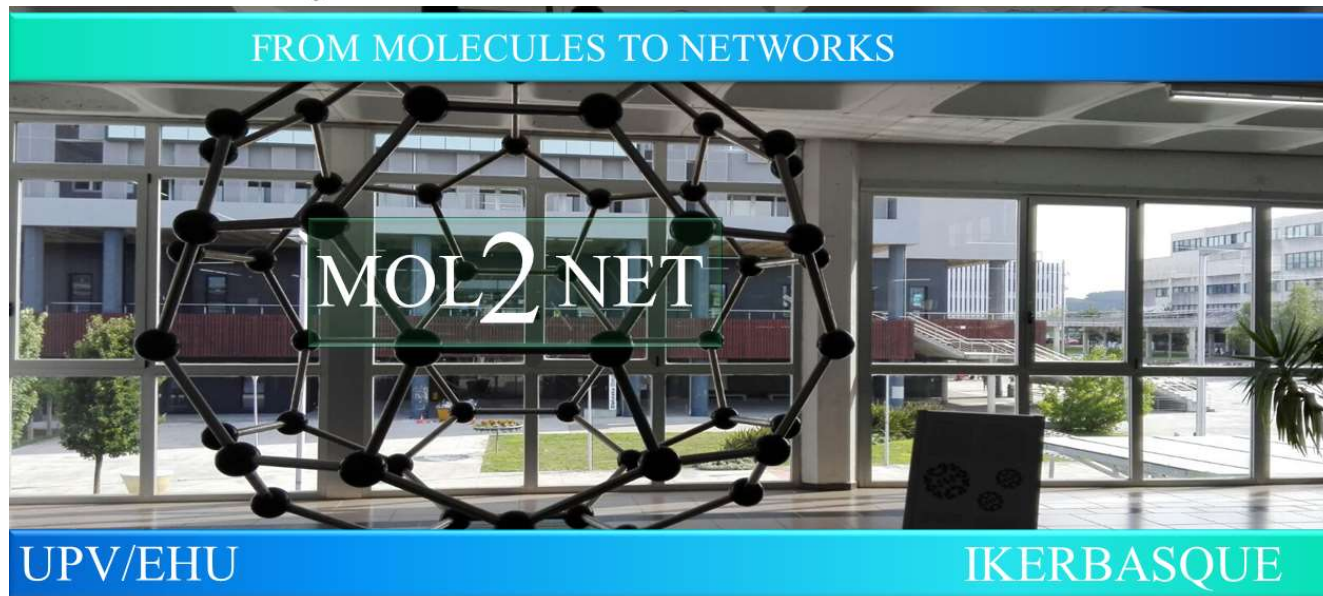




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### Seroprevalence of Q Fever and Neosporosis: Evaluation of the cause of abortions in dairy cows

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**Abstract.** In ruminants, abortion is considered one of the major causes of economic losses in livestock worldwide (Reichel et al., 2013). Approximately 30% of abortions are caused by pathogenic bacteria (Kirkbride, 1992) such as *Coxiella burnetii* (Q fever), *Brucella abortus* (Brucellosis), Bovine Herpes Virus type 1 (BoHV-1), *Neospora caninum* (Neosporosis) (Kirkbride, 1992), *Leptospira* spp. (Leptospirosis) (Murray, 1990), *Toxoplasma gondii* (Toxoplasmosis) (Bártová et al., 2009) and *Trypanosoma vivax* (Trypanosomiasis) (Silva et al., 1998), among others; and the cost of this reproductive disorder ranges between \$ 90 and \$ 1900, depending on the stage of gestation in which it occurs (Peter, 2000). Q fever and bovine neosporosis are diseases that have received attention and, currently, they are part of the list of the World Organization for Animal Health because they can have a high impact on the health of livestock and public health and that they can negatively affect conservation of wildlife. (OIE, 2018).

In this study, the prevalence of *C. burnetii* and *N. caninum* in dairy cows was determined, from two farms in Pichincha, which have suffered abortions (40 cows) and a control group (42 cows) by means of a commercial ELISA (IDvet, France). Blood samples (4 mL) were collected by caudal venipuncture

in sterile vacutainers. In Pintag Parish, samples were obtained from 38 cows and in Nanegalito from 44 cows. Serology tests were performed for all 82 samples using the commercial ELISA specifications. Of the 40 samples of bovines that have aborted, a prevalence of *C. burnetii* of 13% was obtained in the two farms and of *N. caninum* of 60%. On the other hand, the control group had a prevalence of *C. burnetii* of 3% and of *N. caninum* of 11%. In addition, the cases of coinfection of all the individuals in the study with both etiological agents studied were evaluated, obtaining a prevalence of 4.87%.

There is a strong association between dairy cow abortions and their seropositivity for Q fever and neosporosis. Therefore, it is suspected that these causative agents may cause a significant part of abortions in cattle in the country.

En rumiantes, el aborto se considera una de las mayores causas de pérdidas económicas en la ganadería a nivel mundial (Reichel et al., 2013). Aproximadamente, el 30% de los abortos son causados por bacterias patógenas (Kirkbride, 1992) como *Coxiella burnetii* (Fiebre Q), *Brucella abortus* (Brucelosis), Herpes Virus Bovino tipo 1 (BoHV-1), *Neospora caninum* (Neosporosis) (Kirkbride, 1992), *Leptospira* spp. (Leptospirosis) (Murray, 1990), *Toxoplasma gondii* (Toxoplasmosis) (Bártová et al., 2009) y *Trypanosoma vivax* (Tripanosomiasis) (Silva et al., 1998), entre otros; y el costo que este desorden reproductivo oscila entre \$ 90 y \$ 1900, en dependencia de la fase de gestación en la que se produce (Peter, 2000). La fiebre Q y la neosporosis bovina son enfermedades que han tomado atención y, actualmente, forman parte del listado de La Organización Mundial de Sanidad Animal debido a que pueden tener un alto impacto en la sanidad del ganado y la salud pública y que pueden afectar negativamente la conservación de la fauna silvestre. (OIE, 2018).

En este estudio, se determinó la prevalencia de *C. burnetii* y *N. caninum* en vacas lecheras, de dos haciendas de Pichincha, que han sufrido abortos (40 vacas) y un grupo control (42 vacas) mediante un ELISA comercial (IDvet, Francia). Se recogieron muestras de sangre (4 mL) por punción venosa caudal en *vacutainers* estériles. En la Parroquia Pintag, se obtuvieron muestras de 38 vacas y en Nanegalito de 44 vacas. Se realizaron pruebas de serología para las 82 muestras mediante las especificaciones del ELISA comercial. De las 40 muestras de bovinos que han abortado se obtuvo una prevalencia de *C. burnetii* de 13% en las dos fincas y de *N. caninum* del 60%. Por otro lado, del grupo control se obtuvo una prevalencia de *C. burnetii* de 3% y de *N. caninum* del 11%. Además, se evaluaron los casos de coinfección del total de los individuos del estudio con ambos agentes etiológicos estudiados obteniéndose una prevalencia del 4, 87%. Existe una fuerte asociación entre los abortos de vacas lecheras y su seropositividad para fiebre Q y neosporosis. Por lo tanto, se sospecha que estos agentes causales pueden causar una parte importante de los abortos en bovinos del país.

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