
2006	10575	205	13
2007	14821	90	5
2008	8609	?	10
2009	387	5	0
2010	22	170 + 13 goats	3
2011	741	735	6
2012	34	0	0
2013	89	266	1
2014	62 (15)	205 (5)	6
2015	93 (31)	72 (18)	13
2016	17 (7)	0	2
2017	10 (10)	0	3
2018	23	0	3
2019	59 (30)	0	6
2020	30 (24)	0	3
2021	10 (6)	2 (1)	5
2022	10 (4)	0	0

2.2.3. Ovine Brucellosis

Ovine Brucellosis (*Brucella melitensis*) has never been detected. It is a notifiable disease, according to Act No 25/1993. Systematic surveillance has been carried out since 2010. See table below.

Table 11 Number of sheep samples analysed for Ovine Brucellosis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2010	100	19	100	0
2012	85	18	85	0
2014	100	20	100	0
2015	45	8	45	0
2016	80	16	80	0
2017	50	10	50	0
2018	75	15	75	0
2019	86	17	86	0
2020	100	20	100	0
2021	100	20	100	0
2022	75	15	75	0

2.2.4. Maedi-visna

Maedi-visna has not been detected since 1965. It is a notifiable disease, according to Act No25/1993. Systematic surveillance has been carried out since 2012. See table below.

Table 12 Number of sheep samples analysed for maedi-visna

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2012	85	18	85	0
2013	61	-	61	0
2014	100	20	100	0
2015	45	8	45	0
2016	80	16	80	0
2017	78	10	78	0
2018	75	15	75	0
2019	86	17	86	0
2020	100	20	100	0
2021	100	20	100	0
2022	75	15	75	0

2.2.5. Border Disease

Border Disease has never been detected. It is a notifiable disease, according to Act No 25/1993. Systematic surveillance has been carried out since 2018. See table below.

Table 13 Number of sheep samples analysed for Border Disease

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2018	75	15	75	0
2019	86	17	86	0
2020	100	20	100	0
2021	100	20	100	0
2022	75	15	75	0

2.3. Swine diseases

2.3.1. Aujezky's disease

Aujeszky's disease has never been detected. It is a notifiable disease, according to Act No25/1993. Samples have been taken occasionally since 1994. See table below.

Table 14 Number of samples analysed for Aujezky's disease

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
1994	-	20	-	0	0
1995	-	1	-	0	0
1997	-	1	-	0	0
1998	-	1	-	0	0
2007	240	8	240	0	0
2014	232	4	232	0	0

2.3.2. Transmissible gastroenteritis and porcine respiratory corona virus

TGE and PRCV have never been detected. They are notifiable diseases, according to Act No 25/1993. Samples have been taken occasionally since 1994. See table below.

Table 15 Number of samples analysed for TGE and PRCV

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
1994	-	20	-	0	0
1998	-	1	-	0	0
2007	240	8	240	0	0
2013	226	4	226	0	0
2018	89	8	89	0	0

2.3.3. Porcine respiratory and reproductive syndrome

PRRS has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1994. See table below.

Table 16 Number of samples analysed for PRRS

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
1994	-	20	-	0	0
1995	-	1	-	0	0
1997	-	1	-	0	0
1998	-	1	-	0	0
1999	-	3	-	0	0
2007	240	8	240	0	0
2009	119	-	119	0	0
2010	210	-	210	0	0
2011	240	9	240	0	0
2012	225	8	225	0	0
2013	226	4	226	0	0
2014	232	4	232	0	0
2015	229	8	229	0	0
2016	225	8	225	0	0
2017	242	8	242	0	0
2018	209	8	209	0	0
2019	285	8	284	1*	0
2020	360	8	357	3*	0
2021	240	8	240	0	0
2022 (H1)	119	8	119	0	0
2023 (H2)	120	8	120	0	0

* Test result was uncertain. Assumed to be false-positive as all other sample from the farm were negative.

2.3.4. Swine influenza

Clinical signs of swine influenza have only been detected in connection with an outbreak of the subtype H1N1 in people. It is a notifiable disease, according to Act No25/1993. Samples have been taken occasionally since 1994. See tables below.

Table 17 Number of samples analysed for swine influenza subtype H3N2

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
1994	-	20	-	0	0
1997	-	1	-	0	0
1998	-	3	-	1*1	-
1999	-	3	-	5*1	-
2007	240	8	240	0	0
2009	239	8	239	0	0
2010	210	8	210	0	0
2011	240	9	207	33*2	9*2
2012	225	8	225	0	0
2013	226	4	226	0	0
2014	232	4	163	69*2	4*2
2015	229	8	172	57*2	7*2

*1 Positive serology. No clinical signs. Repeated sampling negative. Considered false positive.
*2 Positive serology. No clinical signs.

Table 18 Number of samples analysed for swine influenza subtype H1N1

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
1999	-	3	-	5*1	0
2009	370	8	345	25*2	2
2010	210	8	171	39*2	3
2011	240	9	240	0	0
2012	225	8	225	0	0
2013	226	4	224	2*1	1
2014	232	4	186	46*1	3
2015	229	8	216	13*1	2

*1 Positive serology. No clinical signs.
*2 Considered H1N1 pan2009.

Table 19 Number of samples analysed for Influenza A

Year	Number of individuals sampled	Number of farms	Number of negative samples	Number of positive samples	Number of positive farms
2016	225	8	201	24	1

2.4. Horse diseases

2.4.1. Equine infectious anaemia

Equine infectious anaemia has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples were taken from horses intended for export in the period from 1990-2002. A total of 13.082 samples were analysed and all turned out to be negative. Systematic surveillance has been carried out since 2008. See table below.

Table 20 Number of samples analysed for equine infectious anaemia

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
<2003	13.082	-	13.082	0
2008	30	-	30	0
2009	60	-	60	0
2010	50	-	50	0
2011	50	-	50	0
2012	50	50	50	0
2013	50	50	50	0
2022 (H1)	50	50	50	0
2022 (H2)	15	1	15	0

2.4.2. Equine influenza

Equine influenza has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1990. Systematic surveillance has been carried out since 2008. See table below. Samples are taken from stallions which have had a close contact with at least 100 horses for the past three months prior to sampling and horses with clinical symptoms, if any.

Table 21 Number of samples analysed for equine influenza

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1990	18	-	18	0
1995	4	-	4	0
1998	7	-	7	0
2000	15	-	15	0
2004	5	-	5	0
2008	30	-	30	0
2009	60	-	60	0
2010	50	-	50	0
2011	50	-	50	0
2012	50	50	50	0
2013	50	50	50	0
2014	50	50	50	0
2015	50	50	50	0
2016	45	45	45	0

2017	50	50	50	0
2018	50	50	50	0
2019	50	50	50	0
2020	50	50	50	0
2021	50	50	50	0
2022 (H1)	50	50	50	0
2022 (H2)	15	1	15	0

2.4.3. Equine rhinopneumonitis (EHV-1)

Equine rhinopneumonitis has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1990. Systematic surveillance has been carried out since 2008. See table below. Samples are taken from stallions which have had a close contact with at least 100 horses for the past three months prior to sampling and horses with clinical symptoms, if any.

Table 22 Number of samples analysed for equine rhinopneumonitis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1990	18	-	13	5*1
1994	4	-	1	3*1
1998	29	-	29	0
2000	11	-	11	0
2004	5	-	5	0
2008*2	35	-	35	0
2009*2	60	-	60	0
2010*3	50	-	50	0
2011*3	50	-	50	0
2012*2	50	50	49	1*1
2013*2	49	49	48	1*1
2014	50	50	50	0
2015	48	48	48	0
2016	50	50	50	0
2017	50	50	50	0
2018	50	50	50	0
2019	50	50	50	0
2020	50	50	50	0
2021	50	50	50	0
2022 (H1)	50	50	50	0
2022 (H2)	15	1	15	0

*1 No clinical signs. Considered a cross-reaction to EHV-4
*2 Diagnostic method: ELISA (enzyme-linked immunosorbent assay).
*3 Diagnostic method: CF (compliment fixation test).

2.4.4. Equine viral arteritis

Equine viral arteritis has never been detected. It is a notifiable disease, according to Act No 25/1993. Systematic surveillance was initiated in 2013. See table below. Samples are taken from stallions which have had a close contact with at least 100 horses for the past three months prior to sampling and horses with clinical symptoms, if any.

Table 23 Number of samples analysed for equine viral arteritis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2013	48	48	48	0
2014	50	50	50	0
2015	50	50	50	0
2016	50	50	50	0
2017	50	50	50	0
2018	50	50	50	0
2019	50	50	50	0
2020	50	50	50	0
2021	50	50	50	0
2022 (H1)	50	50	50	0
2022 (H2)	15	1	15	0

2.5. Poultry diseases

2.5.1. Newcastle disease

Newcastle disease has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1993. Systematic surveillance has been carried out since 2008. See table below.

Table 24 Number of samples analysed for Newcastle disease

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1993	100	-	100	0
1994	100	-	100	0
1995	100	-	100	0
1996	100	-	99	1*1
1997	100	-	100	0
1998	100	-	100	0
2000	100	-	100	0
2002	100	-	91	9*1
2007	200	5	199	1*1
2008	120	6	120	0
2009	238	6	238	0
2010	180	6	180	0
2011	190*2	8*3	190*2	0
2012	120*2	6*4	120	0
2013	90	3	90	0
2014	59	2	59	0
2015	221	5	221	0
2016	153	5	153	0
2017	70	10	70	0
2018	66	5	66	0
2019	139	11	139	0
2020	234	23	234	0
2021 (H1)	150	12	150	0
2021 (H2)	169	6	169	0
2022 (H1)	129	10	129	0
2022 (H2)	80	4	80	0

*1 No clinical symptoms. Repeated sampling negative. Probably not APMV-1.
*2 100 samples from back-yard flocks.
*3 Five back-yard flocks.
*4 Three back-yard flocks.

2.5.2. Avian infectious laryngotracheitis

Avian infectious laryngotracheitis has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1995. See table below.

Table 25 Number of samples analysed for avian infectious laryngotracheitis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1995	100	-	99	1*
1998	100	-	100	0
2000	100	-	99	1*
2002	100	-	88	12*
2007	200	5	193	7*
2008	120	6	120	0
2009	238	6	238	0
2012	58	3	58	0
2013	20	1	20	0

* No clinical signs. Repeated sampling negative.

2.5.3. Avian rhinotracheitis

Avian rhinotracheitis has never been detected. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1998. See table below.

Table 26 Number of samples analysed for avian rhinotracheitis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1998	100	-	100	0
2000	100	-	100	0
2002	100	-	100	0
2007	200	5	200	0
2008	120	6	120	0
2009	20	1	20	0

2.5.4. Avian encephalomyelitis

Avian encephalomyelitis is a notifiable disease, according to Act No 25/1993. Clinical disease has never been detected. Samples have been taken occasionally since 1993. See table below

Table 27 Number of samples analysed for avian encephalomyelitis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1993	100	-	100	0
1994	100	-	100	0
1995	100	-	100	0
1996	102	-	101	1*1
1997	100	-	100	0
1998	100	-	100	0
2000	100	-	98	2*1
2002	100	-	83	17*1
2008	120	6	120	0
2009	238	6	236	2*2

*1 No clinical signs. Repeated sampling negative.
*2 No clinical signs. Considered false positive.

2.5.5. Avian mycoplasmosis (Mycoplasma synoviae)

Large proportion of poultry parent flocks was infected by *Mycoplasma synoviae* during the period from 1995 to 2003 when vaccination was started. Now the infection is considered eradicated. Infections due to *Mycoplasma synoviae* are subject to compulsory registration. Samples have been taken occasionally since 1995. See table below.

Table 28 Number of samples analysed for Mycoplasma synoviae

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1995	110	-	51	59
1996	102	-	81	21
1997	100	-	42	58
1998	100	-	52	48
2000	100	-	100	0
2002/3	100	-	60	40
2009	238	6	238	0
2010	180	6	180	0
2014	90	3	90	0

2.5.6. Avian mycoplasmosis (Mycoplasma gallisepticum)

Mycoplasma gallisepticum has never been detected. Infections due to *Mycoplasma gallisepticum* are notifiable, according to Act No 25/1993. Samples have been taken occasionally since 1995. See table below.

Table 29 Number of samples analysed for Mycoplasma gallisepticum

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1995	110	-	110	0
1996	102	-	102	0
1997	100	-	42	0
1998	100	-	52	0
2000	100	-	100	0
2002/3	100	-	60	0
2007	207	14	207	0
2008	120	6	120	0
2009	238	6	238	0
2011	200	2	200	0
2013	100	1	100	0
2014	100	1	100	0
2015	100	1	100	0
2020	340	4	340	0

2.5.7. Avian mycoplasmosis (Mycoplasma meleagridis)

Mycoplasma meleagridis has never been detected. Infections due to *Mycoplasma meleagridis* are notifiable, according to Act No 25/1993. A survey was conducted in 2011. See table below.

Table 30 Number of samples analysed for Mycoplasma meleagridis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2011	100	1	100	0

2.5.8. Infectious bronchitis

Infectious bronchitis was frequently detected during the period from 1995 to 2002 but for the last few years it has not been detected in routine surveillance. It is a notifiable disease, according to Act No 25/1993. Samples have been taken occasionally since 1995. See table below

Table 31 Number of samples analysed for infectious bronchitis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1995	110	-	16	84
1996	102	-	60	40
1997	100	-	73	27
1998	100	-	13	87
2000	100	-	30	70
2002	100	-	93	7*
2010	180	6	180	0
2011	180	6	180	0
2012	58	3	58	0
2014	20	4	20	0

* No clinical symptoms. Repeated sampling negative.

2.5.9. Gumboro disease

Gumboro disease was last detected in 1998. One survey was conducted in 2014. Following clinical signs in one broiler farm samples were taken on 13 farms. All samples were negative apart from samples from the farm with clinical signs. See table below.

Table 32 Number of samples from poultry analysed for Gumboro disease

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples	Number of positive farms
2014	20	4	20	0	0
2019	149	13	143	6	1

2.5.10. Avian influenza

Avian influenza is a notifiable disease, according to Act No 25/1993. Clinical disease has never occurred. Samples have been taken occasionally since 1995. Systematic surveillance has been carried out since 2006. See tables below.

Table 33 Number of samples from poultry analysed for AI antibodies

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
1994	100		100	0
1995	100	-	100	0
1998	100	-	100	0
2000	100	-	100	0
2002	100	-	100	0
2006	352		348	4*1
2007	200	5	200	0
2008	120	6	120	0
2009	238	6	238	0
2010	180	6	180	0
2011	90	3	90	0
2012	60	2	60	0
2013	90	3	90	0
2014	59	2	59	0
2015	221	5	221	0
2016	153	5	153	0
2017	70	10	70	0
2018	181	18	181	0
2019	155	11	155	0
2020	234	23	234	0
2021 (H1)	150	12	150	0
2021 (H2)	168	6	168	0
2022 (H1)	149	11	149	0
2022 (H2)	80	4	80	0

*1 H5 positive. No clinical signs.

Table 34 Number of samples from poultry analysed for AI virus

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2022 (H1)	5	1	5	0
2022 (H2)	6	1	6	0

Table 35 Number of samples from back-yard birds analysed for AI virus

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2011	104	5	102	2*1
2012	60	3	57	3*2
2014	100	5	92	8*2
2015	81	4	74	7*3
2016	80	4	80	0
2017	3	2	3	0
2018	55	6	55	0
2022 (H1)	15	10	9 farms	1 farm
2022 (H2)	1	1	1 farm	0

*1 1 x InfA CT36, 1 x InfA CT42, H5 negative.
*2 InfA CT>40, H5 negative.
*3 H5 and H7 negative.

Table 36 Number of faecal samples from wild birds analysed for AI

Year	Number of individuals sampled	Number of places sampled	Number of negative samples	Number of positive samples
2006	1093	-	1092	1*1
2007	465	-	465	0
2008	375	-	373	2*2
2009	411	-	410	1*3
2010	205	-	201	4*3
2010/11	1078*4	-	1049	29*5
2017	214	-	214	0
2018	21	6	21	0
2019	2	1	2	0
2020	9	8	9	0
2021	17	13	17	0
2022 (H1)	118	81	90	28
2022 (H2)	49	33	23	26

*1 LPH5 positive.
*2 H5 and H7 negative.
*3 H5 negative.
*4 Samples taken in connection with a study done by the US National Wildlife Health Centre and Náttúrustofa Suðurlands in Iceland.
*5 H2N5, H3N6, H4N8, H5N2, H6N5, H6N8, H10N5, H11N2, H16N3

More information about avian influenza surveillance in wild birds.

2.6. Fish diseases

All Icelandic fish farms have been included in the official national health control programme since 1985. The surveillance also includes farms dealing with wild salmonids. The sampling and diagnostic methods regarding viral examination have been along the lines given in Commission Decision 2001/183/EC, including relevant amendments. Screening of important virus agents causing serious infectious diseases, like *Infectious salmon anaemia* (ISA), *Pancreas disease* (PD), *Infectious pancreatic necrosis* (IPN), *Viral haemorrhagic septicaemia* (VHS) and *Infectious haematopoietic necrosis* (IHN), has been a big part of the surveillance program. Until spring 2009, the diagnostic methods were mainly based on EPC, BF-2 and CHSE-214 cell-lines in the routine screening, in addition to clinical signs, gross pathology and histopathological examination of vital organs. In the first years of screening, 150 samples were taken from all farms four times a year. After achieving a “disease-free status“, the sample size was decreased down to 30 samples per brood stock farm each year. However, exporting brood fish, farms must deliver at least 60 samples from every year-class of fish with 9 months interval. This frequency of sampling will be unchanged in the future regarding virus screening in general. In the beginning of May 2009, we started up with examination of ISA and PD (and to a large extent also of IPN) by Real-time RT-PCR technique. All stripped males and females in exporting farms have been tested for those diseases since then. Bacterial examination is in general based on the use of blood agar (with or without 2% NaCl, and 5% horse blood). An ELISA method has been used for the detection of BKD (*Renibacterium salmoninarum*) since 1991, with indirect fluorescent antibody test (IFAT) and/or RT-PCR methodology for confirmation.

2.6.1. Viral haemorrhagic septicaemia (VHS)

Viral haemorrhagic septicaemia is a notifiable disease, according to Act No 25/1993. In October 2015, VHS-virus was detected for the first time in lumpfish of wild origin in Iceland in a marine research farm which had had no connection with the salmonid aquaculture. The lumpfish VHS-virus was sequenced by the European Reference Laboratory for Fish Diseases in Denmark and blasted towards other known genotypes. The results showed a totally new appearance of VHSV subtype, most likely a highly host specific and a unique variant for lumpfish. Iceland obtained formally a disease-free status for VHS by the fish health authority of the European Union in 2004. Following the virus detection in the wild lumpfish in 2015 the disease-free status was suspended temporarily. After stamping out in the research farm, Icelandic authorities started up with a new process of achieving VHS-free status for the broodfish companies of Atlantic salmon and Arctic char. This recognition was confirmed on 2 May 2016. Routine sampling has been performed since 1985 and since 2016 VHS samples have also been analysed by Real-time RT-PCR, in addition to culture on cell-lines. See tables below.

2.6.2. Infectious haematopoietic necrosis (IHN)

Infectious haematopoietic necrosis has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 1985. See table below.

2.6.3. Infectious pancreatic necrosis (IPN)

Infectious pancreatic necrosis is a notifiable disease, according to Act No 25/1993. An avirulent marine IPNV was detected for the first time in farmed Atlantic salmon in a sea-cage farm in late 2019. Routine sampling has been performed since 1985 and test results from tens of thousands of samples show no indication of disease at freshwater sites. Consequently, Iceland is regarded as being free from IPN. Since 2010, samples have been analysed for IPN partly on cell lines and partly by Real-time RT-PCR. See tables below.

Table 37 Number of samples analysed for VHS, IHN and IPN

Year	Number of individuals sampled	Number of farms sampled	Number of positive samples
1985	1.214	-	0
1986	5.591	-	0
1987	9.121	-	0
1988	10.503	-	0
1989	4.854	-	0
1990	6.831	-	0
1991	5.603	-	0
1992	2.763	-	0
1993	949	-	0
1994	610	16	0
1995	775	18	0
1996	601	17	0
1997	945	21	0
1998	806	19	0
1999	860	17	0
2000	696	15	0
2001	706	15	0
2002	533	12	0
2003	885	13	0
2004	1.109	16	0
2005	725	13	0
2006	524	13	0
2007	669	16	0
2008	812	15	0
2009	963	15	0
2010	1.220	13	0
2011	310	12	0
2012	335	12	0
2013	394	10	0
2014	432	12	0
2015	753	13	1*[1]
2016	1.155	12	0
2017	1.127	13	0
2018	966	12	0
2019	1.178	13	1*[2]
2020	1.509	11	0
2021	1.076	13	0
2022	935	12	0

*1 VHS-virus positive lumpfish of wild origin in one farm
*2 IPN-virus Atl. Salmon in one marine farm (avirulent without any clinical symptoms and mortality.

Table 38 Number of samples analysed for VHSV

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2016	462	5	462	0
2017	614	5	614	0
2018	1.094	5	1.094	0
2019	931	5	931	0

Table 39 Number of samples analysed for IPN

Year	Number of individuals sampled	Number of farms sampled	Number of positive farms
2010	928	4	0
2011	3.450	4	0
2012	1.988	3	0
2013	332	2	0
2015	2.570	2	0
2016	784	2	0
2017	2.030	2	0
2018	1.459	6	0
2019	912	6	1*1
2020	1.355	5	0
2021	2.422	10	1*1
2022	5.751	11	0

*1 IPN-virus positive Atl. Salmon in one marine farm (avirulent without any clinical symptoms and mortality).

2.6.4. Viral nervous necrosis/ viral encephalopathy and retinopathy (VNN/VER)

Viral nervous necrosis has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling was performed during halibut farming from 2000 to 2010. See table below.

Table 40 Number of samples analysed for VNN/VER

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2000	45	1	45	0
2001	140	1	140	0
2002	75	1	75	0
2003	90	1	90	0
2004	90	1	90	0
2005	30	1	30	0
2006	30	1	30	0
2007	30	1	30	0
2008	30	1	30	0
2009	30	1	30	0
2010	32	1	32	0

Halibut farming ceased in 2011.

2.6.5. Infectious salmon anaemia (ISA)

Infectious salmon anaemia has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2009. See table below.

Table 41 Number of samples analysed for ISA

Year	Number of individuals sampled	Number of farms sampled	Number of ISA HPR0 positive samples	Number of ISA HPR-del positive farms
2009	2.764	2	48*[1]	0
2010	4.644	4	56*[1]	0
2011	8.206	3	67*[1]	0
2012	8.230	2	47*[1]	0
2013	10.777	2	118*[1]	0
2014	10.310	3	46*[1]	0
2015	14.151	8	49*[1]	0
2016	13.427	8	39*[1]	0
2017	13.296	8	31*[1]	0
2018	10.817	8	55*[1]	0
2019	7.391	7	12*[1]	0
2020	7.078	5	4*[1]	0
2021	8.403	12	21*[1]	1*[2]
2022	16.773	19	25*[1]	1*[2]

*[1] Low/non pathogenic ISAv (HPR0).
*[2] Pathogen ISAv (HPR-del)

2.6.6. Pancreas disease (PD/SAV)

Pancreas disease has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2009. See table below.

Table 42 Number of samples analysed for PD/SAV

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2009	1.908	2	1.908	0
2010	4.504	2	4.504	0
2011	8.206	3	8.206	0
2012	7.530	2	7.530	0
2013	8.506	2	8.506	0
2014	8.772	2	8.772	0
2015	9.247	4	9.247	0
2016	5.644	3	5.644	0
2017	5.074	4	5.074	0
2018	7.390	5	7.390	0
2019	4.488	6	4.488	0
2020	4.323	5	4.323	0
2021	3.437	11	3.437	0
2022	3.362	10	3.362	0

2.6.7. Piscine myocarditis virus disease

Piscine myocarditis virus has never been detected. Surveillance was initiated in 2013. See table below.

Table 43 Number of samples analysed for piscine myocarditis virus.

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2013	902	3	902	0
2014	4.713	3	4.713	0
2015	3.369	7	3.369	0
2016	1.689	7	1.689	0
2017	3.094	5	3.094	0
2018	6.497	6	6.497	0
2019	3.286	5	3.286	0
2020	3.233	3	3.233	0
2021	2.708	4	2.708	0
2022	3.083	5	3.083	0

2.6.8. Heart and skeletal muscle inflammation (HSMI)

Heart and skeletal muscle inflammation is widespread. According to Act No 25/1993 detection shall be reported to the veterinary authorities. Routine sampling has been performed since 2011. See table below.

Table 44 Number of samples analysed for HSMI

Year	Number of individuals sampled	Number of farms sampled	Percentage of positive samples
2011	60	1	0 – 100%
2013	60	3	0 – 100%
2015	567	6	0 – 100%
2016	840	6	0 – 70%
2017	2.707	5	0 – 60%
2018	2.385	4	31%
2019	2.116	5	1,1%
2020	3.482	8	4,1%
2021	3.694	10	5,6%
2022	6.102	23	14,4%

2.6.9. Salmon Gill Pox (SGP)

Salmon Gill Pox is widespread. Routine sampling has been performed since 2017. See table below.

Table 45 Number of samples analysed for HSMI

Year	Number of individuals sampled	Number of farms sampled	Percentage of positive samples
2017	52	5	38%
2018	450	4	1,3%
2019	1.388	5	11,2%
2020	1.531	8	4,3%
2021	1.888	13	6,6%
2022	3.314	14	13,2%

2.6.10. Enteric Redmouth Disease (ERD)

Enteric Red Mouth is widespread. Routine sampling has been performed since 2015. See table below.

Table 46 Number of samples analysed for HSMI

Year	Number of individuals sampled	Number of farms sampled	Number of positive samples
2015	31	2	0
2016	496	2	0
2017	1.263	2	0
2018	1.444	2	0
2019	943	2	0
2020	1.235	2	0
2021	2.214	2	0
2022	3.811	4	0

2.6.11. Bacterial kidney disease (BKD)

Bacterial kidney disease occurs sporadically. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 1985. See tables below.

Table 47 Number of samples from farmed salmon analysed for BKD

Year	Number of individuals sampled	Number of farms sampled	Number of positive farms
1991	435	12	0
1992	558	13	1
1993	453	14	1
1994	522	12	4
1995	431	8	1
1996	594	8	0
1997	337	10	0
1998	362	8	1
1999	316	7	0
2000	361	6	0
2001	312	6	0
2002	357	7	1
2003	713	6	1
2004	1.306	8	3
2005	2.052	16	3
2006	3.048	19	4
2007	3.169	16	1
2008	3.134	11	0
2009	3.930	19	0
2010	2.839	12	1
2011	1.006	11	2
2012	1.399	12	0
2013	1316	10	0
2014	1.989	13	2
2015	1.994	12	0
2016	1.393	18	3
2017	3.800	23	2
2018	5.550	25	1
2019	5.464	21	0
2020	5.196	21	0
2021	3.790	26	1
2022	4.567	23	0

Table 48 Number of samples from wild salmon analysed for BKD

Year	Number of individuals sampled	Number of rivers sampled	Number of positive samples	Number of positive rivers
1991	569	49	8	5
1992	470	55	13	8
1993	403	50	3	3
1994	333	38	2	2
1995	349	38	4	2
1996	253	38	1	1
1997	407	45	0	0
1998	291	37	0	0
1999	240	40	0	0
2000	242	38	1	1
2001	602	38	1	1
2002	530	49	3	2
2003	827	50	4	2
2004	1.279	51	35	6
2005	1.160	48	7	1
2006	1.359	52	157	26
2007	1.757	54	174	32
2008	1.775	48	463	35
2009	1.370	44	340	33
2010	905	38	87	15
2011	929	33	97	20
2012	620	25	38	10
2013	664	29	23	16
2014	628	24	14	6
2015	639	18	13	4
2016	767	14	27	3
2017	863	14	16	4
2018	666	15	39	9
2019	543	15	5	3
2020	728	18	10	4
2021	797	17	16	6
2022	634	21	6	4

2.7. Molluscs

2.7.1. Marteilia refringens

As far as known, *Marteilia refringens* does not exist in blue mussel (*mytilus edulis*) at the Icelandic shore. Samples were taken in 2010, 2011, 2015, 2016 and 2017. See table below.

Table 49 Number of samples analysed for Marteilia refringens.

Year	Number of individuals sampled	Number of sites sampled	Number of negative samples	Number of positive samples
2010	60	2	60	0
2011	30	1	30	0
2015	30	1	30	0
2016	30	1	30	0
2017	60	2	60	0
2020	60	2	60	0

2.7.2. Perkinsus marinus, Microcytos mackini, Haplosporidium spp.

Pacific oyster (*Crassostrea gigas*) was imported for the first time in 2013. Surveillance for Perkinsus marinus, Microcytos mackini and *Haplosporidium* spp started in 2018. See table below.

Table 50 Number of samples analysed for Perkinsus marinus, Microcytos mackini, Haplosporidium spp..

Year	Number of individuals sampled	Number of sites sampled	Number of negative samples	Number of positive samples
2018	41	1	41	0

2.8. Fur animals

2.8.1. Plasmacytosis

Plasmacytosis has been detected a few times in farmed mink, last time in 2008. It is a notifiable disease, according to Act No 25/1993. Routine sampling was performed voluntarily by farmers for many years but it was made mandatory in 2007. See table below.

Table 51 Number of samples from farmed mink analysed for plasmacytosis

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2006	2.731	21	2.647	0
2007	3.220	22	3.220	0
2008	3.153	21	3.150	3
2009	3.201	21	3.201	0
2010	3.235	20	3.235	0
2011	3.999	22	3.999	0
2012	3.822	22	3.822	0
2013	4.486	27	4.486	0
2014	4.703	29	4.703	0
2015	-	-	-	-
2016	4.160	30	4.160	0
2017	3.346	22	3.346	0
2018	2.643	15	2.643	0
2019	1.385	-	1.385	0
2020	1.020	7	1.020	0
2021	1.833	9	1.833	0
2022 (H1)	993	4	993	0
2022 (H2)	794	5	794	0

2.8.2. SARS-CoV-2 (Covid-19)

SARS-CoV-2 has never been detected in mink. Sampling was initiated in November 2020.

Table 52 Number of samples from farmed mink analysed for SARS-CoV-2

Year	Number of individuals sampled	Number of farms sampled	Number of negative samples	Number of positive samples
2020	125	9	125	0

2.9. Dogs

2.9.1. Echinococcus granulosus

Echinococcus granulosus has not been detected in animals since 1979 in a sheep. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2016. See table below.

Table 53 Number of samples from dogs analysed for Echinococcus granulosus

Year	Number of individuals sampled	Number of places sampled	Number of negative samples	Number of positive samples
2016	36	-	36	0
2017	44	-	44	0
2018	42	-	42	0

2.9.2. Echinococcus multilocularis

Echinococcus multilocularis has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2016. See table below.

Table 54 Number of samples from dogs analysed for Echinococcus multilocularis

Year	Number of individuals sampled	Number of places sampled	Number of negative samples	Number of positive samples
2016	36	-	36	0
2018	42	-	42	0

2.10. Wild foxes

2.10.1. Echinococcus granulosus

Echinococcus granulosus has not been detected in animals since 1979 in a sheep. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2016. See table below.

Table 55 Number of samples from dogs analysed for Echinococcus granulosus

Year	Number of individuals sampled	Number of places sampled	Number of negative samples	Number of positive samples
2016	19	-	19	0
2017	40	-	40	0
2018	31	-	31	0

2.10.2. Echinococcus multilocularis

Echinococcus multilocularis has never been detected. It is a notifiable disease, according to Act No 25/1993. Routine sampling has been performed since 2016. See table below.

Table 56 Number of samples from dogs analysed for Echinococcus multilocularis

Year	Number of individuals sampled	Number of places sampled	Number of negative samples	Number of positive samples
2016	19	-	19	0
2017	40	-	40	0
2018	31	-	31	0

*Results not yet available

2.11. Vectors

2.11.1. Culicoides spp

Surveillance for *Culicoides* spp was initiated in 2015. See table below.

Table 57 Number of samples analysed for Culicoides spp

Year	Number of traps	Number of samples	Number of *Culicoides*
2015	3	9	0
2016	5	24	3*[1]
2017	2	9	0
2018	3	15	*[2]

*1 Two *C. grisescens* and one *C. riouxi*
*2 Results not yet available

2.12. Reindeer

2.12.1. Chronic Wasting Disease

Chronic Wasting Disease has never been detected. Routine sampling has been performed since 2016. See table below.

Table 58 Number of samples from reindeer analysed for Chronic Wasting Disease

Year	Number of individuals sampled	Number of negative samples	Number of positive samples
2016	15	15	0
2017	54	54	0
2018	100	100	0
2019	114	114	0
2020	33	33	0
2021	3	3	0
2022	76	76	0