Bots

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A Parasite Profile

In temperate areas, summer and autumn are the times of year when horses are likely to become infected with bots. In warmer climates, it is possible for infection to occur in the spring. Bots are larvae of bot flies (Gasterophilus species). There are three major species which can be found all over the world: Gasterophilus nasalis, Gasterophilus intestinalis and Gasterophilus haemorrhoidalis.

Pathology

Migration of all three larval stages or instars of Gasterophilus can cause tissue damage in horses. The first-stage instars in the mouth can cause inflammation and sores as well as ulceration of the tongue, which can make eating painful and difficult and possibly interfere with the bit. The larvae continue development to second-stage instars and eventually migrate to the stomach where the third-stage instars can be found attached to the stomach lining. In this location, the bots can cause clinical signs ranging from loss of appetite, impaired digestion, and ulcers, to gastritis, colic, and occasionally, intestinal blockages and peritonitis.

Treatment

In the past, horses were treated in autumn or early winter after the egg-laying adult flies had been killed by frost. This tradition was established, in part, due to the limitations imposed by earlier methods of treatment, particularly the incomplete efficacy of organophosphate boticides. Current knowledge indicates that a single treatment is generally inadequate for three reasons:

1. Bot eggs are laid on the horses’ legs in summer and early fall. The horses ingest the eggs which develop into first-stage instars that cause inflammation and sores in the oral cavity months before frost kills adult flies.

2. Bots can also be present in horses’ stomachs for four months or more, causing irritation, ulcers and even colic, before frost kills the adult flies.

3. Lastly, bot fly eggs can be present on horses’ hairs long after the adult
flies have died. The eggs continue to hatch, causing ongoing oral inflammation and then they migrate to the stomach, threatening the health of horses.

**When to Treat with EQVALAN®**

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Before EQVALAN® (ivermectin) was introduced, products containing organophosphates were commonly used for treatment. Organophosphates work by inhibition of an enzyme called acetylcholinesterase. This results in an accumulation of the neurotransmitter acetylcholine at the neuromuscular junction; the excess acetylcholine causes neuromuscular dysfunction, which ultimately paralyzes the parasite. Acetylcholinesterase inhibition is also responsible for the clinical signs associated with organophosphate toxicity in mammals. In general, organophosphate compounds do not have wide safety margins. Equine dewormers containing organophosphates are no longer available.

**Bot Control with EQVALAN**

The advent of ivermectin provided a simpler, more effective way to treat bots and with a wide margin of safety. No special measures need to be taken with regard to feeding practices. EQVALAN can be used in mares at any stage of pregnancy as well as in breeding stallions, young horses and foals.

Ivermectin is the active ingredient in EQVALAN and there are no restrictions on concurrent use with other compounds commonly used in, or on, horses. Its broad spectrum of activity provides control of all three larval stages of bots, as well as large and small strongyles, ascarids, pinworms, hairworms, large-mouth stomach worms, threadworms, lungworms, and "summer sores" caused by the cutaneous larvae of *Habronema* and *Draschia*.

Regular parasite control with EQVALAN, beginning in spring or summer, can effectively control bots all season long, while also controlling most other common internal parasites. Because EQVALAN provides the most complete parasite control available, it reduces the need for additional treatments and products. The complete and effective control of parasites, with the wide margin of safety provided by EQVALAN, can make parasite control simpler and easier not only for the horse owner and veterinarian, but for the horse as well.

**References**
