

Unit 20ii: Oral vaccine Factsheet

Introduction

Many species of worm parasites live in the gastrointestinal and respiratory tracts of cattle and sheep. One of these *dictyocaulus viviparous* (lungworm) is known to cause health and economic damage. It affects both cattle and sheep worldwide.

What are the symptoms of lungworm infection in cattle?

- Increased respiratory rate to possibly twice the normal
- Coughing - especially noticeable when chased
- Loss of condition, becoming more rapid
- Fatal pneumonia may develop, characterised by gasping for air
- Calves experiencing an acute attack show considerable distress in trying to breathe in enough oxygen, with the mouth open and frothing, and the tongue extended.

Lifecycle of lungworm

1. Young cattle eat contaminated grass
2. Infective larvae pass into small intestine
3. Larvae penetrate intestine wall and migrate to the lungs via the blood vessels.
4. Larvae develop into adults in the larger air spaces in the lungs, and are ready to start breeding about 28 days after ingestion
5. The *dictyocaulus spp* eggs hatch in the lungs
6. In the lungs the larvae develop into adults in the air passages. The irritation caused by the worms which are about 7.5 cm long stimulates the lungs to produce great quantities of mucus. This mucus becomes foamy and blocks the air passages when the calf tries to force air into its lungs.
7. Thousands of microscopic larvae may be coughed up and swallowed by the animal
8. Immature larvae move through the gut passing out in the dung onto pasture, where they develop through two larval stages in a few days
9. The final stage larvae, now infective, may crawl up foliage ready to be eaten
10. Young cattle eat contaminated grass.

What are the preventative strategies available to the stockperson?

- Vaccination
- Clean grazing policy

1. Vaccination

- Best, most effective method of control
- Vaccine is a live vaccine, made from irradiated larvae
- Vaccination should be completed at least two weeks before turnout (in young calves)
- Vaccine produces very good immunity.

2. Clean grazing policy

This involves making sure all young animals with no immunity do not come into contact with larva at any stage. However once immune, challenge from the parasites on the pasture help to maintain the immunity.