

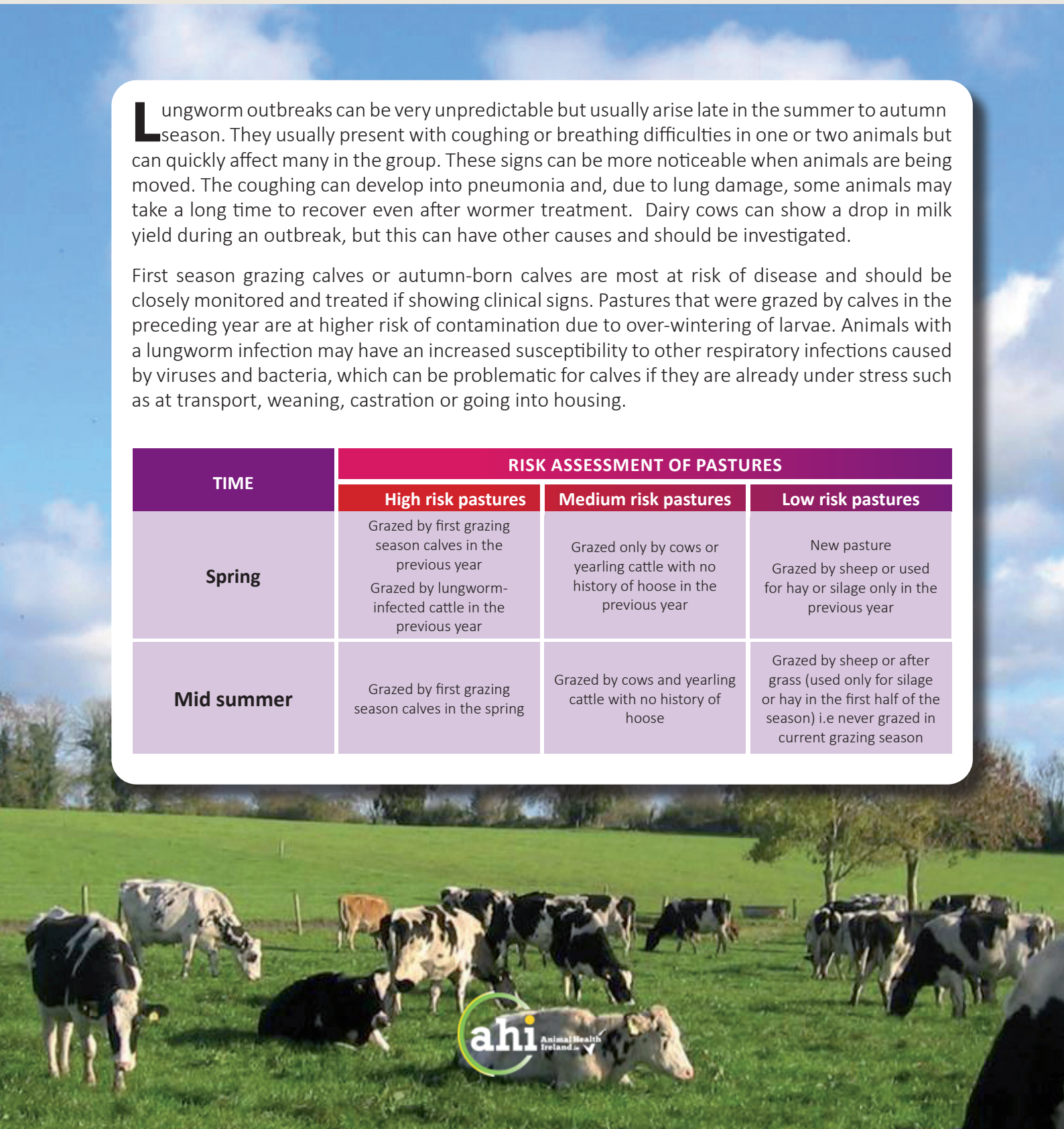
# SEASONAL LUNGWORM OUTBREAKS

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Lungworm outbreaks can be very unpredictable but usually arise late in the summer to autumn season. They usually present with coughing or breathing difficulties in one or two animals but can quickly affect many in the group. These signs can be more noticeable when animals are being moved. The coughing can develop into pneumonia and, due to lung damage, some animals may take a long time to recover even after wormer treatment. Dairy cows can show a drop in milk yield during an outbreak, but this can have other causes and should be investigated.

First season grazing calves or autumn-born calves are most at risk of disease and should be closely monitored and treated if showing clinical signs. Pastures that were grazed by calves in the preceding year are at higher risk of contamination due to over-wintering of larvae. Animals with a lungworm infection may have an increased susceptibility to other respiratory infections caused by viruses and bacteria, which can be problematic for calves if they are already under stress such as at transport, weaning, castration or going into housing.

TIME	RISK ASSESSMENT OF PASTURES		
	High risk pastures	Medium risk pastures	Low risk pastures
Spring	Grazed by first grazing season calves in the previous year Grazed by lungworm-infected cattle in the previous year	Grazed only by cows or yearling cattle with no history of hoose in the previous year	New pasture Grazed by sheep or used for hay or silage only in the previous year
Mid summer	Grazed by first grazing season calves in the spring	Grazed by cows and yearling cattle with no history of hoose	Grazed by sheep or after grass (used only for silage or hay in the first half of the season) i.e never grazed in current grazing season



Dung samples are not always helpful to diagnose lungworm and a negative test does not rule out a lungworm infection because the immature larval stages of the worm can cause clinical signs before they are present in dung. High risk animals should be closely monitored for signs of coughing at grass and dosed immediately if lungworm is suspected.

Cattle develop immunity to lungworm by their second or third grazing season provided they have received adequate exposure to the worms. This immunity is short-lived and will wane over time without follow-up exposure, which can lead to cows developing clinical signs. A long housing period combined with use of long-acting wormers, for example, may prevent the natural boost needed to maintain immunity.

There are increasing reports of cows also developing the clinical signs of lungworm and there could be two main reasons for this. Firstly, these cows may not have been sufficiently exposed as young stock to develop adequate immunity, either due to being raised on pasture without lungworm infection or following intensive anthelmintic treatments. These animals will develop typical signs along with a patent infection where larvae might be detected in dung samples. Alternatively, because the naturally acquired immunity to lungworm is short-lived, cows may develop clinical signs as immunity wanes if there is limited follow-up exposure. High pasture lungworm burdens can also overwhelm the animal's immunity. This results in reinfection syndrome, with respiratory disease and drops in milk yield. Clinical signs and tissue damage can be severe in these animals, likely due to a reaction to adult parasites in the lungs. In these cases, dung samples are usually negative.

Vaccination should be considered where lungworm is a repeated problem. This can be given to calves or yearlings before the grazing season, to returning stock or as booster vaccinations for older animals. However, vaccinating spring-born calves can be a challenge as they need two vaccine doses before turnout. Anthelmintic treatments can interfere with vaccine effectiveness and should not be given at or before vaccination.

Some animals do not respond well to lungworm treatment. This may be due to damage to the lung tissue but resistance of the worms to the anthelmintic is possible. Recent case reports from the UK are concerning, with treatment failures following moxidectin, ivermectin and eprinomectin use. These cases are early warnings that there is always a potential of resistance with medicines and we should focus on using anthelmintics responsibly to ensure their effectiveness into the future. Suspected resistance should be reported to the HPRA and the manufacturer for further investigation.

