



Animal &
Plant Health
Agency

Disease Information Note

Be aware of lungworm

November 2021

Contents

Lungworm information	1
Clinical signs	1
Diagnosis	1
Treatment.....	2
Control.....	2
REFERENCES.....	2

Lungworm information

The APHA Cattle Expert Group would like to alert you to the fact that we have seen several severe cases of lungworm infection or 'husk' over our postmortem network in recent weeks.

As with many other parasitic nematodes, infection is acquired by the ingestion of infective larvae from pasture. The epidemiology is complex and outbreaks are often unpredictable.

Despite a good vaccine having been available, and no resistance of *Dictyocaulus viviparus* to any of the commonly used anthelmintics officially having been reported, lungworm disease continues to pose a serious threat to both animal welfare and income on cattle farms worldwide.

Over the past few decades, the epidemiology of lungworm in the UK has changed in several ways (McLeonard and van Dijk 2017) and the overall incidence of lungworm disease in cattle, sharply increased towards the end of the 1990s (van Dijk 2004).

Traditionally, husk was a disease seen in calves during the latter half of their first grazing season, however, reports of lungworm outbreaks in adult cattle have increased dramatically over the last three decades.

The disease is now commonly diagnosed by APHA and SRUC. Losses in severe lungworm outbreaks in growing cattle can average £50-£100 per head and lost milk production in adults may reach £3 per cow per day (COWS 2014).

Clinical signs

The disease should be considered in any coughing cattle with access to pasture and there is often widespread coughing within a herd. Sudden deaths may also be observed, especially in the case of reinfection syndrome.

Loss of condition, tachypnoea, dyspnoea and reduced milk yield are also observed.

Diagnosis

Diagnosis is based on the clinical signs and grazing history; confirmation of diagnosis requires laboratory testing:

- The standard parasitological method of confirming lungworm disease is by detecting the L1 stage in faecal samples using the Baermann technique. This test can be carried out at the APHA Carmarthen on 50 grams of faeces (APHA test code TC0062).

- An ELISA can be used to detect antibodies to *D. viviparus*. As sero-conversion does not usually occur until four to six weeks post-infection, animals with prepatent infections (or re-infected animals), may be sero-negative (COWS 2014). This test is can be carried out at the APHA Weybridge on 2ml clotted blood or 1ml serum (APHA test code TC0507). Seropositivity should be considered supportive of diagnosis as any animals exposed to the parasites should seroconvert.
- Haematology: Animals clinical affected will normally have a marked absolute or relative eosinophilia. Like serology this test is supportive of a diagnosis of husk.
- Postmortem examination: Worms can readily be seen in the bronchi and bronchioles. Histopathological findings may also confirm a diagnosis.

Treatment

Lungworms are susceptible to the three major classes of benzimidazoles, levamisole and macrocyclic lactones (MLs). Treated cattle should be removed from infected pasture and transferred to clean pasture if it is available or alternatively housed in well-ventilated facilities. In the face of an outbreak, all stock should be treated with anthelmintics, as it is impossible to differentiate between prepatent and patently affected animals, and it will also reduce the potential for further pasture contamination (Hayton 2009).

Beyond anthelmintic treatment, in moderately to severely affected animals, adjunctive treatment with NSAIDs and antibiotics may be required to reduce inflammation and secondary infections.

Control

Cattle can be vaccinated for lungworm by giving an oral vaccine containing irradiated lungworm larvae (L3), which stimulates immunity. Vaccination should be strongly considered on farms with evidence of lungworm. Although vaccination is effective in preventing clinical disease, it does not completely prevent establishment of small numbers of lungworms which should occur after the vaccinated animal are turned onto 'dirty' pasture as this is required to complete the development of immunity. Consequently, pastures may remain contaminated, albeit at a low level. For this reason, it is important that all calves on farms where lungworm is endemic should be vaccinated whether they go to pasture in the spring, or later in the year; and a calf vaccination programme must be continued annually. Furthermore, all cattle likely to be naive should be vaccinated before entering a herd containing carriers.

REFERENCES

- CONTROL OF WORMS SUSTAINABILITY. (2014) Control of lungworm in cattle. Technical report.
- HAYTON, A. (2009) Lungworm and cattle. Veterinary Times, July 20.

MCLEONARD, C. & VAN DIJK, J. (2017) Controlling lungworm disease (husk) in dairy cattle. In Practice

VAN DIJK, J. (2004) The epidemiology and control of dictyocaulosis in cattle. Cattle Practice 12:133-145

WOOLLEY, H. (1997) The economic impact of husk in dairy cattle. Cattle Practice Cattle practice 5, 315–318.



You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence v.3. To view this licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3/ or email PSI@nationalarchives.gsi.gov.uk

Data Protection:

For information on how we handle personal data visit www.gov.uk and search Animal and Plant Health Agency Personal Information Charter.

Any enquiries regarding this publication should be sent to us at siu@apha.gov.uk

www.gov.uk/apha

APHA is an Executive Agency of the Department for Environment, Food and Rural Affairs and also works on behalf of the Scottish Government, Welsh Government and Food Standards Agency to safeguard animal and plant health for the benefit of people, the environment and the economy.