

Trination meeting, Aberdeen, October 12th-13th 2016

Update on the situation in Norway

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In 2015, Norway produced (figures at harvest)

1234, 200 tonnes of Atlantic salmon,
71,600 tonnes of rainbow trout,
4000 tonnes (estimated) of Atlantic cod (live storage)
1700 tonnes (estimated) of Atlantic halibut
2 – 300 tonnes (estimated) of turbot
5 – 600 tonnes (estimated) of arctic charr.
Ten million lumpsucker fish were raised,
400,000 to 500,000 (estimated) ballan wrasse

These figures are based on information supplied by Kontali Analyse AS.



Where do we get data from?

PD, HSMI, CMS, PRV-*Om*:

Official data

Data from the Norwegian Veterinary Institute

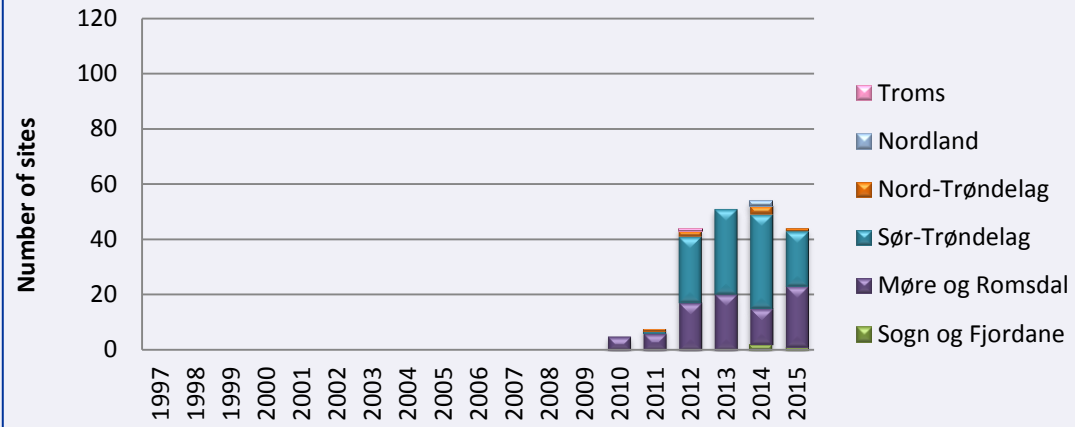
HSMI, CMS:

Additional data from private laboratories (2015)

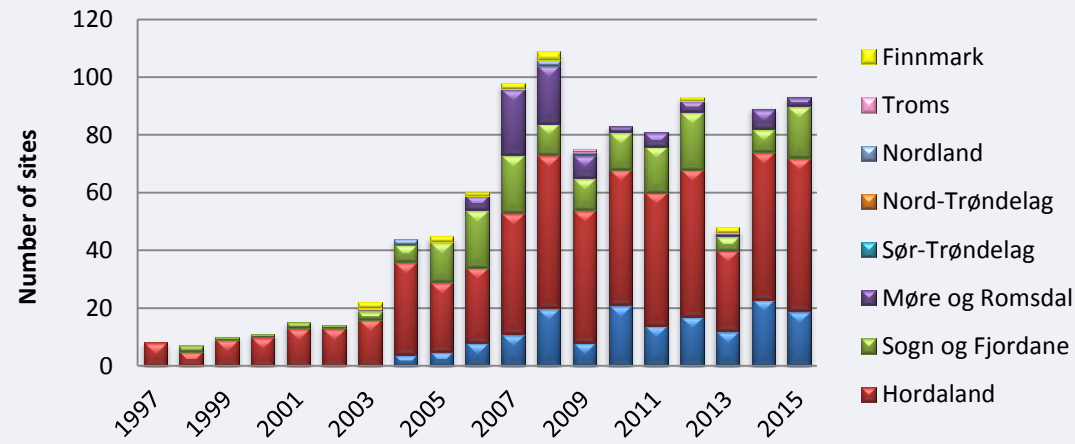


Infections with Salmonide Alphavirus (Salmon Pancreas Disease)

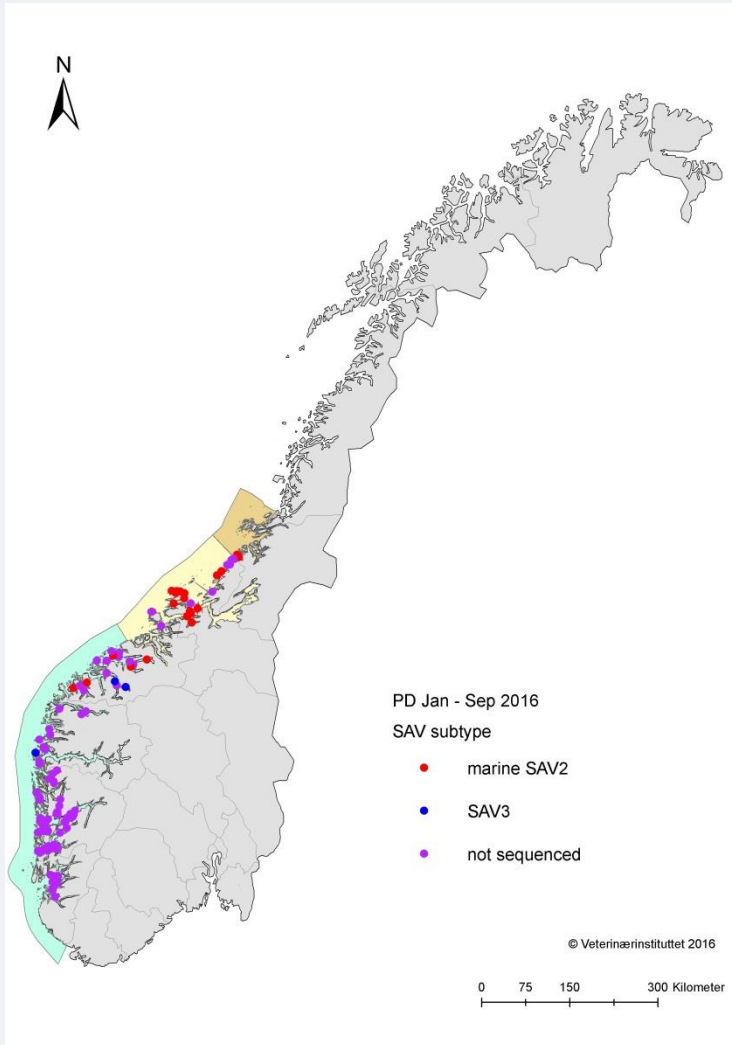
SAV2-outbreaks 1997-2015



SAV3-outbreaks 1997-2015



Infections with Salmonid Alphavirus (Salmon Pancreas Disease)



2016(30.9):117

2015: 137

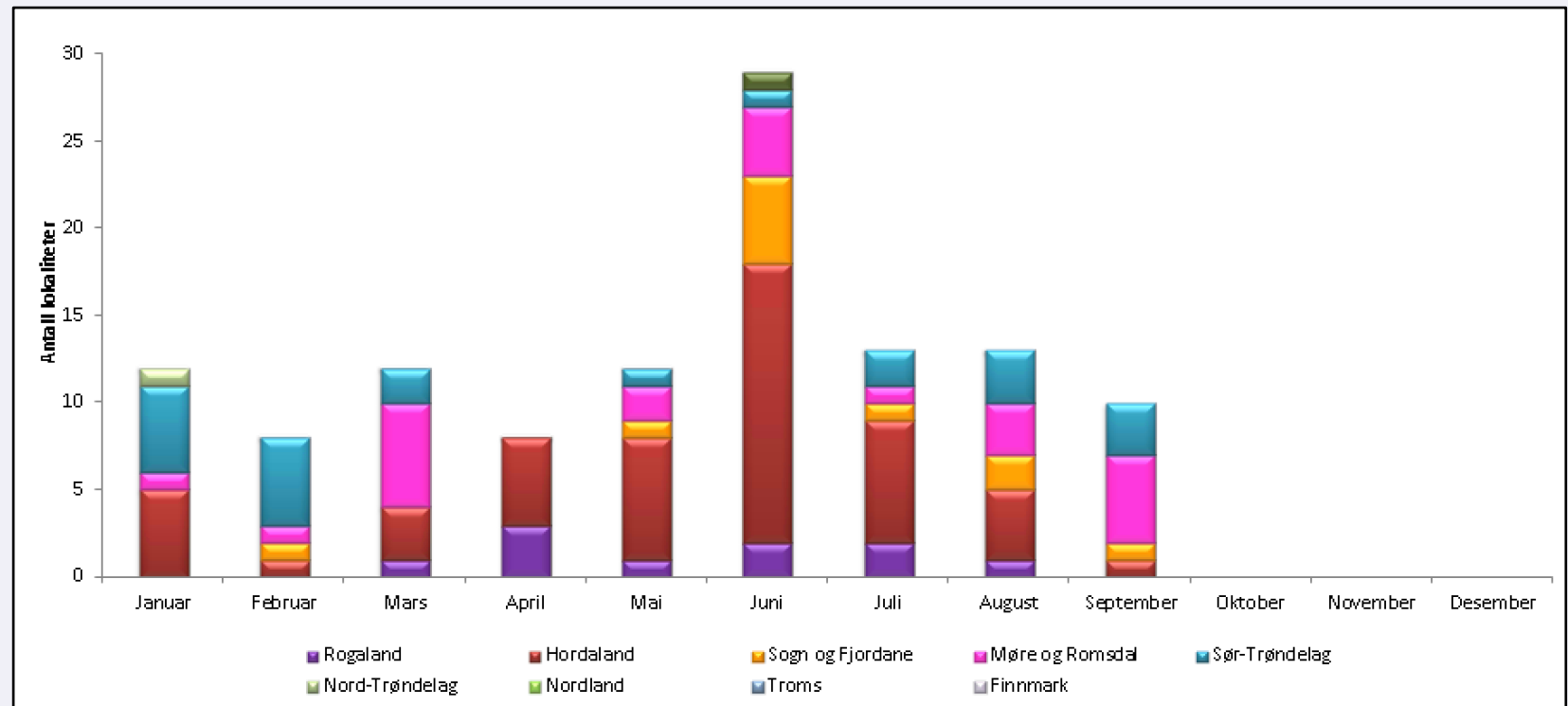
2014: 142

2013: 99

2012: 137

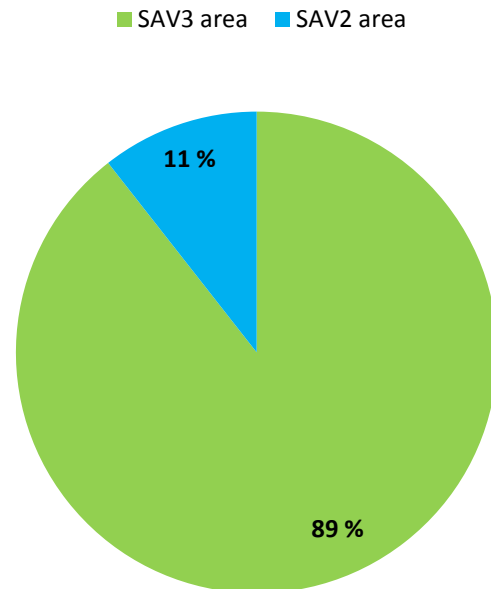
2016: An increase ?

Infection with Salmonide Alphavirus PD 2016 (30.9). Distribution by county

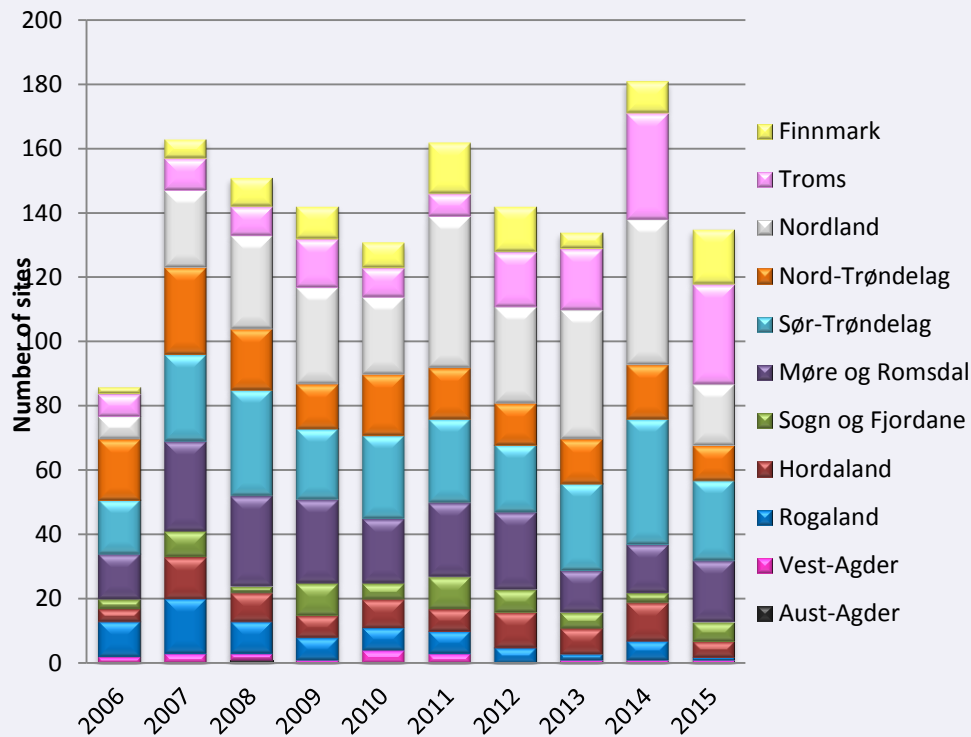


PD doses in 2016, so far (both S1 and S0)

- 87, 5 million fish were PD vaccinated in 2016
 - Both spring 16G, fall 16G, and some spring 17G
 - Nearly all fish south of Hustadvika are vaccinated against PD (SAV 3 endemic area)
 - 11% of the PD vaccinated fish were vaccinated in the SAV 2 area



Heart and skeletal muscle inflammation (HSMI) PRV (Piscine Orthoreovirus)



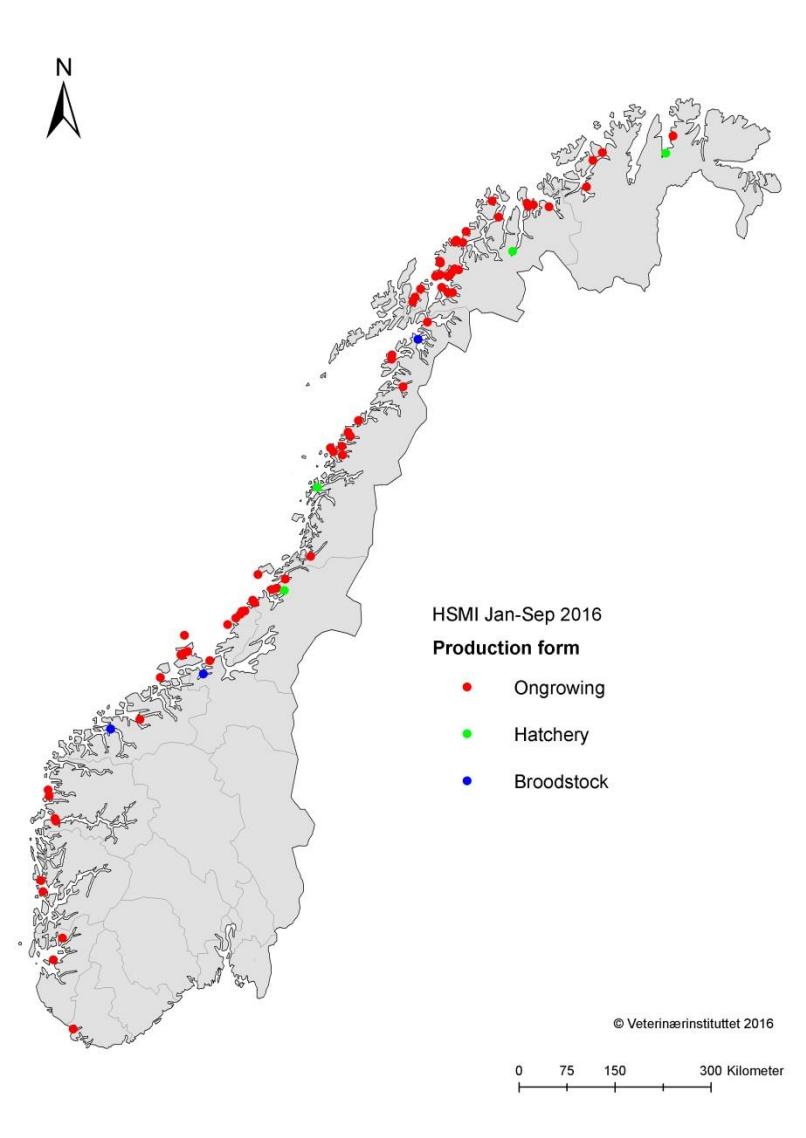
2015	135* (187**)
2014	181
2013	134
2012	142
2011	162
2010	131

*Data from NVI. Data from private laboratories not included

** Data from private laboratories included



Heart and skeletal muscle inflammation (HSMI)



2016 (31.09): 81

No conclusion reached

Piscine orthoreovirus (PRV) in red and melanised foci in white muscle of Atlantic salmon (*Salmo salar*)

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Infection with rainbow trout PRV (virus Y)

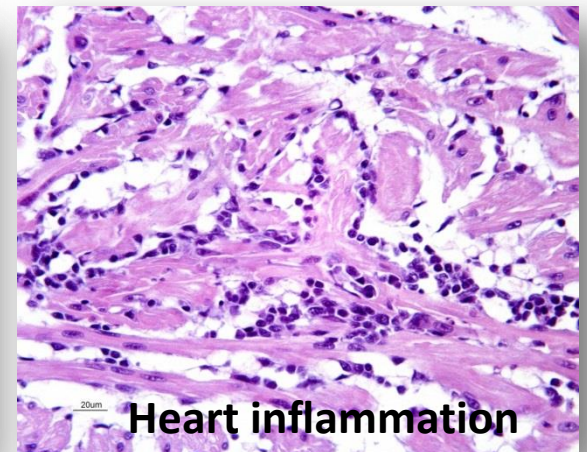
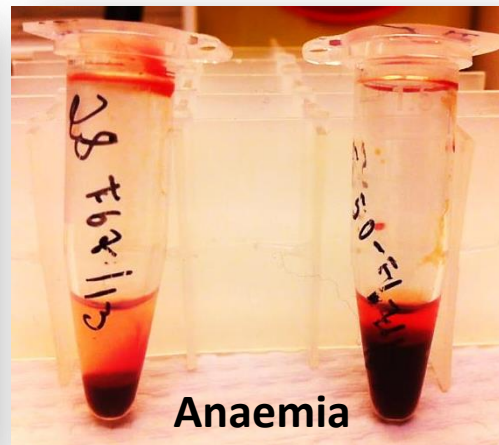
2013-14: Disease outbreaks in 4 rt hatcheries

2014: Disease after sea transfer

Low to moderate mortalities

Circulatory failure, anaemia

Heart inflammation (red muscle and liver)



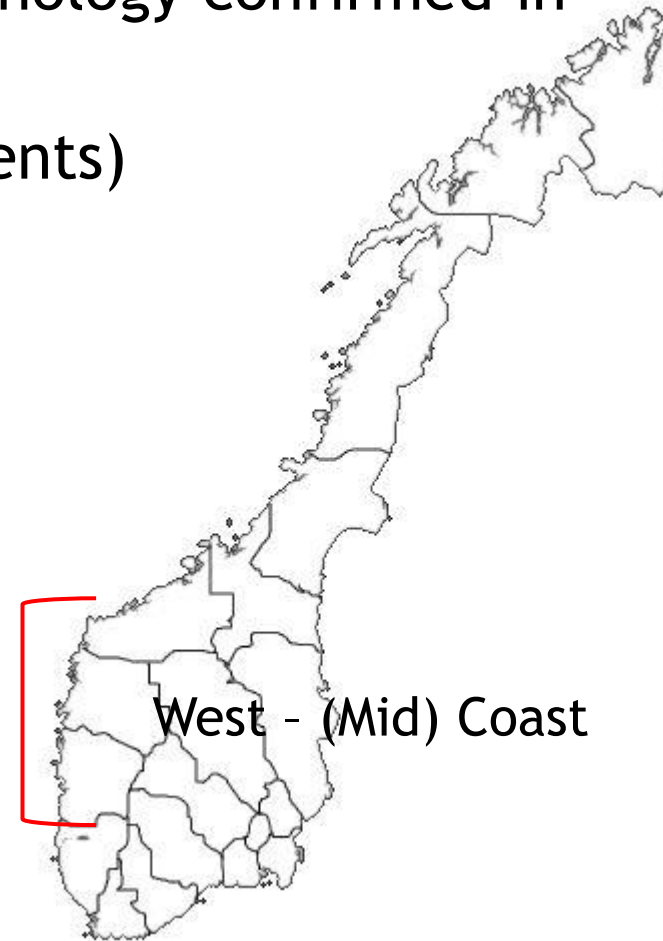
Rainbow trout PRV («PRV-*Om*»)

- Associated with PRV variant (85 % id S1)
- Horizontal transmission and heart pathology confirmed in challenge experiments
- Infects also Atlantic salmon (experiments)

Survey (PCR)

2015: 9/65 rt sea sites positive, 6 new,
no clinical disease

2016: 7/19 rt sea sites
no clinical disease

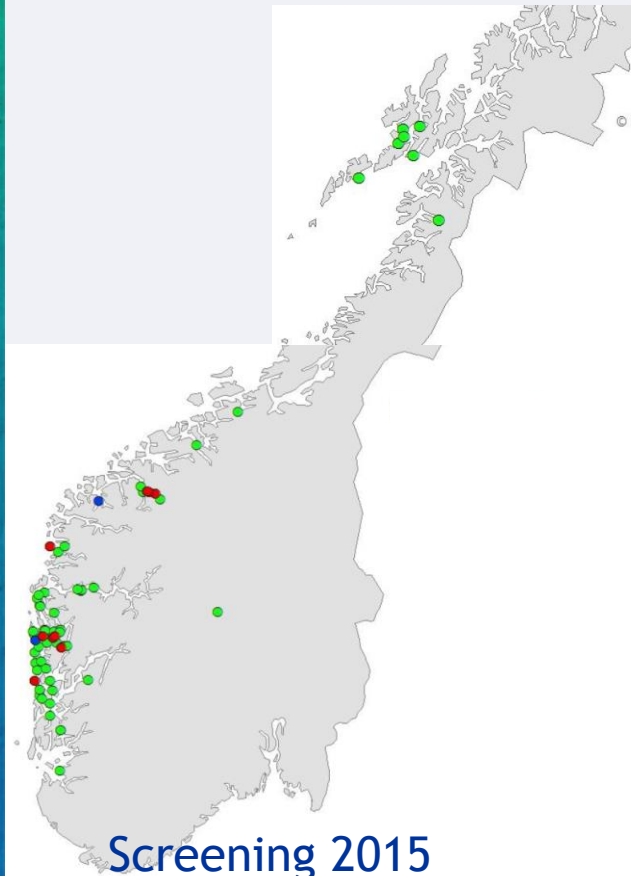


PRV-associated disease in rainbow trout (PRVom)

PRVom was detected in 17 sites with rainbow trout in 2013-2015

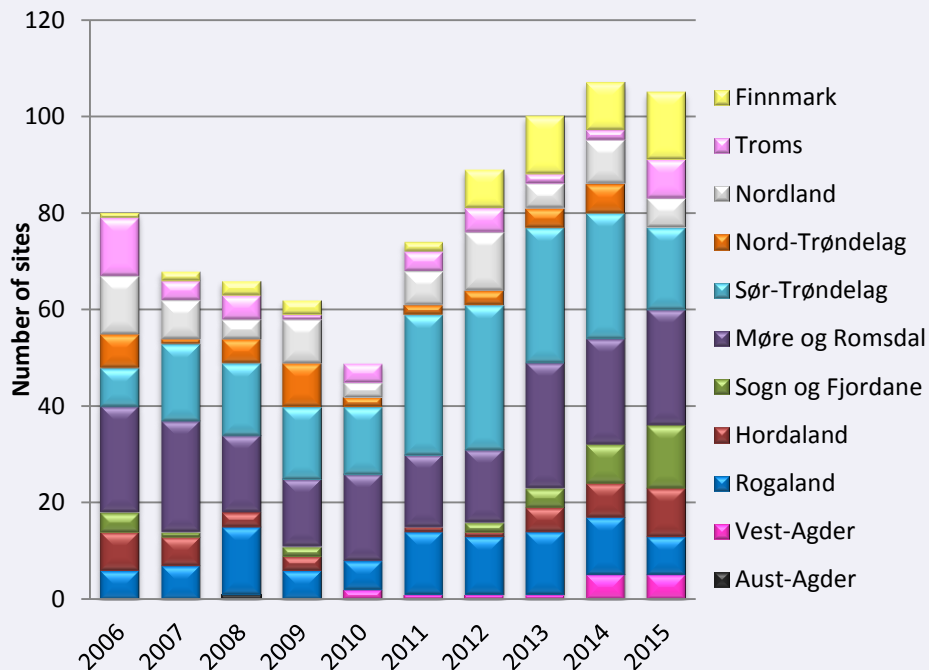
- Atlantic salmon -ve
- Rainbow trout -ve
- Rainbow trout +ve

Site	Type	Virus Y detected by PCR	Detection of disease
1	Broodfish	2014	
2	On-growing	2013, 2014	
3	Smolt producer	2014	2013, 2014
4	On-growing	2015	
5	Smolt producer	2013, 2014	2013, 2014
6	On-growing	2015	
7	Smolt producer	2014	2014
8	On-growing	2014	
9	On-growing	2015	
10	On-growing	2014, 2015	2014
11	On-growing	2014, 2015	2014
12	Smolt producer	2013	2013, 2014
13	Broodfish	2014	
14	Broodfish	2015	
15	On-growing	2015	
16	On-growing	2015	
17	On-growing	2013, 2015	



Cardiomyopathy syndrome (CMS)

PMCV (Piscine myokardittvirus) - Totivirus



2015

105* (129)**

2014

107

2013

100

2012

89

2011

74

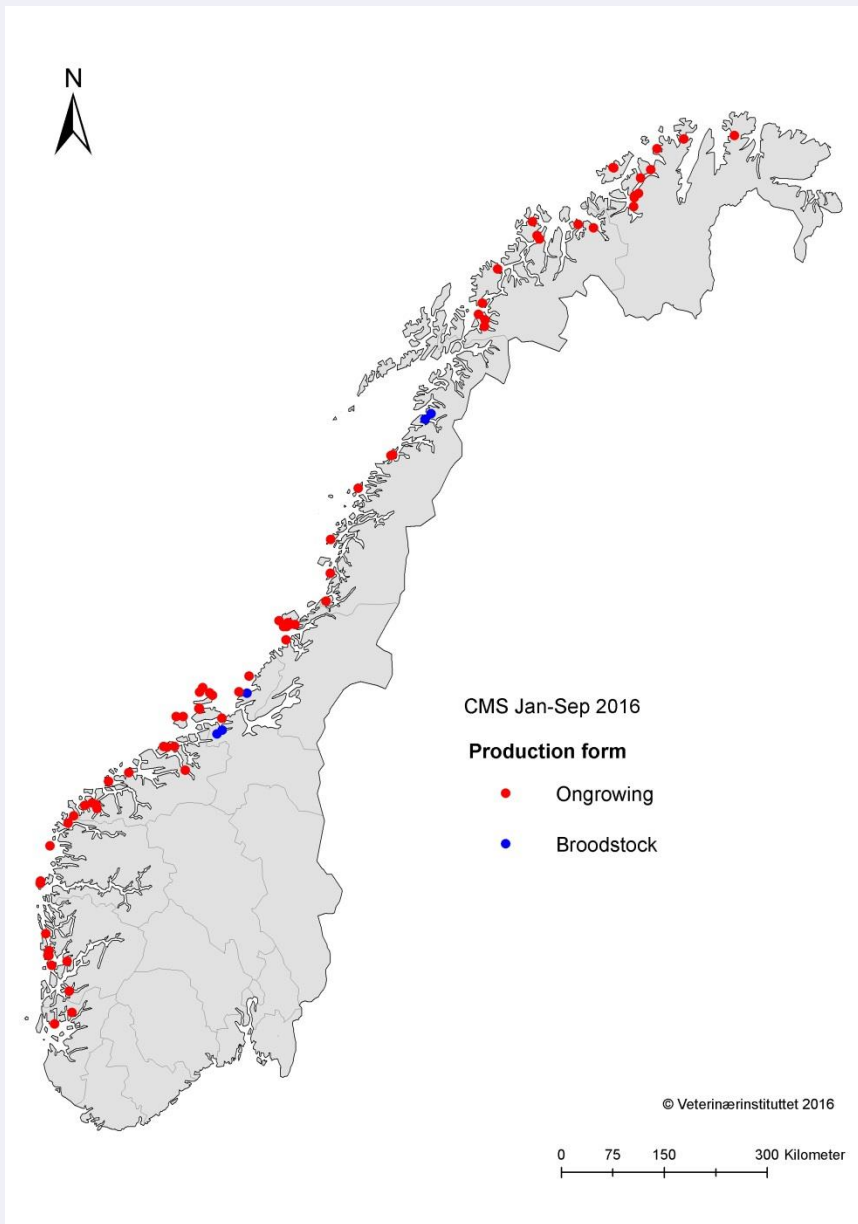
2010

53



*Data from NVI. Data from private laboratories not included

** Data from private laboratories included



2016 (31.09): 76

No conclusion reached

CONCLUSIONS

- SAV 2015: Similar situation to 2014 with a high number of of cases with infection with SAV. 2016: an increase?
- HSMI/CMS 2015 tend to increase. 2016: no conclusions reached



Thank you for your attention

