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SYSTEMATIC REVIEW ON THE EFFECTIVENESS OF *Brucella abortus* S19 AND RB51 VACCINE STRAINS: EFFECTIVENESS OF *Brucella abortus* VACCINES

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Brucella abortus S19 and RB51 are the most used vaccines to control bovine brucellosis worldwide; therefore, this study aimed to perform a systematic review on the effectiveness of these two vaccine strains. The literature review was conducted on April 3rd, 2020 on five databases (CABI, Cochrane, PubMed, Scielo, Scopus and Web of Science) and included papers published between 1976 and 2016. The search strategy recovered a total of 5,846 papers on databases and 6 papers were included due to specialists' suggestions. After selection based on title, abstract, full text and considering the eligibility criteria, 17 papers were included, in which 33 trials were identified. Most trials 63.63% (21/33) used prevalence panel design, while the others were cohort studies. S19 strain was used in most of the trials [75.76% (25/33)], mainly by subcutaneous route [84.00% (21/25)] and in adult cattle [76.00% (19/25)]. RB51 strain was administrated only by the subcutaneous route and in both young and adult animals. For case definition, complement fixation [60.61% (20/33)] and rivanol [30.30% (10/33)] were the most used serological tests, while bacteriology was adopted in 21.21% (7/33) of the trials. Thirty-two of the 33 trials (96.97%) showed a lower infection or abortion incidence in the vaccinated groups (in cohort trials) or a reduced prevalence of brucellosis after vaccination (in prevalence panels), however, the great heterogeneity observed among the studies precluded a meta-analysis from the data extracted. In addition, most part of the trials [51.51% (17/33)] adopted other control measures in association with vaccination, which harmed the better understand of the isolated effect of vaccination for control brucellosis in field in these studies. In conclusion, the results from this review strongly suggests that both S19 and RB51 vaccine strains are effective to prevent infection and abortion in the field, associated or not to other control policies.

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