# **Titre d’article**: Seroprevalence and risk factors for Coxiella burnetii, the causative agent of Q fever in the dromedary camel (Camelus dromedarius) population in Algeria

**Abstract :**

Query (Q) fever is a globally distributed zoonotic disease caused by Coxiella burnetii, a bacterial agent for which ruminants are the most prevalent natural reservoir. Data regarding Q fever infection in camels in Algeria are limited. Therefore, a survey to detect seroprevalence of C. burnetii antibodies was conducted among healthy camel populations in a vast area in southeastern Algeria to determine distribution of the Q fever causative organism and to identify risk factors associated with infection. Between January and March 2016, blood samples were collected from 184 camels and serum samples were subsequently analysed using a commercial Enzyme-Linked Immunosorbent Assay (ELISA) kit. At the time of blood collection, a questionnaire investigating 13 potential predisposing factors associated with C. burnetii seropositivity was completed for every dromedary camel and herd. Results were analysed by a chi-square (χ2 ) test and multivariate logistic regression. The seroprevalence of C. burnetii at the animal level was 71.2% (95% CI: 65.2–78.3) and 85.3% (95% CI: 72.8–97.8) at the herd level. At the animal level, differences in seroprevalence were observed because of herd size, animal age, animal sex, presence of ticks and contact with other herds. A multivariable logistic regression model identified three main risk factors associated with individual seropositivity: (1) age class > 11 years (OR = 8.81, 95% CI: 2.55–30.41), (2) herd size > 50 head (OR = 4.46, 95% CI: 1.01–19.59) and (3) infestation with ticks (OR 2.2; 95% CI: 1.1– 4.5). This study of seroprevalence of C. burnetii infection in camels in Algeria revealed a high seroprevalence of Q fever in camel populations in southeastern Algeria and provided strong evidence that Q fever represents an economic, public health and veterinary concern. Appropriate measures should be taken to prevent the spread of C. burnetii and to reduce the risk of Q fever in farm animals and humans in this agro-ecologically and strategically important region of North Africa.