

Polymerase chain reaction (PCR) detection of *Neospora caninum* DNA in oocytes and embryos of seropositive cows

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Neospora caninum, an apicomplexan parasite with a worldwide distribution that infects ruminants and carnivores, is a causative agent of infertility and abortion in cattle. The infection leads to important economical losses in cattle industry due to reproductive failure associated with abortion and mortality in congenitally infected calves. Limited data is available on transmission of infection with this parasite by embryo transfer (ET). The International Embryo Transfer Society (IETS) suggests the ET procedure as an effective way to prevent vertical transmission of *N. caninum*. The passing of *N. caninum* by ET was investigated on the basis of serological status of ET donors and recipients. The results suggested the risk of *N. caninum* transmission by ET is not related to the serological status of the embryo donors, but linked to the seropositivity of the recipients.

The aim of the study was to examine oocytes and embryos collected from seropositive cows-donors to determine the occurrence of parasite DNA.

A modified PCR protocol using Np21 and Np6 primers was applied to detect parasite DNA in the samples. To avoid carry-over contamination in the PCR reaction, a uracil *N*-glycosylase (UNG) protocol has been implemented. Amplification products were analyzed by electrophoresis in a 1% agarose gel stained with ethidium bromide and visualised under UV light using the Kodak Electrophoresis Documentation and Analysis System (EDAS) 290.

The expected 328 bp product was not obtained in oocytes and/or embryos collected from seropositive dams.

Our results confirmed that transfer of embryos from seropositive donors into seronegative recipients is an appropriate method to eliminate vertical transmission of neosporosis in a herd.