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## Hookworm

Adult worms attach themselves to the jejunal mucosa in the small intestine. This worm is not very pathogenic but it can cause anaemia in young pigs.

The adult worms (which are just 7mm long) lay eggs which are voided in the faeces. Infective larvae develop on the ground before entering another pig by ingestion or skin penetration. Geographical distribution of hookworms is confined to areas which do not freeze and this worm is primarily associated with outdoor production.

## Acanthocephala (thorny head)

Macracanthorhynchus hirudinaceus is 40cm long and a very big worm. It can be mistakenly identified as a tapeworm as it sometimes has a flattened appearance.

The adult worm lays eggs which are voided in the faeces and, once outside the host, these can be ingested by certain species of beetles and over the next three months infective larvae develop. When the beetle is consumed by foraging pigs, the larva or cystacanth matures into an adult worm.

This worm inserts its proboscis into the jejunal wall and perforation may occur. Such perforations are sealed off by fibrous connective tissue and appear as nodules in the jejunal wall. Clinical signs are rare but can include abdominal pain, diarrhoea and emaciation.

## Whipworm

The whipworm – *Trichuris suis* – is primarily found in the caecum. Adult females are 60mm long but two thirds of this length is a filamentous oesophageal region which attaches itself to the mucosa and is difficult to see.

The whipworm has a direct (pig to pig) lifecycle with the first stage larva remaining in the egg until that egg is ingested. When it is released it penetrates the gut wall and goes through four moults over a two week period.

Light populations of adult worms cause minimal lesions in the caecum. Heavy infestations are associated with mucosal oedema and ulceration, blood in the faeces and the formation of a fibrinonecrotic membrane on the caecum's surface.

Diagnosis of trichuriasis is by the demonstration of this worm's uniquely shaped egg in the pig's faeces.

## Nodular worms

Nodular worms are common and inhabit the mucosal surfaces of the caecum and colon. The adult worms are 8-15mm long.

There are several species of nodular worms and their lifecycle is a direct one. In this case infective larvae escape from the eggs, and then the faeces, and crawl on to the grass. They are then consumed by foraging/grazing pigs. The larvae penetrate the gut wall where they live for a while before emerging into the gut lumen and becoming adults.

Adult worms cause minimal damage. Migrating larvae in the gut wall produce nodules (small abscesses).