

Re-emergence of *Brucella ovis* infection in Aragon (Spain) after the ban of Rev 1 vaccination

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B. ovis infection is one of the most widespread causes of reproductive failure in sheep. No specific *B. ovis* vaccines are available, but the live attenuated *B. melitensis* Rev1 vaccine, used for the prophylaxis of *B. melitensis* infection in sheep and goats, cross-protects also against *B. ovis*. Rev1 vaccination of small ruminants (both males and females) was compulsory in Aragon as a key tool of the *B. melitensis* official eradication program applied. Once the *B. melitensis* officially free status was reached (January 2011), Rev 1 vaccination was withdraw. A *B. ovis* eradication program was never applied compulsorily, but the culling of seropositive rams (a gel diffusion test -GDT- with a *B. ovis* hot saline extract as antigen was used) was conducted voluntarily in the Region. We collected GDT data from rams tested in 2010 (last year of Rev1 vaccination) and then yearly from 2015 to 2019, to follow up the trend of both individual and flock *B. ovis* seroprevalence after Rev 1 withdrawal. In 2010, 2015 and 2016, 100% of the rams were tested but since 2017, the whole ram population from only one third of the flocks was tested each year. The individual seroprevalence was increasing steadily (0.41% in 2010; 1.20% in 2015; 1.41% in 2016; 1.65% in 2017; 1.99% in 2018 and 3.05% in 2019). The increase of flock seroprevalence was even more evident (2.22 % in 2010; 3.75 % in 2015; 4.70% in 2016; 4.77 % in 2017; 8.44% in 2018 and 9.45% in 2019). The bacteriological analyses performed in many of these seropositive flocks confirmed the presence of *B. ovis*. This work proves that once *B. melitensis* infection is eradicated and Rev 1 vaccination banned, a huge reemergence of *B. ovis* infection is produced in sheep. This serious problem has been also reported in other EU countries with similar conditions such France. Accordingly, in *B. ovis* endemic areas in which Rev 1 vaccination is withdrawn, it is advisable to implement specific control programs against this important infection that affects both rams and ewes.