



## THE RISK OF IMPORTATION OF EQUINE PIROPLASMOSIS INTO THE UNITED KINGDOM

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Equine piroplasmosis (EP) is likely to be unfamiliar to the majority of UK equine practitioners as the UK is currently considered free of the disease. However there is a considerable risk of the importation and establishment of EP due to a number of factors. The purpose of this focus article is to raise awareness and improve monitoring of the situation, by providing a brief overview of the disease, its distribution and transmission.

EP is a tick borne protozoal infection; its distribution has historically been determined by the presence of suitable tick vectors and habitats, and stable equine populations. While it is widely seen in the tropics and subtropics, many European countries are also considered endemic for EP. For a full list of country information the World Animal Health International Database (WAHID) of the OIE at the following website, provides maps and updated surveillance reports: [Click here](#).

The parasites *Theileria equi* and *Babesia caballi* are the causative agents of EP. After transmission by the feeding activity of infected ticks, they proceed to multiply in equine erythrocytes, resulting in haemolysis and inflammatory changes (*T.equi* undergoes schizogony within lymphocytes prior to entering the erythrocytes). In equines with no prior exposure an acute or per-acute syndrome may occur with signs including severe anaemia, petechiated and jaundiced mucous membranes, haemoglobinuria, pyrexia, and even death. In less severely affected cases various degrees of chronic signs occur which may mimic other causes of weight loss and general inflammatory conditions.

Equines that are stressed either by exertion (performance athletes), or by immune compromise (foals, geriatric and "working equines") are particularly at risk of severe disease.

In countries where the disease is endemic, constant exposure to sufficient infectious ticks allows a state of "endemic stability" to exist and hence equines from these countries may show none or only very mild clinical signs. As the infection can persist for years or lifelong these carriers may remain infectious to other ticks in the future.

It is important to note that while ticks are the usual route for transmission, in-utero and iatrogenic infection can occur, and have been recorded in the UK. A recent large outbreak of EP in Florida, in which 20 horse were destroyed, was traced to needle re-use. Procedures such as dentistry, stomach tubing, artificial insemination with contaminated semen and blood transfusion may also allow spread between horses.

In acute cases diagnosis may be made by direct examination of blood smears but this is not always accurate and for screening purposes or detection of carrier equines serology is required. The current tests used for international trade are a competitive ELISA or Indirect Immuno-Fluorescent Antibody Test (IFAT). These tests are available at the VLA, Weybridge.



Clinical cure may be easy to achieve, but it's very difficult to prevent longterm carrier status. Although *B. caballi* infection may be sterilised, it is questionable whether full sterilisation of *T. equi* infections may be achieved with available babesicides and infected horses may remain carriers for life. Suitable drugs are not readily available in the UK and the risk of adverse side effects is relatively high.

There is increasing international travel and importation of equines into the UK, some of these movements are not as well regulated as would be desirable, especially at the lower end of the market and there is no EU regulation or OIE guidelines regarding pre-import acaricide treatment of horses. Currently the UK has a Tripartite agreement with France and the Republic of Ireland such that a health certificate or pre-export veterinary check is not required for "any registered equidae and equidae for breeding and production" imported from these countries (Click here).

The implication of this is that carrier equines and/or infective ticks may be introduced into the UK without hindrance. It is pertinent to note that the results of tick surveillance in Great Britain (Vet Record, August 2009) record importation of *Hyalomma marginatum marginatum*, an exotic tick and known vector of EP, on a horse originating from Portugal and increasing populations of *Dermacentor reticulatus* throughout south east England, potentially capable of vectoring EP. The results of increasing global temperatures may favour the establishment of such populations, and already autochthonous infection has been recorded in Normandy, France.

Interestingly the situation regarding companion animal movement as regulated by the PETS transport regulations does specify compulsory treatment against ticks prior to leaving Europe, and disease incidence is monitored on a voluntary basis by the DACTARI scheme (Dog and Cat Travel And Risk Information). A similar practice would be beneficial if it were to also apply for horses.

At present the equine industry is thus vulnerable to the introduction of EP and as no legal requirements exist to limit its incursion from parts of Europe, it is up to individual practitioners to advise clients considering importing equines. Recommendations may include blood testing and tick removal prior to import, and a period of quarantine on arrival. For an exhaustive list of precautions the reader is recommended to examine the document provide by the USA in preparation for the World Equestrian Games in 2010 (Click here).

Practitioners are also urged to i) notify positive EP results to the DEFRA/AHT/BEVA equine disease surveillance scheme, and ii) send ticks found on imported horses to the HPA tick surveillance scheme (contact: Lisa Jameson, Emerging Infection Scientist, Health Protection Agency, Porton Down, Salisbury, Wiltshire, SP4 0JG, Lisa.Jameson@hpa.org.uk).

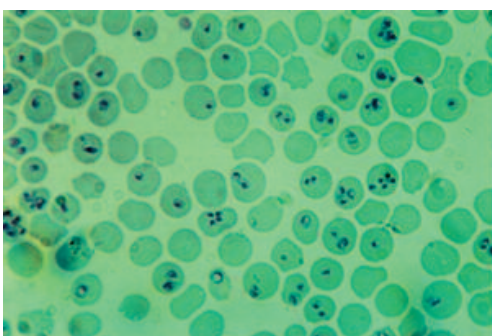


Fig. 1

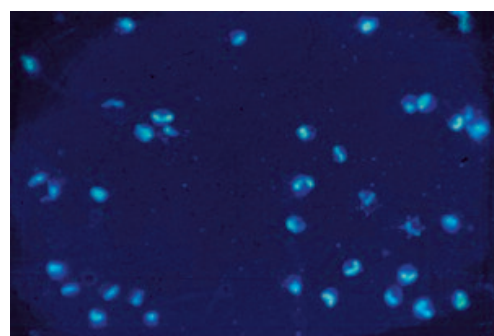


Fig. 2

Fig. 1: *Theileria equi* in Giemsa stained thin blood film

Fig. 2: Fluorescing *Babesia caballi* in IFAT