Genus : Oesophagostomum

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Oesophagostomum : Morphology

- The adult worms are 15 to 20 mm long,
- The females are larger than males.
- The head of *Oesophagostomum* worms has a prominent cephalic vesicle, which may be constricted at several points depending on the species.
- The body of worms is covered with a cuticle, which is flexible but rather tough.
- The worms have no external signs of segmentation.
- They have a tubular digestive system with two openings.
- They also have a nervous system but no excretory organs and no circulatory system, i.e. neither a heart nor blood vessels.
- Males have two long rodlike spicules for attaching to the female during copulation.
Oesophagostomum : Life cycle

- They have a direct life cycle.
- Adult females lay eggs in the large intestine of the host which expelled out through the feces.
- In the environment the eggs release the L1-larvae, which develop to infective L3-larvae in about 1 week.
- The eggs are susceptible to dryness and extreme temperatures, but can survive up to 3 months on pasture.
- Livestock becomes infected after ingesting such larvae while grazing.
- Ingested larvae penetrate into the intestinal mucosa and form nodules.
- About a week later they escape from the nodules and migrate to the colon, where they develop to adults and reproduce.
Oesophagostomum

Rhabditiform larva hatches

Rhabditiform larva develops into filariform larva in the environment

Eggs in feces

Adults in large intestine

= Infective Stage

= Diagnostic Stage
In some cases, such as second-time infections, the immune system reacts to the larvae causing inflammation and encapsulation of the worm in nodules which become infected with cheesy tissue (caseation).

Oesophagostomum

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Oesophagostomum : Pathogenesis

- The worm are very harmful for young cattle, lambs and piglets.
- The massive infections can be fatal.
- The infective larvae penetrate the intestinal wall, reacts and form pea shaped nodules.
- They disturbs the physiology of the gut, causes diarrhea with mucus (green or dark). Disturbed peristaltic movements affect digestion and defecation which leads to enteritis.
- Secondary bacterial infections also occurs when the larvae migrate across the liver or when nodules burst towards the abdominal cavity.
- Acute infections cause fever, loss of appetite and weight, colitis.
- Chronic infections cause anemia and swellings (Oedema), in addition to diarrhea, which considerably weakens the animals.
Pea shaped nodule in colon of sheep
Pimplly gut in intestine

Source: Google

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Pimpily gut in intestine

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Oesophagostomum : Diagnosis

- Examination of faecal sample for detection of characteristic eggs.
- Clinical signs by per rectum palpation of nodule.
- The nodule can also be seen in large intestine during post-moteum examination
Pimply gut in intestine

Source: Google

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**Oesophagostomum : Prevention & control**

- Systematic and thorough removal of manure can reduces the risk of infection.
- Anthelmintics such as benzimidazoles (albendazole, fenbendazole, oxfendazole etc.), Levamisole, as well as several macrocyclic lactones (doramectin, Ivermectin) are very effective against adult worms.
- There are so far no true vaccines against *oesophagostomum spp*
- Biological control is so far not feasible.