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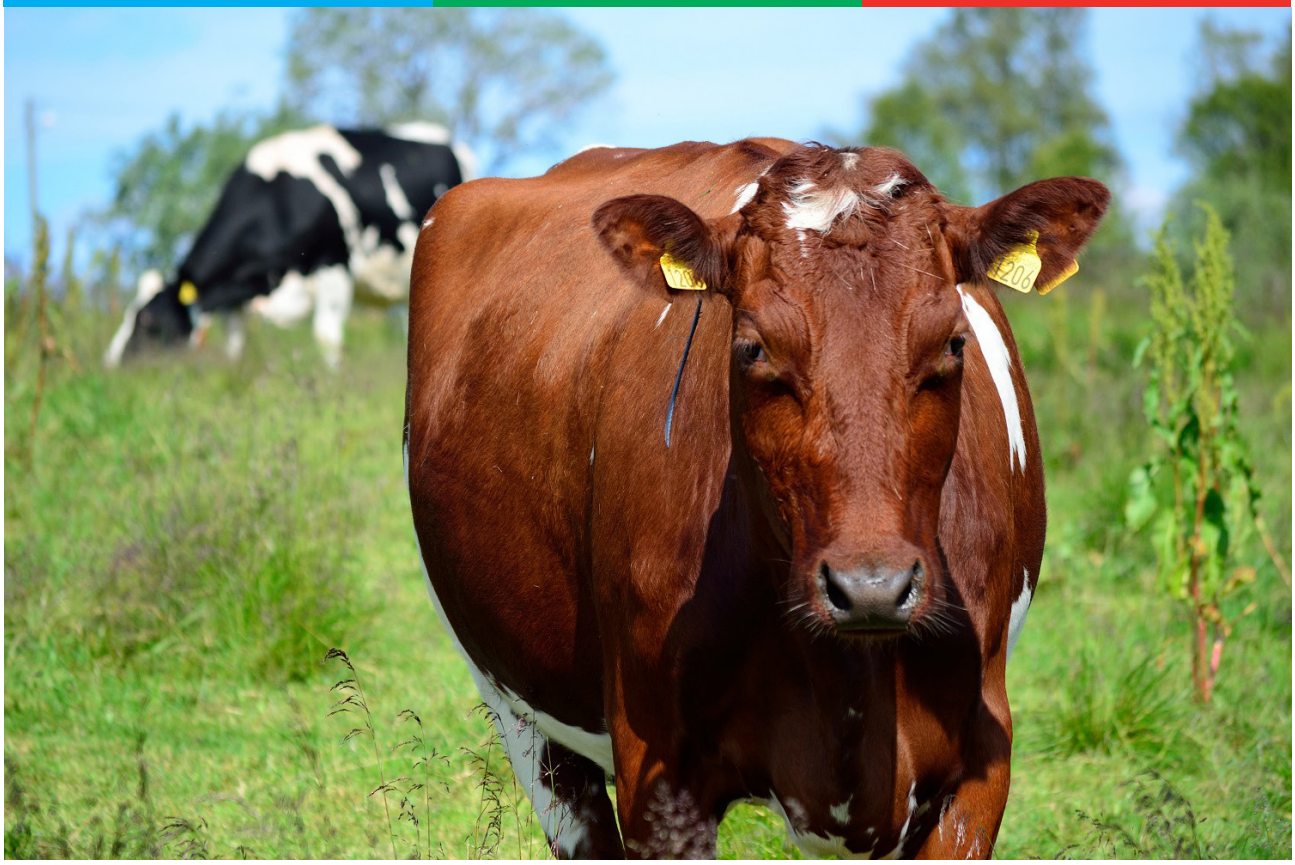

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The surveillance programme for *Brucella abortus* in cattle in Norway in 2023

Authors

Marie Myklatun Krosness, Attila Tarpai, Jørgen Dalaker, Siv Klevar

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Content

Summary

Blood samples from 110 cattle with abortion in the second half of the pregnancy from 37 different herds and bulk milk samples from 202 dairy herds with at least one registered abortion, were analysed for antibodies against *Brucella* spp in 2023. All the samples were negative for *Brucella* spp.

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 032/21/COL. Brucellosis caused by *B. abortus, B. melitensis* and *B. suis* is classified as a list 1 disease in Norway and is listed by the World Organisation for Animal Health (WOAH). Brucellosis is a category B, D and E disease in the EU. Bovine brucellosis is mainly caused by *B. abortus*.

A surveillance programme for bovine brucellosis 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 consisted of passive clinical surveillance. From 2004 to 2014 both aborted foetuses and blood samples from the dams were examined for *Brucella* spp. infection. After 2014 only blood samples from the dams were analysed for antibodies against *Brucella* spp. In 2023 the programme also included bulk milk samples from selected dairy herds, with at least one registered abortion.

The Norwegian Food Safety Authority (NFSA) is responsible for implementing the surveillance programme for bovine brucellosis. The Norwegian Veterinary Institute is in charge of planning the programme, performing the analyses and reporting the results. Inspectors of the NFSA collect the blood samples.

Aim

The aim of the programme is to document freedom from bovine brucellosis according to demands in Regulation (EU) 2020/689, and to contribute to the maintenance of the present favourable situation.

Materials and methods

Herd criteria for submission of blood samples 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 at least two weeks after the abortion. The blood sample is tested in duplicates for antibodies against *B. abortus, B. melitensis and B. suis* with an indirect ELISA, the ID Screen® Brucellosis Serum Indirect Multi-species (ID.vet, Grabels, France). If the result is doubtful or positive, the sample is re-tested in duplicates using the same ELISA. If the result then is negative, the sample is concluded to be negative. If the result is inconclusive, a new blood sample from the suspected animal will be requested 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 *Brucella* spp. If the CF test is positive, the result is reported as a suspicion to the NFSA and new blood samples from the suspected herd are requested and tested. In addition, there will be an immediate follow up with post-mortem and bacteriological investigations.

A total of 202 bulk milk samples were randomly selected from 206 herds with at least one registered abortion in 2022. Bulk milk samples are tested for antibodies against *B. abortus* and *B. melitensis* using ID Screen® Brucellosis Milk Indirect (ID.vet, Grabels, France). Samples with inconclusive and positive reactions are retested in duplicates using the same ELISA. In case of positive or doubtful serological results, new bulk milk samples from the suspected herd are collected and tested.

Results and discussion

In 2023, a total of 110 blood samples from 37 herds (107 blood samples from 35 dairy herds and three blood samples from two beef herds) (Table 1) and bulk milk samples from 202 dairy herds were analysed for antibodies against *Brucella* spp. All of the samples were negative for antibodies against *Brucella* spp.

In conclusion, there was no detection of antibodies against *Brucella* spp. in cattle examined in the surveillance programme in 2023. Bovine brucellosis has not been detected in Norway since 1953 (1).

***Table 1**: Number of blood samples from individual cows examined for brucellosis in Norway 2000-2023.*

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
2016	-	116 (55)	-	31 (7)	-	147 (62)	62
2017		99 (39)		28 (9)		127 (48)	48
2018		110 (48)		29 (8)		139 (56)	56
2019		98 (29)		6 (2)		104 (31)	31
2020		107 (36)		21 (7)		128 (43)	43
2021		102 (33)		4 (1)		106 (34)	34
2022		63 (19)		15 (4)		78 (23)	23
2023		107 (35)		3 (2)		110 (37)	37

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References

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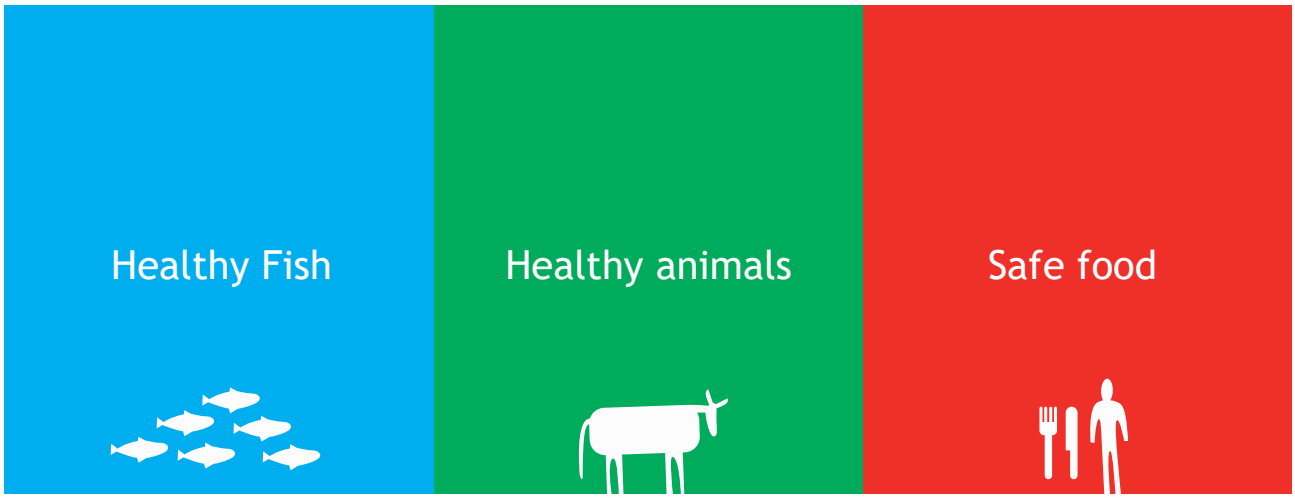

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Veterinærinstituttet
Norwegian Veterinary Institute

Ås Trondheim Sandnes Bergen Harstad Tromsø

postmottak@vetinst.no
www.vetinst.no