

# Yersiniosis

## Costs and benefits

Yersiniosis is one of the main causes of death in 4 to 8-month-old deer, resulting in losses of 10 to 30% in unvaccinated herds, as opposed to losses of 3% or less in vaccinated herds.

On individual farms, vaccination becomes economic when one weaner is saved for every 40 weaners vaccinated, assuming a weaner is worth \$220 and a dose of vaccine costs \$2.80.

This calculation does not take into account other costs associated with a yersiniosis outbreak, such as production losses, veterinary charges and management changes.

## Stress is often the trigger

Stress is a major factor in making fawns vulnerable to yersiniosis around the time of weaning. These stresses include:

- Separation from mothers
- Cold, wet, windy weather
- Underfeeding or a sudden change of feed
- Transportation
- A heavy internal parasite burden
- Mixing with strange deer.

Stressed or cold weaners stop eating, and quickly lose body heat. As a result, their intestinal movements slow down, allowing yersinia bacteria to multiply.

The bacteria produce toxins that damage the intestine, leading to rapid fluid loss, bleeding, dehydration and death.

## What are the signs?

- Affected deer are usually dull, don't eat and stand apart from the mob.
- Green watery diarrhoea develops, turning dark and bloody as the disease progresses, staining the hocks and hair around the tail.
- Scouring deer rapidly become dehydrated and weak.
- Some deer may be found dead without having shown any signs of disease.
- Some animals, including deer, may have yersinia bacteria in their gut without showing any signs. These are carrier animals.



A weaner showing the watery green staining around the tail, characteristic of yersiniosis

## Key points

- Yersiniosis is a common disease of young farmed deer caused by *Yersinia pseudotuberculosis*.
- It's one of the main causes of scouring and death in 4 to 8-month-old deer.
- Up to 30% of the mob may be affected.
- Outbreaks are triggered by factors like stress, particularly the stresses that can occur around the time of weaning.
- Vaccination and reducing stress and vaccination are the best ways to reduce the disease risk.
- If an outbreak occurs, act quickly. Call your vet, who will probably treat the affected mob with antibiotics.
- Yersiniosis sometimes occurs in older deer.
- The disease can spread to other species including humans, so good personal hygiene is important, particularly during outbreaks.

## How does it spread?

- Most infections are picked up when deer eat feed or water contaminated by faeces containing yersinia bacteria.
- The bacteria can survive for months in feed, water and soil, especially in cold wet weather.
- Contamination with yersinia bacteria can be caused by carrier sheep, deer, cattle and pigs, and also birds, rodents, rabbits and hares.
- Carrier animals can seem healthy while excreting the bacteria in their faeces.
- When carrier animals are under stress – for example during spells of very bad weather – they excrete more yersinia bacteria

## Diagnosis

- Yersiniosis is diagnosed when deer show the characteristic clinical signs, confirmed by laboratory test results.
- Your vet can arrange the lab tests using faecal samples or body tissue samples collected during a post mortem examination.
- It is important to confirm the diagnosis with a lab test because there are other diseases like malignant catarrhal fever and salmonellosis that cause signs that can look very similar to yersiniosis.

## Treatment

- Once an outbreak occurs, it is too late to vaccinate, so the best option is to treat all deer in the mob with an antibiotic such as tetracycline.
- Minimise stress. Ensure the mob has a good feed supply and effective shelter from bad weather. Try to prevent social disruption within the group.
- Move quickly. Losses can be minimised if antibiotic treatment and management changes are made soon after an outbreak begins.
- Treat all deer in the mob, even those that do not seem sick, because they could carry and spread the bacteria for weeks or months.
- Your vet can aid the recovery of badly affected deer by

giving early re-hydration therapy (fluids and electrolytes by mouth or by injection) and scour treatment.

- Yarding inevitably causes stress that can exacerbate the disease, but in most situations the advantages of yarding for treatment outweigh the short-term disadvantages.
- Isolation of scouring deer helps prevent spread of the disease to other deer.

### Prevention

The two most important parts of a yersiniosis prevention strategy are vaccination and reducing stress.

Reducing stress is particularly important for the most vulnerable group of deer on the farm – weaners. These deer have to contend with the stresses of weaning, colder weather and potentially dwindling food supplies. Putting a quiet older nanny hind in with newly weaned fawns can help calm them.

To reduce stress across the whole herd:

- Provide good feed and adequate shelter
- Be a good stock manager – muster with skill and care, avoid keeping deer for extended periods in the yards, be calm
- Keep worm burdens low
- Ensure trace element status of the herd is adequate.

### Vaccination

Because yersinia bacteria are widespread in the environment, most mature deer build good natural immunity to the disease.

However weaners are vulnerable. The passive immunity they get from their mothers wanes after about 12 weeks of age. They don't have time to develop natural immunity before facing an inevitable heavy challenge in autumn/winter.

Vaccination helps them resist this challenge. While vaccination is not 100% effective, it significantly reduces the number of deer affected, the severity of the disease and the number of deaths. In field trials it reduced losses by more than 65%.

Weaners should be at least 12 weeks old before the first vaccination, with the second (booster) dose 3 to 4 weeks later. Maximum protection is not reached until at least 10 days after the second dose.

### When to vaccinate

The timing of vaccination is a complicated issue. Your vet will help you decide the best strategy for your farm.

Here are the main options:

- **Pre-rut weaning:** This is normally in late February/early March, when fawns are 12 to 15 weeks old. Give the first vaccine dose at around the time of weaning and the second, 3 to 4 weeks later.
- If the fawns are going to be transported soon after weaning, give the first vaccine dose before the fawns reach 12 weeks of age, but before weaning. The purchaser should be told that a second dose will be needed 3 to 4 weeks later.
- **Post-rut weaning:** Give the first vaccine dose in late February/early March when hinds and fawns are put in mating groups. Give the second dose in early April when mobs are yarded to change stags.

Some farmers have found that a third dose of vaccine (3 to 4 weeks after the second) gives even better protection, especially if weaners were given the first dose when they were less than 12 weeks of age.

First-calving hinds calve later than mixed age hinds which means that their weaners are usually vaccinated later than the main mob.

### Other animal health treatments

Anthelmintic treatments are usually given at weaning and 3 to 4 weeks later. Vaccinations can be given at the same time.

**Leptospirosis vaccination:** It is important to stagger the timing of yersinia and leptospirosis vaccinations, to avoid interfering with development of immunity. Give the first leptospirosis dose at the same time as the yersinia booster and the second leptospirosis dose 3 to 4 weeks later.