

# Canterbury Chamber of Commerce

*Agricultural Bulletin*

## FOOT-ROT IN SHEEP

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### Foot-Rot in Sheep

Footrot is a general term used to denote certain conditions of the feet of sheep which cause inflammation and pain, and consequent lameness. While a number of different forms exist, it is difficult to draw any sharp line of demarcation among them. Usually the trouble commences with a mild inflammation or "scald" between the toes of the hoof and, if checked at this stage, is easily treated. However, if the trouble becomes deeper seated by more tissues becoming affected or by the onset following a definite injury to the foot, a state is reached which may be called either foot-sore or foot-rot. This trouble is confined chiefly to the tissues of the foot itself. An even more severe form, called malignant foot-rot, of which the cause is still a little obscure, attacks the tissues all round and above the foot. This type will be dealt with separately.

Considerable work has been done on the problem of foot-rot but there is still a wide field for investigation into all the predisposing and contributory causes of the trouble and for methods of prevention and control. The chief organism associated with the trouble is *bacillus necrophorus*, which has a burrowing action and thrives in the absence of air. A result of this is that in the treatment of all cases not dealt with in the earliest stages it is essential to cut deeply enough into the tissues to get to the seat of the trouble.

**Breeding for Resistance**—Certain breeds of sheep are able to withstand foot-rot better than other breeds and even within breeds there are degrees of resistance. Some sheep owners endeavour to breed towards this resistance by removing all seriously affected sheep from the flock and treating them intensively in an isolation paddock not used for the rest of the flock. Subsequently these sheep can be disposed of.

**Predisposing Causes**—Any set of circumstances which tend to soften or cause injury to the tissues of the feet or to set up irritation between the toes may lead to foot-rot. On the contrary, any condition, for example, grazing on stony country, which keeps the feet hard and short tends to prevent the trouble. The fact must not be lost sight of that the general good health of the animal helps it to throw off attack and has, in some cases, a definite influence on the course the trouble will take.

The early stages of the trouble, particularly in wet localities or in damp seasons, are frequently spoken of as scald, but there does not appear to be any line of demarcation between scald and the more serious forms of foot-rot. Scald is the term used to describe a mild inflammation between the toes, usually caused by excessive dampness of the pasture, and the fact that the feet are never properly dry. However, if the organisms causing the more severe forms of the trouble gain entrance at this stage, they soon multiply and cause endless trouble.

**Prevention**—There can be no doubt that foot-rot results in considerable loss to some flock owners each season. Pain and the inability of the animal to travel reduces the production of flesh and wool, and recovery is frequently slow. For this reason, it is essential to exercise care, and perhaps to go to some expense to prevent the occurrence of the trouble. It is impossible to lay down definite rules for the prevention of foot-rot, but much can be done to prevent the occurrence of the trouble in serious proportions. The pastures, especially in damp seasons, should be grazed short, the sheep frequently moved, the land well drained, and the sheep's feet kept trimmed. Some farmers adopt the practice of spilling bags of lime in the gateways through which the sheep are driven, and they regard it as a useful aid in the prevention of foot-rot. Care should be taken to prevent the introduction of infected sheep to the flocks. A precautionary measure is to isolate newly-bought sheep for a period of four weeks.

Where permanent watering troughs or salt lick troughs are used in country subject to foot-rot, it is desirable to build a concrete platform about four feet wide round them with the outside edge raised a little. This serves the purpose of preventing a mudhole from forming round the trough, and it provides a suitable place to put some powdered bluestone so that the sheep will treat themselves. Where possible sheep should be frequently driven along a hard metal road to trim and harden the hoof.

An additional precaution on country and in seasons where foot-rot is liable to occur, is to run the sheep periodically through a suitable foot-rot trough or bath. It cannot be stressed too much that in dealing with foot-rot

"prevention is better than cure," and the use of precautionary measures will probably save loss of time and money in combating the disease if it becomes established in the flock.

**Treatment**—The commonest and most satisfactory material used for treatment in the earliest stages or as a preventive is bluestone (copper sulphate). For use as a preventive only it should be dissolved in water at the rate of 4oz to the gallon and the sheep should be allowed to stand in the bath for a few minutes. For this purpose it is necessary to have a gate at either end of the trough. It must be realised that this solution is too dilute for actual treatment, but it acts as a preventive as it keeps the tissues hard.

Where bluestone is objected to because of its liability to stain the wool, formalin at the rate of one part to eight parts of water may be used. In some cases on heavy land the lambs should be treated also to prevent scald.

Once there is any sign of foot-rot then more active steps should be taken to check the trouble in the early stages. All sheep showing any signs of a limp should be caught, the feet cleaned and then inspected. Any loose or overgrown horn or tissue should be trimmed off and if there is a sign of the trouble being under the surface, the overlying tissue should be cut away. As a precaution all trimmings should be burnt. If it is only the mild condition known as scald which is affecting the feet, then all the sheep should go through the footrot bath containing a solution of bluestone at the strength of 8oz to the gallon. If formalin is used, one part to four parts of water is the usual strength, and is suitable for treatment at this stage.

**Foot-rot Trough**—For this purpose a trough about eight inches wide at the bottom sloping out to 12 inches wide at the top, about six inches deep and 15 feet long, should be built, and used for preference in the shearing shed. The sheep clean their feet by walking over the battens before going into the trough, and dry their feet on the battens after treatment. For the ideal treatment the trough should be made in two sections. The first one about eight feet long, filled with water and with fine pebbles on the bottom to clean the feet, then a section of the gratings with no trough on which the feet drain, and then a longer section, in which the solution for treating the

feet is placed. Some means should be adopted to prevent splashing. Where a wooden trough is used, light wooden slats should be placed across the bottom at six-inch intervals, to give a foothold, and if a concrete trough is made the bottom should be left rough. The solution requires to be about two and a half inches deep in the trough.

When it is not convenient to use the shearing shed the next best position in which to erect a trough, preferably of concrete, is the position that allows the draining pens of the sheep dip to be used to accommodate the sheep for a time after they have passed through the trough. This should, if possible, be made similar to the one described above, but for preference should have the sides boarded to prevent loss of liquid, and to give a race about 20 inches wide. A movable wooden trough can also be used in the branding race or other suitable position.

In every case the sheep should go out to some dry pasture after treatment, and if this is not possible they should be held on the road for some time to allow time for the solution used for treating the trouble to take effect.

Another method used to provide facilities for standing sheep in a solution for treatment is to concrete one of the pens in the sheepyards, and to have a raised flange round the edge of the pen. The most suitable pen is the one just before the sheep enter the shearing shed, and after the sheep have been held in this pen for some time they can be driven into the shearing shed.

Hand Dressing—Where the tissues under the skin or horn are affected, the feet require to be hand dressed, and these sheep isolated from the remainder of the sheep, which should go through a trough containing one of the solutions mentioned above.

For hand dressing, a number of treatments may be used, since it sometimes happens that one treatment will be effective where others fail. If satisfactory results are not obtained with

the treatment in use, it would be wise to try another. Bluestone may be used at the rate of 1lb to one gallon of water, but should not be used at this strength in troughs in the early "scald" stages, because it causes blisters. Bluestone dissolved in vinegar at the rate of 2-3oz to the quart is an effective hand dressing. Another preparation is 8oz bluestone, 4oz lysol or fluid sheep dip, and one gallon of water. Formalin three parts and water one part may also be used. A recently introduced treatment is cresylic acid and stockholm tar in equal parts.

The above are all liquid dressings, but in certain cases, particularly where the sheep have to be turned out on to wet pastures, it is desirable to use a more waterproof dressing. One of these is powdered bluestone one part, gunpowder one part, and sufficient stockholm tar to make a thick paste. This mixture requires to be used with due care, and should be warmed before use by placing the container in hot water, but on no account should it be warmed over a fire. Another recipe is stockholm tar one part, lard one part, and powdered bluestone one part. This should also be slightly warmed prior to use. In very severe cases, but-ter of antimony applied with a feather may be used. Before applying any of these dressings it is absolutely essential to pare away any tissue which may have had a trace of the trouble under it.

A very useful article with which to apply the treatment is a small sized bottle brush so that the material can be worked well into any affected part, except in the case of bluestone, which has a corrosive action on metal. Bluestone containers should be made of wood, earthenware, or glass, and when applying solutions containing bluestone to the hoof use a narrow brush to work in the solution. Care must be taken that splashes of bluestone do not get into the eyes of the operator.

#### **Malignant Foot-rot**

This is a more severe form, and the inflammation and suppuration

spread to the tissues above and round the hoof. There is usually intense swelling, the toes are widely separated, and the animal has great difficulty in placing any weight on the affected foot.

The reason for the trouble taking this form is not known, but some research workers claim that a special organism is at work. As a general rule recovery from this form is very slow and unless the animal is young or valuable it is questionable whether it is worth treating.

As soon as it is seen that a sheep has this form it should be isolated in a dry place and any hoof parings, used dressings, etc., should be burnt. Constant careful attention is essential, the affected foot or feet should be bathed in a hot water fomentation to which a mild antiseptic has been added, for example a weak solution of a carbolic dip.

A moderately deep incision should be made with a sharp sterilized knife near the heel of the foot to allow any discharge to drain away. This should be assisted daily by gentle pressure from the front of the hoof towards the heel.

The feet should be kept clean, every endeavour being made to relieve the pain and to reduce the swelling. Soothing dressings should be applied.

#### **Conclusion**

Prevention is better than cure.

Every property on which sheep are likely to be affected should have a foot-rot trough.

Run the sheep periodically through one of the weak solutions mentioned.

If the sheep are affected hand dress and isolate.

Copies of this Bulletin may be obtained from the Secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.