



Livestock Production

Animal Anatomy, Physiology and

Animal Health

Handout 10

Internal Parasite Called Flukes

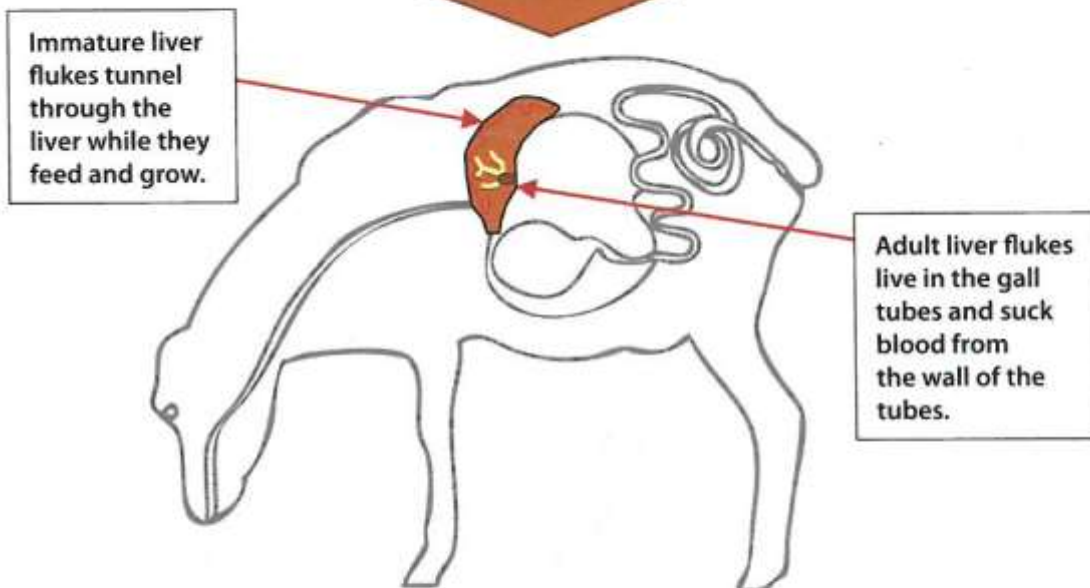
DISEASE OR PRODUCTION LOSS CAN BE TRIGGERED BY FIVE MAIN CAUSES AS DISCUSSED IN PREVIOUS MODULES

In this module, we focus on a specific kind of internal parasite called flukes.

Poisoning	Infection	Parasites	Nutrition	Injury
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Liver flukes

A parasite that occurs in the liver of cattle, sheep and goats causing damage to this vital organ.



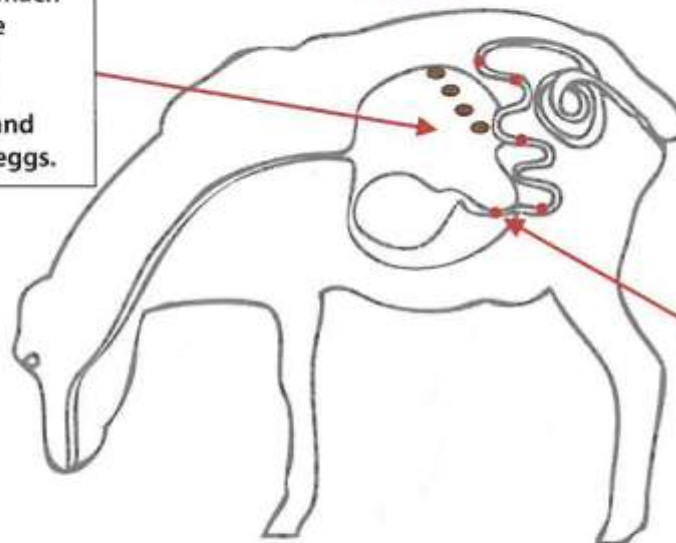
The liver is damaged by the immature flukes that tunnel through the liver tissue. The adult flukes in the gall tubes cause a reaction from the body and the tubes become thickened and can be obstructed by the flukes.

Both these endoparasites cause major continued losses and deaths annually in South Africa. Control can only be improved by a better understanding of these parasites.

Stomach (conical) flukes

The adult flukes are found in the big stomach (rumen) but the damage is caused by the young flukes in the small intestine of cattle, sheep and goats.

Adult stomach flukes live in the big stomach (rumen) and produce eggs.



Immature stomach flukes live and feed from the wall of the small intestine.

Stomach (conical) flukes



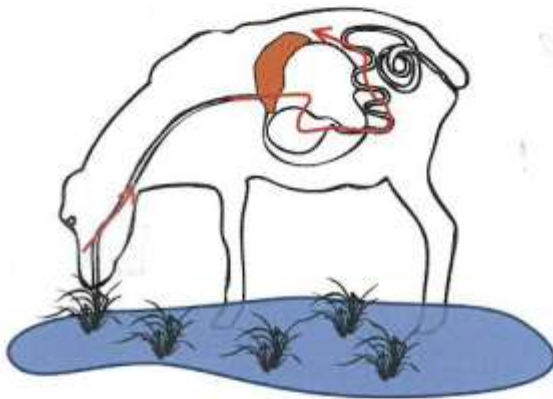
The lining (wall) of the small intestine is severely damaged by the immature flukes, which cause wounds, causing blood components to seep into the intestine, causing foul-smelling, watery diarrhoea.

LIVER FLUKE – DETAILED UNDERSTANDING OF THE

Start of infestation

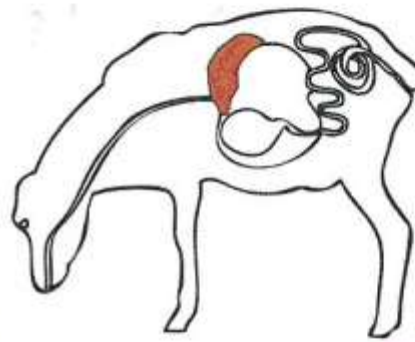
The signs of disease will depend on the number of infective flukes (high, medium or low) ingested by the animal.

The signs that will be seen with a medium to high infection are described here.



Week 1-8

Animals show rapid weight loss, weakness, signs of blood loss and even sudden death if the infestation rate is extremely high.



First signs of disease



Development of liver fluke inside

When the animals graze in wet areas they take in the immature flukes which are attached to plants.

Inside the animal, these immature flukes move through the wall of the small intestine, migrate to the liver and penetrate the liver.

The immature flukes will then start to eat liver tissue, forming small tunnels in the process.

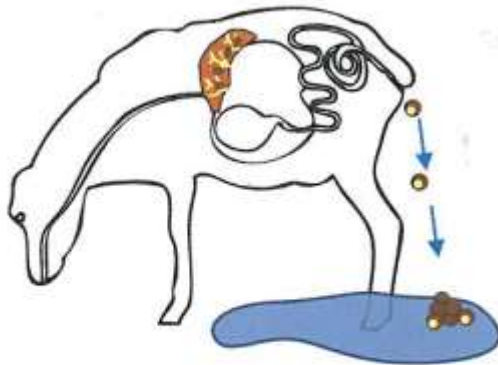
Immature flukes feed on the liver for the next six to eight weeks while growing, causing severe damage to the liver. **Liver damage depends on the number of immature flukes feeding on the liver tissue.**

By week eight, they become adult flukes that enter the small bile ducts (tubes) and migrate to the larger bile ducts.

DISEASE PROCESS THAT TAKES PLACE INSIDE THE ANIMAL

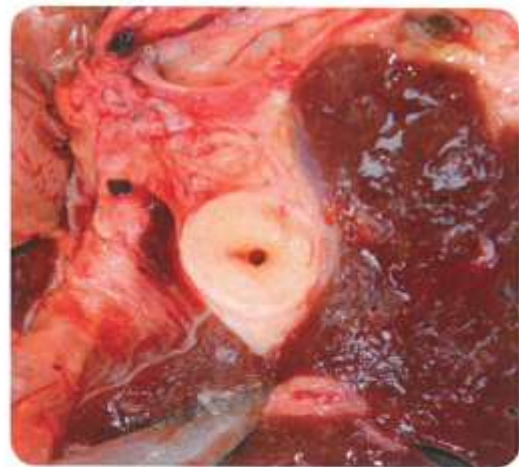
>12 Weeks

Affected sheep can fall behind when herded or develop bottle jaw – a sign of slow blood and protein loss. Continued weight loss especially during the period when the grazing is poor.



Examination of dead sheep

When a veterinarian cuts open the dead sheep he will look for signs of liver damage (thickened gall tubes) and flukes in the gall tubes.



cattle, sheep and goats

The adult flukes attach to the wall of the bile ducts and feed by drinking blood. After a month each adult starts to produce eggs (20 000 per day) which go with the bile into the intestine and out with the dung.

The thin walls of the bile ducts now become thickened and white and the whole liver can become hard (fibrotic) owing to the body's reaction to this infestation.

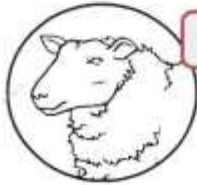
Diagnosis of infestation in the live animals

To confirm infestation in the live animal, dung must be collected and sent to the veterinarian for tests to determine if there is a liver fluke infestation. The newest tests can identify the infestation early (from four weeks after infestation), which will be at the time when the first signs of disease are observed in the case of a very severe infestation.

Sheep – bluetongue

Identification of disease with daily observation card

Observation



Mouth

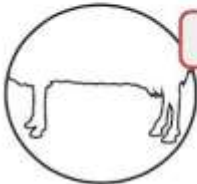
- lips swollen

- face swollen



Rumen fill

- sunken in = empty



Walking

- lame in all four legs

- with difficulty



Eating

- doesn't eat



Photos: Dr Johan van Rooyen

Examination



Temperature

- >40°C



Mouth inside

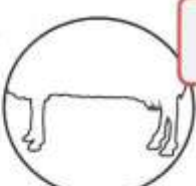
- sores on hard palate
- tongue is dark red/blue
- sores on lips

Nose

- slight excretion

Eyes

- slight excretion



Front and back feet

- red line at the junction of the hoof and skin

