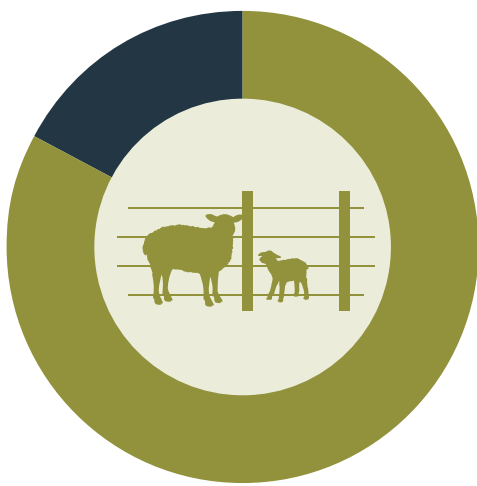
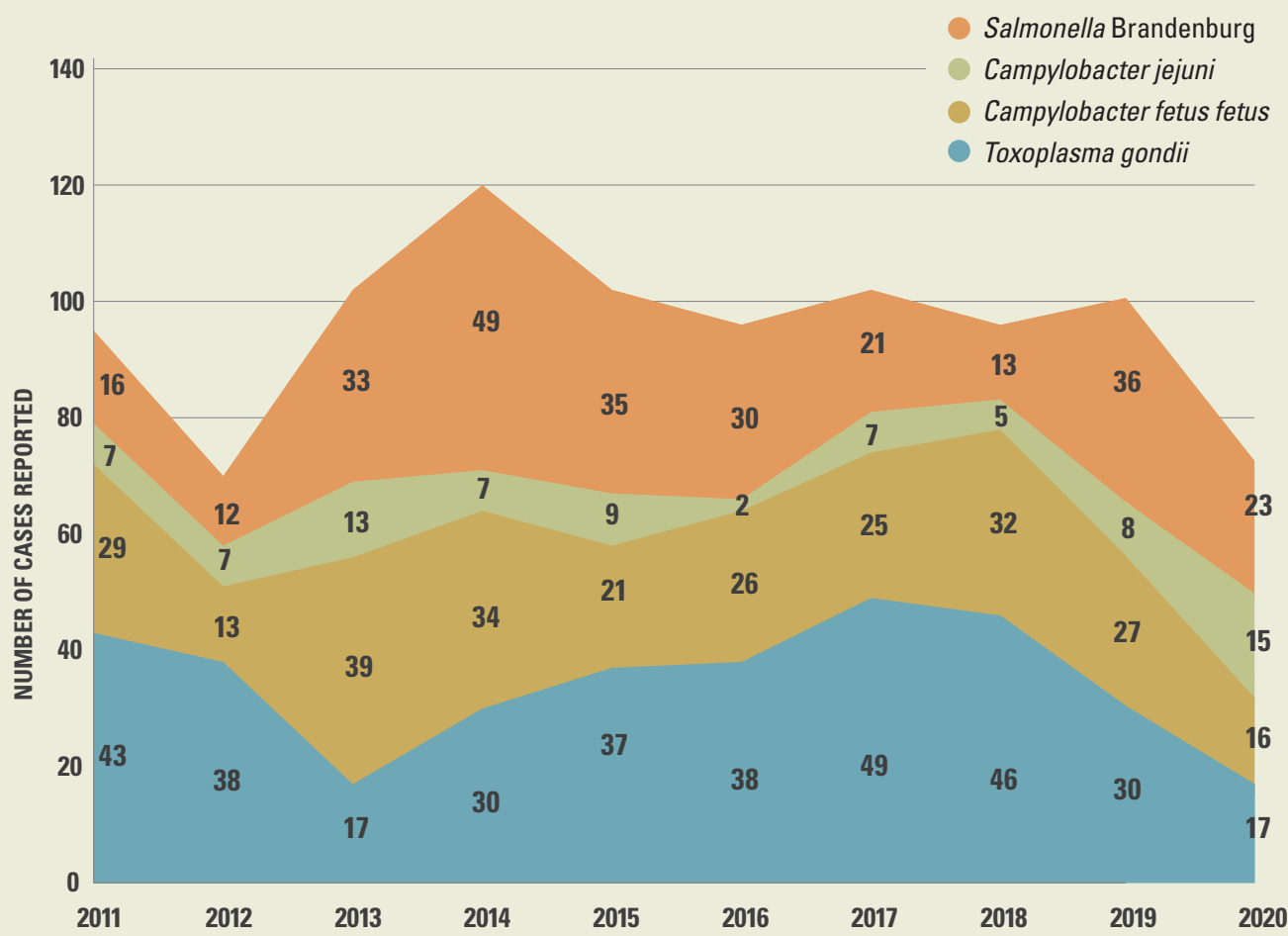


CAMPYLOBACTER



88%
of NZ farms have
Campylobacter
present¹

Campylobacter is one of the
most common causes of sheep
abortions in New Zealand



2. Surveillance, Vol's 47-48, No 3, September 2012 – 2021

Campylobacter abortions are
just the tip of the iceberg



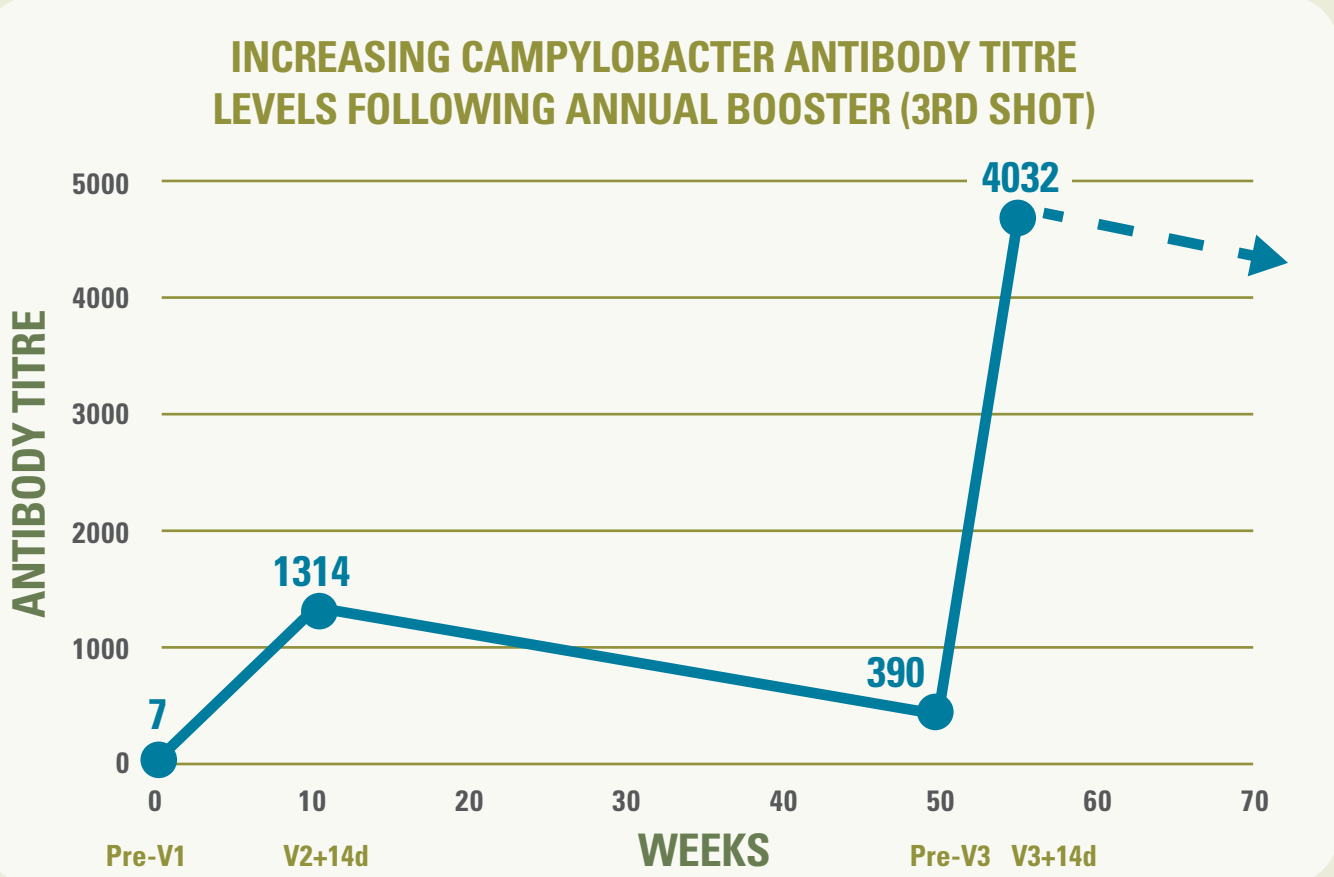
Of greater economic importance is:
Still births, weak lambs, more dry ewes,
poor scanning results, losses between
scanning and tailing... *(even when
abortions are not observed).*

3. Anderson, P (2001) The implications of Campylobacter Infections in Ewe Flocks.
Proc 31st Annual Seminar, Society of Sheep and Beef Cattle Veterinarians, NZVA p31-40

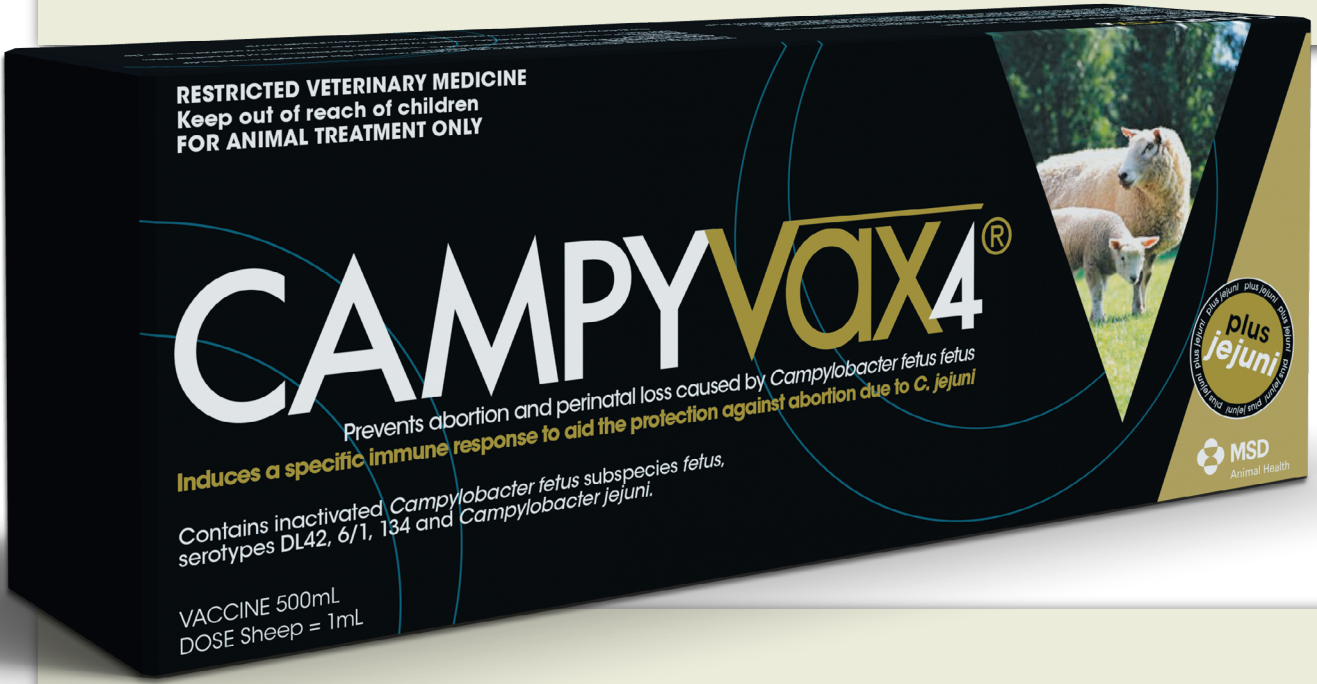
CONTROL THE RISK OF CAMPYLOBACTER

Mixed Age ewes are still at risk
& need an annual booster

48% of M/A ewes
are naive



1. Dempster (2011) NZVJ
MSD Data On File (Graph)



Vaccination

- » Low cost
- » 9% average increase
in lambing percentage
- » High ROI > 400%

ROI > 400%

3. Anderson, P (2001) The implications of Campylobacter Infections in Ewe Flocks.
Proc 31st Annual Seminar, Society of Sheep and Beef Cattle Veterinarians, NZVA p31-40

Further explanation of Campylobacter talking points:

1. 88% of NZ farms have Campylobacter present¹

- Toxoplasma is present on 100% of farms and Campylobacter on 88% of farms. No difference between fine-wooled vs crossbreds.
- Due to Campylobacter being so widespread on NZ farms, it's not a case of 'if' your sheep will get campylobacter but 'when'.
- Vaccination is key to avoiding the devastating effects of Campylobacteriosis including abortion storms resulting in lamb losses up to 30% in naïve flocks⁴.

2. Campylobacter is one of the most common cause of sheep abortions in New Zealand²

- Surveillance data collected by the Ministry for Primary Industries.
- Laboratory-diagnosed cases represent a minority of clinical cases, but provides a useful insight into trends in overall cases over time.
- There are two common strains of Campylobacteriosis: *Campylobacter fetus fetus* and *Campylobacter jejuni*. Traditionally *Campylobacter fetus fetus* has tended to dominate, but in 2020 data there were an almost equal number of cases of the two strains (*C. fetus fetus* 16, *C. jejuni* 15)
- For this reason, it is important when vaccinating to prevent Campylobacter in your flock to ensure the vaccine provides protection against both strains, such as Campyvax4.

3. Campylobacter abortions are just the tip of the iceberg

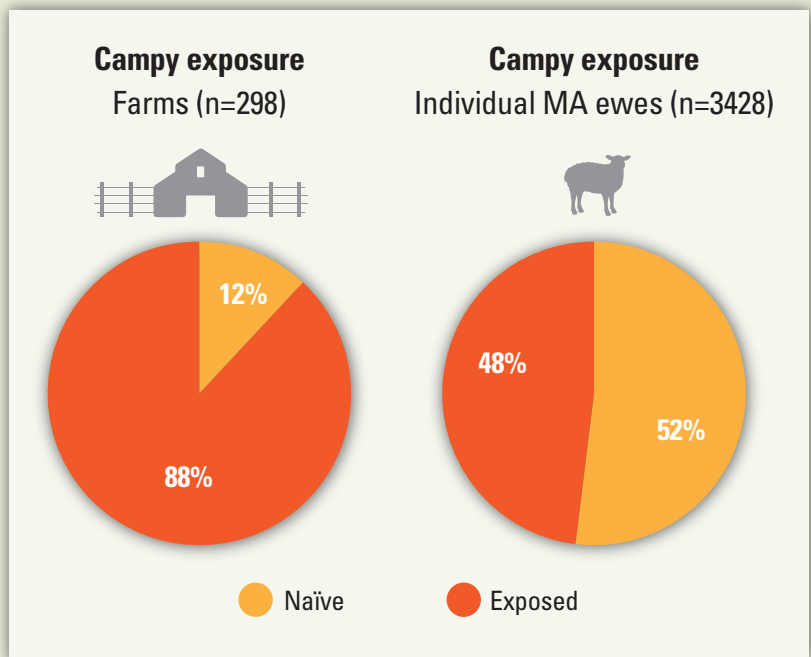
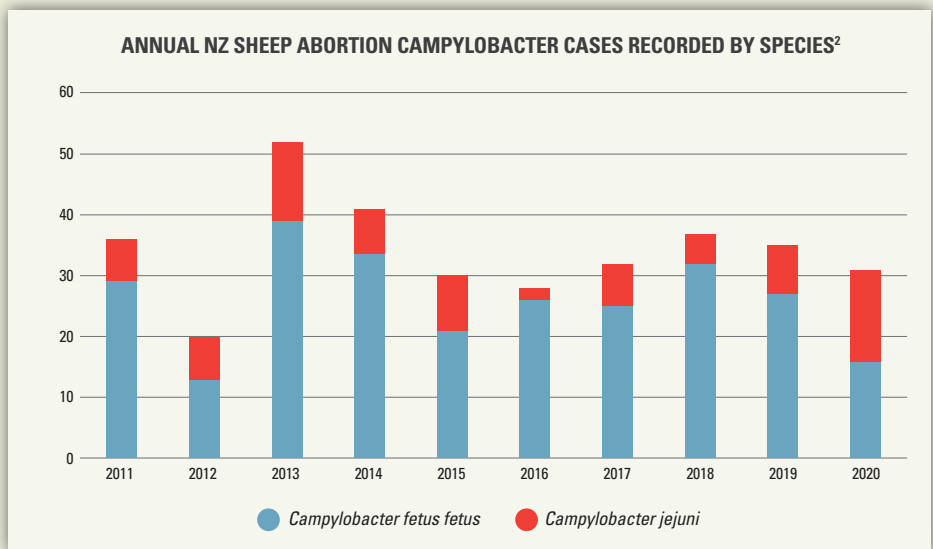
- Many people associate Campylobacteriosis with abortions in the last six weeks of pregnancy.
- Abortion losses are the tip of the iceberg, with early embryonic loss which results in dry ewes or late lambers, stillbirths, and weak lambs all attributed to Campylobacter infection
- Trial work carried out in Marlborough³ analysing scanning and tailing data and responses to trials of flock vaccinations with a Campylobacter vaccine suggests of greater economic importance is reduced lamb numbers and viability even when abortions are not observed.

4. Mixed Age ewes are still at risk & need an annual booster

- People assume that it is not necessary to vaccinate Mixed Age ewes with a Campylobacter vaccine.
- Data gathered from 10+ years of blood testing shows Mixed Age ewes are still at risk with nearly half (48%) of mixed age ewes still naïve.
- Relying upon environmental exposure to 'boost' immunity is risky.
- MSD data on file shows a strong response to a third shot (first annual booster) of Campyvax4 leading to much higher levels of antibody for longer.

5. Vaccination: Low cost, High ROI > 400% / 9% average increase in lambing percentage

- Retail price will vary by veterinary reseller
- If we conservatively estimate the cost of a shot of Campyvax4[®] to be \$0.75-\$1.00 (\$1.50-\$2.00 for 2 shot course)
- The following table demonstrates that vaccinating with Campyvax4 is extremely cost-effective when taking into account the 9% average increase in lambing percentage from vaccination in a naïve flock
- Return On Investment (ROI) is very high at more than 400%.



Campyvax4	
Number of maiden ewes	1,000
Total doses needed	2,000
Cost per dose	\$0.85
Labour cost per hour	\$30.00
Hours to vaccinate	8
Total cost	\$1,940.00
Average lambing % improvement	9%
Price of lambs	\$110.00
Total additional income	\$9,900.00
Net value of vaccinating	\$7,960.00
ROI Campyvax4	410.3%

NOTE: The above uses a number of assumptions, these are estimates only and should be used with caution. These calculations are based on first year of use and therefore allow for two shots of Campyvax4 (sensitiser and booster, 4 – 8 weeks apart), however when used in subsequent years only a single booster shot is required (prior to mating) and therefore costs will be reduced.

