Investigating the presence of *Babasia canis* in Dorset

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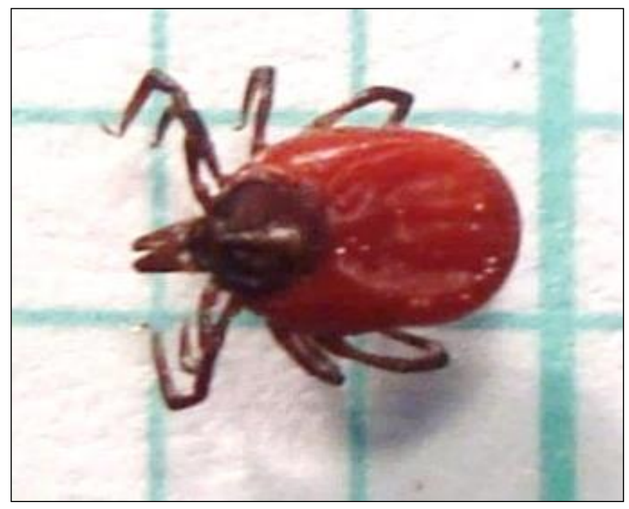
Aims:

- To identify the frequency of ticks carrying *Babasia canis* in Dorset.



What do we know about babasiosis?

Babesiosis is a tick-borne disease. The *Babesia spp* spread when the host is infected with the sporozoites that are carried in the ticks' saliva.

The infectious piroplasms replicate in the red blood cells. This causes haemolytic anaemia which is where red blood cells are destroyed and haemoglobin is released into the body.

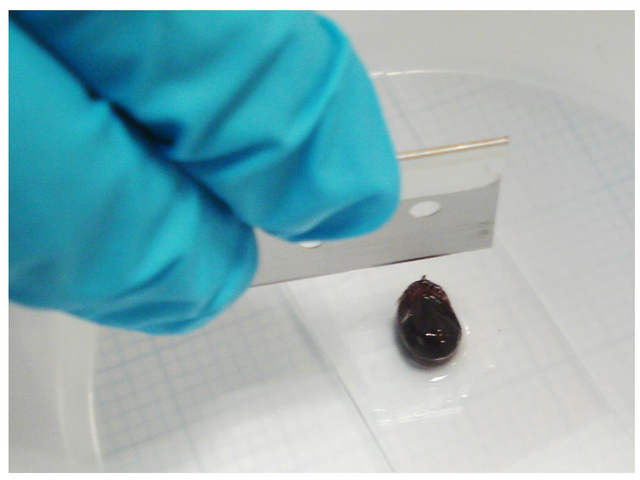
The tick, *Dermacentor reticulatus* is the main vector and is present in the UK so therefore has the potential to carry *B.canis.*

Method

1.

28 ticks collected were photographed, their gender and location was recorded.

2.

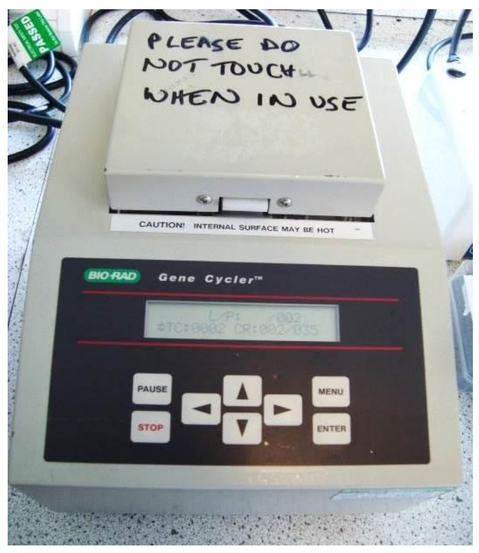


The tick's head was removed and its DNA extracted.

3.

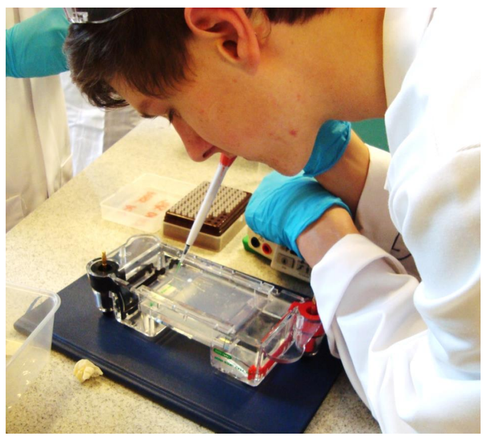
Babasia primers, GOTAQ, distilled water and the DNA were all added into an Eppendorf tube.

4.



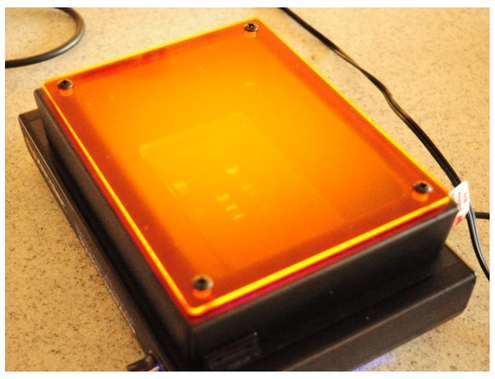
35 cycles of PCR were carried out to increase the amount of DNA present.

5.



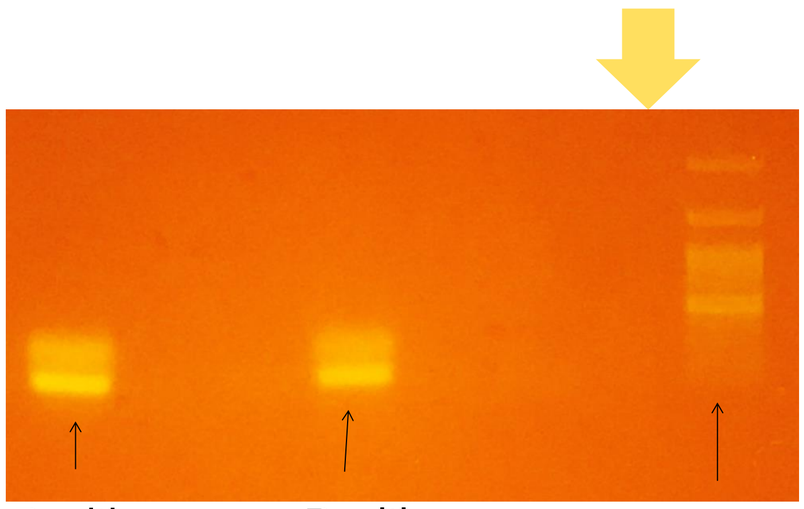
The DNA samples and ladder were pipetted into an electrophoresis gel. This was run at 150V to separate DNA fragments.

6.



DNA bands viewed under blue light and compared to positive control.

7.



Positive control | Positive result | DNA ladder

Results

Out of the 28 ticks that have been tested so far, the DNA of one has tested positive for *B.canis*.

	Positive	Negative	Unsure
No. Ticks	1	23	4*

** Some results gave positive and negative results on different days. These have been labelled as unsure.*

Conclusion

The distribution of *B. canis* across Dorset is low with few positive ticks identified.

If there were more time it would be interesting to increase the sample size and investigate the positive result further. Consistency of results was also an issue and further time could be spent investigating the reasons for this.

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