

COOPERS' OVIS
CAMPYVAX
CAMPYLOBACTER VACCINE FOR SHEEP

COOPERS' Animal Health MSD Animal Health

Abortion in Ewes

- Resorption of foetus occurs early in pregnancy
- Abortion is a dead foetus delivered.
- 60 day foetus is 13cm
- 95 day foetus is 25 cm
- 110 day foetus is 30cm
- 130 day foetus is 40cm



COOPERS' Animal Health MSD Animal Health

Abortion in Ewes

Common infectious causes

- Campylobacteriosis (vibriosis)
- Toxoplasmosis
- Listeriosis
- Brucellosis
- Leptospirosis
- Salmonellosis
- Border Disease
- Chlamydia



Photo: Anthony Shepherd - Sheepmaster

COOPERS' Animal Health MSD Animal Health

Losses at lambing time

- Premature lambs
- Stillborn lambs born full term.
- Weak lambs.
- Sick ewe means poor mothering and reduced milk production.
- Ewe deaths from secondary uterine infections
- These could all be due to Campy infection close to term
- **Infections can present not just as abortions**

COOPERS' Animal Health MSD Animal Health

Caution

- Infectious causes of abortion or stillbirths in sheep such as *Toxoplasma*, *Listeria* and *Campylobacter* are potentially zoonotic meaning they can cause illness in humans
- Take care handling foetuses and sheep.
- Use gloves and hygiene
- Campylobacter causes enteritis and is a concern for immunocompromised individuals

COOPERS' Animal Health MSD Animal Health

Campylobacteriosis in sheep (Campy)(Vibrio)

- Bacterial infection – *C. fetus fetus* and *C. jejuni* both cause abortion in Australia
- Different to vibrio in cattle (*C. fetus venerealis*)
- Most common cause of abortion outbreaks in Australian sheep

COOPERS' Animal Health MSD Animal Health

Campylobacteriosis in sheep (Campy)(Vibrio)



- Low level endemic problem: causes estimated 9% abortion rate (may not see foetuses on ground – just reduction from scanning to lamb marking)
- Abortion storm: 20-30% abortion rate common (up to 40%)*
- May be confined to 1 or 2 mobs.

*Nilon, P. 2011: A Review of Campylobacter Abortions in Tasmania. MSD Animal Health. Data on file.



Campylobacteriosis in sheep



- Abortions from 3 months of pregnancy onwards, 7-25 days after infection introduced.
- Also causes stillbirths and the birth of weak, premature lambs.
- Infected ewes with full-term lambs often have a poor milk supply resulting in the lambs dying of either exposure or starvation.
- Can result in ewe death after abortion (uterine infection).



Campylobacteriosis in sheep



- Often first detected when ewes are yarded for crutching, pre-lambing vaccination/drenching or premature/dead full term lambs are seen
- Ewes abort in the yards or have blood stained breech wool
- Most aborting ewes show no signs of ill-health
- Diagnosis: PM and lab examination of foetus and placenta,
 - Distinct lesions (liver and placenta)
 - Bacteria isolated from stomach contents of foetus
- Blood test now available to detect exposure to Campylobacter infection.
 - targeting sheep that have lost lambs post scanning.



Transmission between flocks



- Movement of healthy carrier ewes into clean flocks (bacteria carried in intestine and shed in faeces)
- Carrion-eating birds (crows, magpies) can carry bacteria for several weeks after feeding on an aborted foetus and can spread the bacteria or aborted material from one mob or property to another
- Scavenger animals (foxes) moving the foetus from one mob or property to another can also spread the disease.



Transmission within flocks



- Oral transmission (from contaminated feed or water)
- Source of infection: Excreted in faeces of healthy sheep (immune carriers – won't abort)
- Aborted materials (placenta, fluids, foetus)
 - Abortng ewes discharge a large number of bacteria with the aborted foetus that acts as a source of infection to other ewes
 - Common to get one or two abortions and then a large number as ewes come into contact with aborted material
 - Following introduction of the disease into a naïve flock, one or two ewes aborting in the 3rd or 4th month of gestation will be followed in 2-3 weeks by a sharp increase in the abortion rate.
- *C fetus fetus* bacteria may persist in the uterine discharge for up to 6 weeks



Is Campy an issue?



- Campylobacter Abortion has been diagnosed in every State of Australia, except Qld.
- High suspicion of Campy problem if:
 - Aborted foetuses/stillbirths
 - Weak non-viable lambs being born, or
 - Reduced lamb marking % compared to scanning %



Is Campy an issue?



Benefits of Scanning Your Ewes:

- ✓ Measure conception rates and diagnose multiple pregnancies for targeted management
- ✓ Enables measurement of any lamb losses between scanning and marking
- ✓ Triggers the investigation of the cause of any losses and implementation of preventative strategies to maximise gains





Prevalence in Australia



- Hard to estimate prevalence – not many samples submitted to labs due to scavenging and aborted lambs are often not found
- Common cause of abortion in high rainfall zones of Australia identified in sheep wheat areas.
 - Cool moist conditions favour survival
 - Concentration of pregnant ewes and high stocking rate
 - Supplementary feeding increases contamination and exposure
- Don't always get an abortion storm, many properties get a few sporadic, late term abortions or the birth of stillborn or small, weak, non-viable lambs




Control



- During an outbreak:
 - Need to decrease exposure of ewes to infection
 - Reduce stocking density
 - Move sheep from contaminated pasture
 - Remove aborting ewes and aborted fetuses from the mob
 - Antibiotics ?? Perhaps in early stages of outbreak or depends on stage of pregnancy of mob and likely disturbance of lambing. Discuss with your vet




Control



- If endemic in flock consider grazing ewe weaners with affected mobs.
 - This will expose females to bacteria before they are pregnant – hopefully develop some immunity and reduce risk of aborting as maidens.
 - Incomplete immunity – not all will mount protective immune response and a big challenge may overcome immunity
- Ewe lambs lambing at 12-14 months less likely to have been exposed and thus very susceptible.
- Traditional 2yo maiden ewes the same.
- Vaccinate prior to joining to as an aid in the control of reproductive losses




Vaccination



- **Why vaccinate against Campy?**
- Avoid abortion storms caused by this organism capable of inflicting lamb losses of up to 40%
- Reduce the sporadic losses between conception and lambing (9% in endemic flock)
- Reduce the losses due to weak, non-viable lambs




Ovilis CampyVax vaccine



- Full registration late 2013
- For use as an aid in the control of reproductive losses due to *Campylobacter jejuni* and *Campylobacter fetus fetus*




Ovilis CampyVax vaccine

- Active constituent Inactivated (killed) whole cell preparations of *Campylobacter fetus fetus* and *Campylobacter jejuni*
- Emulsigen: oil in water adjuvant improves the level and duration of immunity (more rapid and stronger immune response than aluminium hydroxide)





Storage & Disposal

- Store at 2-8 °C (Refrigerate, do not freeze)
- Keep shaded/cool while using and in breaks
- Dispose of empty containers by wrapping in paper and putting in garbage
- Vaccine should be used up within 12 hours of opening





Recommended Vaccination Programme

- Unvaccinated ewes: 2 vaccinations, at least 3 weeks apart
 - Sensitiser dose prior to joining and booster at least 3 weeks later. Convenient to vaccinate when rams introduced and booster when rams removed (5-6 weeks later) – demonstrated to be safe for use in pregnant ewes
- All ewe lambs, maiden ewes and newly purchased ewes must receive 2 vaccinations prior to mixing with older ewes
- Annual booster: To maintain maximum immunity, all ewes should receive an annual booster dose prior to joining
- Where *Campylobacter* is diagnosed on unvaccinated farms, all breeding ewes should be fully vaccinated in the season following diagnosis

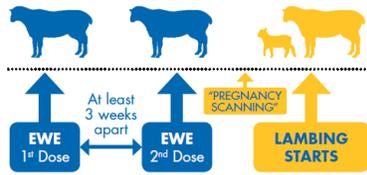




Recommended Vaccination Programme

GETTING STARTED WITH CAMPYVAX

- 500 mL pack
- 2 mL dose
- Nil Meat WHP





Conclusions

- Where *Campylobacter* abortions are confirmed on a property then a full vaccination programme should be carried out
- Abortions may be just ‘the tip of the iceberg’
- Lamb losses from reduced lamb survival of full term lambs may be more important than abortions – investigate
- Campylobacter* should be considered in mobs or on properties experiencing large lamb losses (>18%) between scanning to lamb marking whether or not abortions have been observed



