

PREVENT. PROTECT. PERFORM.



Photographer: Jenny McMurdo



**CONTROL THE RISK OF
YERSINIOSIS**



**CONTROL THE RISK OF
LEPTOSPIROSIS**

Important animal health decisions around weaning which impact deer production

Minimising mortality post-weaning, and maximising weight gain through autumn/winter are critical to a profitable venison production operation.

It is important to consider the impact of the following on animal health and production:

- Weaning – method, timing and nutrition.
- Transportation – stress, stand down periods and TB control.
- Yersiniosis – management of stressors, vaccination and clinical signs.
- Leptospirosis – risks, diagnosis and benefits on production of vaccination.
- Parasite control – prevention, anthelmintics used and timing.
- Johnes Disease – diagnosis and control.



Photographer: Quin Hartley

Yersiniosis

Yersiniosis is a highly infectious disease affecting weaner deer. It takes little to trigger yersiniosis, the first sign of disease is blood-tinged, watery, smelly diarrhoea or sudden death.

Bacterial toxins damage the intestines, leading to rapid fluid loss, bleeding, dehydration and frequently death. Yersinia bacteria are always there, waiting, and there’s nothing that you can do to eliminate them.

Diseased animals are normally 4 to 8 months old, separate from the mob, and have green watery distinctive smelling diarrhoea that turns dark or bloody. As diseased animals stand back and diarrhoea may not be obvious, yarding and inspection for subtle signs, such as dirty watery staining of the hocks, is necessary to detect all cases. If treated early (e.g. antibiotics and fluids) deer often recover.

Yersiniosis strikes during late autumn and winter when the typical stresses that trigger the disease – poor nutrition, changes in feed, high parasite challenge, trace elements, yarding, transport and bad weather – are at their worst.

To protect herds over weaning and through the high risk late autumn and winter periods, consider a vaccination plan with Yersiniavax®.

Yersiniosis is the leading cause of death in weaned deer¹

A 2001 survey showed the leading cause of death in weaned deer is Yersiniosis. An average of 5 weaners per 100 perishing during autumn and winter.

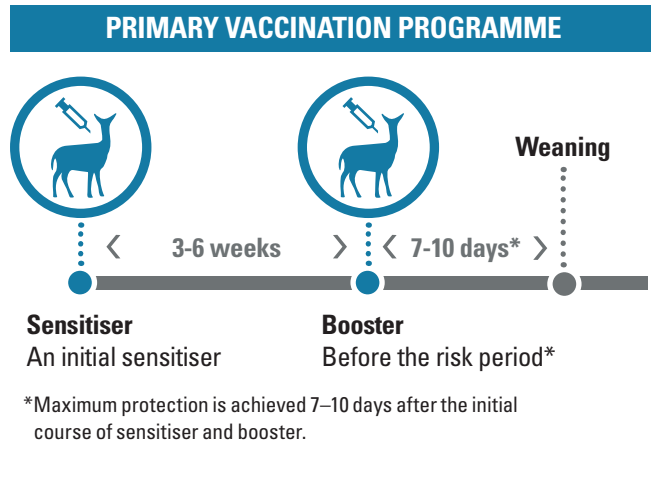
AVERAGE MORTALITY BY SEASON FOR DIFFERENT CLASSES OF DEER					
Class of Deer	Season				
	Autumn	Winter	Spring	Summer	Annual
3-15 months	2.41%	2.62%	0.42%	0.14%	5.87%
Females > 15 months	0.23%	0.67%	0.58%	0.32%	1.77%
Males > 15 months	0.38%	0.83%	0.82%	0.57%	2.60%



Yersiniosis can result in losses of 10-30% in unvaccinated herds²

BENEFITS OF VACCINATION WITH YERSINIAVAX

- Provides protection against yersinia losses in deer
- Reduced mortality
- Reduced clinical disease

VACCINATION PROGRAMME



Dose:	2mL
Initial Vaccination Programme:	2 shots 
Administer by:	SC (Subcutaneous)
Annual Booster:	Not required 
Vaccinate weaners as early as possible from 12 weeks of age to ensure immunity develops before weaners are stressed. Maternal antibodies, while likely to protect the weaner, may prevent a proper immune response if vaccination occurs too early.	

Maximum protection over weaning, the period of highest risk, is especially beneficial if weaners are sold and transported soon after weaning. Regardless if weaning is done before or after the rut, the first injection can generally be given between late February and mid March. If weaning after the rut, an option is to time the second injection to occur during mating, e.g: when mating groups are yarded to change the stags.

If management priorities do not allow this, the ‘gold standard’ method of first injection 6-8 weeks before weaning and second injection at least 7-10 days before weaning, the alternatives are:

First injection 3 – 6 weeks before weaning, second injection at weaning.

This provides some protection against Yersiniosis triggered by weaning stressors, but the peak immune response is not complete until a minimum of 7–10 days after second injection, so doesn’t fully protect weaners at weaning. Reduces risk of disease associated with bad weather after weaning.

First injection at weaning, second injection 3 – 6 weeks later.

Least favourable option as gives no protection against Yersiniosis triggered by weaning stress or poor weather until 7–10 days after the second injection.

NOTE: It’s too late to vaccinate a mob once an outbreak has started.

The aim of vaccination is to prevent a serious epidemic by reducing mortality and the spread of disease through a mob. Vaccination doesn’t protect every individual — but rather enhances good management. This is demonstrated by the reduced proportion of clinical disease and death seen in vaccinated compared to unvaccinated weaner deer on the two farms on which major outbreaks occurred during field trials³.

REDUCED CLINICAL DISEASE AND DEATHS DUE TO YERSINIAVAX				
Farm 1	VACCINATED WEANER DEER		UNVACCINATED WEANER DEER	
	Clinical Disease	Died	Clinical Disease	Died
	7%	7%	22%	22%
Farm 2	10/150	10/150	33/149	33/149
	4%	1%	34%	21%
	10/260	3/260	88/260	55/260

Leptospirosis

There are three strains of the bacteria that cause leptospirosis in deer in New Zealand: *Leptospira hardjo-bovis*, *L. pomona* and *L. copenhageni*. *L. hardjo-bovis* infection is widespread on deer farms. Although it doesn't usually cause obvious signs of disease, it can limit productivity. *L. pomona* and *L. copenhageni* occur on a small number of farms in some regions but can cause serious disease and death in deer.

Signs of Leptospirosis vary from very mild infections, often with no obvious signs (but can reduce growth rates in weaners and reduce calving percentages) to serious outbreaks in which deer develop red water, jaundice, dullness and loss of appetite. Deer may also abort and die⁴.

Leptospirosis in deer can be very costly in terms of reduced farm productivity. For people who develop the disease it can be very serious with a long recovery time. A herd vaccination programme will prevent leptospirosis outbreaks and protect staff.



Photographer: Denise Pawsey

Leptospirosis vaccination improves production

Massey University research confirmed vaccinating deer against Leptospirosis provides reproductive and growth rate benefits:

- 9% higher weaning percentage in rising two year old hinds
- 6.5kg greater live weight gain between weaning and slaughter.

With infection present in 81% of deer herds⁸, the risk of disease and potential production loss is widespread. As deer are maintenance hosts for *L. hardjo* and *L. pomona*, once infected this usually remains endemic in the herd.

GROWTH RATE BENEFITS FROM VACCINATING WEANERS⁷

	L. HARDJO SEROPREVALENCE	MEAN LIVE WEIGHT DIFFERENCE BETWEEN LEPTAVOID VACCINATED AND UNVACCINATED WEANERS
Farm A	88%	6.5kg
Farm B	7%	4.0kg
Farm C	5%	3.1kg

Weaning Percentage

- 9% higher weaning percentage in vaccinated (97%) vs unvaccinated (88%) rising two year old hinds in a herd with dual *L. hardjo* and *L. pomona* infection⁵.
- 5% average difference in a repeat study comparing weaning percentage in vaccinated vs unvaccinated pregnant hinds (range 2 to 9%)⁶.

Growth Rate


- Deer infected with *L. hardjo* or *L. pomona* grew significantly less (3.76kg) between weaning and slaughter than non-infected deer⁷.
- Deer vaccinated at weaning grew significantly faster to slaughter than those not vaccinated on farms with evidence of *L. hardjo* infection⁶.

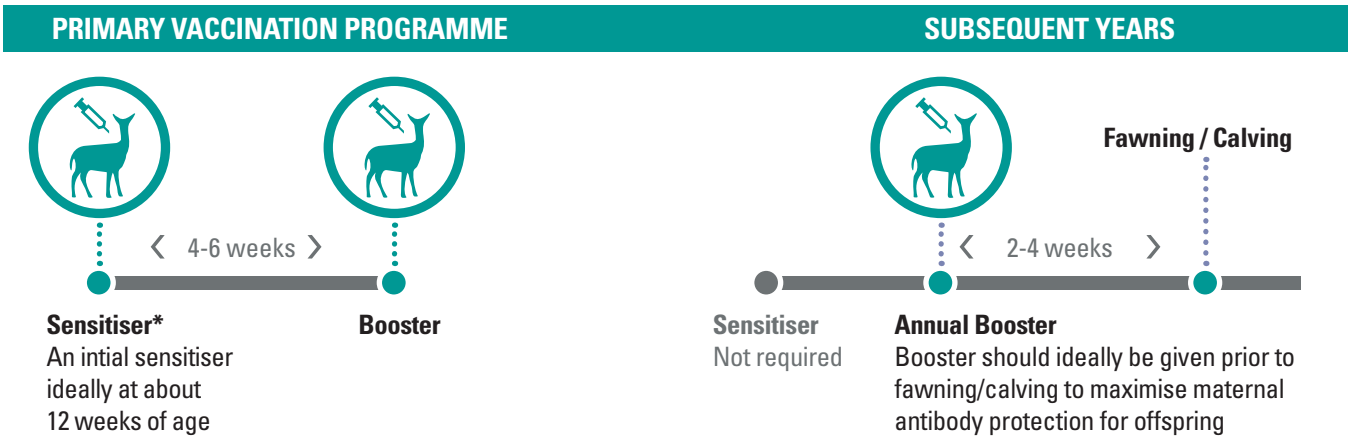
Studies show 81% of NZ deer herds have been exposed to *L. hardjo*⁸



BENEFITS OF VACCINATION WITH LEPTAVOID®2 OR 3

- Provides protection against Leptospirosis caused by the *L. hardjo* and *L. pomona* serovars
- In healthy animals (before infection) vaccination will prevent urinary shedding for leptospires for at least 12 months, preventing transmission to humans and animals
- Leptavoid is the only vaccine proven to prevent shedding in deer (A3876)

Dose:	2mL
Initial Vaccination Programme:	2 shots 
Administer by:	SC (Subcutaneous)
Annual Booster:	Required 



*Maternal antibodies may interfere with the response to vaccination if administered before 6 months of age. Young stock exposed to high risk may be vaccinated from an earlier age. However, if the primary vaccination is completed before 6 months of age **it is essential that a booster dose is administered once they reach 6 months of age.**



Photographer: Sandra Stevens

1. Audi'ge *et al.* (2001). Disease and mortality on red deer farms in New Zealand. *Vet Record* 2001; 148: 334-340 .
2. Deer Industry NZ Deer Facts, Deer Health 04 Sept 2015
3. MSD Data On File
4. Deer Industry NZ Deer Facts, Deer Health 02 Sept 2015
5. Ayanegui-Alcérreca M.A. (2005). Epidemiology and control of leptospirosis in farmed deer in New Zealand. *Pro Deer NZVA* 2005 Pp 128-131.
6. Subharat S. *et al.* (2008). Leptospirosis: A Massey University research update. *Pro.Deer NZVA* Pp115-120.
7. Wilson P.R. *et al* (2009). Leptospirosis on deer farms: to vaccinate or not? *Pro.Deer NZVA* Pp 89-94.
8. Ayanegui-Alcérreca M.A. *et al.* (2010). Regional seroprevalence of leptospirosis on deer farms in New Zealand. *NZJV* 2010 Aug; 58(4):184-9.

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