Better Training for Safer Food
BTSF

Training on Animal Health Prevention and Control of Aquaculture Animals

Aquaculture animal health surveillance

L4

Niels Jørgen Olesen

Health and Consumers

European Commission

To discuss the implementation of an animal health surveillance activity, according to Arts. 7, 10, 44 and 52 and Annex III of Directive 2006/88/EC

Health and Consumers

Aquaculture animal health surveillance
Outline

Arts. 7, 10, 44 and 52 and Annex III

Purpose of surveillance under EC directive 2006/88

Authorisation a prerequisite for surveillance

Health categorisation and types of surveillance

Notification

Contingency planning

- *Challenges to active surveillance*
- *Structured surveys – some examples*

European Commission

Legislative basis for Aquaculture animal health surveillance

COUNCIL DIRECTIVE 2006/88/EC

of 24 October 2006

on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals

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Article 7
Official controls

1. Official controls on aquaculture production businesses and authorised processing establishments shall be carried out by the competent authority.

Article 7
Official controls

*2. The official controls shall at least consist of **regular inspections, visits, audits, and where appropriate, sampling**, for each aquaculture production business, the aquaculture production business and **taking account of the risk** the establishment poses in relation to the contracting and spreading of diseases. Recommendations for the frequencies in Part B of Annex III.*

Article 10
Animal health surveillance scheme

*1. Member States shall ensure that a **risk-based animal health surveillance scheme is applied in all farms**, as appropriate for the type of production.*

Article 10
Animal health surveillance scheme

*2. The risk-based animal health surveillance scheme shall **aim at the detection of**:*

*(a) **any increased mortality** in all farms; AND*

*(b) the **listed diseases**, in farms were species susceptible to those diseases are present.*

Article 10
Animal health surveillance scheme

*3. Recommendations for the **frequencies** of such animal health surveillance schemes, depending on the health status are laid down in Part B of Annex III.*

Inspections according to 2006/88 Annex III Part B

Species present	Health status	Risk level	Surveillance	Inspection frequency		Specific requirements
				Competent authorities (art. 7/0	health service (art. 10)	
No susc.	I Disease-free	low	Passive	4	4	
Susceptible species present	I Disease-free	High	Active, targeted or passive	1	1	Art 52
		Medium		2	2	
		Low		4	2	
	II Surveillance programme	High	Targeted	1	1	Art 44
		Medium		2	2	
		Low		4	2	
	III Unknown	High	Active	1	3 every year	
		Medium		1	2 every year	
		Low		2	1 every year	
	IV Eradication programme	High	Targeted	1	1	Art 44
		Medium		2	2	
		Low		4	2	
	V Infected	High	Passive	4	1	Ch. V
		Medium		4	2	
		Low		4	4	

Article 10
Animal health surveillance scheme

4. The risk-based animal health surveillance scheme shall take account of guidelines given in

COMMISSION DECISION 2008/896/EC

on guidelines for the purpose of the risk-based animal health surveillance schemes provided for in Council Directive 2006/88/EC

CHAPTER VI: CONTROL PROGRAMMES AND VACCINATION

SECTION 1: Surveillance and eradication programmes

Article 44: Drawing up and approval of surveillance and eradication programmes

1. Where a Member State not known to be infected but not declared free (category III) of

one or more of the non-exotic diseases draws up a surveillance programme for achieving

disease-free status, it shall submit that programme ***for approval*** *(SCoFCHA). Such programmes may also be amended or terminated in accordance with that procedure.*

Article 44
Drawing up and approval of surveillance and eradication programmes

Use the specific requirements for surveillance, sampling and diagnostic given in the Directive.

*If a programme comprise **less than 75 %** of the territory of the Member State, and the zone or compartment consists of a water catchment area not shared with another Member State or third country, SCoFCAH shall be **informed**- with 60 days for objections.*

Article 52
Maintenance of disease-free status

A Member State that is declared free from one or more non-exotic diseases may discontinue targeted surveillance and maintain its disease-free status provided that the conditions conducive to clinical expression of the disease in question exist, and the relevant provisions of this Directive are implemented.

Article 52
Maintenance of disease-free status

However, for disease-free zones or compartments in Member States not declared disease-free, and in all cases where conditions are not conducive to clinical expression of the disease in question, targeted surveillance shall be continued as appropriate, but at a level commensurate with the degree of risk.

European Commission

Authorisation in 2006/88/EC

- ***Increase awareness by industry and competent authorities towards prevention, control and eradication of aquatic animal diseases***

- ***Chapter II: Authorisation process***

European Commission

Derogation from authorisation in 2006/88/EC for APB

- ***APBs not placing on the marked***
- ***Put and take***
- ***APBs only for human consumption no live fish or product on the marked***
- ***Registration is however mandatory***

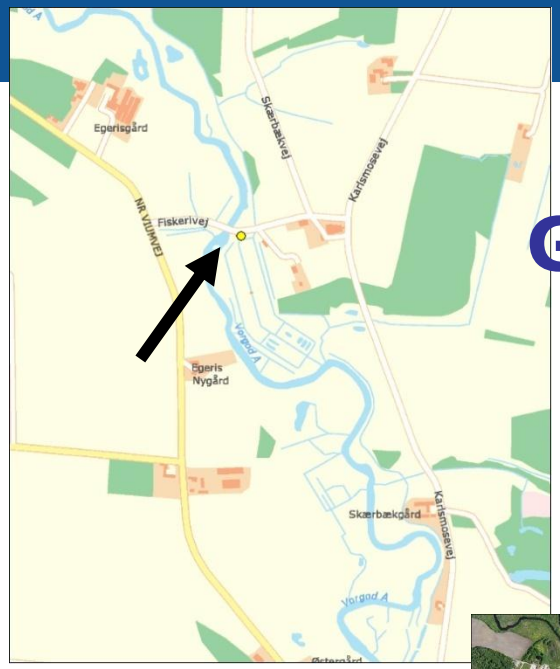
Authorisation

Introduction of an authorisation system of APBs

Establish a complete overview of the aquaculture industry in EU

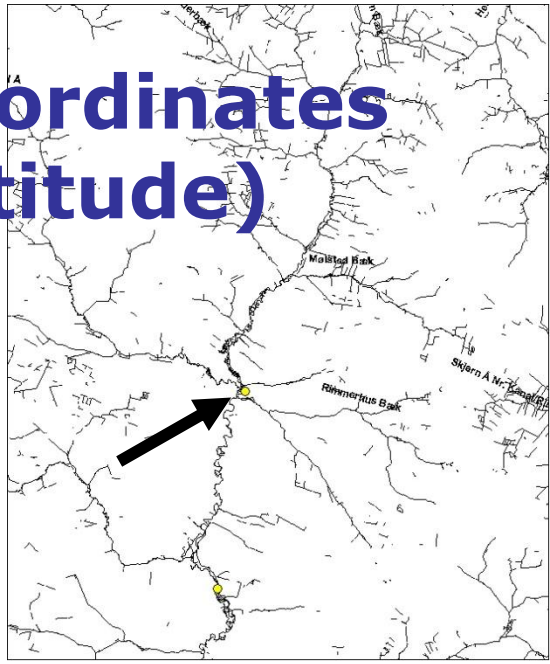
- Name & address
- Registration number
- GIS position (optional or if possib
- Production type
- Water supply details
- Information on health status

Electronically available EU-wide (Article 59)

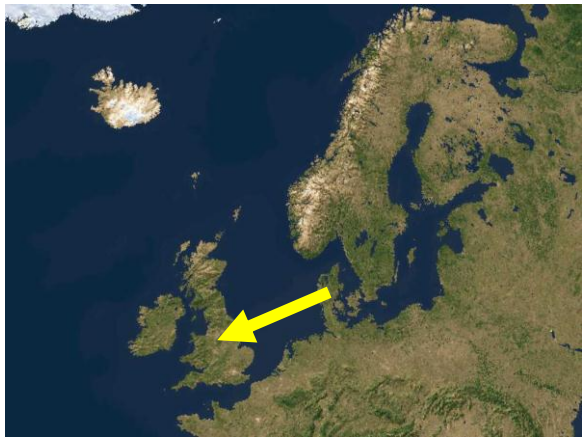


GIS: Geographic coordinates (longitude and latitude)

Tracing



- Geographic spotting



Authorisation

Introduction of an authorisation system of APBs

Establish a complete overview of the aquaculture industry in EU

- Name & address
- Registration number
- GIS position (optional or if possible)
- Production type
- Water supply details
- **Information on health status**

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Health surveillance under placing on the market requirements

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Purpose of surveillance

- *To demonstrate freedom*
- *To estimate prevalence (ie progress in disease control, inform decision making)*
- *Identification of new and emerging diseases*
- *Early detection of introduced exotic and non-exotic diseases with notification to CA, EU, OIE*
- *Mapping distribution of introduced diseases*

Surveillance obligations under the Aquatic Animal Health directive 1

- *Detection of listed diseases – exotic and non-exotic –Fish, mollusc and crustacean diseases*
- *Non-exotic to the EU (VHS, IHN, ISA, KHV)*
- *Exotic to the EU (EUS, EHN)*
- *Detection of increased mortality*

Surveillance obligations under the Aquatic Animal Health directive II

- *Active surveillance programmes for Article 43 diseases (additional guaranties, e.g. IPN, BKD, SVC, G. sal)*
- *–New variant of know pathogens (marine VHSV, ISA HPR0, etc)*
- *Detection of new and emerging diseases*
- *Application of risk based approaches*

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Health status of aquaculture zones or compartments

Health Category	Health status	Intro from	Dispatch to
V	Infected	I-V	V

Health status of aquaculture zones or compartments

Health Category	Health status	Intro from	Dispatch to
IV	Eradication programme	I	V
V	Infected	I-V	V

Health status of aquaculture zones or compartments

Health Category	Health status	Intro from	Dispatch to
III	Undetermined: ”Not known to be infected but not subject to eradication programme for achieving disease free status”	I, II & III	III+V
IV	Eradication programme	I	V
V	Infected	I-V	V

Health status of aquaculture zones or compartments

Health Category	Health Status	Intro from	Dispatch to
II	**Surveillance programme**	**I**	**III+V**
III	Undetermined: ”Not known to be infected but not subject to eradication programme for achieving disease free status”	I, II & III	III+V
IV	Eradication programme	I	V
V	Infected	I-V	V

Health status of aquaculture zones or compartments

Health Category	Health status	Intro from	Dispatch to
I	Disease free	I	I-V
II	Surveillance programme	I	III+V
III	Undetermined: ”Not known to be infected but not subject to eradication programme for achieving disease free status”	I, II & III	III+V
IV	Eradication programme	I	V
V	Infected	I-V	V

Health monitoring programmes and health status of aquaculture zones or compartments under Art12

ANNEX III PART A Health status of aquaculture zones or compartments to be considered for the application of Article 12
Aquaculture animals for farming and restocking

Category	Health status	May introduce animals from	Health certification		May dispatch animals to
			Introduction	Dispatching	
I	Disease-free (Articles 49 or 50)	Only category I	YES	NO when dispatched to category III YES when dispatched to categories I, II or IV	All categories
II	Surveillance Programme (Article 44(1)	Only category I	YES	NO	Categories III and V
III	Undetermined (not known to be infected but not subject to programme for achieving disease-free status)	Categories I, II or III	NO	NO	Categories III and V
IV	Eradication Programme (Article 244(2)	Only category I	YES	YES	Only category V
V	Infected (Article 39)	All categories	NO	YES	Only category V

Health monitoring programmes and health status of aquaculture zones or compartments under Art12

PART B
Recommended surveillance and inspections on farms and mollusc-farming areas

Species present	Health status as referred to in Part A	Risk level	Surveillance	Recommended inspection frequency by the competent authority (Article 7)	Recommended inspection frequency by qualified aquatic animal health services (Article 10)	Specific requirements for inspections, sampling and surveillance necessary to maintain the health status	Comments
No species susceptible to the diseases listed in Annex IV	**Category I** Declared disease-free in accordance with Article 49(1)(a) or (b) or Article 50(1)(a) or (b)	Low	Passive	1 every 4 years	1 every 4 years	Specific requirements for the maintenance of the disease-free status in accordance with Article 52.	The recommended inspection frequencies shall apply without prejudice to the specific requirements mentioned for each health status. However, where possible, such inspections and sampling should be combined with the inspections required pursuant to Articles 7 and 10. The aim of inspections by the competent authority is to check compliance with this Directive in accordance with Article 7.
Species susceptible to one or more of the diseases listed in Annex IV	**Category I** Declared disease-free in accordance with of Article 49(1)(c) or of Article 50(1)(c).	High	Active, targeted or passive	1 every year	1 every year		
		Med		1 every 2 years	1 every 2 years		
		Low		1 every 4 years	1 every 2 years		
	Category II Not declared disease-free but subject to a surveillance programme approved in accordance with Article 44(1).	High	Targeted	1 every year	1 every year	Specific requirements in accordance with Article 44(1).	
		Med		1 every 2 years	1 every 2 years		
		Low		1 every 4 years	1 every 2 years		

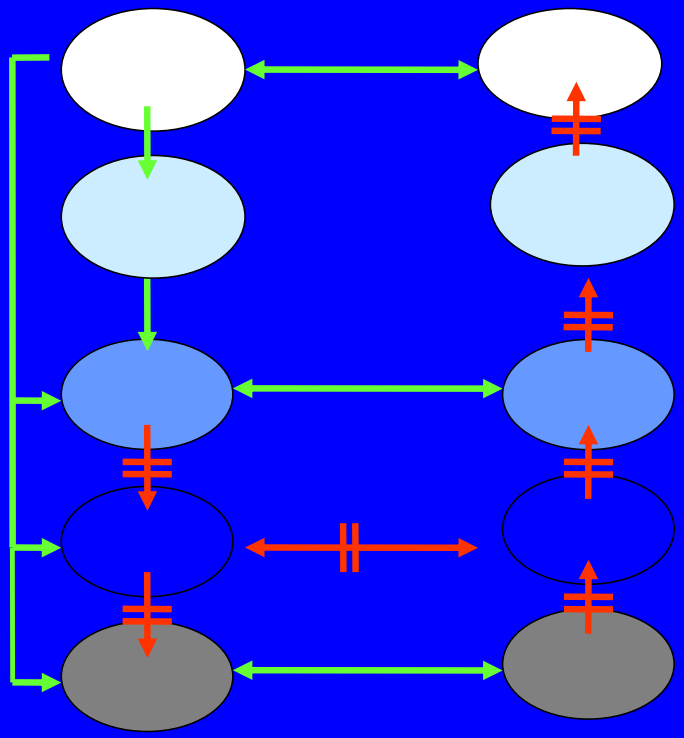
Health monitoring programmes and health status of aquaculture zones or compartments under Art12

PART B

Recommended surveillance and inspections on farms and mollusc-farming areas

Species present	Health status as referred to in Part A	Risk level	Surveillance	Recommended inspection frequency by the competent authority (Article 7)	Recommended inspection frequency by qualified aquatic animal health services (Article 10)	Specific requirements for inspections, sampling and surveillance necessary to maintain status	Comments
Species susceptible to one or more of the diseases listed in Annex IV	**Category III** Not known to be infected but not subject to surveillance programme for achieving disease-free status.	High	Active	1 every year	3 every year		The aim of inspections by qualified aquatic animal health services is to check the health status of the animals, to advise the aquaculture production business operator on aquatic animal health issues, and where necessary, undertake the necessary veterinary measures.
		Med		1 every year	2 every year		
		Low		1 every 2 years	1 every year		
	Category IV Known to be infected by subject to an eradication programme approved in accordance with Article 44(2).	High	Targeted	1 every year	1 every year	Specific requirements in accordance with Article 44(2).	
		Med		1 every 2 years	1 every 2 years		
		Low		1 every 4 years	1 every 2 years		
	Category V Known to be infected. Subject to minimum control measures as provided for in Chapter V.	High	Passive	1 every 4 years	1 every year	Specific requirements in accordance with Chapter V.	
		Med		1 every 4 years	1 every 2 years		
		Low		1 every 4 years	1 every 4 years		

Movements between zones of different health categories



Declared disease free

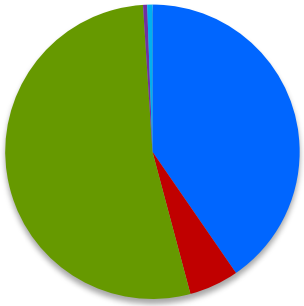
Surveillance programme

Neither declared disease free, but nor known to be infected

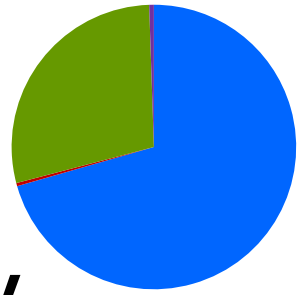
Eradication programme

Known to be infected

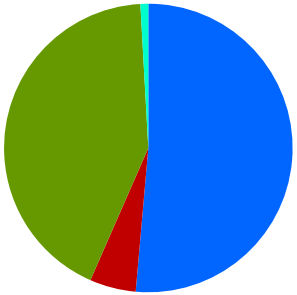
VHS



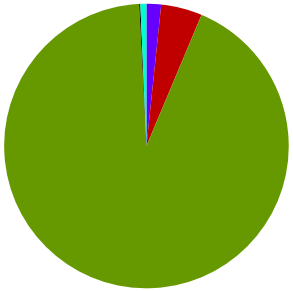
ISA



IHN



KHV



Category I
Category II
Category III
Category IV
Category V

All for 2010/**2011**	Category I	Category II	Category III	Category IV	Category V	Total
VHS	3414/**3306**	751/**446**	6526/**4348**	9/**37**	50/**47**	10750/**8184**
IHN	3547/**3674**	632/**370**	6458/**3041**	1/**0**	36/**63**	10674/**7148**
ISA	6594/**3729**	73/**19**	1396/**1509**	10/**28**	18/**0**	8091/**5285**
KHV	358/**116**	200/**327**	13035/**6494**	7/**9**	60/**48**	13660/**6994**

Risk based animal health surveillance scheme

Applicable to ALL farms in EU

Article 7

- **Official control shall be carried out by Competent Authority**
- **Control consists of inspections and samplings according to risk**

Article 10

- **Aiming at**
  - Detecting any unexplained increased mortality
  - Detecting listed diseases at farms where susceptible species are present
- **Proposed frequencies for animal health inspections and type of surveillance are laid down in Annex 3, part B**
- **Guidelines will be drawn by the Commission**

European Commission

Risk levels

A high-risk farm *is one which:*

(a) has a high risk of spreading diseases to or contracting diseases from other farms or wild stocks;

(b) operates under farming conditions which could increase the risk of disease outbreaks (high biomass, low water quality), taking into account the species present;

(c) sells live aquatic animals for further farming or restocking.

A medium-risk farm *is one which:*

(a) has medium risk of spreading diseases to or contracting diseases from other farms or wild stocks;

(b) operates under farming conditions which does not increase the risk of disease outbreaks (medium biomass and water quality), taking into account the species present;

(c) sells live aquatic animals mainly for human consumption.

European Commission

Risk levels

A low-risk farm *is one which:*

(a) has a low risk of spreading diseases to or contracting diseases from other farms or wild stocks;

(b) operates under farming conditions which would not increase the risk of disease outbreaks (low biomass, good water quality), taking into account the species present;

(c) sells live aquatic animals for human consumption only

Type of health surveillance:

Passive surveillance: Immediate notification and investigation (I,V)

Active surveillance: Inspection sampling if suspicion (I, III)

Targeted surveillance: Inspection + prescribed sampling (I, II, IV)

European Commission

Types of health surveillance

Passive surveillance *shall include:*

(a)mandatory immediate notification of the occurrence or suspicion of specified diseases or of any increased mortalities. In cases investigation under Section 2 of Chapter V required.

Active surveillance *shall include:*

(a) routine inspection by the competent authority or by other qualified health services on behalf of the competent authorities;

(b) examination of the aquaculture animal population on the farm or in the mollusc farming area for clinical disease;

(c) diagnostic samples to be collected on suspicion of a listed disease or observed increased mortality during inspection;

(d) mandatory immediate notification of occurrence or suspicion of specified diseases or of any increased mortalities

Types of health surveillance

Targeted surveillance *shall include:*

(a) routine inspection by the competent authority or by other qualified health services on behalf of the competent authorities;

(b) prescribed samples of aquaculture animals to be taken and tested for specific pathogens by specified methods;

(c) mandatory immediate notification of occurrence or suspicion of specified diseases or of any increased mortalities

Art 26 Notification

Notification to Competent authorities of

- **Suspicion of listed diseases**
- **Increased mortality**

Obligation on:

- **Fish farmer**
- **Transporters**
- **Veterinarian**
- **Any person with an occupational relationship to aquatic animals of susceptible species**

Decision 2008/896 Guidelines on risk based surveillance schemes under art 10(1) of Directive 2006/88

What should an Inspection consist of?

- *Analysis of farm records necessary under art 8, particularly mortality records*
- *Inspection of epidemiological units*
- *Examination of dead or moribund animals if available with lab testing where indicated*

Who to carry out inspections?

Official services, private veterinarians or other qualified aquatic animal health services

Frequency of inspection is dictated by health status and risk level

Risk based Inspections can be combined with those under art 44 on eradication and art 52 on maintenance of health status

European Commission

Decision 2008/896 Guidance on risk based surveillance schemes under art 10(1) of Directive 2006/88

- *Specific requirements unnecessary under risk based surveillance for areas in category II and IV*
- *Specific requirements needed for category I, III and V areas under part B of annex III of Directive 2006/88*
- *Risk profile for farms may be different for individual diseases!*
- *Risk levels of farms relate to area status and individual farm risk*
- *Decision 2008/896 provides a model in section 6.3 which may be used to assess an individual farms risk level or the relative risk levels of farms across the territory, zone or compartment*

Decision 2008/896 Guidelines on risk based surveillance schemes under art 10(1) of Directive 2006/88

Examples of risk factors:

- *Spread of disease via water*
- *Movements of aquaculture animals*
- *Type of production*
- *Species of aquaculture animals held (susceptible and vector)*
- *Bio-security system, staff competence, training of*
- *Density of farming in area around farm*
- *Proximity of farms in area with lower health status*

The Decision then looks at combining the estimates of risk levels to give the farm a risk level and hence the level of surveillance needed

Decision 2008/896 Guidelines on risk based surveillance schemes under art 10(1) of Directive 2006/88

Overall risk level is based on combination of risk of contracting and spreading disease. Farms are assessed for contracting and spreading separately and then the risks combined e.g.

Risk related to water

- *Farms on spring /borehole water supplies with no wild fish in supply at lower risk of contracting than those on river water with wild fish. Similarly water supplies treated in order to prevent introduction of pathogens are lower risk*
- *Farms with no discharge into natural waterways has a lower risk of spreading disease*

Risk related to movements of fish

- *Farms self sufficient in ova and juveniles would be at lower risk of contracting compared to farms using wild animals as broodstock*
- *Farms which do not supply live fish to other sites but slaughter for food may be at a lower risk for spreading than farms which supply to restock farms and put and take fisheries*

European Commission

Diagnostic Manual for certain aquatic animal diseases

Draft Decision in preparation to ensure procedures for surveillance schemes, including health inspections, sampling, and diagnosis of the diseases listed in Directive 2006/88/EC are uniform.

Decision sets out:

Minimum requirements for surveillance schemes, diagnostic methods to be used by Member States to obtain:

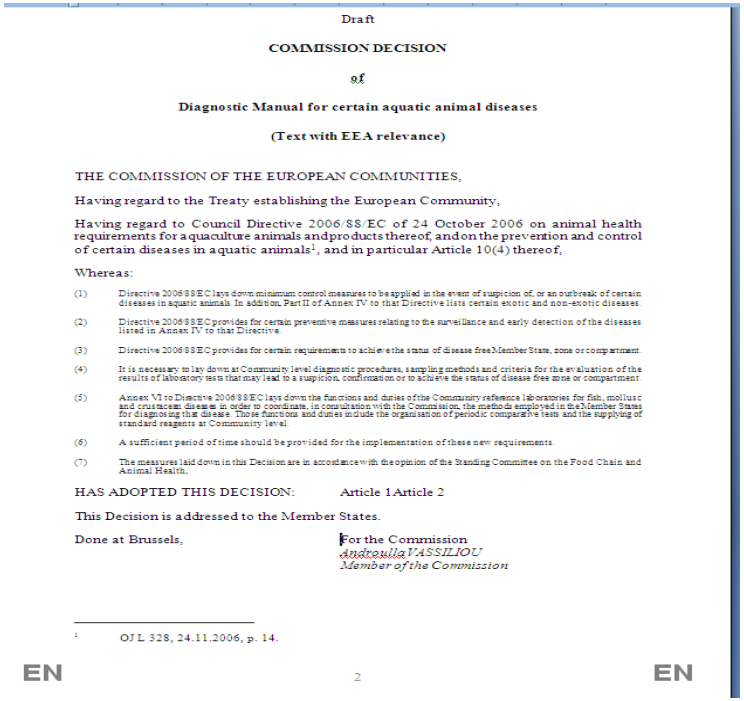
- *disease-free status for the whole or parts of Member States*
- *maintain the disease-free status for the whole territory of the Member State, zones or compartments;*

Minimum requirements and criteria for evaluation of diagnostic test results in cases of suspicion or confirmation of a listed diseases.

Decision directed to authorities responsible for the control of those diseases and laboratory personnel undertaking testing Accordingly, emphasis on sampling procedures, principles, application and evaluation of laboratory results.

Confirmation of listed diseases in aquatic animals must conform to guidelines accordance with the guidelines

New Commission Decision is still in preparation



Draft

COMMISSION DECISION

of

Diagnostic Manual for certain aquatic animal diseases

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 2006/88/EC of 24 October 2006 on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals[1], and in particular Article 10(4) thereof,

Whereas:

(1) Directive 2006/88/EC lays down minimum control measures to be applied in the event of suspicion of, or an outbreak of certain diseases in aquatic animals. In addition, Part II of Annex IV to that Directive lists certain exotic and non-exotic diseases.

(2) Directive 2006/88/EC provides for certain preventive measures relating to the surveillance and early detection of the diseases listed in Annex IV to that Directive.

(3) Directive 2006/88/EC provides for certain requirements to achieve the status of disease free Member State, zone or compartment.

(4) It is necessary to lay down at Community level diagnostic procedures, sampling methods and criteria for the evaluation of the results of laboratory tests that may lead to a suspicion, confirmation or to achieve the status of disease free zone or compartment.

(5) Annex VI to Directive 2006/88/EC lays down the functions and duties of the Community reference laboratories for fish, mollusc and crustacean diseases in order to coordinate, in consultation with the Commission, the methods employed in the Member States for diagnosing that disease. Those functions and duties include the organisation of periodic comparative tests and the supplying of standard reagents at Community level.

(6) A sufficient period of time should be provided for the implementation of these new requirements.

(7) The measures laid down in this Decision are in accordance with the opinion of the Standing Committee on the Food Chain and Animal Health,

HAS ADOPTED THIS DECISION: Article 1Article 2

This Decision is addressed to the Member States.

Done at Brussels, For the Commission
Androulla VASSILIOU
Member of the Commission

[1] OJ L 328, 24.11.2006, p. 14.

EN 2 EN

Comprising all listed fish and molluscs diseases. Detailed diagnostic procedures on web sites and close to OIE guidelines

European Commission

All diseases follow the same frame:

VHS/IHN
ISA
KHV
EHN
EUS

European Commission

VHS/IHN as example:

ANNEX II ,PART I:

SURVEILLANCE AND DIAGNOSTIC METHODS FOR

1) VHS AND IHN

2) ISA

3) KHV

4) EHN

5) EUS

I. Aetiology of the diseases in question

II. Programmes to achieve and to maintain category 1 status

III. Diagnostic methods

European Commission

II.2.Specific provisions to achieve disease free health status (category I) with regard to VHS and/or IHN

II.2.1 Surveillance programs:

(a)(i) Model A – two-year surveillance program:

LARGE sample size:
2 year x 2 x 150 fish

In all 600 fish

TABLE I A

Surveillance scheme for zones and for compartments for the two year control period which precedes achievement of VHS and/or IHN free status

	Number of health inspections per year (two years):	Number of samplings per year (two years):	Number of fish in the sample[1]	
			Number of growing fish	Number of broodstock fish
(a) Farms with broodstock	2	2	120 (first inspection) 150 (second inspection)	30 (first inspection) 0 second inspection)
(b) Farms with broodstock only	2	1	0	150 (first or second inspection) inspection)
(c) Farms without broodstock	2	2	150 (first and second inspection)	0
Maximum number of fish per pool: 10				

[1] The samples have to be collected no sooner than three weeks after transfer of fish from fresh to saltwater.

II.2.Specific provisions to achieve disease free health status (category I) with regard to VHS and/or IHN (cont)

(ii) Model B – 4 years surveillance programme with reduced sample size:

SMALL sample size:
2 year x 1 x 30 fish +
2 year x 2 x 30 fish
In all 180 fish samples

TABLE I B

Surveillance scheme with reduced sample size for the four year control period which precedes achievement of VHS and/or IHN free status

	Number of health inspections per year	Number of samplings per year	Number of fish in the sample[1]	
			Number of growing fish	Number of broodstock fish[2]
First two years of the surveillance period				
(a) Farms with broodstock	2	1	0 (first inspection) 30 (second inspection)	0 (first inspection) 0 (second inspection)
(b) Farms with broodstock only	2	1	0	30 (first or second inspection)
(c) Farms without broodstock	2	1	30 (first or second inspection)	0
Last two years of the surveillance period				
(a) Farms with broodstock	2	2	30(first inspection) 0(second inspection)	0(first inspection)[1] 30(second inspection)
(b) Farms with broodstock only	2	2		30 (first and second inspection)
(c) Farms without broodstock	2	2	30 (first and second inspection)	
Maximum number of fish per pool: 10				

[1] The samples have to be collected no sooner than three weeks after transfer of fish from fresh to saltwater.

II.2.2 Eradication programmes

II.2.2.1 General requirements

Protection zone

in coastal areas: at least 5 km,

in inland areas: the entire water catchment area; but possibility for derogation

Surveillance zone

in coastal areas: radius 10 km

in inland areas: as an extended area outside the established protection zone.

II.2.2 Eradication programmes (cont.)

The fallowing period shall be at least 6 weeks. When all farms officially declared infected are emptied, at least 3 weeks of synchronised fallowing shall be carried out (for ISA longer period)

Restock with fish from category I only

Surveillance schemes before approval

II.3.
Specific provisions for maintenance of category I status

Maintenance programs:

Sample size
1 x 30 fish

TABLE IC

Surveillance schemes for zones or compartments to maintain VHS and/or IHN free status

Risk level	Number of health inspections	Number of fish in the sample[1]
High	1 every year	30[2]
Medium	1 every 2 years	30[2]
Low	1 every 4 years	30[2]
Maximum number of fish per pool: 10		

1 Only applicable when targeted surveillance is needed to maintain disease-free status (Art 52 of Directive 2006/88/EC).

2 The samples have to be collected no sooner than three weeks after transfer of fish from fresh to saltwater.

European Commission

III. Diagnostic methods VHS, IHN, and EHN

III.1. Organs to be sampled and Diagnostic methods for VHS, IHN, and EHN:

Spleen, anterior kidney, and either heart or encephalon.

Maximum 10 fish may be pooled.

virus isolation on cell culture followed by identification using virus neutralisation test, IFAT, ELISA or RT-PCR.

Real-time RT-PCR for VHS and IHN will hopefully be included in 2011.

European Commission

III. Diagnostic methods

ISA

III.1. Organs to be sampled and Diagnostic methods for ISA:

Diagnosis is based on a combination of pathological findings, cell cultivation and immunochemical and or molecular testing

RT-PCR: Anterior or mid-kidney + heart

Cell cultivation: Liver, anterior kidney, heart and spleen

Histology: Liver, spleen, mid-kidney, heart, pancreas and gills

Maximum 5 fish may be pooled.

Virus isolation on cell culture (ASK-1, TO) followed by identification using IFAT or RT-PCR.

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III. Diagnostic methods KHV

III.1. Organs to be sampled and Diagnostic methods for KHV:

Diagnosis is based on finding of CyHV-3 by PCR and eventually by cell cultivation.

PCR: gill, kidney and spleen tissue

Cell cultivation: gill, kidney and spleen tissue

No pooling or max. 5 fish may be pooled when clinical symptoms.

Virus isolation on CCB cell culture followed by identification using IFAT or PCR.

III. Diagnostic methods
EUS

EUS-affected grey mullet *Mugil cephalus*, caught in the Richmond River, eastern Australia.

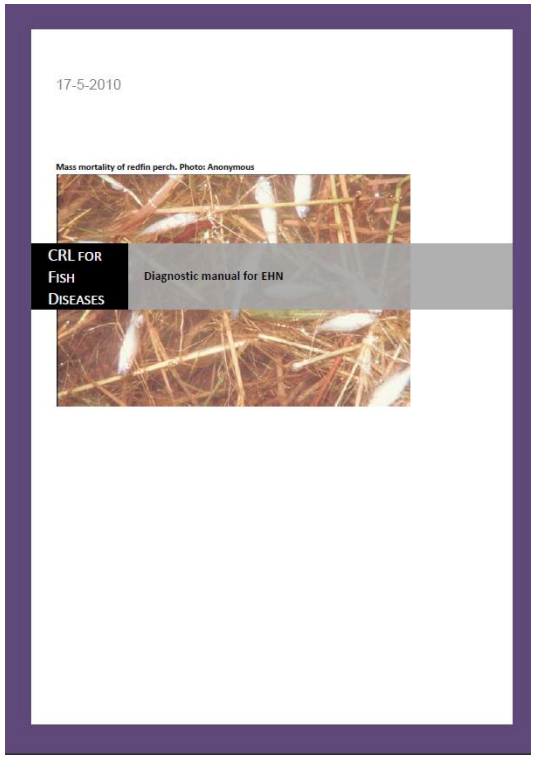
III.1. Organs to be sampled and Diagnostic methods for Aphanomyces invadans:

Sampling should be done from various lesions and organs and should be done in the edge of a lesion from a clean cut surface

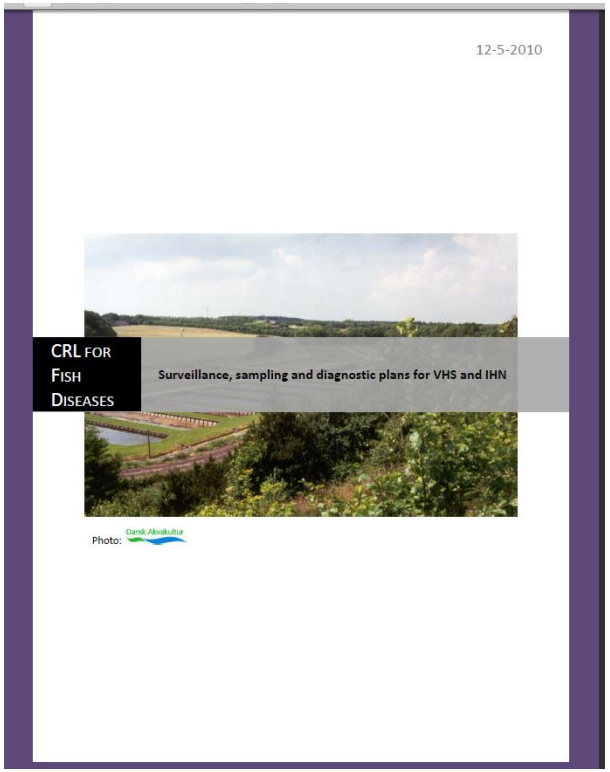
III. Diagnostic methods (cont)

Detailed diagnostic procedures for all non-exotic and exotic diseases on

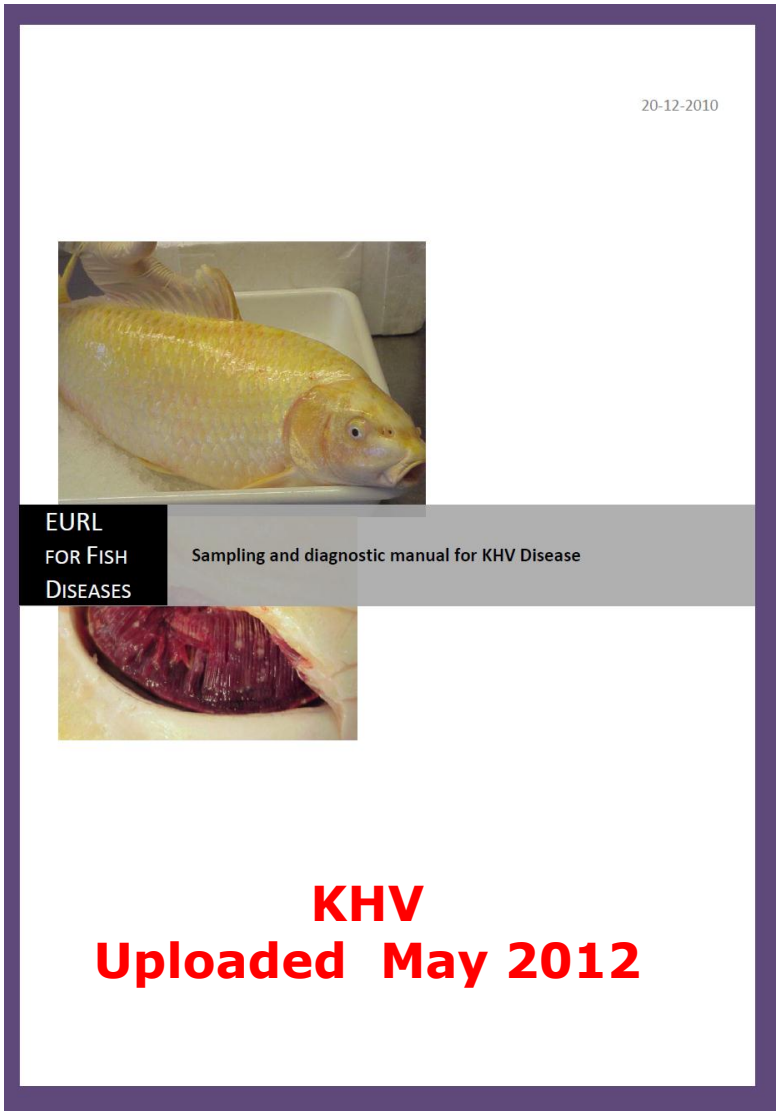
www.eurl-fish.eu



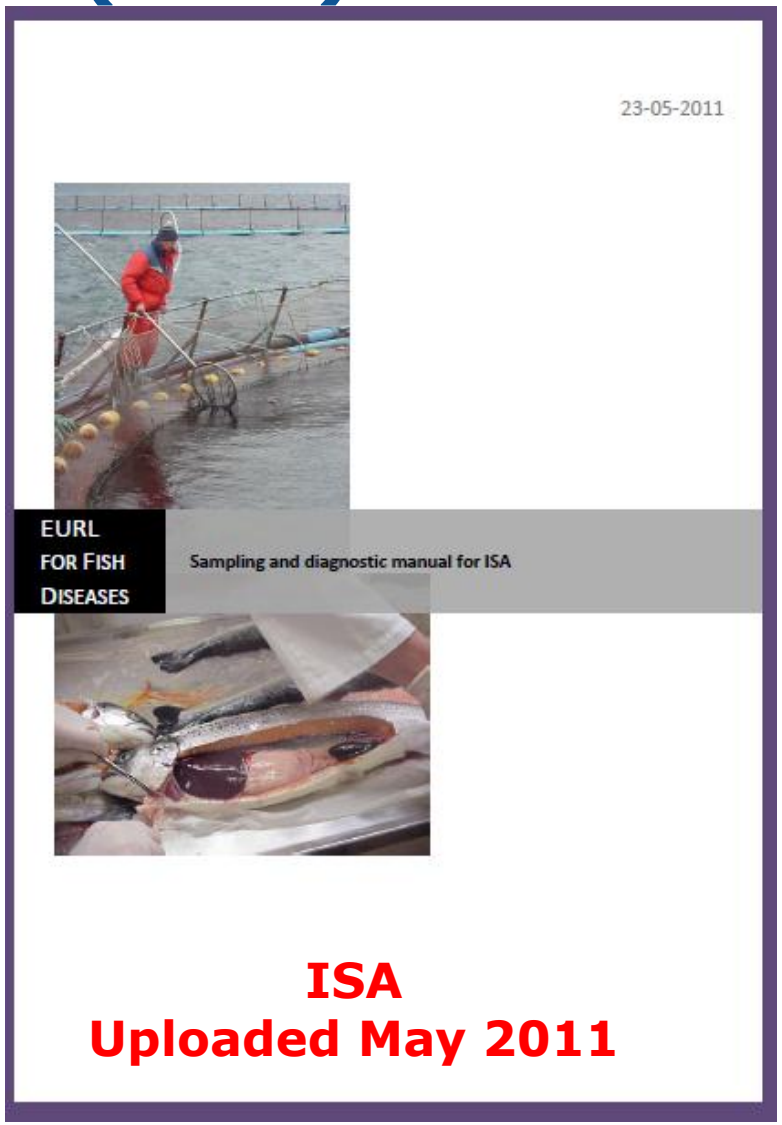
EHN and VHS/IHN are ready and uploaded but not approved yet



III. Diagnostic methods (cont)



KHV
Uploaded May 2012



ISA
Uploaded May 2011

European Commission

Laboratory diagnosis and accreditation

Currently methods for diagnosis for the diseases listed in Annex II of Directive 2006/88 are those previously defined under 91/67.

Where no test for exotic diseases defined in EU legislation, OIE method laid down in the manual apply.

Both the EU legislation and OIE stipulate testing to be to accredited standards

- *For the laboratory diagnosis ISO17025 standards apply*
- *For Inspection work ISO 17020 standards apply*

These standards apply to laboratories, official services and fish health professionals and provide assurances that common standards being applied across the EU and in third countries exporting fish and fish products to the EU

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Health surveillance under control and eradication programmes

Health and Consumers

Two year surveillance/control period for zones and compartments preceding gaining VHS / IHN free status

	Number of health inspections per year (two years):	Number of laboratory examinations per year (two years):	Number of fish in the sample[1]	
			Number of growing fish	Number of broodstock fish[2]
(a) Farms with broodstock	2	2	120 (first inspection) 150 (second inspection)	30 (first inspection) 0 (second inspection)
(b) Farms with broodstock only	2	1	0	150 (first or second
(c) Farms without broodstock	2	2	150 (first and second inspection)	0
Maximum number of fish per pool: 10				

[1] The samples have to be collected no sooner than three weeks after transfer of fish from fresh to saltwater.

[2] In exceptional circumstances, ovarian fluid may be sampled.

Four year surveillance and control period with reduced sample size preceding gaining disease free status

	Number of health inspections per year	Number of laboratory examinations per year	Number of fish in the sample[1]	
			Number of growing fish	Number of broodstock fish[2]
First two years of the surveillance period				
(a) Farms with broodstock	2	1	0 (first inspection) 30 (second inspection)	0 (first inspection) 0 (second inspection)
(b) Farms with broodstock only	2	1	0	30 (first or second inspection)
(c) Farms without broodstock	2	1	30 (first or second inspection)	0
Last two years of the surveillance period				
(a) Farms with broodstock	2	2	30(first inspection) 0(second inspection)	0(first inspection)[1] 30(second inspection)
(b) Farms with broodstock only	2	2		30 (first or second inspection)
(c) Farms without broodstock	2	2	30 (first and second inspection)	

Surveillance schemes for zones or compartments to maintain VHS and/or IHN free status

Risk level	Number of health inspections	Number of fish in the sample[1]
High	1 every year	30[2]
Medium	1 every 2 years	30[2]
Low	1 every 4 years	30[2]
Maximum number of fish per pool: 10		

[1] Only applicable when targeted surveillance is needed to maintain disease-free status (Art 52 of Directive 2006/88/EC).

[2] In exceptional circumstances, ovarian fluid may be sampled.

The samples have to be collected no sooner than three weeks after transfer of fish from fresh to saltwater.

Health Surveillance

- *The previous tables are drafts for just two of the non-exotic listed diseases that affect salmonids and some other fish species.*

- *Similar tables have been drafted for the other diseases of fish, shellfish and crustacean listed diseases*

I don't intend to go through all the others in the draft as the final outcome for these standards may change in the final version but hopefully you understand the principles behind the approach

You should have a copy of the visit form used in UK for farm inspections please study details ready for tomorrows farm visit

European Commission

Listing of susceptible species

Listed diseases in 2006/88		Susceptible species
Exotic	EUS	7 tropical genera
	EHN	Rainbow trout and perch
Non-exotic	ISA	Rainbow trout, Atl. Salmon, Brown trout, sea trout
	VHS	12 species listed including RT but Not Atl salm. anymore! >80 sp in literature
	IHN	All *Oncorhynchus* + Atl. Salm
	KHV	Common carp + Koi carp

European Commission

CONTINGENCY PLANS FOR THE CONTROL AND ERADICATION OF DISEASES IN AQUACULTURE

ANNEX VII

CRITERIA AND REQUIREMENTS FOR CONTINGENCY PLANS

Member States shall ensure that contingency plans meet at least the following requirements:

To be followed in the next presentation

Health and Consumers