

The surveillance programme for *Brucella abortus* in cattle in Norway 2015



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Project managers at the Norwegian Veterinary Institute:

Ståle Sviland (Terrestrial animals)
Anne-Gerd Gjevre (Aquatic animals)
Mona Torp (Food safety)

Editor

Merete Hofshagen

Publisher

Norwegian Veterinary Institute
PO Box 750 Sentrum
N-0106 Oslo
Norway

Fax: + 47 23 21 60 95
Tel: + 47 23 21 60 00
E-mail: postmottak@vetinst.no
www.vetinst.no

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Authors:

Ståle Sviland, Tone Bjordal Johansen, Siv Klevar, Chiek Er

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The surveillance programme for *Brucella abortus* in cattle in Norway 2015

Ståle Sviland, Tone Bjordal Johansen, Siv Klevar, Chiek Er

Brucella abortus in cattle was not detected in 2015.

Introduction

Eradication of bovine brucellosis in Norway was achieved in 1950 (1). Since 1994, the EFTA Surveillance Authority (ESA) has recognised Norway as a state officially free from brucellosis as described in ESA Decision 66/94/COL, later replaced by ESA Decision 227/96/COL.

A surveillance programme for *Brucella abortus* was launched in 2000. All samples were negative in 2000, 2001, 2003 and 2004. In 2002 however, two bulk milk samples were antibody positive. Further investigation did not confirm the positive results and it was concluded that the positive serological results most likely were false positive reactions. Since 2005 the programme has consisted of passive clinical surveillance. From 2004 to 2014 both aborted fetuses and blood samples from the dams were examined for *B. abortus* infection. After 2014 only blood samples from the dams are analysed for antibodies against *B. abortus*.

The Norwegian Food Safety Authority is responsible for carrying out the programme. The Norwegian Veterinary Institute is in charge of planning the programme, performing the analyses and reporting the results. The samples are collected by inspectors of the Norwegian Food Safety Authority.

Aim

The aim of the programme is to document freedom from *B. abortus* in cattle according to demands in Directive 64/432/EEC with amendments, and to contribute to the maintenance of the present favourable situation.

Material and methods

Herd criteria for submission of clinical material are:

- abortions occurring between the fifth month of pregnancy and 14 days before expected birth
- at least two abortions within this pregnancy period the last twelve months

Blood sampling is limited to one sample taken within two weeks after the abortion. The blood sample is tested in duplicates for antibodies against *B. abortus* in an indirect ELISA (Svanova®). If the result is doubtful or positive, the sample is retested in duplicates using the same ELISA. If the result then is negative, the sample is concluded to be negative. If the result is doubtful or positive, new blood sample from the suspected animal is taken and tested as described above.

Doubtful or positive samples in ELISA tests are subjected to a complement fixation test (CF). If the CF test is negative the sample is concluded to be negative for antibodies against *B. abortus*. If the CF test is positive, the result is reported and new blood sample from the suspected animals is required and tested. In addition there will be an immediate follow up with post-mortem and bacteriological investigations.

Results and discussion

A total of 113 blood samples from 51 herds (103 blood samples from 46 dairy herds and 10 blood samples from 5 beef herds) were analysed for antibodies against *B. abortus* in 2015 (Table 1).

In conclusion, there was no detection of antibodies to *B. abortus* in cattle examined in the surveillance program in 2015, and bovine brucellosis has not been detected in Norway since 1953 (1).

Table 1. Number of cattle examined for brucellosis in Norway 2000-2015.

Year	Dairy cattle		Beef cattle		Total		
	Foetuses (herds)	Cows (herds)	Foetuses (herds)	Cows (herds)	Foetuses (herds)	Cows (herds)	Herds
2000	-	-	-	-	17 (14)	-	14
2001	21 (18)	-	0 (0)	-	21 (18)	-	18
2002	18 (17)	-	10 (6)	-	28 (23)	-	23
2003	30 (25)	-	4 (3)	-	34 (28)	-	28
2004	25 (21)	28 (19)	2 (2)	2 (2)	27 (23)	30 (21)	26
2005	16 (14)	48 (26)	8 (7)	8 (4)	24 (21)	56 (30)	31
2006	11 (11)	19 (13)	0 (0)	1 (1)	11 (11)	20 (14)	15
2007	11 (10)	14 (11)	1 (1)	1 (1)	12 (11)	15 (12)	12
2008	20 (17)	42 (19)	2 (1)	5 (2)	22 (18)	47 (21)	22
2009	14 (11)	19 (11)	5 (3)	7 (3)	19 (15)	26 (10)	15
2010	9 (8)	30 (15)	3 (3)	14 (4)	12 (11)	44 (19)	22
2011	7 (7)	42 (17)	2 (1)	10 (3)	9 (8)	52 (20)	22
2012	11 (10)	47 (20)	1 (1)	1 (1)	12 (11)	48 (21)	22
2013	37 (31)	130 (64)	7 (4)	22 (7)	44 (35)	152 (71)	72
2014	20 (18)	90 (37)	6 (5)	8 (7)	26 (23)	98 (44)	45
2015	-	103 (46)	-	10 (5)	-	113 (51)	51

References

1. Sandvik O. Animal Health Standards in Norway. A historical perspective and assessment of the existing situation. Næss B (editor). Oslo: The Royal Ministry of Agriculture; 1994.

The Norwegian Veterinary Institute (NVI) is a nationwide biomedical research institute and Norway's leading centre of expertise regarding biosafety in aquatic and terrestrial animals. The aim of the Institute is to become Norway's contingency centre of preparedness for One Health.

The primary mission of the NVI is to give research-based independent advisory support to ministries and governing authorities. Preparedness, diagnostics, surveillance, reference functions, risk assessments, and advisory and educational functions are the most important areas of operation. The Institute has its main laboratory in Oslo, with regional laboratories in Sandnes, Bergen, Trondheim, Harstad and Tromsø, with about 330 employees in total.

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The Norwegian Food Safety Authority (NFSA) is a governmental body whose aim is to ensure through regulations and controls that food and drinking water are as safe and healthy as possible for consumers and to promote plant, fish and animal health and ethical farming of fish and animals.

We encourage environmentally friendly production and we also regulate and control cosmetics, veterinary medicines and animal health personnel. The NFSA drafts and provides information on legislation, performs risk-based inspections, monitors food safety, plant, fish and animal health, draws up contingency plans and provides updates on developments in our field of competence. The NFSA comprises two administrative levels, five regions in addition to the head office, and has some 1250 employees. The NFSA advises and reports to the Ministry of Agriculture and Food, the Ministry of Trade, Industry and Fisheries and the Ministry of Health and Care Services.

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