

## Survey & Diagnosis of listed fish diseases in Europe 2012

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## Survey & Diagnosis of listed fish diseases in the Europe 2012 <sup>2</sup>

An Annual questionnaire

1. General data
2. Epidemiological data
3. Laboratory data, NRL and regional laboratories

Status on implementation of the fish health surveillance legislation 2006/88/EC

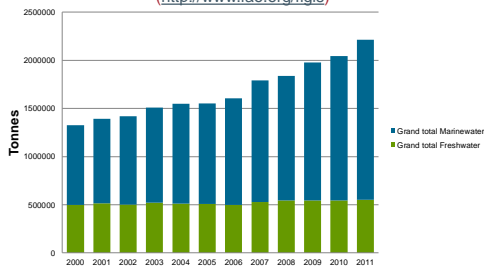


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## Total production of fish in aquaculture in Europe <sup>3</sup>

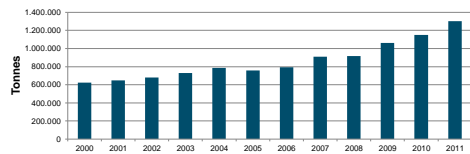
2000 to 2011

(<http://www.fao.org/figis>)

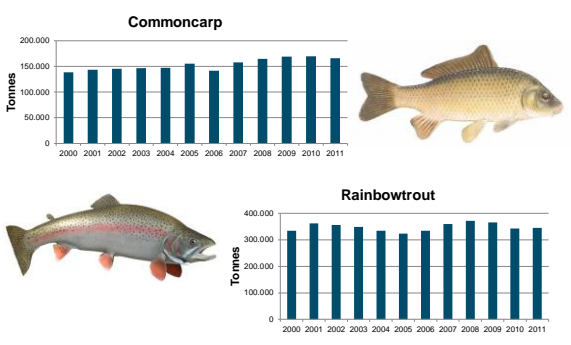


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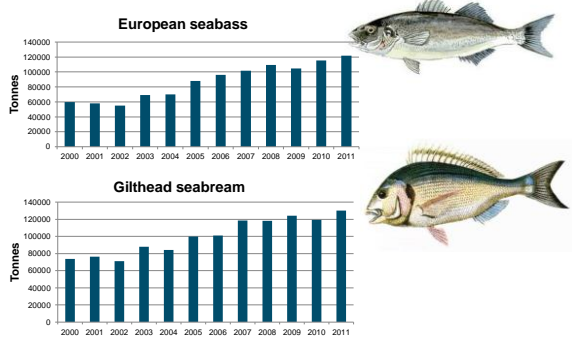
## Atlantic salmon <sup>4</sup>



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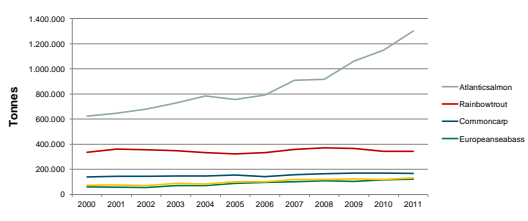
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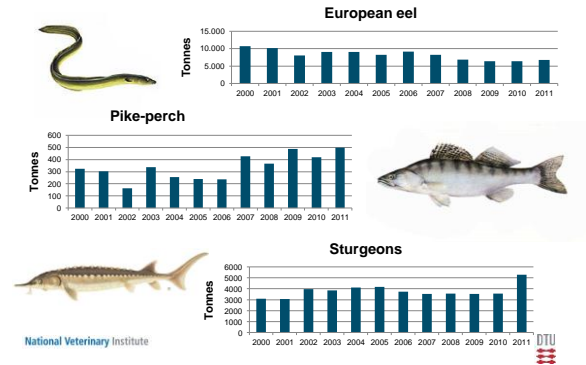
Total production of Atlantic salmon, rainbow trout, common carp, seabass and seabream in Europe 2000 to 2011 (<http://www.fao.org/figis>)



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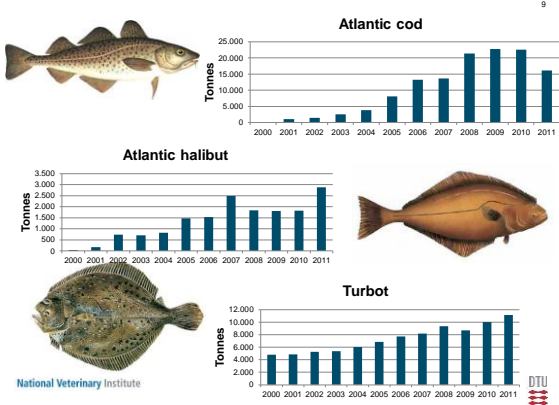


Production 2000 to 2011 (<http://www.fao.org/figis>)

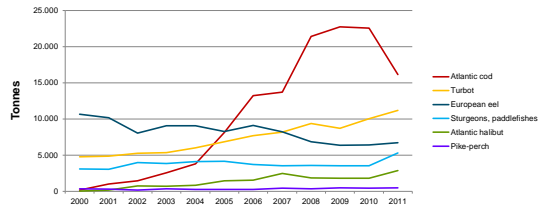


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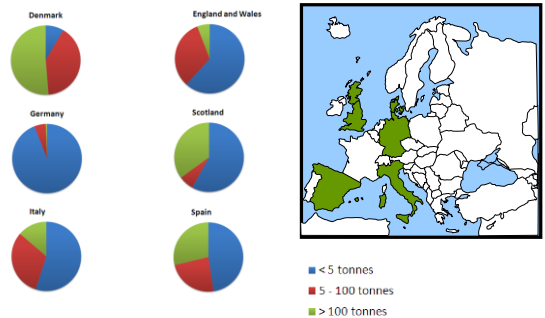
Total production of Eel, Cod, Halibut, Sturgeons and Turbot Europe 2000 to 2011 (<http://www.fao.org/figis>)



General data, whole country or region

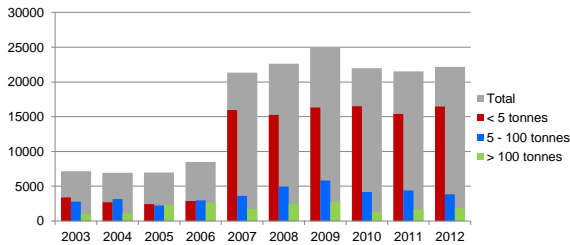
1. Number of fish farms within country/region, according to size of production (tonnes fish/year) ? No farm data in FIGIS
2. According to fish species
3. Categorisation according to Council Directive 2006/88
4. Number of fish farms surveyed for other diseases
5. Do you have active or passive surveillance for these diseases

% Distribution of farms according to size



Number of farms according to size from 2003 to 2011

13



Total number of fish farms in the MS calculated from data in 1.1.: (<5t)+ (5-100 t) + (>100 t)

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Number of fish farms within country/region, according to fish species in the Northern European countries

14

	Rainbow trout	Atlantic Salmon	Other salmonid	Carp	Eel	Flatfish	Seabream / Seabass	Other marine spp.	Other freshwater spp.	Total
Denmark	241	6	53	6	9	6	1		5	327
Finland	245		312	23					236	816
Ireland	8	70	7	1		1		2	6	95
Sweden	110	23	104	1	1			1	8	248
England and Wales	155	29	124	125	4	1	1		88	527
Scotland	47	369	43	2		5	1	87	1	429
Northern Ireland	17	3	4	5				1		30
Iceland	6	16	25			2		7	1	50
Norway	All salmonids are reported as Atlantic salmon	1236			Included in other marine spp	Included in other marine spp		122		1358
Faroe Islands		34								
Total	829 + NO	1786	672	163	14	15	3	220	345	3880

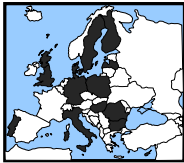
Number of fish farms within country/region, according to fish species in the Continental European countries

	Rainbow trout	Atlantic Salmon	Other salmonids	Carp	Eel	Flatfish	Seabream / Seabass	Other marine spp.	Other freshwater spp.	Total
Austria										
Belgium	44	1	40	6					6	97
Czech Republic	184	1	318	1572					1183	1741
Estonia	19	1	2	2	2				2	28
France										
Germany	3662	40	1194	4241	170	5	11	14	4398	13735
Hungary	4			260					11	275
Latvia	45	5	30	75					10	147
Lithuania	3			19	1				10	33
Netherlands	45		1	2	20	3			80	151
Poland	483			3281					218	3982
Slovakia	81			87						168
Switzerland	209		139						9	357
	4779	48	1724	9545	193	8	11	14	5927	20714

Number of fish farms within country/region, according to fish species in the Mediterranean European countries

	Rainbow trout	Atlantic Salmon	Other salmonid	Carp	Eel	Flatfish	Seabream / Seabass	Other marine spp.	Other freshwater spp.	Total
Bulgaria	85			236				1	14	336
Cyprus	7			1			9	1	1	19
Greece	72		2	7	8		336		3	428
Italy	333		15	21	24		127	not available	42	562
Portugal	26			1		5	84			116
Romania	169		14	277					117	577
Slovenia	98		52	84			1		70	305
Spain	102	6	33	3	118	142	182	127	25	738
Croatia	30			23			57	7		117
Turkey	1810			38			341	11		
Bosnia and Herzegovina	31		26	14				2		56
Kosovos										
Albania										
Total	2763	6	142	705	150	147	1139	147	272	3254

### Countries surveyed for **SVC** <sup>17</sup>

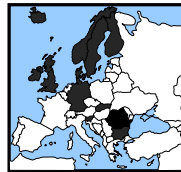


19 countries with SVC programs

Country	Number of fish farms involved in 2010/2011	Programme based on:	Number of fish farms involved in 2012
Bulgaria	102/104	National programme	104
Cyprus	1/1	Industry programme	1
Denmark	6/6	Fish farms/national surveillance, passive, active and targeted (Outer stores and private garden ponds)	6
Finland	18	National/REG	2
<b>Germany</b>	<b>426/122</b>	<b>regional active surveillance</b>	<b>61</b>
	3/0	surveillance	7
Hungary	169/130	national surveillance programme	133
Ireland	All carp farms and lake fisheries	National surveillance based on inspections (passive surveillance)	All carp farms/ponds & lake fisheries
Italy	fisheries	fishot available	not available
Latvia	28/24	National surveillance based on inspections (active surveillance)	1560 tonnes (passive) 2011 goods returned top 24
Poland	30/30	National survey	30 farms sampled twice per year
Portugal	2/1	Passive surveillance	1
Romania	9/9	National surveillance and/or industry financed	27
<b>Slovakia</b>	<b>55/0</b>	<b>National surveillance financed by NRL for fish diseases</b>	<b>87</b>
Slovenia	4/1	national programme	1
England and Wales	162/150	Article 43 measure - National surveillance based on annual inspection	157
Scotland	5/3	National survey - based on inspections (active surveillance)	1 in 2012 (in programme)
Northern Ireland	2/0	regional SVC programme (additional guarantees)	2
Bosnia and Herzegovina	5/14	passive surveillance	14

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### Countries surveyed for **BKD** <sup>18</sup>

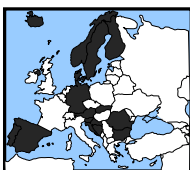


14 countries with BKD program especially salmon farming countries

Country	Number of fish farms involved in 2010/2011	Programme based on:	Number of fish farms involved in 2012
Bulgaria	1/0	National programme	39
Denmark	49/44	National surveillance, passive and active/Targeted BKD brood stock testing and industry financed BKD programme	43
Finland	80/76	National/Regional	64 fish farms and 122 natural food pond producers
<b>Germany</b>	<b>107/161</b>	<b>regional active surveillance</b>	<b>157</b>
		<b>regional passive surveillance</b>	<b>23</b>
Ireland	All salmon farms	National surveillance based on inspections (passive surveillance), active surveillance testing on one salmon farm (industry financed)	All salmon farms
Romania		Industry financed	7
Slovenia	3/1	national financed BKD programme for achieving additional guarantees	2
Spain	1/1		2
Sweden	130/124	national program	124
England and Wales	196/189	Domestic surveillance based on annual inspection	176
Scotland	428/205	Domestic surveillance - based on inspections (active surveillance)	172 in 2012 (419 in programme)
Northern Ireland	10/10	regional BKD programme (additional guarantees)	24
Iceland	17/13	National BKD program running since 1985 (Industry financed)	16
<b>Norway</b>	<b>116/109</b>	<b>List 3, National surveillance programme - wild brood fish caught for restocking of progeny in rivers.</b>	<b>List 3, National surveillance programme - wild brood fish and at the same time farm at Barents Sea catchment</b>
Faroe Islands	37/25	National surveillance based on inspection, BKD brood stock testing, industry financed	List 3 All active farms with surveillance since 2012. Surveillance brood fish for restocking programme for salmon, 33 river/farms.

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### Countries surveyed for **IPN** <sup>19</sup>

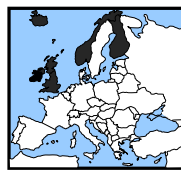


18 countries with IPN program

Country	Number of fish farms involved in 2010/2011	Programme based on:	Number of fish farms involved in 2012
Bulgaria	8/50	National programme	7
Cyprus	0/7		7
Czech Republic	83/90		83
Denmark	37/34	National surveillance, passive and active/Targeted IPN brood stock testing	36
Finland	69/65	National/Regional	144 fish farms and 148 natural food pond producers
<b>Germany</b>	<b>481/347</b>	<b>regional targeted surveillance / regional active surveillance / regional passive surveillance</b>	<b>100 targeted / 113 active / 44 passive</b>
Ireland	All salmon farms	National surveillance based on inspections (passive surveillance), industry financed broodstock testing carried out in support of export certification.	All salmon farms
Portugal	3/0	Passive surveillance	20
Romania	2/15	Industry financed	4
<b>Slovakia</b>	<b>105/0</b>	<b>National surveillance financed by NRL for fish diseases</b>	<b>134</b>
Slovenia	4/1	national financed BKD programme for achieving additional	2
Spain	120/133	Regional Surveillance	125
Sweden	180/129	national program	129
Northern Ireland	10/9	regional surveillance	11
Croatia	25/30	Under surveillance program for VHS/IPN samples were tested on cat, salmon and certain number of samples gained positive results. (see point 3.2. on Laboratory data)	30
Turkey	65/55	passive surveillance	40
Bosnia and Herzegovina	29/35	National program, mainly based on IPN brood stock testing, running since 1985	12
Iceland	15/13	passive surveillance	12
Norway	130/11 active farms in 2011	Passive surveillance and investigation of cases with increased mortality	All active farms with surveillance specified in 2012
Switzerland		IPN is a notifiable disease. In case of detection of positive fish in a farm, stocks are quarantined	Elimination of stocks from one farm

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### Countries surveyed for **Gyrodactylus salaris** <sup>20</sup>



7 countries with G. sal. program

Country	Number of fish farms involved in 2010/2011	Programme based on:	Number of fish farms involved in 2012
Finland	2/Regional survey of wild fish and at the farms at Barents Sea catchment	Regional survey (watercourses running into the Barents Sea). More farms are examined in the connection with export/research (these farms are situated in the Baltic Sea catchment, where G. salaris is endemic)	Regional survey of wild fish and at the same time farm at Barents Sea catchment
Ireland	All salmon farms, fish farm	National surveillance based on inspections (passive surveillance). In 2011 6 catchments identified and tested.	All salmon farms, five river catchments (140 fish)
<b>England and Wales</b>	<b>198/189</b>	<b>Article 43 measure - National surveillance based on annual inspection</b>	<b>179</b>
Scotland	65/84	National survey - based on inspections (active surveillance)	69 in 2012 (161 in programme)
Northern Ireland	10/8	regional GS programme (additional guarantees)	21
Iceland	5/6	National surveillance based on inspections (passive surveillance) and microbiological survey, in farms raising wild salmon fingerlings released back to salmon rivers	5
Norway	86/93	List 3, National surveillance programme, wild Atlantic salmon in river systems	69 farms (and 111 rivers)

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## 2. Epidemiological data

21

- Number of fish farms **considered to be infected with VHS, IHN, ISA, KHV**
- Number of fish farms with susceptible species that are **considered to be free**
- Number of fish farms with susceptible species for which the infection status of **VHS, IHN, ISA, or KHV is unknown**:



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## 2. Epidemiological data

22

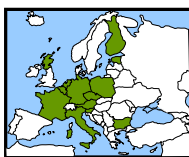
- Other fish diseases than VHS, IHN, ISA or KHV?
- Is there an *increase or decrease in the number of fish farms infected* with listed diseases compared to previous years ?
- Is there a general increase or decrease in the *severity of infections* with listed diseases compared to previous years ?

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### Number of salmonid farms considered to be infected with VHS in Europe, 56 of 12741 farms

23



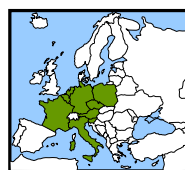
Country	Total number of farms/positive		
	2010	2011	2012
Austria		1319/5	
Belgium	85/4	92/2	97/2
Bulgaria	54/2	302/2	336/2
Estonia		23/2	
Czech Republic	432/2	1798/1	
Finland	305/18	485/31	816/26
Germany	4421/14	3706/8	13735/8
Italy	356/73	346/4	
Netherlands	46/4	46/5	151/5
Poland	445/10	470/4	3982/6
Slovakia	40/4	76/5	168/1
Slovenia	136/9	145/8	305/7
Scotland			429/4

- 75 farms in 2011
- 56 farms in 2012 considered VHSV positive in Europe!

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### Number of trout farms considered to be infected with IHN in Europe, 61 of 8363 farms

24

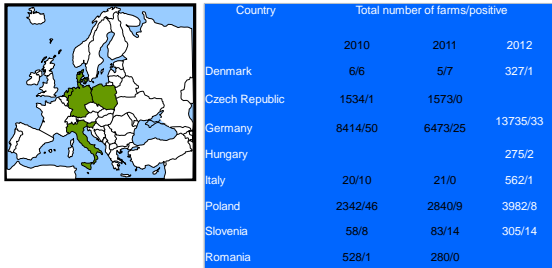


Country	Total number of farms/positive		
	2010	2011	2012
Austria		7/3	
Belgium	85/1	85/1	97/2
Czech republic	432/1	499/1	
Germany	4421/5	3706/7	13735/6
Italy	356/73	346/0	562/2
Netherlands	46/3	46/8	151/8
Poland	445/7	470/8	3982/10
Slovenia	136/28	145/33	305/29

- 61 farms in 2011
- 49 farms in 2012 considered IHN positive in Europe!

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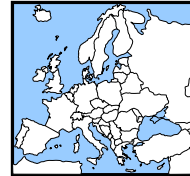
Number of fish farms considered to be infected with KHV in Europe, 53 of 10403 farms <sup>25</sup>



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Number of fish farms considered to be infected with ISA in Europe <sup>26</sup>

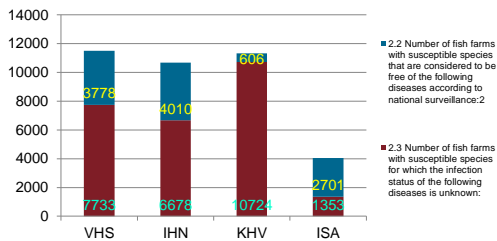


No ISA positive farms in Europe 31.12. 2012 !

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Distribution of farms with known (blue) and unknown (red) infection status in Europe according to the listed diseases <sup>27</sup>



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Other diseases problems in Northern European countries <sup>28</sup>

Country	Fish species	Disease or symptoms
Ireland	Atlantic salmon	• Amoebic gill disease
Estonia	Rainbow trout	• Aeromonas hydrophila
Finland	Rainbow trout	• IPN genotype 2 in inland fish farms
Sweden	Trout	• PKD
England and Wales	<i>Cyprinus carpio</i>	• Major carp mortality in managed fisheries.
Scotland	Atlantic salmon	• Gills haemorrhagic and congested.
Norway	Atlantic salmon	• IPN, HSS, SAV, CMS, <i>Vibrio</i> spp., ERM, Amoebic gill disease
Faroe Islands	Atlantic salmon	• Sea lice, pancreas disease increasing problem with SAV2, IPN decreasing, HSMI
		• IPN mainly at start feeding of fingerlings

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## Other diseases problems in Continental European countries

29

Country	Fish species	Disease or symptoms
Austria	Arctic char	• Furunculosis
Germany	Rainbow trout	• Amoebic gill disease (AGD), IPN (high mortality) • Aeromonosis
Latvia	Cyprinidae	
Netherlands	eel ( <i>A. anguilla</i> )	• 2x EVE + AngHV1 • 3x AngHV1 in diseased eels
Poland	Cyprinus carpio	• <i>Aeromonas hydrophila</i> • <i>Aeromonas caviae</i> • <i>Shewanella putrefaciens</i>
Slovakia	Carp	• SVCV • RTFS, external Flavobacteriosis, ERM, PKD
Switzerland	Rainbow trout, Brown trout	

## Other diseases problems in Mediterranean European countries

30

Country	Fish species	Disease or symptoms
Bulgaria	Rainbow trout	• Y.ruckeri • BKD • <i>Aeromonas hydrophila</i>
Greece	Seabream ( <i>Sparus aurata</i> )	• Microcotyle infection
Italy	Seabass ( <i>Dicentrarchus labrax</i> )	• Affected by betanodavirus during summer
Romania	rainbow trout	• Yersiniosis
Spain	Rbt	• FTS • SDV • Saprolegniosis
Croatia	Rainbow trout	• ERM • RTFS • Red mark syndrom

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## Northern European countries. Is there an increase or decrease in the number of fish farms infected with listed diseases compared to previous years?

31

Denmark	The number of fish farms infected with VHS is 0. This has been the situation since the beginning of 2009, where Denmark had the last incidence of VHS in a fresh water fish farm.
Finland	Yes. Six new IPN genotype 2 disease cases were found from inland fish farms during year 2012. Inland has been IPNV free before year 2012.
Sweden	We have had fewer infected farm in 2012 than previous years.
Scotland	Decrease in ISA - eradication programme in South West Shetland completed (sites moved from Category IV to Category I). Increase in VHS - one site holding wrasse (mixed species) confirmed VHS positive (changed from Category I to Category V)
Norway	VHS: The surveillance zone established in 2007 is declared free of disease. ISA: There has been only two new case of ISA in 2012.

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## Continental European countries. Is there an increase or decrease in the number of fish farms infected with listed diseases compared to previous years?

32

Austria	increase in number of KHV-infected farms (2007:18 / 2008:4 / 2009:9 / 2010: 3 / 2011: 2 / 2012: 4) constant number of IHNV-infected farms (2007:3 / 2008:0 / 2009:1 / 2010:1 / 2011: 4 / 2012: 4) increase in number of VHSV-infected farms (2007:3 / 2008:3 / 2009:3 / 2010:5 / 2011: 5 / 2012:10)
Czech Republic	2011: only one positive farm for VHS and one positive farm for IHN 2012: no occurrence of VHS, IHN, KHV
Estonia	There was two infected farms with VHS in the beginning of the year. As of the end of 2012 the number of infected farms decreased to 0.
Latvia	No. In spite of increasing amount of fish farms, amount of production are not risen, breeding are not intensive and density of animals are not high.
Hungary	Yes, there was two geographically separate cases and since then there was no more outbreak.
Netherlands	Yes, a decrease; no new outbreaks in 2012 after VHS and IHN outbreaks in 2011. After-screenings of the positive farms related to IHN and VHS of 2011 were all negative in 2012, and also start of 2013. The farms will be in category III soon.
Poland	There is an increase in number of IHN infected fish farms, VHS and KHV infections number was similar to previous years
Switzerland	While in 2011 there were no records of either VHS, IHN and IPN, in 2012 VHS was diagnosed in 4 different farms, partly with trade connections, IHN once and IPN twice (both in the same farm, infection most probably due to introduction of infected imported fish). In farms with recorded VHSV or IHNV stocks were destructed and sanitation measures took place.



Mediterranean European countries. Is there an increase or decrease in the number of fish farms infected with listed diseases compared to previous years?

33

No

Is there a general increase or decrease in the severity of infections with listed diseases compared to previous years?

34

Northern European countries

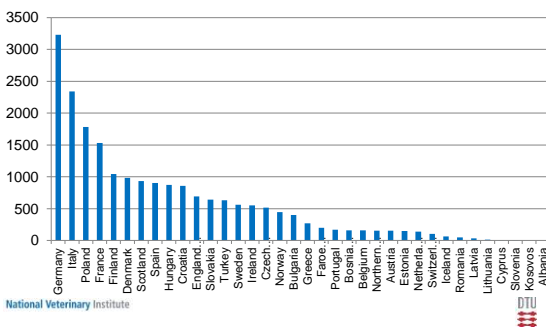
Continental European countries

Mediterranean European countries

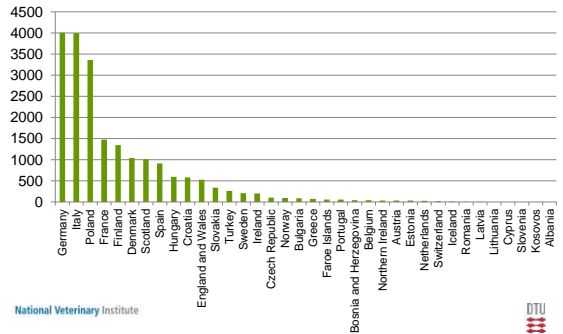
No reports

No. of samples tested by cell cultivation.  
Total in Europe = 20731 fish samples 2011  
Total in Europe = 21943 fish samples 2012

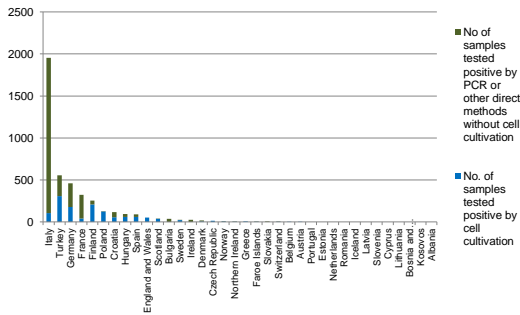
35



No of samples tested by PCR or other direct methods without cell cultivation. Total in Europe = 20617 in 2011 and 2012



Number of samples tested positive in NRL and regional laboratories in your country



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## Conclusion on S&D 2012

- Significant increase in marine production, 2010-2011 and very stable fresh water production. Especially the salmon production is increasing.
- Beside this few changes from 2011 to 2012.
- Unfortunately some Member states did not reply
- VHS aroused and ISA resolved in Scotland (Wrasse)
- VHS resolved in Estonia
- VHS eradicated from Denmark
- In general VHS seem to cause less severe losses
- No ISA infected farms 31.12.2012!
- Still significant under-reporting for VHS, IHN and KHV
- Apparently significant problems with Nodavirus infection in Mediterranean Sea bass and sea bream production

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39

- Raw data are not included in folder this year.
- If interested all data can be retrieved from our web site:

[WWW.EURL-Fish.EU](http://WWW.EURL-Fish.EU)

In "Surveillance and diagnosis"

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Only dead fish always follows the stream

Thank you for your attention!



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