



Horse bots:

Gasterophilus intestinalis, **horse bot fly**; *G. nasalis*, **throat bot fly**; and *G. haemorrhoidalis*, **nose bot fly**.

Description: Adults superficially resemble honey bees and are similar to slightly larger in size. Females hover and dart near favored oviposition sites on the host, their abdomens somewhat elongate and curled under. Larvae are grublike maggots with rows of heavy spines at the front border of each segment. Larvae are seldom seen except on autopsy or in horse manure when they mature or after application of a boticide to the host. Common horse bots occur throughout the U. S., nasal bots occur mostly north of Kansas, and throat bots are more prevalent in the Rocky Mountains and western Texas.

Domestic animals affected: horses, mules, donkeys (newly hatched larvae occasionally invade human skin but die in a few days).

Damage caused: Mouth soreness and secondary infection during initial infestation. Larger larvae consume tissue of the horse's stomach or gut lining as well as taking nutrients from the contents. They cause irritation and secondary infection can result. Large numbers, especially of the throat bot and nose bot, can obstruct passage of food from the stomach into the intestine. Bot infestation causes unthriftiness, even death.

Development: complete metamorphosis: egg, three larval (bot) instars, pupa, adult.

Generational time: one year.

Oviposition site: *G. intestinalis*, our most common species, strongly prefers hair on the inside surfaces of the front legs, especially below the knees; the nose bot fly oviposits on hair of the muzzle and lips, throat bot fly on hair of the jaw and throat.

Larval habitat, feeding: Larvae are ready to hatch from 2 to 7 days after oviposition but remain viable for several weeks, usually hatching only on stimulation by warmth and moisture of the host's tongue (throat bot larvae hatch spontaneously and crawl into the host's mouth). In the mouth, they invade tissues of the tongue, gums, and mouth lining and spend from 3 to 6 weeks. They then emerge, pass into the alimentary canal, attach to mucosal lining, and continue feeding and developing for 7 to 10 months. Common horse bots are found in the left sac of the stomach near the esophagus; throat bots and nasal bots attach in lower portions of the stomach and in the duodenum.

Adult habitat, feeding: Bot flies do not eat; they mate, females seek hosts and oviposit, then they die.

Method of dispersal or infestation: Bot flies may travel several miles to find suitable hosts for oviposition; dispersal in larval stages is by host mobility and hauling horses from place to place.

Seasonality: Literature suggests that adults are active "during the summer", but both in New York and Kansas I have observed no oviposition before late August—most in September and early October. Most damage from bots in the stomach and intestines occurs from late winter through mid-summer.

For additional information contact:
Ludek Zurek Ph.D.
Medical and Veterinary Entomology
Department of Entomology
Kansas State University
Manhattan KS 66506
(785) 532-4731
lzurek@ksu.edu

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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