

NADIS disease bulletins are written specifically for farmers, to increase awareness of prevalent conditions and promote disease prevention and control, in order to benefit animal health and welfare. Farmers are advised to discuss their individual farm circumstances with their veterinary surgeon.

Septic Laminitis (Bush Foot)

The horn of the foot of the pig is designed to be protective. It has been stated that, in nature, the “foot is the hardware and the ground is the software” but in the indoor farming system these roles are reversed. Furthermore, the high levels of productivity expected of the sow can be associated with defective horn growth, such that the protection afforded by the claw is incomplete. In either scenario, cracks can appear in the horn, which allows secondary environmental bacterial contamination to gain access to the sensitive tissues underneath. Proliferation of such contamination leads to abscessation within a sealed compartment, which ultimately swells and bursts producing what is commonly recognised as bush foot.

Clinical Signs

In the early stages, there will be little other signs than a reluctance of the sow to put weight on the foot. She will act as if she is touching something hot. Over a few days, swelling may appear above the horn and the foot will be noticeably hot and painful. Unless action is taken, the developing abscess will infiltrate all tissues of the foot, including tendons and bone, setting up a septic arthritis or osteomyelitis and tendonitis. Ultimately, the pressure above the hoof will be so great that the skin will die off (necrosis) and the abscess will burst with pus and blood leaking out. The animal is likely to be 100% lame. Swelling may extend above the foot as far as the hock or elbow.

Precipitating Factors

Anything which causes damage to the claw can allow infection to penetrate. Thus, rough abrasive flooring is heavily implicated, as can be worn slats. Difficulty in rising if farrowing crates are too small will also risk horn damage. Sows that stand in persistently wet conditions, be they outdoors or in deep litter systems indoors, will tend to have softer horn, which is more prone to damage, and abrasion. Likewise, chemical damage from e.g. newly laid concrete can affect horn integrity. Fast growth and high protein rations tend to be associated with fast horn growth, which can be defective. This is particularly relevant in replacement gilts. Excessive condition and weight in older sows can equally put strain on the horn structure and risk cracking.

Any environmental contaminant bacteria can gain access through horn defect to set up the infection. The most common organisms involved are Streptococci, Staphylococci or E coli, but a wide range of other such as Fusiformis and Actino pyogenes may be implicated.

Treatment

Successful treatment of the affected individual depends on early recognition and aggressive antibiotic medication before deep-seated abscessation has occurred. Unlike the cow, which is equally prone to this type of lesion, the pus tends to be dry and is difficult to drain out of the foot, even with excessive debridement. It is important that the antibiotic treatment chosen not only is effective against the organisms involved but

also has good penetration into the foot, particularly the bone and surrounding tissues. Your veterinary surgeon will advise. Concomitant treatment with analgesics (non-steroidal anti-inflammatory drugs) is also indicated to improve comfort and welfare. Help to stand and gain access to food and water is vital. A sow so affected must be removed from the healthy competitive group and placed in an isolated hospital area on a clean dry bed.

Prevention

Prevention of the development of bush foot depends on identification and correction of any precipitating factors (such as rough floors, heavily contaminated wet conditions). This is a job that your veterinary surgeon can help to identify and correct.

Use of supplementary biotin in the ration can assist in reducing the incidence of Bush Foot. True biotin deficiency in sows is associated with horizontal cracks in the hoof wall, which are very rare. However, even when not seen, supplementing the diet with extra biotin can appear to improve horn quality and, thus, reduce the risk of cracking that leads to Bush Foot. Your veterinary surgeon will advise on the appropriateness and levels required of such a treatment in each individual situation.

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