

Better Training for Safer Food BTSF

Epidemic emergencies: What are epidemic emergencies?

Dr. Yvonne Gall, Dr. Matthias W. Kramer

vvonne.gall@fli.bund.de



BETTER TRAINING FOR SAFER FOOD BTSF Epidemic emergencies

Outline

- Definitions and types of diseases
- Examples of epidemic emergencies
- EU legislation
- Disease prevention, control and eradication measures
- Economic aspects, trade in livestock and products of animal origin
- EU reference laboratories and the veterinary emergency team
- National legislation in EU Member States



Definitions and types of disease

- Sporadic disease: occurs irregularly and haphazardly in time and space, infrequent
- > Endemic disease: known to be present in the population for a long time
- Epidemic disease: occurrence in population or region clearly in excess of normal expectancy
- **Exotic disease:** cross political boundaries, to occur in a country or region in which they are not currently recorded as present
- Re-emerging disease: previously defined and known but currently absent in the population of a defined geographical area, re-appearance
- **Emerging disease:** new, previously undefined (unknown), not currently recorded as present, evolution or change in an existing pathogen causing a change of strain, host range, vector, or increase in pathogenicity; or may be the occurrence of any other previously undefined condition
- ➤ **Epidemic emergency:** disease outbreak or sudden rise of cases of unusual or severe diseases in a given population of a region, epidemic diseases regardless whether they are exotic, re-emerging or emerging diseases



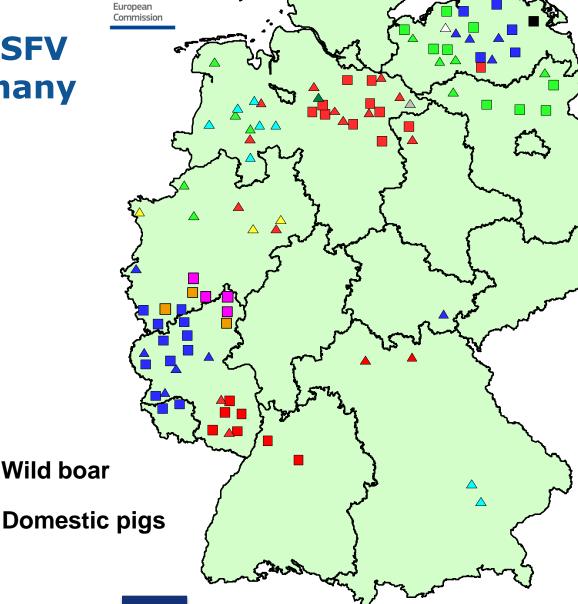
Epidemic Emergencies: CSF in Germany



Genotyping of CSFV Isolates in Germany 1993 - 2009

Genotypes

- 2.3 Spreda
- 2.3 Uelzen
- 2.3 Rostock
- 2.3 Güstrow
- 2.3 Spante
- 2.2 Ringelsdorf
- 2.1 Paderborn
- 2.3 Rotenburg
- ☐ 2.3 Warnow
- 2.3 Rößrath
- 2.3 Euskirchen





Epidemic Emergencies:

The History of CSF in Germany 1995 -2010

- Outbreaks in domestic pigs (1 month)
- Cases in wild boar (6 months)
- Immunisation areas



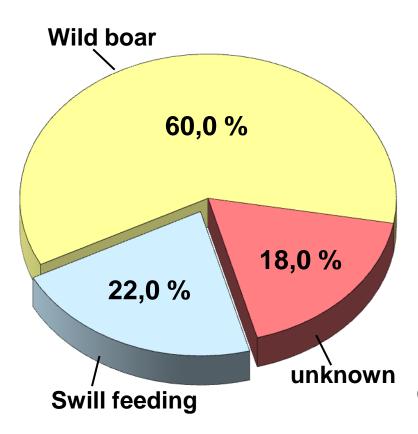


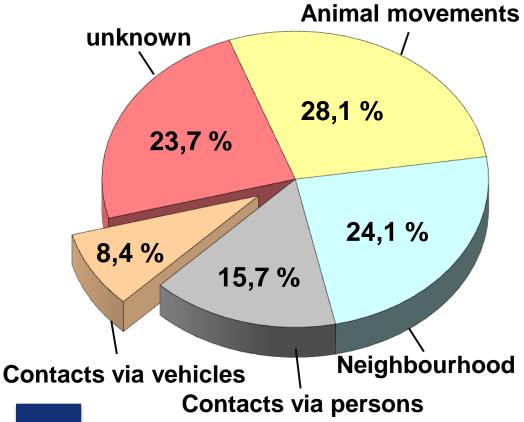
CSF in Germany - Sources of Infection

Domestic pigs 1993-2006

Primary outbreaks (n = 111)

Secondary outbreaks (n = 249)







Epidemic Emergencies: HPAI in Germany 2007



Vogelgrippe durch Tiefkühlenten

Geflügel war infiziert - Lieferungen vermutlich bis nach Berlin

VON KATRIN BISCHOFF

HEILIGENGRABE. Der jüngste Fall von Vogelgrippe in Brandenburg in Blumenthal bei Heiligengrabe (Ostprignitz-Ruppin) ist mit hoher Wahrscheinlichkeit durch Reste einer gefrorenen Ente verursacht worden. "Die Hühner auf dem Hof haben sich für mich eindeutig mit infiziertem Geflügel angesteckt", sagte gestern Kreisveterinär Matthias Rott Vermutlich

de wurden überprüft. "Es gab bei den 459 Proben keinen neuen H5N1-Verdachtsfall", sagte der Veterinärmediziner. Die Kontrolle der Geflügelbestände in der Zehn-Kilometer-Beobachtungszone sei dage-

gen noch nicht abgeschlossen. Trotzdem es keine neuen Verdachtsfälle im Norden Brandenburgs gibt, wurde die Stallpflicht in den Landkreisen Ostprignitz-Ruppin und Prignitz wieder eingeführt.

Nord einer Supermarktkette - und damit eventuell auch in die Hauptstadt. Bisher sei das H5N1-Virus aber weder in Resten der in Altglobsow verfütterten Ente noch in sogenannten Rückstellungsproben des niedersächsischen Zulieferers oder in Proben aus Supermärkten festgestellt worden.

Da es bisher nur den Verdacht auf illegale Verfütterung von Geflügelresten gebe, sei auch noch keine RESEARCH

Highly Pathogenic Avian Influenza Virus A (H5N1) in Frozen Duck Carcasses, Germany, 2007

Backyard chicker holdings 1-3

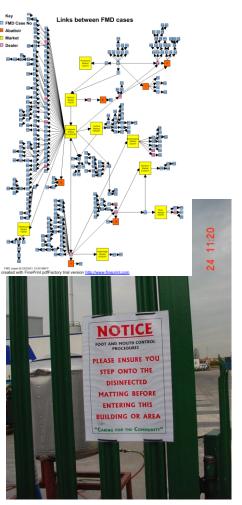
Bavaria, Farm 8 Index case (7)

Timm C. Harder, Jürgen Teuffert, Elke Starick, Jörn Gethmann, Christian Grund, Sasan Fereidouni, Markus Durban, Karl-Heinz Bogner, Antonie Neubauer-Juric, Reinhard Repper, Andreas Hlinak, Andreas Engelhardt, Axel Nöckler, Krzysztof Smietanka, Zenon Minta, Matthias Kramer, Anja Globig, Thomas C. Mettenleiter, Franz J. Conraths, and Martin Beer



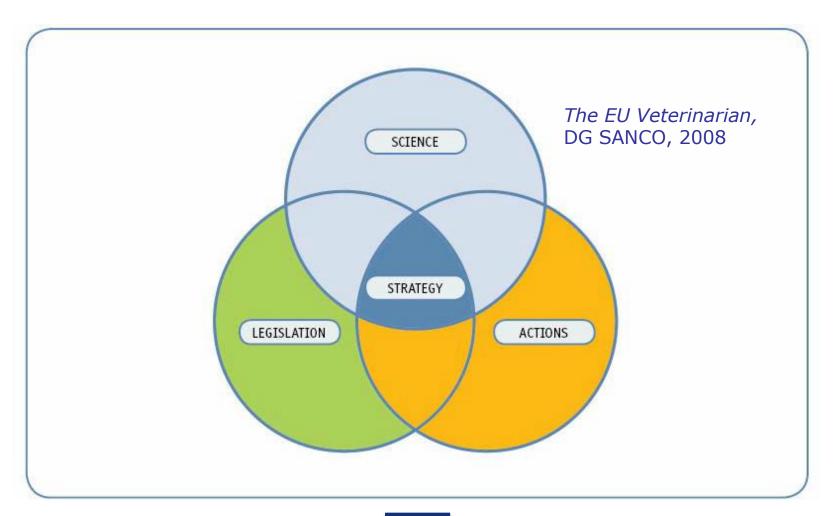
Epidemic Emergencies: FMD in the UK 2001







EU Legislation and EU Veterinary Strategy – The Principle





EU Legislation – The Main Instruments

- Regulations: binding and directly applicable in their entirety; if applicable, only national measures or laws need to be passed for enforcement for certain technical details or to provide for sanctions
- ➤ **Directives:** binding MS as regards the objectives to be achieved, transposition into national legislation allows for a margin of maneuver as to form and means of implementation, e.g. Council Directive on measures for the control of classical swine fever (2001/89/EC)



EU Legislation – The Main Instruments

- ➤ **Decisions:** fully binding to whom they are directed (e.g. MS, a legal entity or an individual), used when the Commission orders measures to be implemented in a separate or individual case, e.g. Commission decision (2002/106/EC) approving a Diagnostic Manual for CSF
- Further instruments:
 - Agreements
 - > Declarations
 - > Resolutions
 - > Recommendations and opinions
 - Conventions



"Vertical" EU Legislation – Directives

- > FMD: Community measures for the control of foot-and-mouth disease... (2003/85/EC)
- CSF: Community measures for the control of classical swine fever (2001/89/EC)
- ➤ Avian Influenza: Community measures for the control of avian influenza ... (2005/94/EC)
- ➤ **ASF:** Specific provisions for the control of African swine fever and amending Directive 92/119/EEC as regards Teschen disease and African swine fever (2002/60/EC)
- > **AHS:** Control rules and measures to combat African horse sickness (92/35/EEC)
- > **SVD and certain other diseases:** General Community measures for the control of certain animal disease and specific measures relating to swine vesicular disease (92/119/EEC)



Commission Decisions Approving Diagnostic Manuals as Disease Detection Standards

- CSF: Establishing diagnostic procedures, sampling methods and criteria for evaluation of laboratory tests for the confirmation of CSF (2002/106/EC)
- Avian Influenza: Diagnostic Manual for avian influenza as provided for in Council Directive 2005/94/EC (2006/437/EC)
- ASF: Approving an African swine fever diagnostic manual (2003/422/EC)





Disease prevention, control and eradication measures

Disease prevention:

- Prevention of disease incursions by trade, traffic (private, commercial) or any other movements e.g. Safeguard measures concerning Third countries
- Prevention of spread within the EU, within member states and regions e.g. Intra-EU safeguard decisions
- Prevention of spread to Third Countries



Disease prevention, control and eradication measures

Control measures:

- Reduction of prevalence and incidence to a level where it is no longer considered a major health and/or an economical problem
- Compatible with the existence of a limited number of cases or outbreaks
- Living with the disease



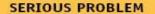
Disease prevention, control and eradication measures

Eradication measures:

- Elimination of the disease due to the removal of its cause
- Include elimination of both clinical cases and the pathogen
- Future cases are impossible



Disease preventionPrevention of incursion



- Serious problems with trade and imports e.g pathogens detected or residues harmful for public health or serious disease outbreak.
- Third country Control gives negative report (insufficient control by competent authority, problems at level of establishment)
- Serious Animal or public health problem

SAFEGUARD CLAUSE

Commission

SCOFCAR

Ban on imports from a country or region of a country

Ban on imports from certain establishments

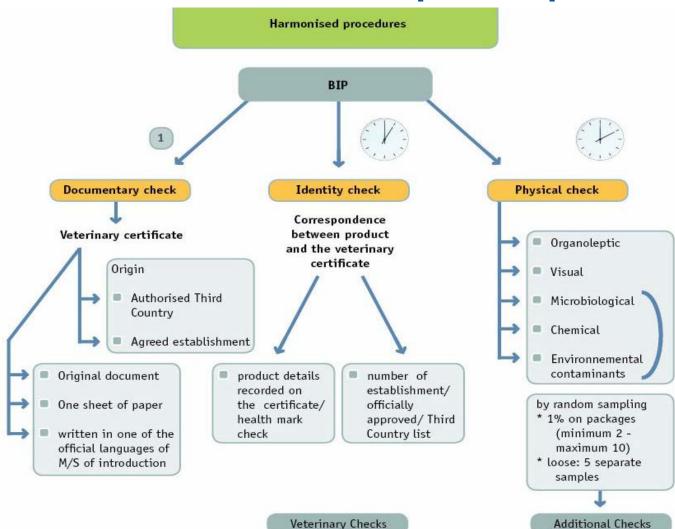
Specific conditions required: e.g. microbiological analysis of each lot

Member States

The EU Veterinarian, DG SANCO, 2008



Disease prevention Border inspection posts



The EU Veterinarian, DG SANCO, 2008



Economic aspects, trade in livestock and products of animal origin

> Economic aspects:

- Economic impact of disease emergencies disastrous for MS
- Long-lasting effects on intra-community trade and trade with Third Countries
- Compensation schemes

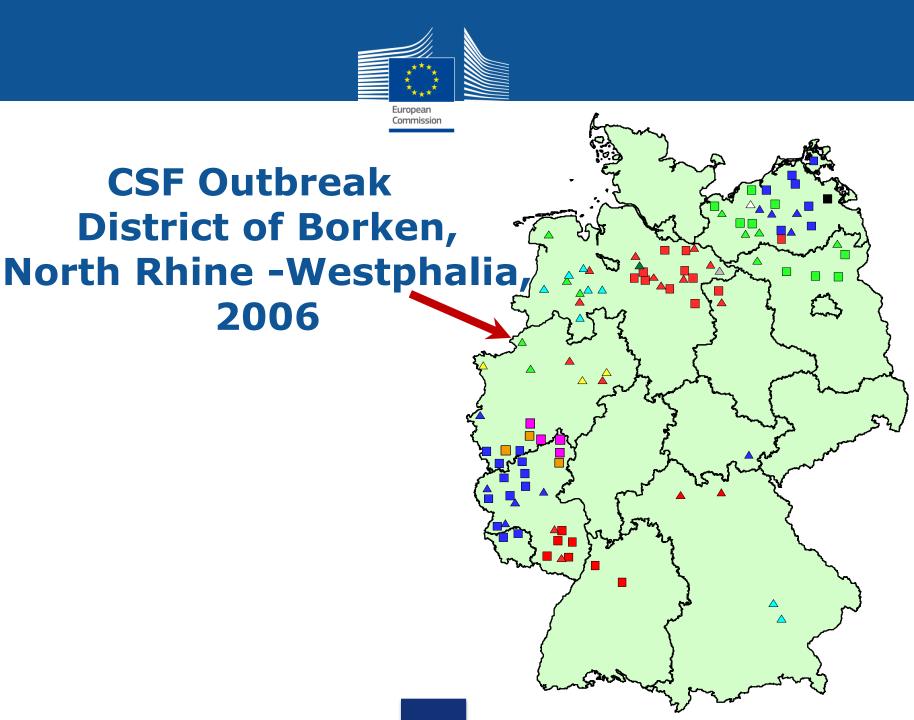




Economic aspects, trade in livestock and products of animal origin

- >Trade in livestock:
 - ➤ Animal health status one of the most important trade criteria
 - > Highly sensitive
- > Trade of products of animal origin:
 - "Farm to fork" approach
 - Placing on the market
 - > Import/ transit
 - > Export to Third countries







Example: CSF Control in the District of Borken,

	North Rhine-Westphalia, 2006		
Event	Source: Dr. A. Groeneveld, AKNZ, 2012	Amount/Cost	

Number of CSF outbreaks 186 Number of farms emptied

Number of pigs culled/pre-emptive slaughter 96.708 ~ 45.000

Number of blood samples taken by official vets ~ 8.000 Number of tranport permits

(including clinical examination sampling)

Administrative cost of the communal district Borken

Cleansing/disinfection

Killing teams

Rendering

Compensation

815.000 €

330.000 €

14.2 Mill. €

~ 500.000 €

1.1 Mill. €



Additional aspects as regards trade and the animal health situation within the EU

Trade:

- Overall increase of trade and movements
- Business traffic and tourism
- Increase of risks
- Drop after outbreaks, recovery period
- Role of veterinary services: shortening the period





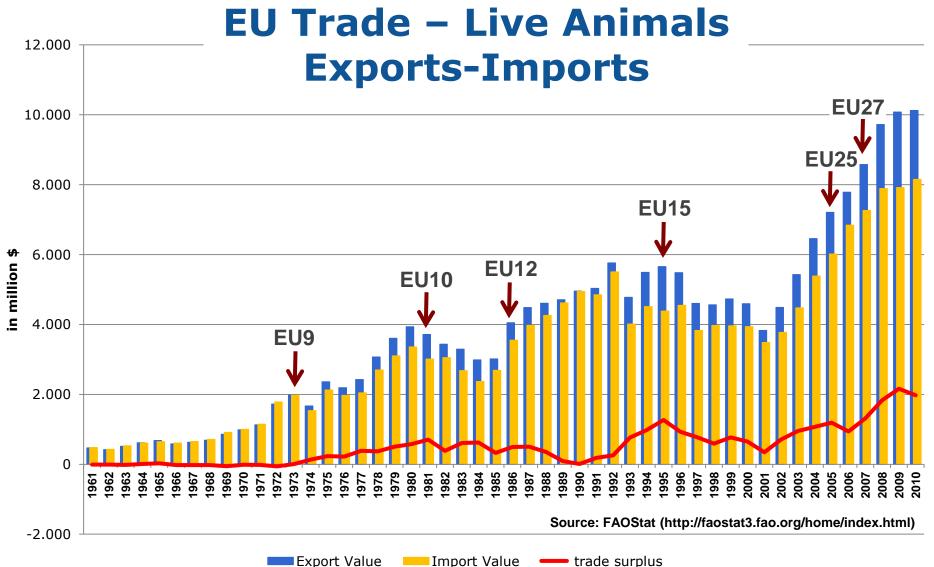
Additional aspects as regards trade and the animal health situation within the EU

EU animal health situation:

- Overall good situation
- Many highly contagious diseases have been eradicated in many regions (e.g. CSF, FMD and HPAI)
- Supports increasing competitiveness and free trade









Arrivals at Airport Cologne/Bonn

Ankunft Ost	
Flug Herkunft Flight From SR 3586 Zuerich DI 7075 Berlin-Tenel	Planmäßig Erwartet Hinweis Scheduled Expected Remark 19:25 19:40 05t
DI 7166 Muenchen	19:40 West
LT 747 Rhodos LT 781 Polmo De Mollorco	Z0:25 Ost
KL 1813 Amsterdom-Schiphol	20:30 West 20:40 West
DI 7077 Berlin-Tegel	21:15 West 21:20 West
AZ 498 Mailand-Malpensa BR 930 London-Heathrox	Z1:40 West
DI 7168 Muenchen	21 : 45 West 21 : 45 West
5R 3588 Zuerich TK 1685 Ankara	21:45
AB 2883 Luxor Hurghada AB 2993 Thessalaniki	00:35 Ost 1111111
AB 2993 Thessaloniki HF 4488 Teneriffa	00:55 West
19: 14	



Passenger Checks concerning HPAI

BIP: Airport Frankfurt am Mai, Time: January 2011 - August 2011

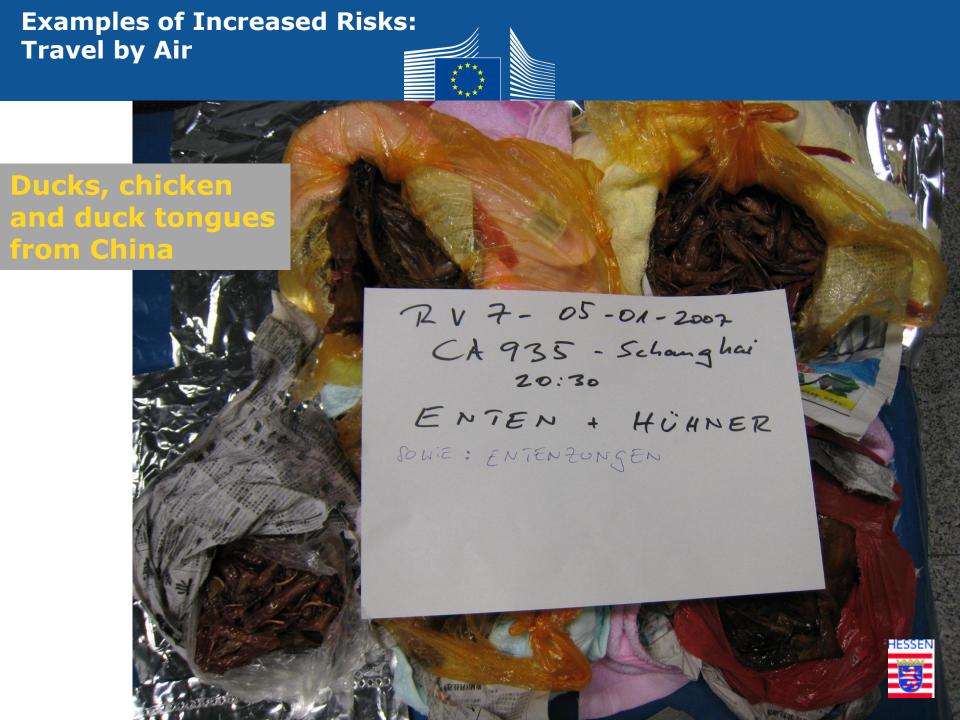
Checks:

- risk based selection of countries of origin (particularly Asian and North African countries)
- 31.757 out of 479.370 passengers (6.6%)
 - .596 passengers (8.2%) with illegal personal consignments (poultry products/byproducts)

Seizured and destroyed goods:

- ca. 5.256 kg food
- Byproducts, e. g. a bird's nest from Vietnam

Source: Hessian Ministry of Environment, Rural Affairs and consumer Protection





Examples of Increased Risks: Smuggling birds and eggs



17.06.2004

German "bird collector" arrested close to the norwegian-finish border near Karigasniemi

Norwegian Police found:

- 122 hatching eggs and
- > 15 juvenile birds

Fine: about 7.500 €, paid after 5 days in prison

Vehicle belonged to a "wellknown egg collector" already sentenced in Germany

(Source: LUGV Brandenburg)



Pictures by Police Karasjok (Norway)



EU Reference Laboratories General Responsibilities

- to coordinate the diagnostic methods employed in the MS (cooperation with NRLs)
- to assist actively in the diagnosis of disease outbreaks in MS (confirmatory diagnosis/characterisation of pathogen isolates, epizootic studies)
- to train/re-train experts in laboratory diagnosis with a view to the harmonisation of diagnostic techniques



EU Reference Laboratories General Responsibilities

- to collaborate, as regards methods of diagnosing animal diseases, with the competent laboratories in third countries where those diseases are prevalent
- to conduct training courses for national reference laboratories' staff and experts from developing countries



Community Reference Laboratory for CSF

University of Veterinary Medicine, Foundation
Institute of Virology
Bünteweg 17, Hanover, Germany





EU Reference Laboratories Specific functions and duties

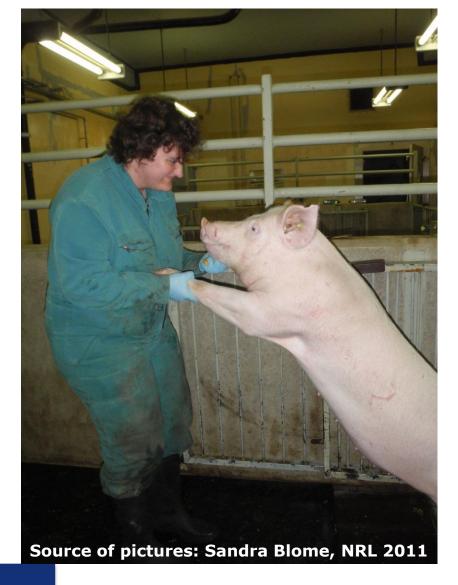
- E. g. Community reference laboratory for CSF*:
- a) to coordinate the diagnostic methods employed in the Member States, specifically by:
- > storing and supplying cell cultures for use in diagnosis
- typing, storing and supplying strains of CSF virus for serological tests and the preparation of antisera
- supplying standardised sera, conjugate sera and other reference reagents to the national laboratories in order to standardise the tests and reagents employed in the MS
- building up and holding a CSF virus collection
- organising periodic comparative tests of diagnostic procedures at Community level,......
 * modified. acc. Dir. 2001/89/EC













EU Reference Laboratories Specific functions and duties

E. g. Community reference laboratory for CSF*:

- b) to make the necessary arrangements for training or re-training experts in laboratory diagnosis with a view to harmonising diagnostic techniques
- c) to have trained personnel available for emergency situations occurring within the Community
- to perform research activities and whenever possible coordinate research activities directed towards an improved control of CSF



EU Reference Laboratories for Animal Health and Live Animals

- 1. Classical swine fever
- 2. African horse sickness
- 3. Avian influenza
- 4. Newcastle disease
- 5. Swine vesicular disease
- 6. Fish diseases
- 7. Mollusc diseases
- 8. Monitoring the effectiveness of rabies vaccination
- 9. Bluetongue

- 10. African swine fever
- 11. Laboratory for zootechnics
- 12. Foot-and-mouth disease
- 13. Brucellosis
- 14. Equine diseases other than African horse sickness
- 15. Crustacean diseases
- 16. Rabies
- 17. Bovine tuberculosis
- 18. Bee health

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules (EC) No 882/2004



Community Veterinary Emergency Team

COMMISSION DECISION (2007/142/EC) establishing a Community Veterinary Emergency Team to assist the Commission in supporting Member States and third countries in veterinary matters relating to certain animal diseases

- ➤ to provide assistance in the event of outbreaks or suspicion of animal diseases (acc. Council Directive 82/894/EEC) to MS and Third Countries
- > specialised team of experts available on request:
 - **82 experts from 20 Member states** (Up-to-date list of experts, 2012)
- cooperation with other international expert teams, i.e. ECDC, FAO, WHO, OIE



Community Veterinary Emergency Team – Tasks

- Scientific, technical and managerial on-the-spot assistance as regards
 - surveillance
 - > monitoring
 - control and eradication of the diseases

in close coordination and cooperation with the competent authorities of the MS or third country concerned



Community Veterinary Emergency Team – Tasks

- Specific scientific advice on
 - > suitable diagnostic methods
 - epidemiological investigations in coordination with the concerned CRL
- Specific assistance to ensure coordination among the veterinary services of the MS and third countries and with the concerned CRL



ON-THE-SPOT ASSISTANCE AS REGARDS THE SURVEILLANCE, MONITORING, CONTROL AND ERADICATION OF CLASSICAL SWINE FEVER (CSF)

MISSION CARRIED OUT IN THE SLOVAK REPUBLIC

23 - 25 APRIL 2008 SCoFCAH Meeting, Brussels, 07 May 2008

Dr. Matthias Kramer Friedrich-Loeffler-Institut, Federal Research Institute of Animal Health, Germany



Community Veterinary Emergency Team - Missions

No.	Country	Date	Disease
1.	Georgia	June 2007	African Swine Fever
2	Armenia	September 2007	African Swine Fever
3	Cyprus	November 2007	Foot and Mouth Disease
4	Cyprus	November 2007	Foot and Mouth Disease
5	Croatia	February 2008	Classical Swine Fever
6	Croatia	February 2008	Classical Swine Fever
7	Slovakia	April 2008	Classical Swine Fever
8	Netherlands	November 2008	Bluetongue
9	Lithuania	July 2009	Classical Swine Fever
10	Ukraine	August 2010	African Swine Fever
11	Bulgaria	January 2011	Foot and Mouth Disease
12	Bulgaria	February 2011	Foot and Mouth Disease
13	South Africa	May 2011	Highly Pathogenic Avian Influenza
14	Lithuania	July 2011	Classical Swine Fever



National legislation in EU Member States

- Based on EU legislation
- Country-specific regulations
- Enforcement
- Compliance
- Legislation on punishment and fines

Tierseuchengesetz (TierSG)

In der Fassung vom 22. Juni 2004

(BGBl. I S. 1260)

zuletzt geändert durch: Artikel 18 des Gesetzes vom 9.Dezember 2010 (BGBl. I S. 1934)

§ 1

- (1) Dieses Gesetz regelt die Bekämpfung von Tierseuchen. § 79a bleibt unberührt.
- (2) Im Sinne dieses Gesetzes sind
- Tierseuchen:

Krankheiten oder Infektionen mit Krankheitserregern, die bei Tieren auftreten und auf

- a) Tiere oder
- b) Menschen (Zoonosen)

übertragen werden können;

Haustiere:

vom Menschen gehaltene Tiere einschließlich der Bienen und des Gehegewildes, jedoch ausschließlich der Fische;

3. Vieh:

folgende Haustiere:

- a) Pferde, Esel, Maulesel, Maultiere, Zebras und Zebroide,
- b) Rinder einschließlich Bisons, Wisente und Wasserbüffel,
- Schafe und Ziegen,
- d) Schweine.