

**MJF COLLEGE OF VETERINARY & ANIMAL
SCIENCES, CHOMU, JAIPUR**



GENUS - HABRONEMA

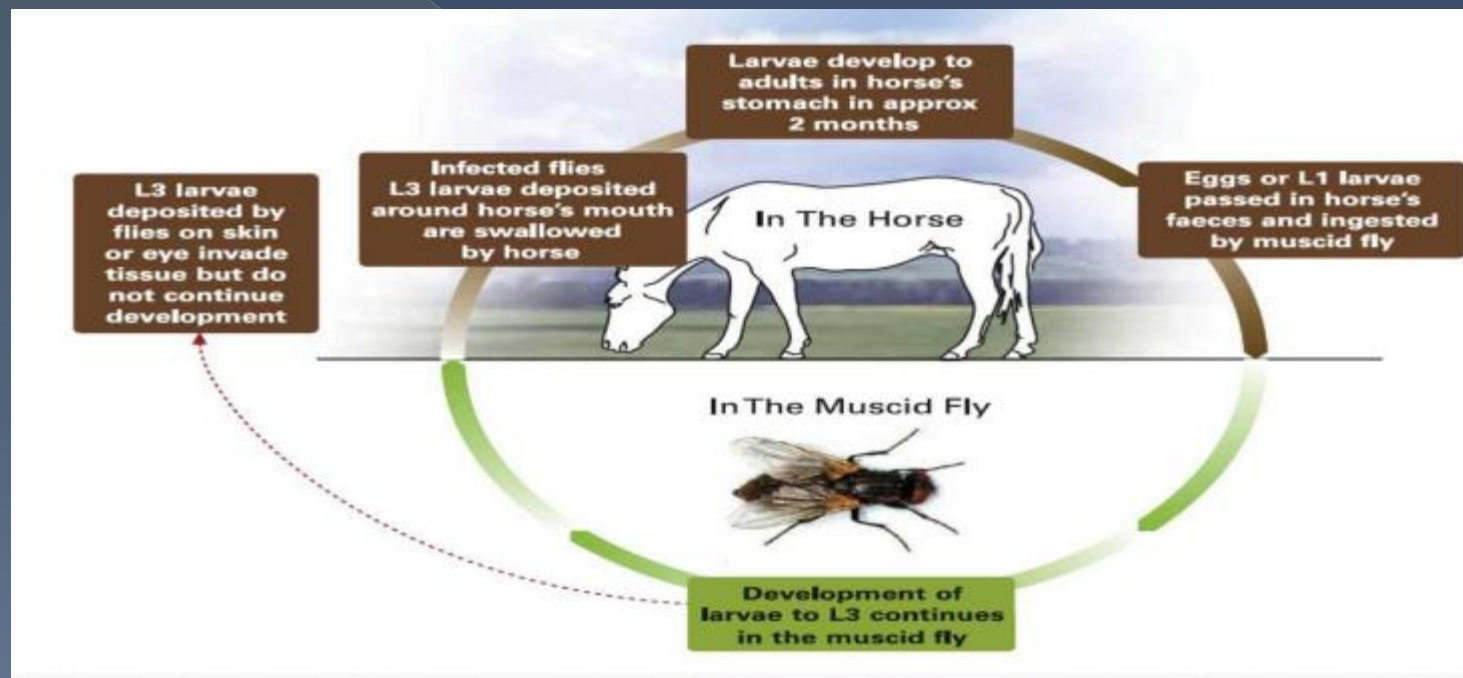
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HABRONEMA

Genus	Habronema
Common name	“Stomach worm of equine”
Species	<i>H. muscae</i> , <i>H. majus</i> (or) <i>H. microstoma</i> , <i>H. megastoma</i> (or) <i>Draschia megastoma</i>



Habronema muscae

- Location: Stomach of equine

Morphology:

- Male : 8 – 13 mm in length Female: 22 mm Medium in size
- Mouth is surrounded by two lateral lips and each trilobed. Pharynx is cylindrical
- Male tail end
 - ✓ It has small caudal alae.
 - ✓ Spicules are unequal, left is long and slender while right is short and stout.
 - ✓ 4 pairs of precloacal papillae and 3 number of post cloacal papillae is present.
 - ✓ Female ovoviviparous. Eggs, thick shelled have larvae. Hatch in I/H or D/H
- I/H: House fly, *Musca* spp

Life cycle of *H. muscae*

- Embryonated eggs or larvae are voided in the faeces of the host (depending upon the species).
- Eggs are ingested by the larva of Musca species.
- In the Musca larva the L1 hatches out and enter the malpighian tubules and moult to become L2, by the time the larva of Musca become pupa.
- In the pupa L2 moult to become L3.
- In the adult fly, L3 migrate to the haemocoel cavity (body cavity) and then to the proboscis.
- Infected adult fly deposits the larvae in the lips, nostrils or existing wounds on D/H while feeding.
- Following deposition the L3 reaches stomach of equine and become adults in about 2 months.

Pathogenesis of *H. muscae*

- Worms penetrate into the stomach mucosa causing catarrhal gastritis with large amount of mucus and ulceration of stomach mucosa

Habronema microstoma

Location: Stomach of equine

Morphology

- Male : 22mm in length Female: 25mm Lengthy
- Pharynx have dorsal and ventral tooth Lips are undivided
- **Male tail end**
- ✓ It has small caudal alae.
- ✓ Spicules are unequal, left is long and slender while right is short and stout.
- ✓ 3 number of post cloacal papillae is present.
- Viviparous
- **I/H:** Stable fly

Life cycle of *H. microstoma*

- Larva of stable fly ingests L1.
- Development in the I/H is similar to *H.muscae*.
- Normal feeding habit of *S.calcitrans* is by biting and sucking.
- They feed on moist surface like nostrils, lips or existing wounds and help in transmission.
- Sometimes, the flies fall into the water or feed, in which horse acquire infection by ingestion of larvae.

Habronema megastoma



Location - It doesn't occur freely, present inside the tumours.



Draschia megastoma

Morphology

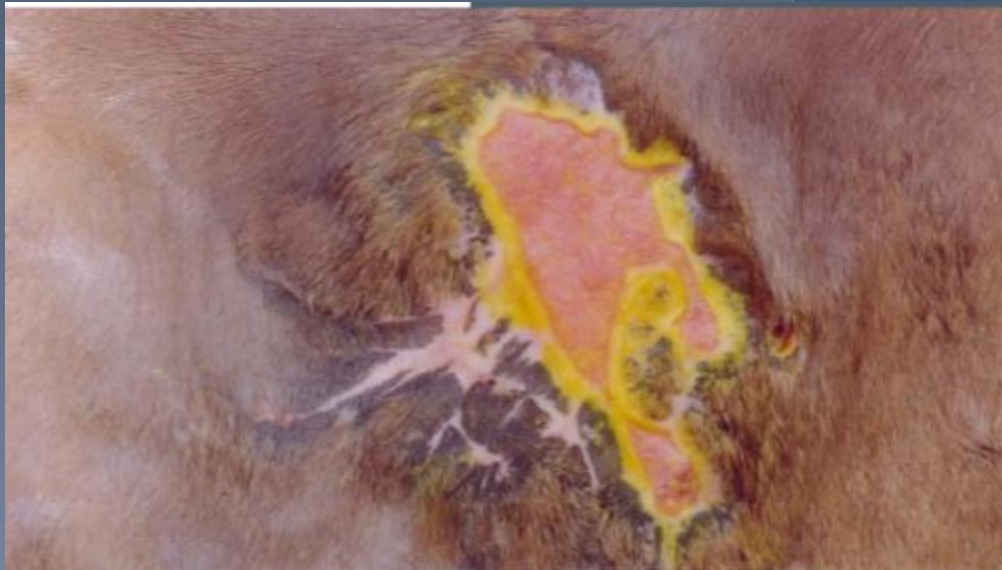
- Male : 7 – 10mm in length
- Female: 10 – 13mm
- Smaller than the other two spp
- Pharynx is funnel shaped.
- Head is distinct
- **Male tail end**
- ✓ It has small caudal alae.
- ✓ Spicules are unequal, left is long and slender while right is short and stout.
- ✓ 2 numbers of post cloacal papillae is present
- **I/H:** *Stomoxys calcitrans*, *Musca* species

Pathogenesis of *H. megastoma*

- Adult worms penetrate the stomach mucosa causing "nodule formation" due to constant irritation.
- In severe case more number of nodules fuse to form large 'tumor' like fibrous growth.
- This tumor protrudes into the lumen of stomach leads to mechanical interference with stomach function.
- Frequently the tumors are located in the fundus region and having cavity filled with pus and cheesy material in which the worms live and also have 1 or 2 openings

SUMMER SORE - BURSATI - GRANULAR DERMATITIS (OR) CUTANEOUS HABRONEMIASIS

- It is very common in India during summer, because during summer fly activity will be more than winter.
- It is caused by larvae of Habronema especially H.megastoma.
- Lesions are commonly seen on those parts of the body liable to injury like legs, withers, canthus and sheath.
- Condition occurs as a result of deposition of infective larvae on existing wound sore, the larvae causing irritation leads to delay in wound healing and also formation of reddish brown material covered with granulation tissue.
- The lesions do not respond to ordinary treatment and often heals spontaneously during winter.
- In chronic cases, granulomatous lesions may occur. In the eye, due to deposition of larvae it causes in "*granular conjunctivitis*"(wart like).



Summer Sore

Harm caused by *Habronema* spp, symptoms and diagnosis

- Adult worms in the **stomach** (so-called **gastric habronemiasis**) of horses are usually not very pathogenic.
- Infective L3-larvae that are deposited on the **eyes** cause so-called **ocular, ophthalmic or conjunctival habronemiasis** that can cause inflammation of the eye envelopes (conjunctivitis) and the eyelids.
- Infective L3-larvae deposited on **skin wounds** produce so-called **skin or cutaneous habronemiasis**, also known as "**summer sores**". They produce granulomatous skin reactions (erosions, swellings, etc.) that cause strong itching and are quite annoying for affected horses. Such infected wounds are difficult to heal, can become infected with secondary bacteria and may attract other fly species that can cause myiasis (e.g. screwworms).
- Infected L3-larvae deposited on the nostrils can migrate into the lungs of the host and cause so-called **pulmonary habronemiasis**. Small, hazelnut-like nodules can appear around the bronchi. Affected horses may show chronic cough, difficult breathing and reduced performance.

Diagnosis

- Diagnosis of gastric infections is difficult because the small eggs or L1-larvae passed in the feces are easily missed in fecal examinations.
- Non-healing skin wounds showing reddish to brownish color and containing rice-grain-like calcified material are typical for skin habronemiasis.
- Larvae may be found in scrappings of such wounds.

Treatment

- Surgical removal.
- Topical application of chromic acid 2%.
- Fenbendazole 15 - 60mg/ Kg. b.wt.
- Trichlorphon 25mg/Kg. b.wt.

CONTROL

- Proper disposal of manure.

THANK

YOU

