

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.

Salt Poisoning

Dehydration is a common sequel to many disease problems and management circumstances. The pig appears to be particularly vulnerable to a form of dehydration which itself presents as a specific disease entity, which we refer to as salt poisoning or water deprivation.

The development of the disease is based on osmotic changes in the brain. If the pig becomes dehydrated, the salt content of the brain becomes concentrated. The same can happen if excessive salt intake occurs without sufficient water intake. Whilst this in itself can provoke clinical disease, greater problems occur when the pig is re-hydrated. The high concentration of salt in the brain acts to draw water into it and the brain swells, producing cerebral oedema. It is this which produces the clinical signs and ultimately death in many cases.

Clinical signs

The clinical disease presents as a nervous disease, often confused with but distinct from meningitis. In a mild form, the pig is simply depressed and dull and may stand or “dog sit”, sometimes pressing the head against a wall – suggesting pain. As the disease develops, and this can occur very quickly, the pig may collapse and show mild paddling movements (convulsions). One classic sign of salt poisoning in the pig is termed opisthotonus. The pig will “dog sit” but its head will be held upwards and backwards towards its shoulders, such that in extremes it will fall over backwards.

The eyes are likely to twitch within the sockets. High temperature is not a common feature of salt poisoning – distinguishing it from meningitis, although mild rises in temperature – up to 40°C can occur.

“Sudden” death can be featured in individuals, it taking no more than 1-2 hours from first signs to death in severe cases. Frequently the signs will not appear until water supply is restored following some form of restriction.

Development of Disease

In broad terms, salt poisoning will occur as a result of one of three set of circumstances:-

- 1) Lack of water intake. This can result from:-
 - a) Interruption of water supply due to freezing, blockage or low pressure.
 - b) Inadequate access to water such that competition leads to some pigs not able to drink.
 - c) Other disease preventing pigs from drinking and swallowing, Meningitis is a typical example, and some pigs that start with Meningitis may actually die of salt poisoning without stockmen realising.
- 2) Excessive water loss, usually as a result of concurrent enteric disease such as E coli or rotaviral scour post weaning or colitis/dysentery in finishing pigs.

3) Excessive salt intake. Pigs can cope with high levels of salt in diet provided they have access to sufficient water at all times. Indeed, high salt levels or salt licks are used widely to reduce tail biting problems. Excess salt intake is usually restricted to wet fed pigs often receiving bi-products in their feed and which do not have access to additional water.

Obviously, any situation that restricts water (as in 1 above) is likely to be exacerbated if high salt intake occurs.

Treatment

The treatment of pigs that have been deprived of water is very difficult; restoration of a full water supply will actually trigger more severe disease as the pigs attempt to restore their fluid balance.

Pigs that have had restricted water intake must have it restored in a limited way, such that they only take small amounts over a period of time. In frozen conditions, eating snow can act as a useful method of slowly restoring fluid intake.

An attending veterinary surgeon may employ other techniques to restore fluid (such as intra-peritoneal injection) but this must only be done under direct veterinary guidance.

Whenever a pig is affected by serious disease, part of the treatment regime must involve provision of fluid to stop the animal subsiding into salt poisoning. This is particularly important in diseases of high fluid loss (e.g. scour) or where the pig is unable to get to water (e.g. severe lameness, meningitis).

Prevention

Freely available fresh water must be supplied at all times. Water systems should be regularly checked for flow rates and blockages and where high salt levels are used in diets, this is even more critical. Likewise, in hot weather.

Wet fed pigs must have additional water available at all times but is particularly critical in warm weather where dehydration is more likely to occur.

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