Vaccine breakthrough could eliminate spontaneous bovine abortion

March 19 2013, by Lisa Aloisio

Cow and calf. Credit: SocialRobot, flickr

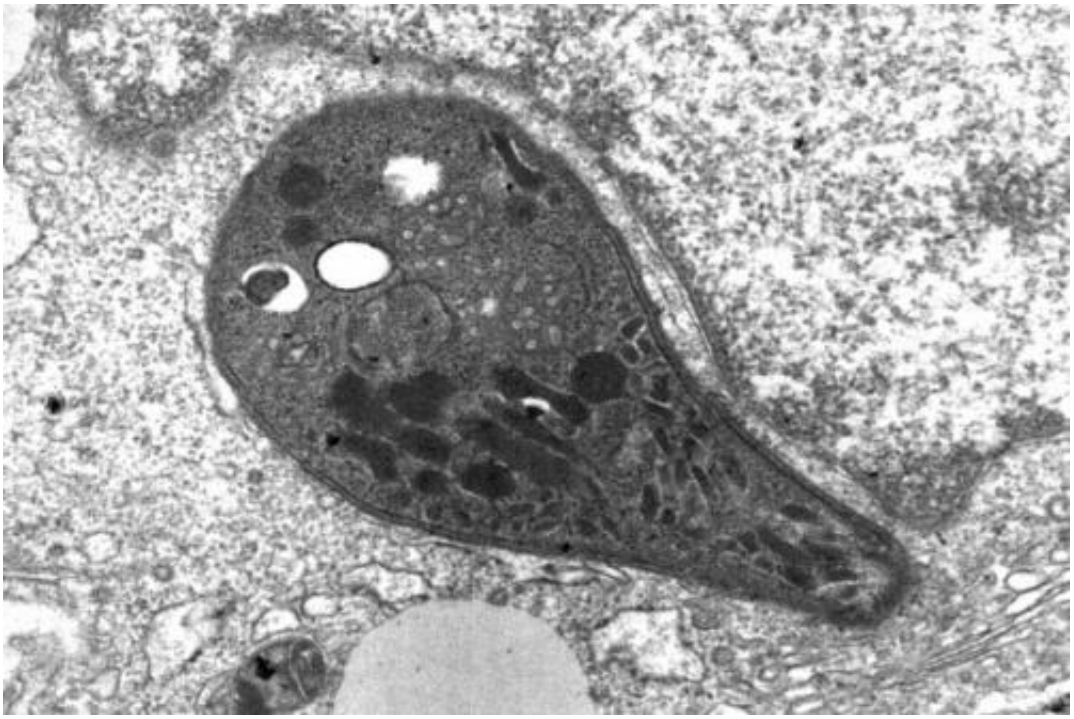
Cattle could soon be vaccinated against an abortion-causing parasite, potentially saving the dairy and beef industries billions worldwide thanks to breakthrough Australian research.

Professor John Ellis from the UTS ithree institute and Professor Michael Reichel from the University of Adelaide have published findings from a

trial in the United States that successfully protects cattle from Neospora caninum, an intracellular protozoan parasite that infects cattle and has been shown to be associated with bovine abortions.

The costs associated with the parasite easily exceed US$1 billion annually, the majority of which are incurred in North America.

According to a survey of the New South Wales dairy industry, one in five cows are infected with Neospora caninum and up to five per cent of pregnant cows abort due to the parasite. Abortion storms can also occur, affecting much larger numbers of cattle in a herd.



Neospora canninum. Credit: Prof John Ellis and his research team 2002

Professor Ellis said their global assessment clearly demonstrates the

economic importance and impact of Neospora caninum in the cattle industries around the world.

"There is no other effective vaccine in the world that targets neosporosis in cattle," he said.

"The results from our pilot study clearly demonstrate very high effectiveness, making this vaccine a beneficial product for the future of the cattle industry worldwide," he said.

"At $10 per dose it is affordable for farmers, with the recommendation to vaccinate all adult female and heifers within the herd to prevent abortion."

Professor Ellis and Professor Reichel have collaborated on aspects of neosporosis for over fifteen years, investigating the diagnosis and economic impact of Neospora caninum abortions, as well as a range of control options including successful vaccine development.

"One of the problems highlighted in the study was overcoming the challenges of storing and distributing the vaccine as a live product," Professor Ellis said.

"However, with these research findings we hope to encourage further development of effective control measures, such as this vaccine, to help treat such a damaging and costly infection."

For more information, read the research paper on the economic impact of Neospora caninum and the published research findings of the vaccine study.

Provided by University of Technology, Sydney