FEDERAL MINISTRY
OF HEALTH

AGES

ANNUAL REPORT VETERINARY MEDICINE 2010

Veterinary Medicine

Federal Ministry of Health
Österreichische Agentur für Gesundheit und Ernährungssicherheit (Austrian Agency of Health and Food Safety) GmbH

CONTENTS

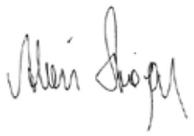
Preface	5
Introduction	6
Structure of Veterinary Administration in Austria	6
Overview of Animal Diseases in Austria	8
Special Guarantees, Recognised Freedoms	9
Aujeszky's Disease (AD)	10
Bovine Brucellosis, Enzootic Bovine leucosis and IBR/IPV	11
Tuberculosis (TBC)	12
Brucellosis of small ruminants	13
Rabies	14
Transmissible Spongiform Encephalopathies (TSE)	16
Detection of thermotolerant *Campylobacter* spp. , VTEC/EHEC and *Salmonella* spp.	18
Psittacosis (Ornithosis, Parrot Disease)	20
Avian Influenza (AI)	21
Paratuberculosis	22
Bovine Viral Diarrhoea (BVD)/Mucosal Disease (MD)	23
Bluetongue Disease (BT)	24
Classical Swine Fever (CSF)	27
Newcastle Disease (NCD)	28
West Nile Virus (WNV)	29
Sporadic Animal Diseases	30
Editors	31
Contact addresses	31

Foods of high quality are the basis for a healthy diet, and where foods of animal origin are concerned, breeding and husbandry of food-producing animals in accordance with animal welfare, as well as the prevention of disease and freedom from undesired or inadmissible residues are of utmost importance.

It is a matter of greatest concern for me – with the support of the Austrian official veterinarians – to preserve the excellent reputation of Austrian foods far beyond the borders of our country with appropriate monitoring and control measures and thus to supply the Austrian population with local products in the best possible way and at the same time to promote sustainable agriculture by ensuring a high standard of animal health.

The recognised freedom of our livestock from many diseases is very important for the export of breeding animals, and large numbers of Austrian cattle are exported to Russia and to Turkey, for instance.

This report on the measures in the veterinary sector has been drawn up in collaboration with the Austrian Agency for Health and Food Safety ("AGES") and the Federal Ministry of Health. It provides an overview of the structure of Austrian veterinary administration and the health status of livestock in Austria.
I would like to express my gratitude to all those who have worked together again in 2010 to maintain the high standard of health in our country.



Alois Stöger

PREFACE

INTRODUCTION

Animal disease surveillance and control in Austria is implemented in accordance with EU law, recommendations issued by the International Office of Epizootic Diseases (OIE) and national legal principles. Due to the dedicated work of the official veterinarians in all the federal provinces and the responsible veterinary authorities, it has been possible to preserve the excellent health status of the Austrian livestock. Animal health is pivotal in achieving the strategic goal of improving the quality of foods of animal origin, and thus the quality of life of the Austrian population. Successful implementation requires federal/provincial cooperation and the support of the veterinary medicine research facilities run by the Austrian Agency for Health and Food Safety ("AGES") and the provinces. Monitoring programmes employing statistically verified sampling methods ensure that the health status of animals is tested annually across the country.

STRUCTURE OF VETERINARY ADMINISTRATION IN AUSTRIA

Austria is a republic with 9 federal provinces (Burgenland, Carinthia, Upper Austria, Lower Austria, Salzburg, Styria, Tyrol, Vorarlberg and Vienna) and 99 districts.

Based on Art. 10 Par. 1 (2) and 12 of the Federal Constitution Act (B-VG), Fed. Legal Gazette 1/1930 as amended, the food sector including food control and the veterinary sector (including the measures necessary to preserve the health of animals and to combat animal diseases, as well as to prevent indirect hazards to human health resulting from animal husbandry and from the utilisation of animal body parts and animal products), regulation of trade with feeds, as well as foreign trade with live animals and animal products are a federal competence in terms of legislation and enforcement. In other words, the federal authorities are responsible for passing and enforcing legislation in these areas within the scope of the federal structure.

Where there are no federal authorities in place, the respective provincial governor and the provincial authorities reporting to him (including the district administrative authorities) are responsible for enforcement on behalf of the federal government pursuant to Art. 102 Par. 1 B-VG. This system is referred to as indirect federal administration.

Within the framework of indirect federal administration the central competent federal authority is responsible for planning and co-ordinating veterinary measures. Thereby the provincial governor is bound by the instructions issued by the federal minister, and he is responsible for organising and implementing the controls.

The areas in which enforcement is implemented by own federal authorities (direct federal administration) include import control of live animals, food of animal origin, food of plant origin (that are subject to an increased level of controls under EU law) and animal by-products.

Pursuant to Art. 11 BV-G, animal protection is a matter of federal legislation and provincial enforcement. In other words, the federal authorities are responsible for passing legislation, the provinces for implementation of the regulations.

In these areas, the provinces are solely responsible for enforcement of the regulations, including the plant disease and animal welfare monitoring and control measures; in these cases, the provincial government is the supreme authority and the subordinate district authority acts as the authority of first instance.

The Federal Ministries Act defines the functional areas of the individual ministries. The responsibilities of the Federal Ministry of Health include food control, animal health and animal protection, and – since 2007 – animal protection during transport, which is an annex matter to the transport sector. The areas feed and plant health are among the responsibilities of the Federal Ministry of Agriculture, Forestry, Environment and Water Management.
Under the Health and Food Safety Act ("GESG"), the Austrian Agency for Health and Food Safety ("AGES") and the Federal Office for Food Safety ("BAES") were established.

AGES comprises all the federal laboratories for food testing, veterinary and human medicine testing, as well as the agricultural laboratories of the Federal Ministry of Agriculture, Forestry, Environment and Water Management.
The Federal Ministry of Health employs 23 veterinarians in three departments, who deal with veterinary matters, as well as 13 border veterinarians at the two remaining border inspection posts at the airports Vienna-Schwechat and Linz-Hörsching, where import consignments subject to control from third countries are inspected.

The widely varied functions of veterinary administration are carried out by 95 official veterinarians employed by the provincial governments and their 116 colleagues in the districts. Additionally, the province of Styria employs 39 provincial district veterinarians.
The total number of veterinary practitioners in Austria is 2,276; 51 veterinarians work in veterinary laboratories.

OVERVIEW OF ANIMAL DISEASE SITUATION IN AUSTRIA

Number of animals and holdings

The survey of animal numbers and holdings in Austria (see Table 1) is based on the random sample survey by Statistics Austria (general livestock count and cattle count on 1st December of each calendar year[1]) on the one hand, and on an evaluation of the entries in the Consumer Health Information System ("VIS") on the other hand.

Table 1: Animal husbandry in Austria

Animal Species	Number of amimals	Number of holdings
Cattle[1]	2,013,281	71,563
Pigs[2]	3,164,898	34,211
Sheep[2]	414,876	16,182
Goats[2]	88,798	11,026
Horses[3]	81,111	17,303
Poultry[3]	13,740,318	62,498

[1] Cattle: General livestock count and cattle count on 1st December of each calendar year
[2] Pigs, sheep, goats: Livestock and holding counts in the VIS as per 1st April of each calendar year
[3] Horses, poultry: Livestock and holding counts in the VIS based on entries in the last years (no annual survey)

In 2010 Austria was free of the following highly contagious animal diseases

- Foot and mouth disease
- Vesicular stomatitis
- Swine vesicular disease
- Rinderpest (cattle plague)
- Peste des petits ruminants
- Contagious bovine pleuropneumonia
- Lumpy skin disease
- Rift Valley Fieber
- Sheep and goat pox
- African swine fever
- Classical swine fever
- Avian influenza
- African horse sickness

ADDITIONAL GUARANTEES, RECOGNISED FREEDOMS

Due to the good animal health situation, Austria has for many years been officially recognised as being free of certain diseases such as bovine tuberculosis (*M. bovis*), bovine brucellosis, enzootic bovine leucosis (all since 1999), as well as brucellosis of small ruminants (*Brucella melitensis* since 2001). For other diseases such as infectious bovine rhinotracheitis (since 1999), Aujeszky´s disease (since 1997) and scrapie (since 2006), Austria has been granted additional guarantees. The official recognition of disease freedom and granting of additional guarantees is associated with easements for the national livestock industry as well as economic trade benefits. Nonetheless, this good health status must continue to be monitored in order to identify any occurring or re-introduced diseases as quickly as possible before they can cause serious damage, therefore good collaboration between all the stakeholders and the authorities is necessary. The good health of the Austrian livestock population must be reconfirmed by the results of the monitoring programmes that are implemented annually.

AUJESZKY'S DISEASE (AD)

Aujeszky's disease or pseudorabies is caused by a herpesvirus (Suid herpesvirus 1, SuHV-1) from the subfamily Alphaherpesvirinae. The virus can survive in the environment for up to 40 days at 25 °C. It is inactivated by heating to more than 55 °C or by chlorine-, ammonium- or formalin-based disinfectants. Pigs (domestic and wild) are the natural reservoirs for SuHV-1. Austria is officially recognised as being free from SuHV-1 in the domestic pig stock.

Carnivores (dogs, cats, minks, ferrets, and also rats) and ruminants (cattle, sheep, goats) are susceptible as dead-end hosts for SuHV-1. There is no transmission from an infected dead-end host to healthy carnivores or ruminants. The disease is usually fatal for all dead-end hosts. Humans are not susceptible for SuHV-1 infection. In domestic pig stocks, the pathogen is usually transmitted to healthy pigs by latently infected pigs (weak to no clinical signs).
In infected stocks, direct transmission is also possible through hand contact, feed and/or in case of close neighbourhood even through air movements (airborne transmission). In regions with dense pig husbandry the infection spreads very quickly. Virus transmission as a result of mating or via the semen also plays an important role. Wild and domestic pigs with a latent infection can be transmitters of the virus. Transmission of the virus is not bound to any specific season. In the case of latent infection, the virus can be detected in the tonsils and in certain ganglia (e. g. trigeminal ganglia) for several years. Nerval symptoms develop when damage to neurons has occurred. Stress factors such as transportation or disease can result in shedding of the virus. Both unvaccinated and vaccinated pigs can become virus carriers; therefore vaccination of the pigs is strictly prohibited in Austria.
In accordance with Section 16 of the Animal Diseases Act, Aujeszky's disease in domestic pig stocks is notifiable in Austria. A permanent monitoring programme for domestic pig stocks has been in place since 1997, based on which the situation regarding Aujeszky's disease is assessed annually in Austria. Based on the results of these tests, Austria has been officially recognised as free of Aujeszky's disease in domestic pigs since 1997.

Domestic pigs

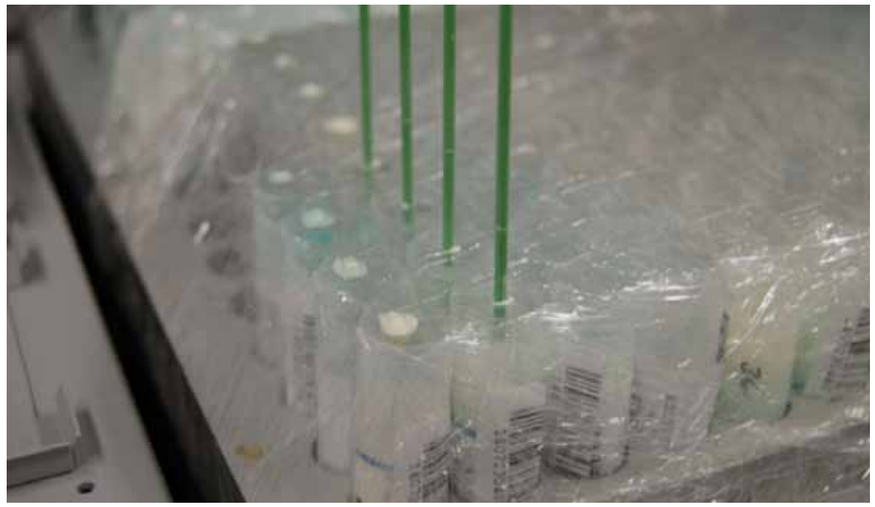
In 2010, 12,427 domestic pigs from 4,290 holdings were tested. All samples were tested negative.

BOVINE BRUCELLOSIS, ENZOOTIC BOVINE LEUCOSIS AND IBR/IPV

Since 2008, nationwide monitoring of milk supplying holdings by testing bulk milk for brucellosis, enzootic bovine leucosis (EBL) and infectious bovine rhinotracheitis / pustular vulvovaginitis (IBR/IPV) has been in place. Non-milk supplying holdings are monitored by means of a risk-based sampling for blood testing. The bulk milk samples were sent to the Institute for Veterinary Disease Control (IVET) Linz and tested there. In holdings with non-negative bulk milk test results, blood samples are collected for further investigation at IVET Mödling.
The annual monitoring programme is necessary in order to maintain the officially recognised freedom from bovine brucellosis, EBL and IBR (Table 2).
To monitor non-milk supplying holdings, a risk-based sampling plan developed by the Division Data, Statistics and Risk Assessment of the Austrian Agency for Health and Food Safety (AGES-DSR) is applied.
No infections were detected in 2010.

Tab. 2: Testing of cattle and bulk milk samples in 2010

	Tested cattle (blood samples)	Tested tank milk samples
Brucellosis	30,210	35,427
EBL	30,284	35,427
IBR/IPV	30,333	35,428



TUBERCULOSIS (TB)

Human and animal tuberculosis is caused by acid-fast mycobacteria comprising the so-called *M. tuberculosis* complex. The complex encompasses *M. tuberculosis, M. africanum, M. canetti, M. bovis, M. caprae, M. pinnipedi, M. mungi, Dassie bacillus, Oryx bacillus* and *M. microti*. Today, the bacteria are differentiated and classified mainly by molecular biological methods based on specific gene sequences, including specific polymerase chain reaction (PCR), restriction fragment length polymorphism (RFLP), spoligotyping and MIRU-VNTR (mycobacterial interspersed repetitive unit-variable number tandem repeat) analysis.

In Austria, bovine tuberculosis is a notifiable animal disease.

Pursuant to a Commission Decision, Austria has been recognised as being free of bovine tuberculosis (*M. bovis*) since 1999. As of May 2000, nationwide intradermal tuberculin testing of ruminants has been discontinued and the disease is now monitored as part of ante-mortem and post-mortem inspections.

The open form of pulmonary tuberculosis (*M. caprae*) detected in a slaughtered bovine in spring 2008 from Lechtal in the Tyrolean district of Reutte resulted in intensive epidemiological investigations including the intradermal tuberculin testing of cattle from contact holdings required by law.

Subsequently, the Federal Ministry of Health ordered expanded intradermal tuberculin testing of cattle.

Based on the findings to date regarding TBC-positive testing of wild red deer in the border region of the provinces Tyrol and Vorarlberg caused by a *M. caprae* infection, certain municipalities and pastures were declared as special TBC testing zones and special TBC monitoring zones by decree. In 2010, more than 7,600 animals from these defined zones were subjected to intradermal tuberculin testing, whereby *M. caprae* was confirmed in eight bovines from eight holdings. After diagnostic slaughtering, tuberculosis isolates were confirmed by molecular biology and bacteriology in the organs of these animals.

The DNA fingerprints collected so far by means of spoligotyping and MIRU-VNTR analysis of the isolates from the Reutte and Bludenz districts match the isolates found in recent years in cattle and wild red deer from Lechtal in Tyrol, as well as individual red deer from the district of Bludenz. This variant of *M. caprae* has also been found in isolates of TB-positive cattle in the neighbouring Allgäu, a German region in Bavaria.

Fig. 1: Apostematous lymph node, tuberculosis (*M. caprae*) in red deer

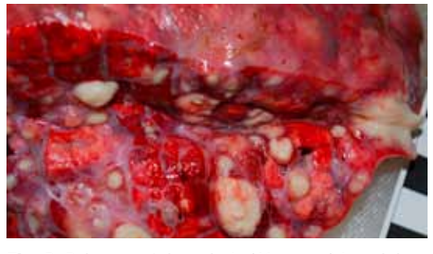


Fig. 2: Pulmonary tuberculosis (*M. caprae*) in red deer

BRUCELLOSIS OF SMALL RUMINANTS

Brucella melitensis

The bacterium *Brucella melitensis* causes problems with the reproductive organs and in rare cases also arthritids in small ruminants, with massive discharges of pathogens in amniotic fluids, foetal membranes, aborted foetuses, vaginal secretions and milk. Humans can become infected, and the resulting disease is known as Malta-fever. It is endemic in the Mediterranean region, with the largest numbers of human infections in Europe being reported in Greece according to the WHO. The primary source of infection for humans is eating cheese made from raw sheep's or goat's milk.

Pursuant to Commission Decision 2001/292/EC, Austria has been declared free of *B. melitensis* since 2001. This status is to be confirmed by means of annual representative sample tests. The sample size is calculated by AGES-DSR and published in the Official Veterinary Bulletin by the competent federal ministry. In 2010, a total of 19,907 sheep and goats from 1,669 holdings were tested for *B. melitensis* antibodies.

No cases of *B. melitensis* were officially detected in small ruminants in 2010.

Brucella ovis

3,202 blood samples were tested for *Brucella ovis* in 2010. Antibodies against this pathogen, which causes inflammation of the epididymis, were detected in a total of 7 animals from 5 holdings.

RABIES

With a successfully implemented vaccination and monitoring programme, Austria was able to maintain its rabies-free status again in 2010, despite cases of rabies in the border areas of northern Italy and Slovenia.
In a spring and autumn campaign, 140,800 vaccination baits against rabies were dropped over a surface of 5,618 km² each in the southern parts of Burgenland, Styria, Carinthia and East Tyrol.
Due to the generally favourable disease situation in Europe, it was possible to reduce monitoring of the rabies situation of the Austrian fox population to random sampling while upholding efficient monitoring of the rabies-free status. Four foxes from the rabies-free monitoring zones and 8 foxes from the risk zones – corresponding to the above immunisation zones – per 100 km² are to be tested for rabies at the National Reference Laboratory (NRL) at IVET Mödling using direct immunofluorescence (DIF). In 2010 this resulted in a total number of 3,547 foxes to be tested.
To ensure proper submission in accordance with the sampling plan, the NRL sent out coloured and consecutively numbered forms that were provided to the hunters by the provinces. Only fox samples that are submitted with such submission forms were accepted for the monitoring programme and a premium was paid to the submitter. The NRL reported on the submitted samples to the provinces and the Federal Ministry of Health ("BMG") monthly.
Compliance with the sampling plan in 2010 is shown at the provincial and district levels in Figures 3 and 4. Additionally, animals with suspected rabies – reported

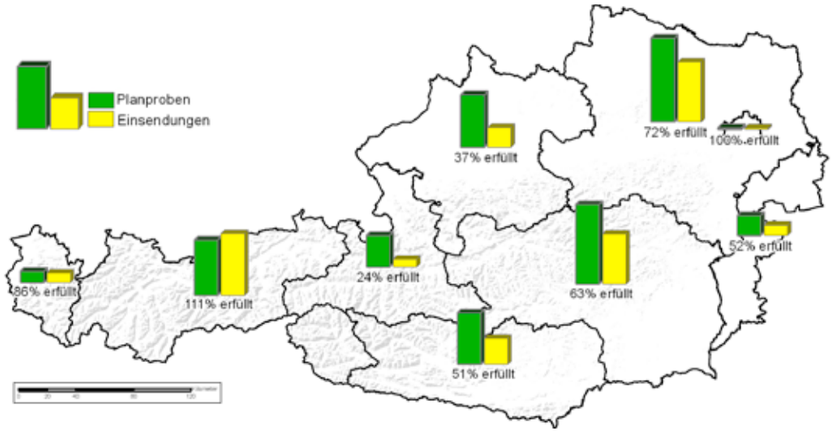


Fig. 3: Target-performance comparison of submission of rabies samples (sampling plan) of foxes by federal province in 2010 (green: sampling plan, yellow: submitted samples)

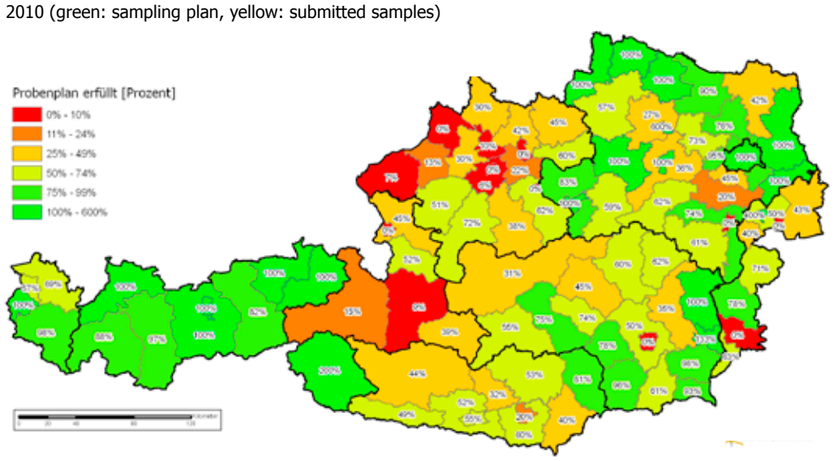


Fig. 4: Target-performance comparison of submission of rabies samples (sampling plan) of foxes by district in 2010

Fig. 5: Dissection room at pathology, IVET Mödling

as suspicious by the official veterinarian – were also tested. These tests were registered in the Consumer Health Information System ("VIS").
382 jaw and blood samples each were to be tested to monitor the success of immunisation resulting from vaccination. 184 samples were submitted for testing, of which 156 blood samples were suitable for testing. To test the fox blood samples for the presence of rabies-specific antibodies, a new commercially available ELISA was tested and validated successfully at IVET Mödling in parallel to the existing method. This new test will be used from 2011. 168 jaw samples (91 %) were tested positively for the marker tetracycline (uptake rate), 88 of the serum samples suitable for testing (56%) had an antibody titre that was sufficiently high during monitoring the success of immunisation.
In addition to DIF-testing, cell cultures were inoculated according to OIE guidelines with samples from 99 animals which had bitten humans in 2010. Routine immunohistochemical testing of the brain and salivary gland samples from these animals was stopped in the middle of the year for organisational reasons. However, it will be continued within the accreditation in exceptional cases (diagnostic confirmation, human samples). Molecular biological testing (13 tests were performed in 2010) is also performed especially for the ante-mortem diagnostics of suspected human infection.
Organs from 80 bats tested for rabies were submitted to the Institute of Clinical Virology at the University of Veterinary Medicine Vienna for research purposes.
Within the scope of the PET Travel Scheme tests, 938 blood samples from pets were tested using the fluorescence antibody virus neutralisation test (FAVNT). Of these, 796 samples displayed a sufficiently high antibody titre (≥ 0.5 IU), 124 an insufficient titre, and 18 samples could not be tested.
In 2010 the NRL participated successfully in two international ring trials with all the accredited methods. The NRL was represented by two members of its staff at the "3rd Workshop for Rabies NRLs" in Nancy/FR. The proposed amendments for improvement and harmonisation of methods discussed there will be integrated and implemented in the NRL programme in 2011.
At the end of the year, the "Pathology Centre EAST" was opened at IVET Mödling. As a result, spacious rooms with state-of-the-art technology are now available for rabies testing as well as for post-mortem diagnostics in general (Fig. 5, 6).

Fig. 6: Dissection of foxes, IVET Mödling

TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES (TSE)

Austria is a country with "controlled BSE risk". The 2010 TSE monitoring programme fulfils the legal provisions of Regulation (EC) No. 999/2001 as amended, the OIE regulations, and the Austrian TSE Notification. Austria – like other Member States – is permitted to implement a revised BSE monitoring programme pursuant to Commission Decision 2009/719/EC, as amended by Commission Decision No. 2010/66/EU.

Cattle

The applicable age limit for mandatory testing is also subject to the animal's country of birth and is regulated in detail in Section 2 of the TSE Notification (see Table 3a). In accordance with the regulations cited above, the testing for bovine spongiform encepalopathy (BSE) comprised:

- all healthy slaughtered cattle from 48 or 30 months of age (depending on country of birth),
- all cattle that have died or been killed from 24 months of age,
- all emergency slaughtered cattle from 48 or 24 months of age, and
- voluntary testing at the request of the owner from 20 to 47 months of age.

In 2010, two bovines tested positive for BSE (Fig. 7, Table 3b).

Table 3a: Number of BSE tests in 2010 by specified testing categories

Tested cattle	Tested samples	Age limit
Healthy slaughtered cattle	172,086	48 months / 30 months[1]
Emergency slaughter	1,486	48 months / 24 months[1]
Cattle that died or was killed	19,077	24 months
Cattle culled in the framework of BSE eradication	1	24 months
Clinically suspected cases	4	
Voluntary testing, healthy slaughtered cattle, at the owner's costs	13,678	20 – 47 months
Total	**206,332**	

[1]Age limit depending on country of birth

Table 3b: Number of BSE tests in 2010 by test results

Total samples tested	Negative samples	Positive samples
206,332	**206,330**	**2**

Notable on the one hand was the high number of slaughtered cattle of non-Austrian origin that was tested for BSE in Austria, and on the other hand the high number of cattle that was tested for BSE voluntarily at the owner's request (on demand by the Turkish authorities prior to exporting the meat of the slaughtered animals to Turkey).

It must also be emphasised that the last three cases of BSE identified in Austria were atypical cases involving bovines over 10 years of age (1 case in 2007, 2 cases in 2010). There is a discussion as to whether these cases are degenerative disorders of the nervous system of old cattle that are not causally associated with contaminated feed.

Sheep and Goats

In April 2006 Austria received additional guarantees for scrapie from the European Union.
A national monitoring programme ensures that an outstanding disease situation is maintained and documented for sheep and goats (Table 4).
The following animals are tested within the scope of this monitoring system:

- all sheep and goats over 18 months of age that have died or been killed, and
- slaughtered sheep and goats from 18 months of age:
  a) when animals are introduced into Austrian holdings from countries where scrapie is endemic or where scrapie has been confirmed within three years prior to introduction of the animals, or
  b) when scrapie is confirmed in their holding of origin within three years of the purchased animals being introduced.

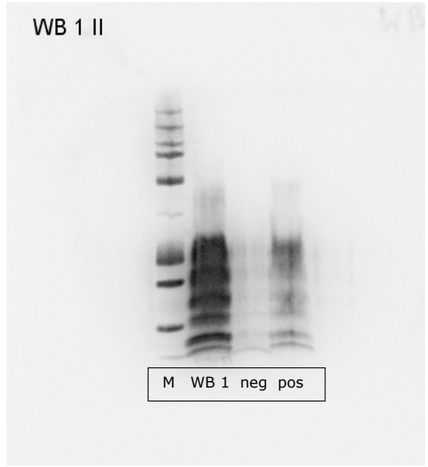


Fig. 7: Result of the confirmatory Western blot of an Austrian BSE case in the year 2010 by the National Reference Laboratory (NRL) for TSE
(M = marker, neg and pos = controls, WB 1 = BSE-positive sample)

Table 4: Scrapie tests in 2010

Category	Number of animals tested
Slaughtered sheep and goats over 18 months of age from at risk holdings	0
Fallen sheep	5,539
Fallen goats	1,789
Clinical suspect cases of scrapie	0
Total	7,328

Scrapie testing is performed centrally by the National Reference Laboratory for TSE at IVET Mödling.

THERMOTOLERANT *CAMPYLOBACTER* SPP., VTEC/ EHEC UND *SALMONELLA* SPP.

Obligatory monitoring of zoonotic pathogens in Austria includes thermotolerant *Campylobacter* (*C.*), verotoxigenic *Escherichia coli* (VTEC) and salmonella (*S.*).
In 2010 – after an interruption in 2009 due to the low epidemiological significance – cattle (large intestine content of slaughtered bovines) and broilers (large intestine content of 10 chickens from each abattoir batch) were tested for *C. jejuni* and *C. coli.* Slaughtered cattle (rectal mucosal swab) and sheep (rectal mucosal swab taken within the scope of blood collection for monitoring of *Brucella melitensis*) were tested for VTEC. Monitoring for salmonella was performed in poultry in accordance with the provisions of the Poultry Hygiene Regulation 2007 within the scope of salmonella control programmes, where samples are taken from laying hens (2 pairs of swabs at intervals of 15 weeks, once per year official sampling with 2 pairs of swabs, one dust sample and one faecal sample to test for inhibitors), broilers and turkeys (2 pairs of swabs each before slaughtering). In addition, the laying and broiler breeding animals are also tested regularly both by the holding and officially within the scope of a salmonella control programme.
The results of these tests are shown in Tables 5 – 8.
Plan = sampling plan, the percentages relate to the number of samples tested, N.t. = samples that were not tested (e. g. because too old). SE/ST = *Salmonella* Enteritidis/*Salmonella* Typhimurium.

Table 5: *Campylobacter* samples in cattle and broilers

Animal species	Parameter	Plan	Submitted	Negative	Positive	N. t.
Cattle	*C. jejuni*	691	684	487	145	13
	C. coli				39	
Broilers	*C. jejuni*	404	402	210	122	8
	C. coli				62	

Table. 6: Number of tests for VTEC using ELISA in cattle and sheep

Animal species	Plan	Submitted	Negative	Positive	N. t.
Cattle	127	129	63	64	2
Sheep	117	125	23	89	13

Table 7: Tests using PCR for isolates from VTEC-ELISA-positive samples

Animal species	Number of samples	Negative (no VTEC Isolate)	Positive (1–3 VTEC Isolates)
Cattle	64	27	37
Sheep	89	12	77

Table 8: Poultry flocks tested to monitor for salmonella
SE ... *S.* Enteritidis
ST ... *S.* Typhimurium

	Laying hens	Broilers	Turkeys
Number of flocks	2,808	3,402	355
SE/ST-positive flocks	33	21	1

No relevant salmonellae (*S.* Enteritidis, *S.* Typhimurium, *S.* Infantis, *S.* Hadar, *S.* Virchov) were detected in parent animals of laying hens and broilers in 2010.

The campylobacter test results are relatively constant in cattle and broilers. In cattle, *C. jejuni* was detected in 27.9 %, *C. coli* in 3.7 % of the samples in 2008. In broilers, the detection rates were 29 % for *C. jejuni* and 16 % for *C. coli* in 2009.
The VTEC data, on the other hand, showed a further increase in detection rates. With reference to the total number of samples tested, the following results of PCR were obtained: in cattle: 29 % in 2010, 24 % in 2009, 15 % in 2008; in sheep: 68 % in 2010, 46 % in 2009 and 21 % in 2008. Part of this increase can be attributed to an improvement of the testing modalities.

Monitoring of the salmonella presence in Austrian poultry flocks showed that the EU targets for combating *S.* Enteritidis and *S.* Typhimurium (the most important types in terms of human medicine) were met again in 2010 (target: under 2 % of the flocks). This shows that the measures to control salmonella were implemented successfully especially in the poultry flocks.

PSITTACOSIS (ORNITHOSIS, PARROT DISEASE)

This disease is notifiable when detected in psittaciforms (parrots and parakeets). This disease is known as ornithosis in other birds species. Psittacosis is a zoonosis.
The pathogen is the gram-negative, obligatorily intracellular bacterium *Chlamydophila psittaci*. It appears in different embodiments as elementary bodies (the infectious form), intermediary bodies and reticulate bodies. The individual species of *Chlamydophila* adapt very well to their host, *Chl. psittaci* to psittacidae, *Chl. abortus* to sheep/goats, *Chl. trachomatis* to the human eye.
Humans are usually infected by inhalation of infectious faeces and dust. The resulting symptoms are usually a general fever and subsequent pneumonia. All secretions and excretions are infectious. The incubation period is 3 – 29 days, but can also be up to 100 days. Symptoms in birds include pneumonia, coughing, emaciation, ruffled feathers, diarrhoea, ophthalmic and nasal discharge. Death can occur from between a few days to several weeks, or the disease becomes chronic with the recovery of the animals. However, these animals continue to shed pathogenic agents.
The treatment of choice is antibiotics which need to be administered longterm.
Prevention involves birds being quarantined and tested for *Chlamydophila*. Standard hygiene measures must be observed when working with the animals.
Laboratory diagnostics to detect *Chlamydophila* sp. are performed by immunofluorescent testing (IF) of organs (spleen, liver, optionally aborted material), immunohistochemistry, antigen-ELISA of faeces, pathogen isolation in egg culture, and differentiation of species by means of molecular biology (PCR).
When dissecting birds, an enlarged spleen and liver are specific indicators for psittacosis.

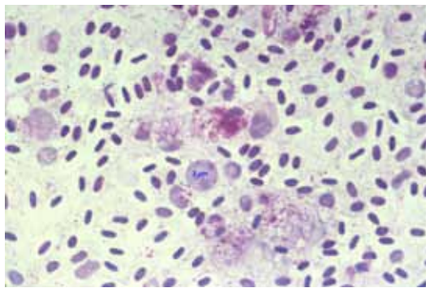


Table 9: Number of samples tested for psittacosis in Austria in 2010

Ag-ELISA	Direct IF (IMAGEN)	Ag-PCR
87	**30**	**54**

Chlamydophilia psittaci was detected in psittacidae in three cases.

AVIAN INFLUENZA (AI)

In 2010, 4,408 blood samples were tested for AI antibodies; 4,386 samples with ELISA and 22 samples with the haemagglutination inhibition test (HI). 62 samples were tested by virus isolation in egg culture, and 1,240 wild birds and 27 domestic poultry for the antigen in real-time RT-PCR.
The pan-European AI screening programme consists of an active and a passive component.
Serological testing was undertaken in active surveillance on the slaughter blood of 600 laying hens from 60 holdings, 790 fattening turkeys from 79 holdings, 2,410 geese and ducks from 77 holdings, and 50 ostriches from 5 holdings.
All antibody tests returned negative results.
Faecal swabs from 1,157 wild water birds were tested for virus detection using real-time RT-PCR.

Table 10: Number of tests for avian influenza in Austria in 2010

	Domestic poultry	**Wild birds**		**Routine samples**	**Total**
Surveillance	active	active	passive		
Ab-ELISA	3,850			536	4,408
Ab-HI				22	
AG-PCR		1,157	83	27	1,329
Virus isolation (egg culture)				62	
Total	3,850	1,157	83	647	5,737

Passive surveillance involved testing of 83 samples from birds found dead by means of real-time RT-PCR and 71 dissections on birds for AI.
Avian influenza virus of types which are neither a hazard for domestic and wild poultry nor notifiable pursuant to the Animal Disease Act was detected in 99 wild bird samples.
Highly pathogenic avian influenza virus was not detected in Austria in the year under review.

PARATUBERCULOSIS

Paratuberculosis or Johne's disease is a chronic and incurable intestinal infection in ruminants that is caused by *Mycobacterium avium* subspecies *paratuberculosis* (MAP). This global disease was first described by Johne and Frothingham in 1895. The infection is usually transmitted to young animals via faeces, milk contaminated with faeces, teats and colostrum. Following an incubation period of 2 - 10 years, the disease is characterised by uncontrollable diarrhoea despite the maintenance of appetite, emaciation, lower milk production, reduced weight gain, infertility and death.

Clinical paratuberculosis in cattle, sheep, goats and wild ruminants in game holdings has been notifiable in Austria since 2006. Testing within the scope of this monitoring programme provided for by regulation is performed centrally at IVET Linz.
The aim of this monitoring programme is to detect animals suffering from clinical paratuberculosis and remove them from holdings, as these animals play a significant role in the spread of paratuberculosis. Clinically suspicious cases can be investigated diagnostically by submitting blood and faecal samples to the testing laboratory. Organ material (intestinal samples, lymph nodes) is submitted for animals that have died or have been killed.

In 2010, samples from 82 cattle (61 holdings), 6 goats (1 holding) and 3 wild ruminants kept in captivity (3 holdings) were examined within the scope of the monitoring programme. The pathogen was detected in 27 holdings in total. An MAP infection was detected in 34 cattle, 6 goats and one wild ruminant in captivity. The positive cattle came from 25 holdings, with Limousin (12 animals) and Simmenthal-Fleckvieh (9 animals) being the most frequently represented breeds. Figure 8 shows the clinically suspicious cases for the individual federal provinces (numbers in black), the number of MAP-positive animals (numbers in red) and the number of MAP-positive holdings (numbers in blue).

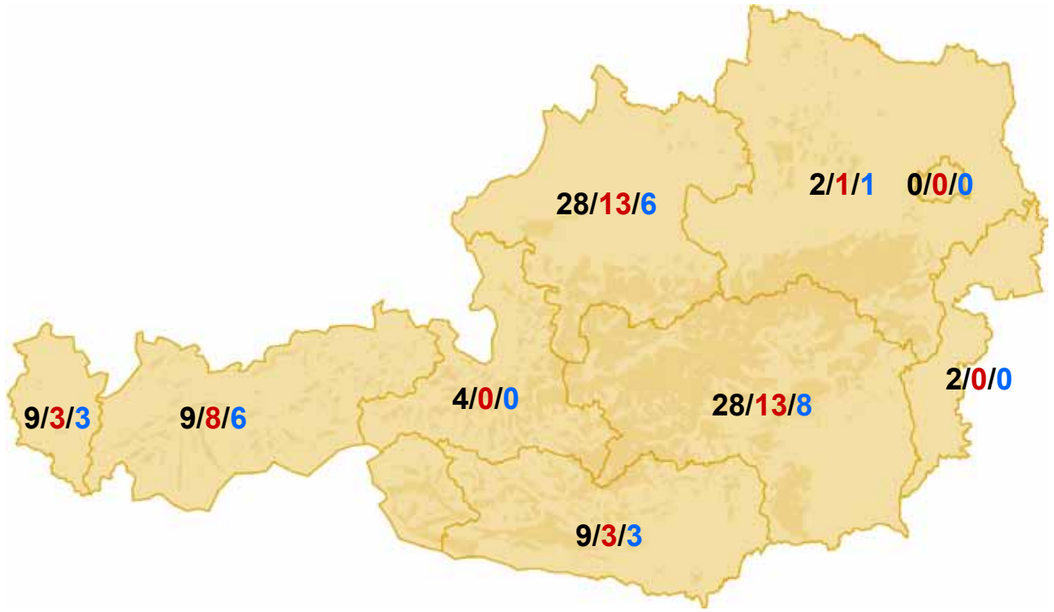


Fig. 8: Number of suspicious cases (black), animals confirmed by positive laboratory results (red) and the positive holdings (blue)

BOVINE VIRAL DIARRHOEA (BVD), MUCOSAL DISEASE (MD)

The disease is found globally and is caused by a pestivirus belonging to the Flaviviridae family. Cattle infected persistently with the BVD virus (BVDV) in the uterus excrete virus throughout their entire lives and are the main source for spreading the disease. BVD/MD is one of the most economically significant infectious diseases in cattle. Consequently, several European countries including Sweden, Switzerland and the Federal Republic of Germany have opted to erradicate the disease actively. BVD control in Austria has been regulated by the BVD Regulation since August 2004. The majority of the complex of symptoms often occur unnoticed. Respiratory tract infections, diarrhoea, fever, loss of appetite, reduced milk production and a general weakening of the immune system are possible. In most cases animals have fertility problems, resulting in abortions or the birth of abnormal and weak calves. Post-natal infection with the BVD virus triggers a transitory infection that usually goes undetected. Subsequently, this acute or transient infection results in the creation of antibodies which can be detected in the blood or in the milk.
Mutation of the virus or superinfection with a further virus strain can cause mucosal disease. This disease is particularly severe, resulting in death of the infected animals. Typical symptoms are massive and often haemorrhagic diarrhoea, high fever, extreme mucosal erosions and subsequent secondary infections. Diagnosis is made on the basis of the detection of antibodies in blood, individual milk or bulk tank milk samples. Blood, tissue and organ samples are suitable for confirming the presence of the virus (antigen detection). In 2010 a total of 103 new infections were reported. The majority of these infections occurred in the western provinces, where outbreaks were observed in numerous holdings as a result of the infection being introduced in the course of alpine farming.

BLUETONGUE DISEASE (BT)

Bluetongue disease (BT, sore muzzle) is a viral disease affecting cattle, sheep, goats and wild ruminants, and was first diagnosed in South Africa in 1934. For a long time the disease was considered to be an exotic animal disease as it was only found around the world between the latitudes of 40°N and 35°S.

Bluetongue disease is caused by an RNA virus, a member of the genus Orbivirus and the family Reoviridae, with 26 serotypes having been identified worldwide so far.

The project "Implementation of bluetongue surveillance in Austria" was initiated in 2007. This project is a joint project involving the Federal Ministry of Health - Veterinary Services, AGES and the Museum of Natural History Vienna ("NHM"). In addition to fast forwarding of information, the aim of the project is performing diagnostic tests by AGES and the NHM.

In accordance with the requirements of Commission Regulation (EC) No. 1266/2007, a programme for surveillance of bluetongue disease must be implemented in Austria. The aim of the programme is to determine whether new serotypes of bluetongue disease have been introduced and whether certain serotypes of bluetongue disease can be excluded. The surveillance programme also serves to exclude circulation of the virus in certain regions or during certain periods.

BT was first diagnosed in Austria on November 7, 2008. By year-end 2008, a total of 11 animals and in the year 2009 a total of 17 animals tested positive for BT. The last positive test for BT virus in Austria was on March 6, 2009. Two further cases were reported on May 6, 2009 and on July 17, 2009, but in these animals only BT antibodies (Ab) were detected, indicating a virus circulation in the autumn/winter of 2008/2009.

The midge population caught in special traps (black blue light traps) was species identified and counted by the Museum of Natural History Vienna. The three-year midge project was concluded on June 30, 2010. Samples were taken at 54 locations in Austria in the first half of 2010 (Fig. 9).

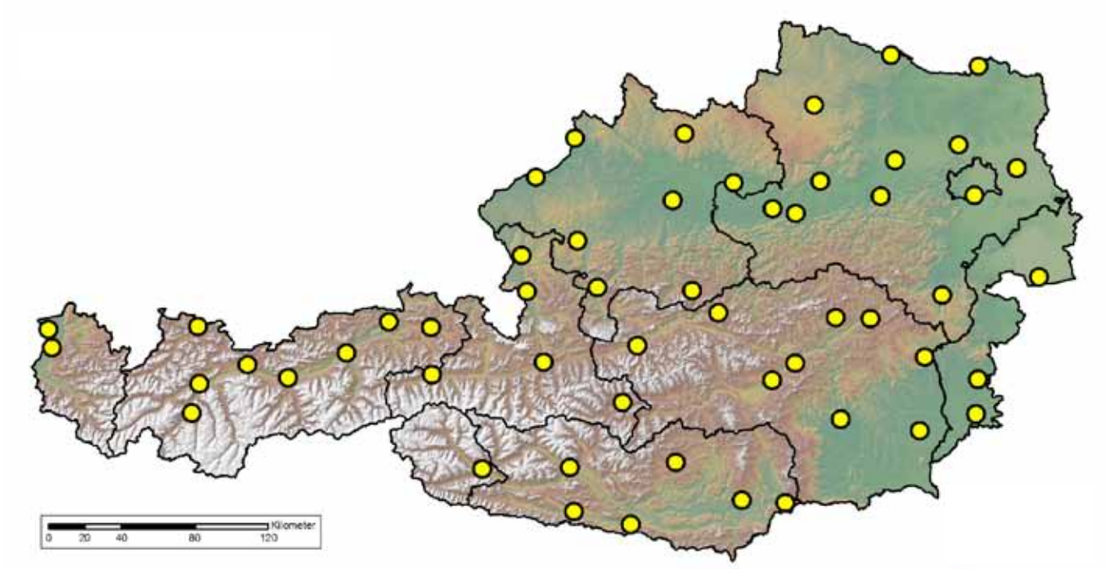


Fig. 9: Location of vector traps in Austria

In the course of entomological *Culicoides* testing, 68 % of the total samples were identified as belonging to the genus *Culicoides* in the first half of 2010. Of these, 92 % were identified as belonging to the *C. obsoletus* complex, 4.5 % to the *C. pulicaris* complex, and 0.99 % to the *C. nubeculosus* complex. Other regular species were *C. furcillatus*, *C. fascipennis*, *C. circumscriptus* and *C. duddingstoni.* 1.6 % of the samples could not be classified during routine examination (Fig. 10).

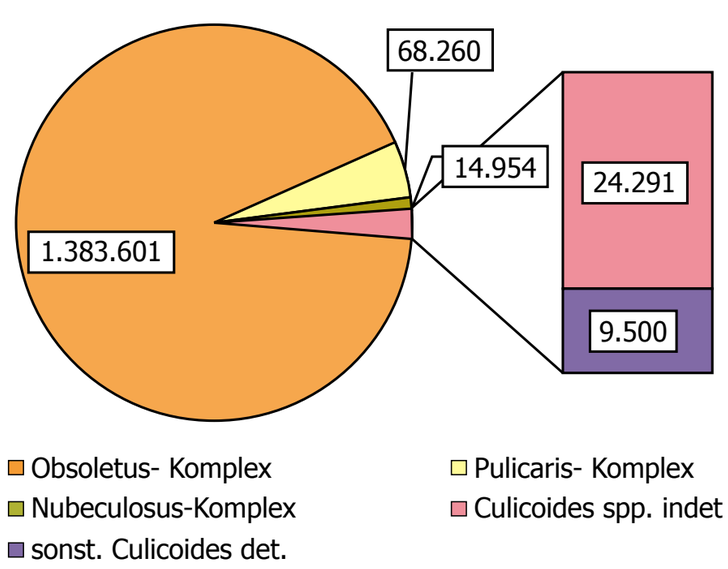


Fig. 10: Proportion of *Culicoides* complexes in 2010 (total numbers of individuals)

For BTV diagnosis blood or milk samples from living animals and organ samples from dead animals were taken by veterinarians or official veterinarians. These were tested at the IVET Mödling (blood, milk and organ samples), Linz and Innsbruck (blood samples).
AGES performed a total of 71,680 ruminant, camelid and Culicoides tests using enzyme linked immunosorbent assay (ELISA), serum neutralisation test (SNT) and polymerase chain reaction (PCR) within the scope of the bluetongue project in 2010. A total of 32,209 tests for BT antibodies (Ab) were performed using ELISA and SNT, and 39,471 tests for BT antigen (Ag) were performed using PCR. Table 11 shows the BT-Ab and BT-Ag tests for the individual animal species. With the exception of a few samples originating from imported animals, BT-immunised animals (serotype 8) and animals with maternal Abs, all samples were tested negative.

Table 11: BT tests for the individual species in 2010, broken down by species, test category and test type (detection)

		Animal species					
Category	**Detection**	**Cattle**	**Sheep**	**Goat**	**Miscellaneous**	***Culicoides***	**Total**
BT monitoring	AB	26,619	50	5	---	---	26,674
	AG	16,940	695	189	---	---	17,824
Import	AB	27	---	5	---	---	32
	AG	615	549	109	5	---	1,278
Routine	AB	5,408	29	5	61	---	5,503
	AG	19,914	66	54	97	238	20,369
Total		69,523	1,389	367	163	238	71,680

Austria has been a uniform BT zone since December 15, 2008. Samples are gathered from ruminants in the 28 sentinel regions of the BT programmes "Sentinel" and "BT Monitoring 1266". In the "Sentinel" programme the blood or milk of unvaccinated cattle is examined for antibodies, while the "BT Monitoring 1266" examines blood samples from cattle and small ruminants for the BT antigen. "BT Monitoring 1266" is a molecular biological investigation using real-time PCR to compensate for deficits in the number of sentinel animal examinations. The blood tests performed in the course of the BT surveillance programme are carried out only by IVET Mödling. A total of 44,498 samples (26,868 sentinel samples and 17,630 BT surveillance samples) from the individual federal provinces were tested.
In 2010, no animals with a positive BT test were identified.
Due to cases of BT in border regions of Germany, it was decided in July 2008 to implement mandatory vaccination of all susceptible animals in Vorarlberg and Tyrol. With the occurrence of the first cases of BT in Austria, the vaccination zone was expanded to cover the whole of Austria. From July 2008 until the end of mandatory vaccination on March 31, 2009, a total of about 1.6 million cattle, 344,000 sheep and 65,000 goats were vaccinated against the bluetongue serotype 8. This corresponds with a vaccination rate of approx. 79% of cattle and approx. 83 % of sheep and goats.

CLASSICAL SWINE FEVER (CSF)

A total of 5,172 samples from domestic pigs were tested by the NRL for CSF at IVET Mödling, of these 4,413 samples were tested for CSF specific antibody (Ab) and 759 for antigen (Ag) (Table 12). All tests returned a negative result.

Table 12: Number of CSF tests in Austria in 2010

Detection	**CSF monitoring programme**	**Other samples**	**Total**
Ab-ELISA	2,560	1,808	4,413
SNT		45	
Ag-PCR	648	104	759
Virus isolation		7	
Total	3,208	1,964	5,172

The monitoring programme for classical swine fever in Austria was started in May 2010. Using a risk-based sampling plan, samples were collected with respect to 5 categories and tested at IVET Mödling (Table 13). A total of 3,208 samples were tested. All tests returned negative results.

Table 13: Sampling plan for 2010 for classical swine fever monitoring in Austria

Category No.	**Type of monitoring**		**Target populaton**	**Detetion**	**Number (rounded)**
I	Monitoring within the scope of ante-morten and post-mortem inspection		Slaughtered pigs	Ag-PCR	100
II	Monitoring of carcasses from rendering plants		All age groups	Ag-PCR	1,000
	Upper Austria	Regau			280
	Lower Austria	Tulln			260
	Styria	Landscha			270
	Burgenland	Unterfrauenhaid			40
	Carinthia	Klagenfurt			150
III	Follow-up examinations to AGES diagnostics		All age groups	Ag-PCR/ Ab-ELISA	300
IV	Monitoring in risk holdings		Breeding pigs	Ab-ELISA	2,300
V	Blood samples from screening for Aujeszky's disease		Slaughtered pigs	Ab-ELISA	3,000

NEWCASTLE DISEASE (NCD)

Newcastle disease (ND) is a highly contagious avian disease with an acute to chronic course. The virus belongs to the family of Paramyxoviridae. A distinction is made between apathogenic, lentogenic (slightly pathogenic), mesogenic (slightly virulent) and velogenic (highly virulent) types of viruses.
The disease is characterised by rhinitis symptoms, CNS symptoms and diarrhoea. It is associated with high morbidity and mortality, particularly amongst pigeons. NCD virus is shed in large quantities in the faeces, orbital, nasal and pharyingeal secretions, as well as in all body fluids, and it is spread both directly and indirectly. The incubation time is 4 to 7 days. The symptoms depend on the virulence of the pathogen. Slight pathogenicity will result in only mild or no symptoms.
In individual cases, these viruses can cause conjunctivitis in humans.
NCD is a notifiable disease. The appearance of clinical suspicious symptoms must be reported to the official veterinarian, who will submit samples for diagnosis. Only highly pathogenic types of viruses are reported as an epidemic when the virus has a pathogenicity index (ICPI) of 0.7 or above, and when pathotyping of the virus by methods from sequencing shows it to be a "velogenic" (highly virulent) strain.
Different provisions apply for commercial poultry than for pigeons (carrier pigeons). Prophylactic immunisation is permitted in Austria, and is also carried out with hens, turkeys and pigeons (carrier pigeons and breeding pigeons).
The laboratory diagnosis is determined by detecting the pathogen from tracheal or oropharyngeal swabs and cloacal swabs as well as from animal carcasses (CNS, lung, liver, spleen, gut) by virus isolation in egg culture and subsequent haemagglutination (HA) and haemagglutination inhibition tests (HI) as well as molecular biological methods (RT-PCR and additional pathotyping).
Detection of antibodies using ELISA and HI is possible, but must be evaluated in context in cases where immunisation has been allowed.

Table 14: Number of samples tested for NCD in Austria in 2010

Antibody HI	Virus isolation (egg culture)	Ag-PCR
1,087	62	43

The antibody test is performed primarily to check the success of immunisation. In 11 cases the virus test was positive in wild pigeons.

WEST NILE VIRUS (WNV)

West Nile virus was first described in a human in the North of Uganda's West Nile District in 1937. WNV is transmitted to humans and animals (primarily birds and horses) by infected mosquitoes that were previously in contact with infected birds.
The disease cannot be transmitted between horses or from horse to humans, as both humans and horses constitute dead-end hosts for the virus. In horses with clinical disease, the infection is lethal for up to 40 % of the animals. In 80 % of cases in humans, the infection is asymptomatic or the symptoms are mild and do not provide a clear indication of WNV infection.

Since the summer of 2008, 6 cases of clinical WNV infection with lineage 2 have been detected in birds of prey (5 goshawks, 1 falcon) in Vienna, eastern Lower Austria and Styria (Fig. 11, Table 15).

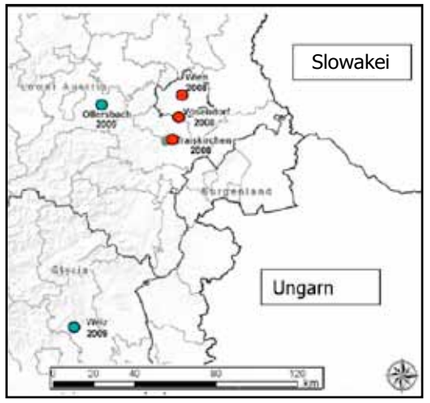


Fig. 11: Geographic distribution of the WNV cases in Austria (2008 – 2009).

Table 15: Number of samples tested for WNV in Austria

Origin of sample	2008	2009	2010
Crows (organs)	34	---	---
Birds of prey (Organs)	5 (4 positive)	6 (1 positive case from 2008)	8 (1 positive case from 2009)
Samples from avian influenza surveillance (organs)	17	109	36
various types of birds (Serology)	87	---	190

The infection was lethal for the birds of prey. Clinical cases in horses or humans have not yet occurred in Austria. During a WNV outbreak in Greece in the summer of 2010, 191 human cases with 32 deaths caused by WNV lineage 2 were confirmed.
On behalf of the Federal Ministry of Health, a WNV monitoring programme for wild birds has been implemented by IVET Mödling in 2008. Samples from dead wild birds that are submitted within the scope of the avian influenza surveillance programme are also tested for WNV.

SPORADIC ANIMAL DISEASES

Sporadic cases of the following animal diseases were detected in the reporting year:

148	cases of American foulbrood
12	cases of equine coital exanthema
1	case of infectious haematopoietic necrosis
5	cases of viral haemorrhagic septicaemia
119	cases of blackleg
1	case of *Campylobacter fetus* subsp. *venerealis* infection
43	cases of mange in sheep
1	case of varroasis
1	case of *Brucella suis* infection

EDITORS

Federal Ministry of Health
Veterinary Administration
Radetzkystr. 2, 1031 Vienna, Austria
www.bmg.gv.at

Dr. Ulrich Herzog
Dr. Johann Damoser
Dr. Andrea Höflechner-Pöltl
Dr. Renate Kraßnig
Dr. Elisabeth Marsch
Dr. Elfriede Österreicher
Simon Stockreiter MVM

AGES – Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH
Austrian Agency for Health and Food Safety
Spargelfeldstr. 191, 1220 Vienna, Austria
www.ages.at

Prof. Dr. Josef Köfer
Dr. Michael Dünser
Prof. Dr. Friedrich Schmoll
Ulla Winkler MVM
Doris Zwettler MVM

CONTACT ADDRESSES

AGES
Institute of Veterinary Disease Control Mödling
Robert-Koch-Gasse 17
2340 Mödling, Austria
phone: +43 (0) 505 55-38112
fax: +43 (0) 505 55-38108
e-mail: vetmed.moedling@ages.at

Institut of Veterinry Disease Control Linz
Kudlichstraße 27
4021 Linz, Austria
phone: +43 (0) 505 55-45111
fax: +43 (0) 505 55-45109
e-mail: vetmed.linz@ages.at

BMG
Federal Ministry of Health
Radetzkystraße 2
1031 Vienna, Austria
phone: +43 (1) 711 00-0
fax: +43 (1) 711 00-14300

Institute of Veterinary Disease Control Graz
Puchstraße 11
8020 Graz, Austria
phone: +43 (0) 505 55-62110
fax: +43 (0) 505 55-62119
e-mail: vetmed.graz@ages.at

Institute of Veterinary Disease Control Innsbruck
Technikerstraße 70
6020 Innsbruck, Austria
phone: +43 (0) 505 55-71111
fax: +43 (0) 505 55-71333
e-mail: vetmed.innsbruck@ages.at

PUBLIC, ANIMAL AND PLANT HEALTH

Imprint
Editor:
Federal Ministry of Health
Veterinary Services
Radetzkystr. 2, 1031 Vienna, Austria

www.bmg.gv.at

AGES - Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH (Austrian Agency for Health and Food Safety)
Spargelfeldstr. 191, 1220 Vienna, Austria
www.ages.at

Graphic Design: Corsaro Graphic Design
Photos: BMG, AGES, AMA, agrarfoto, fotolia