

Insects and Horses

Words and photos from the Newcastle Equine Centre

Internal worms are the most extensively discussed and treated parasitic condition of horses. However, common insects such as flies, mosquitos and caterpillars are an underestimated source of disease in horses. Here we will explain how their effects range from simply irritating to life-threatening.

March flies (also known as Horse flies) bite horses for a bloodmeal. Products in the saliva of these flies called anticoagulants prevent blood from clotting and allow the fly to continually lap up blood from the horse.¹ Some scientists estimate that animals can lose significant amounts of blood in a day (around 300mls a day in some cases!).²

Stable flies (Family *Muscidae*) in addition to being annoying can also transmit the larvae of Habronema worms that cause 'Summer Sores'. These are skin lesions that can develop in moist areas such as the membranes of the eye, on the lining of the sheath, on the tip of the penis or in open wounds. The presence or migration of the worm larvae causes hard nodules of red tissue with yellow spots, which enlarge and spread. The nodules can bleed and weep fluid as well as become infected. This attracts more flies which can continue the cycle of irritation and inflammation.⁴ Both the Habronema larvae (in skin lesions) and adult worms (in the stomach) can be controlled by worming products.³

Biting midges or sand flies (Family *Ceratopogonidae*) can produce an array of symptoms including pain, itching, allergic reactions and cellulitis.² Over time some horses can develop an allergic reaction to Sandfly and Midge bites – this is known as 'Queensland Itch' which can be intensely itchy leading to trauma, sores and hair loss. Horses with Queensland itch can lose condition because they are so busy scratching.³ The mainstay of treatment is preventing the fly bites with insecticides and rugging.

Bot Flies (*Gastrophilus spp*) can be associated with irritation when eggs are laid on the hair of the legs and face. The bot fly larvae can be found attached to the inside (mucosa) of the stomach and may lead to gastric ulceration. In the worst cases ulcers can even perforate the stomach lining and the horse ends up with peritonitis.⁷ Occasionally the larvae can be found in unusual places like the cornea of the eye or in the mouth.

Mosquitoes (Family *Culicidae*) have been known to transmit some serious diseases in humans including malaria, yellow fever and Zika Virus. In horses, mosquitos can transmit viruses including the Flaviviruses; West Nile Virus (Kunjin strain), Japanese encephalitis and Murry Valley encephalitis and an Alphavirus; Ross River Fever.⁵ Some viruses like Ross River Fever and Murry Valley encephalitis can also affect people. Not all horses with exposure to these viruses develop symptoms but many can show severe signs of weight loss, fever, neurological signs, swollen legs or other musculoskeletal signs.⁵

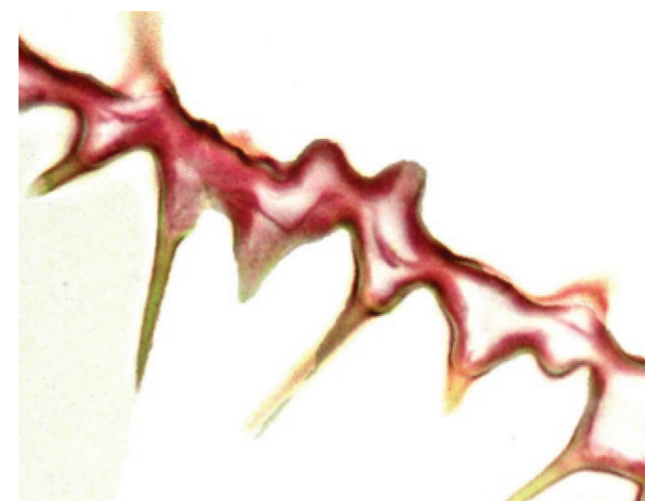


Newly hatched Bot Fly larvae removed from the cornea of a horse with sudden onset eye irritation. Thought to have gotten



Bot fly larvae attached to the lining of a horse's stomach visualized through a gastroscope.

Caterpillars can affect horses in a few ways, especially the very hairy ones. Hairy caterpillars can have a substance within the hairs (also called setae) which can cause an allergic reaction in horses and humans. Horses may be exposed to caterpillars by inadvertently eating a caterpillar or its shed exoskeleton (the outside covering that caterpillar larvae need to shed to grow) while it grazes. This exposure can cause a horse to develop hives (or urticaria) all over its body, chronic mouth ulcers or if pregnant, to abort. The Processionary caterpillar, *Ochrogaster lunifer*, is one type of hairy caterpillar which has been shown to have millions of little barbed hairs called setae on its belly that it uses for self-defence. When the caterpillar is disturbed, those setae are released and can become lodged in tissues like the skin of a human or the gums, oesophagus and intestine of the horse if accidentally eaten. The setae have short barbs all down the shaft that act like a fishhook allowing the setae to bury into tissue and migrate meaning they could end up anywhere. Researchers at the University of Queensland found after feeding pregnant mares with small amounts of caterpillars or its exoskeleton that microscopic parts of these setae ended up in the liver, lymph nodes, throughout the large and small intestine and even in the uterus



Microscopic barbed hair or setae of a Processionary Caterpillar (*Ochrogaster lunifer*).

of mares. Some mares had mild to serious signs of colic and ulcers. But more importantly, the mares that were pregnant often aborted or had pregnancy complications including small, stillborn or sick neonatal foals.⁹ Caterpillar exposure (called EAFL or Equine amnionitis and foetal loss) has been attributed to approximately 30% of all investigated abortions in horses in Queensland and NSW where abortions are tracked. This number could be higher because not all abortions in horses are submitted to be examined by a veterinarian.⁹

Information on the signs and symptoms of these conditions caused by insects and steps you can take to prevent or treat them can be found by checking out reputable primary industry websites and consulting your equine veterinarian.

References

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