

Animal Health

Ectoparasites: Ticks

SEBWAT parameter

(Standardised Equine-Based Welfare Assessment Tool)

Ectoparasites

Welfare issue

- The equid is carrying ticks on its body.
- Ticks are parasites which attach to their host, pierce the skin with their mouth parts and feed off the animal's blood. The tick will remain attached to the host until it has completed feeding. Whilst feeding the tick will swell to many times its original size, making it relatively easy to see compared to some other ectoparasites. Once the tick has completed feeding it will drop off.



Skin lesions due to tick bites.



Ticks under the tail

Welfare significance

Skin damage

- Tick bite sites can become infected or form lesions, which are then vulnerable to local or systemic infection.
- Bite sites can attract blowflies and screw-worm flies which lay their eggs in the wound. Maggots hatch from the eggs and invade the animal's living tissue, causing irritation and pain as they move around and burrow into the tissue. The larvae of the screw-worm fly can cause very serious lesions and untreated cases may die¹.

Irritation and discomfort

- When ticks are located under the tail or in the girth area they can easily be rubbed by harnessing, causing lesions and increasing the risk of infection.
- Ticks in the ears can lead to head-shyness (avoiding handling or contact around the head and ears), and a reluctance to have harnessing applied to the head.
- Heavy infestations of ticks can cause irritation and pruritis (itching). This can be observed in a restless demeanour, hoof stamping, tail swishing and biting or scratching at affected body parts. This can cause poor feeding and even prevent the animal from being able to rest sufficiently after work, leading to exhaustion and loss of condition.

¹ Hayes (1992)

² Brooke (2013)

Disease transmission

- Equine piroplasmosis (also known as EP, babesiosis or biliary fever) is a disease caused by a tick-borne parasite (*Babesia caballi* or *Babesia equi*), which invades red blood cells causing them to break down (haemolysis), which leads to anaemia². The disease is fatal in more than 10% of cases and seriously affected equids may die 1-2 days from the onset of symptoms (the acute form of the disease). The disease is endemic in many tropical and sub-tropical countries when Brooke operates.
- In some cases the disease can progress more slowly over several weeks (the chronic form of the disease). During this time the animal rapidly loses condition. In these instances recovery can take months. After recovery the parasite remains in the red blood cells and can cause relapses for years afterwards, particularly following stressful events such as travelling or illness/injury. Further information on equine piroplasmosis can be found in the Brooke Veterinary Manual (section 17.7), including clinical signs and treatment options.
- Some tick-borne diseases can be transmitted to humans, e.g. Lyme's disease, ehrlichiosis, babesiosis, or tick-borne encephalitis. A high number of ticks on horses has been found to be associated with an increased presence of ticks on humans³.

Tick paralysis

- Tick paralysis is caused by a toxin injected by several species of tick (including *Ixodes rubicundus* in southern Africa) when they bite. 40 ticks can be sufficient to bring on paralysis in an adult horse.
- The paralysis begins at the hind limbs but can progress throughout the body until paralysis of the heart and respiratory muscles causes death⁴.

Possible causation

- High animal density (outdoors, indoors, or during transportation) promotes the transfer of lice through body-to-body contact⁵.
- Equids kept in pasture shared with cattle are more likely to have ticks⁶.
- Pastures with long grasses and mixed bushes provide harbour for ticks, who hide in the grasses awaiting a passing host to attach on to.
- Poor/infrequent grooming and lack of attention to hygiene means that opportunities to spot and treat lice are missed by the owner.
- Long, shaggy hair coats or long manes provide harbour for ticks allowing populations to accumulate.

Means of resolution

- Over-stocking (very high density of animals) of grazing areas and indoor housing should be avoided. This will also prevent over-grazing and allow animals sufficient space to move around freely and to rest.
- Equids and cattle should graze separately if possible. Separating them with wire fencing can prevent cross contamination of ticks and eliminated infestations after removing cattle from the pasture⁷.
- A spelling (rest) period for grazing areas can reduce numbers of one-host ticks, but the pasture must be rested for longer than 60 days to be effective so is unlikely to be feasible in the Brooke context.
- Hiding places for ticks can be reduced by avoiding long grasses.
- Regular grooming and inspection of the animal's hair coat will provide the opportunity to spot and remove ticks before a widespread infestation can become established. Care should be taken when manually removing ticks as they can transmit zoonoses.
- When removing ticks ensure the mouthparts are removed.
- Daily tick removal is the best option, in comparison to acaricides, which can be expensive and there is a limit to how frequently they can be safely applied.
- The *Babesia* parasite can be transmitted at all life stages of the tick, including stages when the tick may not be visible to the naked eye. This means that mechanical tick removal must also be combined with the correct use of acaricides (pesticides that target arachnids including ticks and lice).

Refer to the Working Equid Veterinary Manual, Community Engagement work plans or strategies and the Handling Guidelines before conducting an intervention.

^{3,5,6,7} Labruna et al (2001) ⁴ Hayes (1992)

References

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