

# ENZOOTIC ABORTION CONTROL - LATEST FINDINGS

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Since the introduction 5 years ago of a live Enzootic abortion vaccine Enzovax, there has been increasingly effective EAE control, resulting not only from a high degree of efficacy against abortion but also from reduction of chlamydia shedding, both features of the new technology incorporating a temperature sensitive strain of *Chlamydia psittaci* in the vaccine.

New data this year answers 3 questions:

1. The current level of EAE in flocks that have been vaccinating with Enzovax for 3 or 4 years, and where the reservoir of infection might rest in these flocks.
2. The effective duration of immunity after a single Enzovax vaccination.
3. Is the continued use of LA oxytetracycline a justifiable alternative?

## Current control

A 4 year survey of 27 flocks and 19,000 ewes indicated that the abortion level after 3 or 4 years of vaccinating in these flocks is very low (Figure 1).

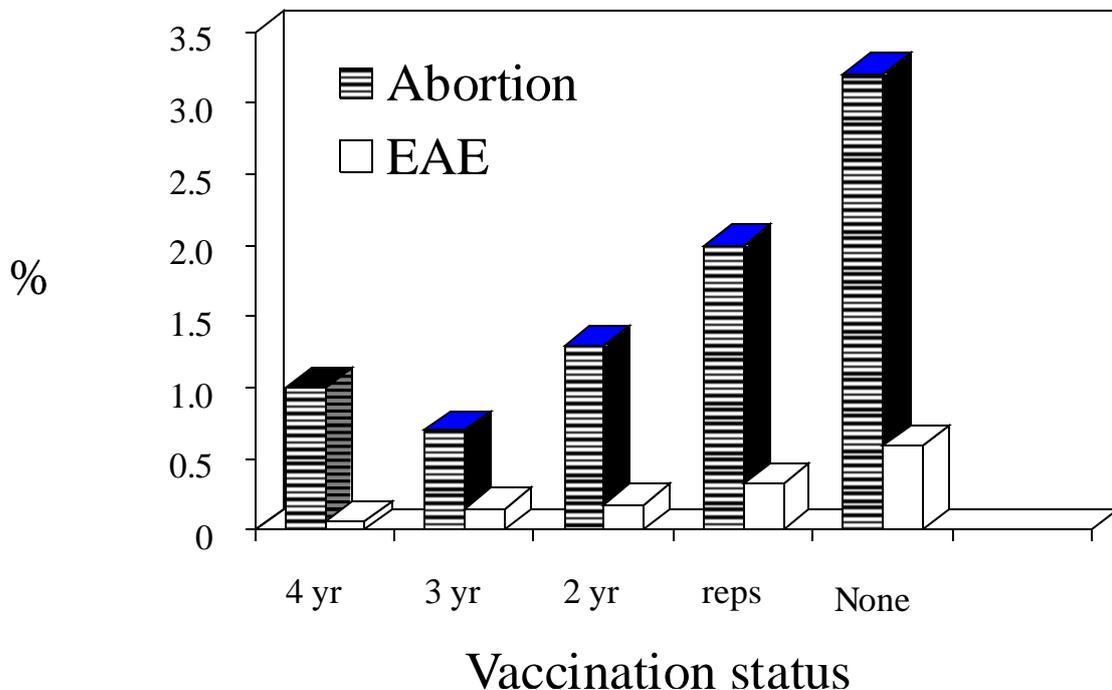
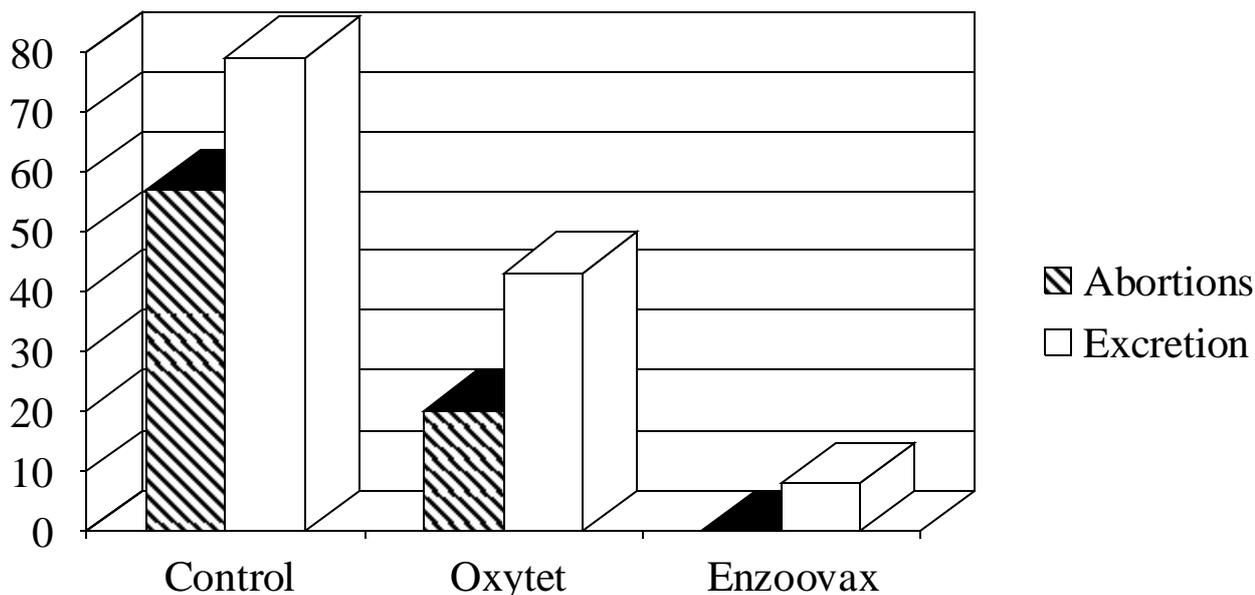


Figure 1. Abortion and EAE in 1997 from a survey of 27 flocks.



**Figure 2. Abortion and chlamydial abortion.**

The main reservoir of infection is in unvaccinated older ewes. The continuing susceptibility of these old ewes indicates that the spread of EAE throughout a flock is slower than many people anticipate, and old ewes cannot be assumed to be 'naturally' immune. The other reservoir is in latently infected replacements, and flocks with bought-in replacements seem to harbour a slightly higher level of infection. The very low level of incidence in these flocks is believed to be the result of two features of Enzoovax induced immunity:

- the prevention of abortion primarily by inhibition of infection in the first place
- a very low infection pressure due not only to reduced abortions but also general suppression of chlamydia shedding.

### Where from here ?

The current low level of abortion seen in flocks in the same position as those in the survey may delude many flock owners into deciding that their problem has gone. This false sense of security may encourage them to stop vaccination. The problem may have gone but the infection usually has not since there is a reservoir. A cessation of vaccination will produce a susceptible group of replacements which will produce abortions and increased infection pressure 2 lambings later, with a resultant upsurge in their problem in what would by then be affecting the unvaccinated ( perhaps) 40% of the flock.

### Immunity

The duration of immunity in Enzoovaxed sheep has been shown to be to be reliable for 3 years in specific challenge studies. This is the first time Enzoootic vaccine has been tested and proven in this way.

The trial results from 69 ewes (Figure 2) indicate the result of challenge nearly 3 years after Enzovax vaccination. There were no abortions in 'Enzovaxed ewes' ( compared to over 55% of the controls) and the reduction of shedding of chlamydia was as effective as in the original vaccination and challenge trials.

### Oxytetracycline LA less effective

In this same trial 2 groups of ewes were given oxytetracycline LA injections in late pregnancy. One group was injected once at 121 days of pregnancy and the other group twice at 100 and 121 days. The results for both oxytetracycline groups was practically the same with abortion/stillbirth in 20% of ewes and chlamydial shedding in 43%. For every ewe that aborted there was at least another spreading infection. Both abortion ( $p < 0.02$ ) and excretion ( $p < 0.005$ ) were significantly less in Enzovaxed ewes.

In the face of an outbreak oxytetracycline LA at 121 days of pregnancy will mitigate the problem (it suggests that the 100 day injection is of little help if a 121 day injection is given), but the results raise a number of question marks over the justification for use of oxytetracycline injections on a yearly basis, since

- abortion reduction is less than from Enzovax vaccinationsubstantial
- shedding still occurs and therefore infects more in-contact ewes
- this also raises questions relative to the increasing public health concerns on all potential zoonoses.