INFECTIOUS DISEASES

Bovine brucellosis: Advantages of using vaccine *Brucella abortus* RB51

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INTRODUCTION

- Bovine brucellosis is a worldwide disease and still causes severe problems. In cattle, two vaccines are available: Strain (S)19 and strain RB51.
- Both induce similar protection; however, RB51 does not induce antibodies which interfere with diagnostic results and can be applied more than once without causing inconvenience.

OBJECTIVE

To demonstrate the contribution of strain RB51 in the control of brucellosis in two infected dairy cattle farms.

MATERIALS AND METHODS

Two dairy cattle farms were selected for this study:

- Farm A (n=2224 animals) with an initial brucellosis prevalence of 1.75%, and farm B (n=510 animals) with an initial brucellosis prevalence of 3.1%.
- Strain 19 was administered to all female calves between 3 and 8 months of age in both farms. In both herds, after 6 months of completing the test and slaughter program:
  — Seropositive animals were found and removed
  — Continuous abortions were keeping the infection active
  — *B. abortus biovar* 1 was isolated from placental tissues and milk
- *Brucella abortus* RB51 Strain vaccine (Bovilis RB51, MSD Animal Health) was then used as adult vaccination in both herds.
- For serology, three diagnostic tests were applied: Buffer Plate Antigen Test, Complement Fixation (CF) and Fluorescent Polarization (FP).

Bovilis RB51 vaccine is an excellent tool to control bovine brucellosis since it didn't interfere with *B. abortus* diagnostic results or induce abortion in pregnant animals previously vaccinated with *B. abortus* vaccines.

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RESULTS

- After the vaccination with Bovilis RB51 in Farm A (table 1) and B (table 2), serology remained negative, and no abortions were observed in pregnant animals.
- Due to the success of the Bovilis RB51 vaccination, Farm B applied a second dose after a year to the whole herd to prevent future complications with the disease.
- After six months using Bovilis RB51, both herds were considered brucellosis free.

TABLE 1. Serology results for Farm A before and after RB51 vaccination in previously S19 vaccinated animals

Animals tested	Negatives	Positives CF/FPA	N° new cases	Blood test interval (days)
2224	2185	39 (*)	39 (**)	60
2206	2151	55	55 (***)	29
2014	1994	20	20 (***)	38
1878	1850	28	28	45
1840 (RB51)	1813	27	27	35
1760	1743	17	17	66
2179	2168	11	11	45
2077	2071	6	6	45
2110	2110	0	0	40

* Initial prevalence (1,75%)
** 3 abortions were detected from positive animals
*** 2 abortions were detected (*B. abortus* biovar 1)

TABLE 2. Serology results in Farm B before and after RB51 vaccination in previously S19 vaccinated animals

Animals tested	Negatives	Positives CF/FPA	N° new cases	Blood test interval (days)
510	494	16 (*)	16 (**)	
488	480	8	7	59
501	502	9	7	61
495 RB51	489	6	6	45
494	489	5	5	45
502	497	5	4	40
499	496	3	2	43
506	506	0	0	40
517 RB51	517	0	0	52

* Initial prevalence (3,1%)
** 2 abortions were observed in positive animals

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