

Fact sheet

SOUTH EAST LOCAL LAND SERVICES

FOOT BATHING

Foot bathing is the most effective and commonly used option for the management and control of scald, benign and virulent foot rot.

Foot bathing alone will not eradicate foot rot and does not eliminate the need for foot inspections and culling in an eradication program. But a well-designed foot bathing program can help clean sheep to resist infection during the spread period and can reduce the severity of infection and number of sheep infected. This will reduce the number of sheep that need to be culled due to persistent lesions at subsequent eradication inspections. It dries feet out which assists in healing affected feet and improves the welfare of these sheep.

Foot bath as often as required to minimise disease. The greater the spread period and the more aggressive the foot rot organism, the higher the frequency of required bathing. Once a week foot bathing is required in periods of high challenge. Occasional bathing is required for lower challenge. Daily foot bathing is occasionally used for curative purposes. Environmental challenge is maximised when conditions are warmer than 10 degrees, wet (>50mms in last month) and pasture is dense, containing a higher proportion of clover or capeweed.

There are three options used for foot bathing:

- Zinc Sulphate
- Formalin
- Radicate®.

Zinc sulphate is the preferred chemical for foot bath treatments as it is safer for the user, gentler on the sheep and easier to dispose of compared to formalin and copper-containing solutions.

Formalin is not recommended due to work health and safety recommendations.

Zinc Sulphate at 10-20%

The chemical zinc sulphate heptahydrate is a white crystalline powder available in 25 kg bags. It can be mixed as a 10% minimum to 20% maximum solution, with or without the addition of a wetting agent such as 1-2% sodium lauryl sulphate. A 10% solution is made by adding 1 kg zinc sulphate to every 9L of water.

Stand-in rather than walk through baths are preferable when using zinc sulphate.

It is most successful when sheep stand for a period specified by the manufacturers datasheets or as recommended by your veterinary surgeon.

The recommended minimum contact time is 5-10 minutes. Prolonged soaking of up to 1 hour is recommended for higher value animals. It is important to use a timer and plan for a long day.

The drying effect and drying time are also important aspects of effective foot bathing. Sheep should be allowed to stand on a dry, clean surface such as grating, on concrete or on dry hard ground for at least an hour (or overnight if possible) to ensure the zinc sulphate is as effective as possible.

Plastic footbaths are available to purchase from rural suppliers. A standard size is 2400 by 480w by 200h. Volume in litres = length (m) x width (m) x fill height (m) x 1000.



It is important foot baths are filled to a depth of at least 5cm. As an example, at a fill height of 5cms this bath would have a volume of 57L. A 10% to 20% solution would be made by adding 6 to 12 kgs of zinc sulphate.

Sodium lauryl sulphate is used to improve the penetration of zinc sulphate into the hoof and therefore provide better outcomes. It also comes in a powdered formulation, added at 1-2kgs per 100L of water. Wetting agents are particularly useful in feet with under-running present.

It is good practice to check the strength of the footbath solution with a hydrometer. Hydrometers that indicate the strength of the solution are available at battery retailers and some rural merchandisers. For a 10 percent solution, it should be 1050 – 1060 units on the hydrometer. If too low, add 2.5kg zinc sulphate/100 litres of water to increase the strength of the solution by 10 units. If too high, add 25 litres of water/100 litres to decrease by 10 units. Strain the solution through a stocking before measuring.

Bathing can be repeated daily for 5 days for an increased curative effect.

Zinc sulphate footbaths can be used over multiple days but will settle out in the bath overnight. It should be mixed with a broom before each day's foot bathing. Zinc sulphate is beneficial compared with formalin in that it remains effective in the presence of organic matter, although it works more effectively when feet are clean and should be discarded when badly fouled with dirt and faeces. Prior to foot bathing, sheep should stand on a hard surface to assist in removing as much dirt as possible before entering the bath.

Dispose of the contents of the foot bath carefully, well away from a watercourse to avoid pollution and meeting all current regulations relating to dip disposal.

5% Formalin

There are serious workplace health and safety problems associated with formalin, so it is generally not recommended. It is caustic, can cause eye ulceration and is thought to be a carcinogen.

The advantage of formalin footbaths over zinc sulphate is that formalin only requires a walk-through and does not require standing time. However, it is important to remember that formalin is inactivated by mud and faeces, so it is crucial that feet are clean (running through a water bath prior) when using this product. Formalin makes the hoof wall considerably tougher, although it can also cause the hoof to become brittle and crack, causing shelly toe and foot abscesses.

5% Formalin can be used as a walk-through treatment in a foot bath at least 8 meters long. A 5% solution of formalin can be made by diluting 1 litre of formalin in 19 litres of water.

Radicate®

Radicate® is a solution of copper salts used for foot bathing every 2 weeks for 15 minutes. A 10 litre container is diluted in 100 litres of water. This product is effective and gives a longer period of protection between applications/bathing, but it is more expensive, has potential for toxicity to waterways and sheep and thus is more difficult to dispose of safely. Radicate is also corrosive so is not recommended for use in metal footbaths.

Sheep are required to stand in the Radicate solution for at least 15 minutes and then feet must be allowed to dry on grating for a minimum of one hour. This product can cause wool discolouring although it is only temporary and scours out in 6-8 weeks.

More information

NOTE: Virulent foot rot is a notifiable disease under the Biosecurity Act 2015 as it poses a biosecurity risk to others. You have a biosecurity duty to inform your District Veterinarian if you have concerns about lame sheep.

Alex Stephens

District Veterinarian

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Your District Vet can assist you to diagnose and manage lameness in sheep.

For more information on foot rot in sheep and goats see:

<https://www.dpi.nsw.gov.au/animals-and-livestock/sheep/health/footrot/footrot-sheep-goats>

<https://www.agric.wa.gov.au/livestock-biosecurity/five-day-foot-bathing-treatment-ovine-footrot>

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