MAKE EVERY LAMB COUNT

PROTECT YOUR LAMBS FROM ARTHRITIS*

COOPERS®

ERYGUARD®

VACCINE FOR SHEEP, LAMBS AND PIGS

* Coopers® Eryguard® prevents the signs of erysipelas arthritis in lambs.

COOPERS®
EST. 1843

WHAT IS ARTHRITIS?

Arthritis is an inflammatory joint disease commonly caused by bacterial infection that affects one or multiple (polyarthritis) joints.

The most obvious signs associated with arthritis are depression, swelling and lameness.

The most common types of bacteria which cause arthritis in sheep are:

Erysipelothrix rhusiopathiae

Pyogenic bacteria (staphylococci, streptococci, *Actinomyces pyogenes* and *Fusiformis necrophorum*)[1]

Chlamydia pecorum

CAUSES OF ERYSIPELAS ARTHRITIS

The bacteria *Erysipelothrix rhusiopathiae* is one of the main types of bacteria causing arthritis in sheep[2].

It is a common environmental bacteria[2] that resides for prolonged periods in soil, faeces and water[4,5].

It is shed in faeces, urine, saliva and nasal secretions[2].

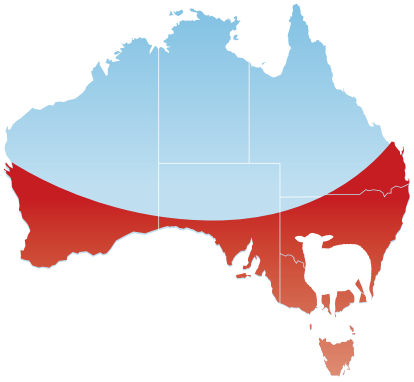
EFFECTS OF ERYSIPELAS ARTHRITIS[2]

Erysipelas bacteria causes an inflammatory response leading to fever, depression, swelling, lameness and a reluctance to walk.

Joints commonly affected: knee, elbow, hock and stifle.

Large volumes of fluid and associated swelling is often present in the joints of chronically affected animals.

There are varying degrees of disease; from initial joint pain and recovery, through to chronic arthritis which can leave sheep severely debilitated.



PREVALENCE AND INCIDENCE OF ERYSIPELAS ARTHRITIS

Erysipelas arthritis is widespread and found across all sheep regions and climatic zones in Australia[1].

HOW DO SHEEP BECOME INFECTED?

Erysipelas arthritis is most often observed in lambs up to 6 months of age; however older sheep can also be affected.

Typically, acute clinical signs of arthritis are observed 10 - 14 days following exposure to *Erysipelothrix rhusiopathiae*.

Erysipelothrix rhusiopathiae enters the systemic system via:

- The umbilical cord of neonates[5].
- Open wounds at lamb marking (following ear marking, mulesing, tail docking and castration procedures).
- At dipping via open wounds caused at shearing, from grass seed penetration or dog bites.
- Flystrike wounds.

Flies may also facilitate the spread of infection with the bacteria transferred from the environment or from an infected wound to other open wounds[2].

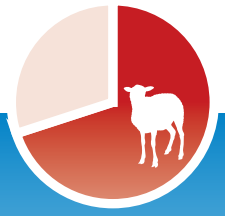
Erysipelothrix rhusiopathiae may also reside in the lymphoid tissue[4] in the alimentary tract (e.g. tonsils) of ewes with the potential of bacterial transfer from ewes to the neonate via licking.

COST OF ARTHRITIS

ARTHRITIS IS ESTIMATED TO COST AUSTRALIAN SHEEP PRODUCERS[1]

$39M PER ANNUM

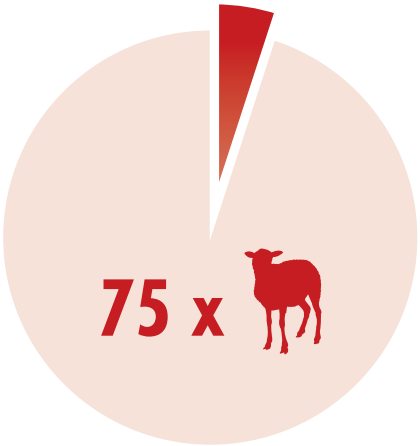
86% of this cost is attributed to production losses[1]



It is estimated that **70%** of affected lambs are culled on farm or die as a result of predation[2]

POTENTIAL LOSS OF FARM INCOME

If 5% of a farm's flock of 1500 lambs are culled or condemned due to arthritis



5% x 1500 x $120/hd^

= $9000

PRODUCTION LOSS TO THE FARM

^ *Estimated average live weight value of 22 kg lamb, MLA Data, June 2016.*

EFFECTS ON PRODUCTIVITY

The distress and discomfort associated with joint pain is likely to decrease sheep grazing time and may inevitably lead to a reduction in feed intake, live weight gain and wool growth.

Reduced sale price

Stockies will draft out lame lambs. Arthritis can impact on weight gain due to reduced grazing and reduced feed intake.

Not 'fit' to load

Truckies will not load lame lambs. Affected sheep not considered 'fit' to load and travel to sale will remain on farm for further recovery time or are culled.

Condemned carcass

Arthritis is recognised as one of the most common causes of total carcass condemnation. Arthritic joints and the joint above are trimmed at the abattoir.
The average carcass weight loss of 3 kg^2 significantly reduces the value of the carcass.

PREVENTION OF ERYSIPELAS ARTHRITIS

Diagnosis of the causative organism is necessary to determine the most effective treatment and preventative strategies required to reduce the incidence of arthritis on farm.

Currently, submission of chilled (unopened) joints, not previously treated with antibiotics, to laboratories is necessary to obtain a definitive diagnosis.

TREATMENT OPTIONS

Veterinary advice should be sought for treatment of erysipelas arthritis and to diagnose the causative organism.

If identified in the early stages of the disease, the most successful treatment regime is a course of antibiotics.

Antibiotic treatment in the latter stages of the disease is often not effective given the integrity of the joint is often compromised due to poor blood supply.

If there has been an increased incidence of arthritis on farm some farmers decide to administer a blanket treatment of antibiotics to lambs; however this is often not a cost-effective approach to controlling arthritis.

REDUCING INCIDENCE ON FARM

Neonates

- Vaccinate pregnant ewes to ensure lambs are protected against erysipelas arthritis via maternal antibodies up to six weeks of age.
- Lamb onto pastures prepared with adequate grass covering and minimal faecal contamination to reduce the spread of bacterial infection via the umbilical cord.

Dipping

- Allow two weeks for shearing cuts to heal prior to dipping sheep post-shearing.
- Ensure dipping solution is clean, free of contaminates and change solution when it is becoming heavily contaminated with debris, faecal matter and mud.
- Ensure dipping solution contains an antiseptic solution when there is evidence of grass seed penetration or recent skin damage due to flystrike.
- Dip youngest sheep first in the cleanest dip wash.

Lamb marking

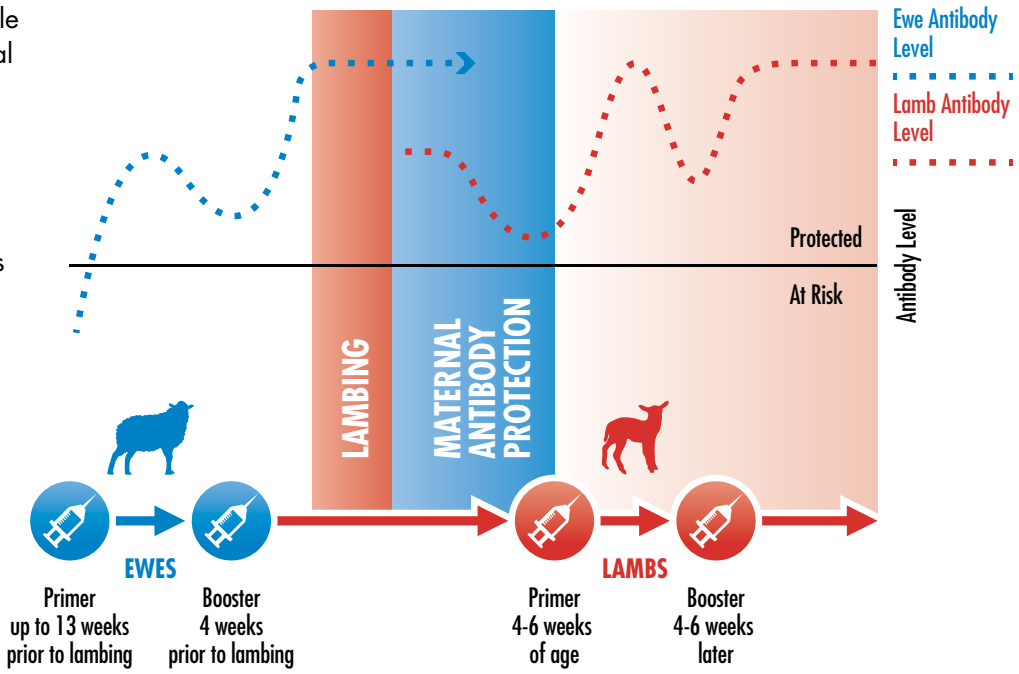
- Avoid dusty yards and preferably mark lambs, using portable yards, in paddocks with adequate grass covering.
- A high standard of hygiene is important for minimising the risk of bacteria entering open wounds.
- Always use clean instruments and disinfect between lambs. Change disinfectant regularly.
- Commence vaccination program to protect against the signs of erysipelas arthritis.
- Release lambs from lamb marking cradles onto their feet. This will reduce soil and faecal contamination of wounds and allow the lamb to walk away from the immediate area.
- Avoid overcrowding as this increases the risk of infection.

VACCINATION IS THE BEST PROTECTION

A vaccination program is the best preventative strategy to protect your flock against the signs of erysipelas arthritis.

Vaccinate pregnant ewes to protect lambs

Lambs are highly susceptible to infection via the umbilical cord of neonates or via open wounds following lamb marking procedures. Vaccinated ewes offer their young, naive lambs protection against the signs of erysipelas arthritis via maternal antibodies from birth up to 6 weeks of age. Lambs should then be vaccinated at marking (sensitising dose) and 4 - 6 weeks later (booster dose) for 12 months protection.



MAKE EVERY LAMB COUNT

PROTECT YOUR LAMBS FROM ARTHRITIS* WITH

COOPERS®
ERYGUARD®
VACCINE FOR SHEEP, LAMBS AND PIGS

COOPERS® ERYGUARD® is an inactivated bivalent erysipelas vaccine which contains two *Erysipelothrix rhusiopathiae* isolates for the prevention of signs of erysipelas arthritis in sheep.

BENEFITS OF USING COOPERS ERYGUARD TO PREVENT THE SIGNS OF ERYSIPELAS ARTHRITIS[1,2]

Improved productivity
Protects lamb's wool growth and weight gains

Increase in number of lambs sold due to reduced mortality and culling of lambs on farm

Improvement in genetic gain due to increased number of ewe lambs to select from for flock retention

Improved carcass value due to reduced penalties on carcass value due to erysipelas arthritis

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ERYGUARD DOSE RATE AND ADMINISTRATION

Eryguard is a 1 mL subcutaneous injection and the recommended site of injection is high on the neck behind the ear.

VACCINATION SCHEDULE

Class of sheep	Vaccination	Timing
Unvaccinated ewes	Initial dose	Up to 13 weeks prior to lambing
	Booster dose	4 weeks prior to lambing
Previously vaccinated ewes	Booster dose	4 weeks prior to lambing
Lambs	Initial dose	At 4 - 6 weeks of age
	Booster dose	4 - 6 weeks later

NOTE: Serological and challenge studies undertaken with Coopers Eryguard have shown that vaccination of lambs born from vaccinated ewes is still effective in the presence of maternal antibodies.

ERYGUARD STORAGE AND HANDLING

- Eryguard should be stored refrigerated between 2°C - 8°C.
- Always protect from light and discard if previously frozen.
- Shake well prior to use and ensure the vaccine remains well mixed when vaccinating.
- Refrigerate any remaining vaccine, with the tube removed from the vaccinator gun.
- Use within 24 hours of opening.
- Take care to avoid self-injection. In the event of self-administration, seek medical attention. Show the package leaflet or label to the Medical Practitioner.

WHAT HAPPENS TO YOUR LAME LAMBS?

NO SALE

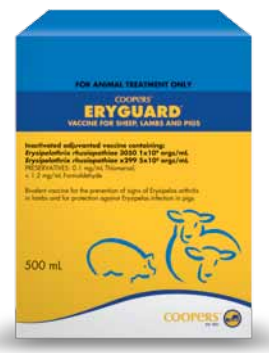
Stockies will draft out lame lambs; sale prices are reduced or sheep unsold

NOT FIT TO LOAD

Truckies cannot accept lame lambs for transportation

REJECTED

Carcasses detected with arthritis are either condemned or trimmed



For further information on **COOPERS ERYGUARD**
call your local Coopers Territory Sales Manager on Toll Free **1800 885 576**
www.coopersanimalhealth.com.au

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1. Lane, J., Jubb, T., Shephard, R., Webb-Ware, J., & Fordyce, G. (2015). Priority list of endemic diseases for the red meat industries (Vol. 282). Meat & Livestock Australia Limited.
2. Farquharson, B. (2007). Review of Arthritis in Prime Lamb Sheep (Vol. B.AHW.0123; ISBN: 9781741912562).
3. Paton, M. W., Rose, I. R., Sunderman, F. M., & Martin, M. H. (2003). Effect of mulesing and shearing on the prevalence of *Erysipelothrix rhusiopathiae* arthritis in lambs. *Australian Veterinary Journal*, 81(11), 694-697.
4. Brooke, C. J., & Riley, T. V. (1999). *Erysipelothrix rhusiopathiae*: bacteriology, epidemiology and clinical manifestations of an occupational pathogen. *Journal of Medical Microbiology*, 48(9), 789-99. http://doi.org/10.1099/00222615-48-9-789
5. Ersdal, C., Jorgensen, H. J., & Lie, K.-I. (2015). Acute and Chronic *Erysipelothrix rhusiopathiae* Infection in Lambs. *Veterinary Pathology*, 52(4), 635-643. http://doi.org/10.1177/0300985814556187.

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