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Health Bulletin

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Coccidiosis

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Scouring in suckling piglets remains a major problem in many farms and can be caused by a wide range of infectious, environmental and managemental factors. Probably the most common cause of scour in piglets from 10-20 days old is Coccidiosis. With an accurate diagnosis, it is possible to introduce a wholly effective control programme.

Background

Coccidiosis in the pig is caused by a parasite called *Isospora suis*. There are a range of other coccidia (*Eimeria* sp), often found in the pig, but these are generally thought to be harmless although in rare cases can cause disease in young adults..

The parasite has a direct lifecycle between pigs (i.e. there is no intermediate host) with Oocysts shed from an infected individual into the environment, in which they undergo a temperature dependant maturation process, before infecting other animals orally. The organism then colonises the small intestine, developing through a number of stages and causing gut damage leading to scour. This process takes several days and, as such, Coccidiosis does not occur below five days of age, and most typically is not seen until 10 days old.

Hygiene is a vital component of any disease process and its control; as an enteric disease of baby pigs, an outbreak of the disease signifies a breakdown in the hygiene standards.

The disease is seen in both indoor and outdoor production systems - in the latter case either in summer where sows have heavily contaminated udders from wallowing or in wet weather where beds are not renewed between batches.

Fig. 1: *Typical creamy coccidial scour.*

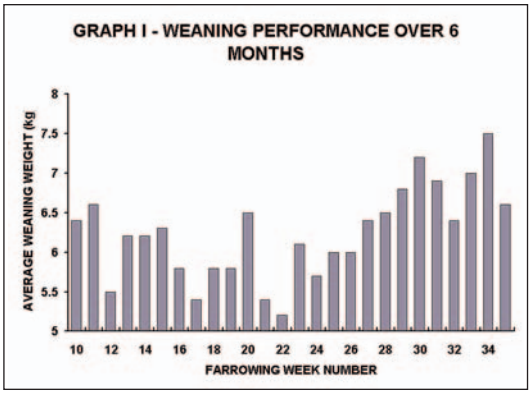
Clinical Signs

Scouring will be seen in all or part of the litter from about 10 days of age. The scour will usually be yellow and creamy and careful observations may reveal blood flecks. Death is a rare consequence of uncomplicated Coccidiosis although, where E coli or Rotavirus become involved, mortality can rise to as high as 30%.

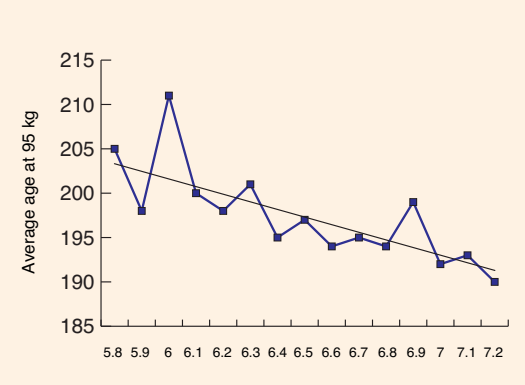
Typical creamy coccidial scour

Loss of condition will be apparent in affected individuals and the overall consequence will be reduced weaning weights - herd average weight at 25 day weaning can drop by 1kg per pig during an outbreak - and gut damage at weaning that may trigger secondary post weaning enteritis. The reduced weaning weights will have implications on overall growth to slaughter (see graph 1).

Coccidiosis can have a dramatic effect on weaning weights and ultimately days to slaughter. Graph 1 shows the decline in weaning weight in a 300-sow B/F farm as an outbreak of Coccidosis, which started in early spring, progressed into summer. Treatment with Toltrazuril was started in week 27.



Graph. 1: *Coccidiosis can have a dramatic effect on weaning weights and ultimately days to slaughter. Graph 1 shows the decline in weaning weight in a 300-sow B/F farm as an outbreak of Coccidosis, which started in early spring, progressed into summer. Treatment with Toltrazuril was started in week 27.*



Graph. 2: *Shows the subsequent effect on age to slaughter as weaning weight declines. In this herd a drop of 1kg/pig at weaning extended the growing period, to reach slaughter at 95kg, by 9 days.*

Fig. 2: *Loss of condition in pigs affected with coccidiosis.*

Graph 2 shows the subsequent effect on age to slaughter as weaning weight declines. In this herd a drop of 1kg/pig at weaning extended the growing period, to reach slaughter at 95kg, by 9 days.

Response to treatment in an affected individual with antibiotics is generally very poor and, in many cases, the scour will stop spontaneously at weaning - suggesting that the gut damage induces a milk intolerance.

In many affected herds, one or two pigs in the litter may show early and mild signs of scour at 7 days of age, with the rest of the litter becoming affected 5-7 days later, as the young pigs act as generators of the parasite.

Disease does not occur after weaning.

There is growing circumstantial evidence that sub-clinical disease exists on many farms in which scour is rarely seen but weaning weights are impaired.

Diagnosis

The clinical picture described will provide a strong indication of the role of coccidia although, because it is possible to have combined infection with other agent, a laboratory diagnosis is desirable.

Despite the fact that carrier sows and affected piglets shed coccidial oocysts in their faeces, these are very difficult to detect and, even if found, do not necessarily mean that this is the cause. The only reliable method of confirming the diagnosis is to sacrifice acutely affected, untreated typical individual pig and examine the gut. Grossly they may be thickened and inflamed but histopathology is essential for confirmation.

On many farms, the response to treatment and control measures is used to support the diagnosis.

Control

Hygiene plays a major part in the control of Coccidosis. The oocysts that are shed in the faeces, which develop into infective stages in the environment - provided the temperature exceeds 16°C - are very resistant to conventional disinfectants. Effective treatments are fire (flame gun) and limewashing - in the latter case, the lime must be allowed to cure for 3-4 days before stock are placed in the treated pen. A specific anti-coccidial disinfectant - Oocide:Antec - is available; this is a two component product that, when mixed, gives off ammonia gas. There are obvious health and safety implications with its use and a treated room must obviously be empty of stock and sealed to prevent leakage into other rooms or stock areas. There are claims that some dry disinfectants have anticoccidial effects and may be useful adjuncts to treatment of the environment. Thorough washing of pens is vital and problems, typically - though not exclusively - occur in continually occupied rooms and on certain type of floors where thorough cleaning is difficult (solid, cracked concrete, moulded plastic slats).

Fig. 3: *Piglet with typical coccidial perineal staining*

In the outdoor herd, arcs must be moved between consecutive farrowings and where problems occur, boards should be avoided. The provision of wallows in farrowing paddocks increases contamination of the udder and should be discouraged (they will also encourage litter desertion in hot weather).

Immunity to the parasite appears to be poor and feedback is not a reliable method of control; it may in fact make matters worse by increasing the faecal output of oocysts from the sow.

Medication

Various treatments have been tried over the years with mixed success.

Medication of the sows' feed with an antibiotic with anti-coccidial activity (e.g. Ionophores) has been used but has poor efficacy and, under current regulations, they are not now permitted in sow feed.

Individual medication of each pig is the most effective method of control. Sulphonamides given at 3, 10 and 17 days have been effective but Toltrazvril (Baycox:Bayer) is the most effective given on the 4th day of life as a single treatment. In some circumstances, a second dose at 10 days may be needed.

It should be noted that, in the UK (as indeed throughout the EU), Baycox is not licensed for use in the pig and can only be used under specific veterinary direction. The medication is applied orally at a dose rate of 25 mg/pig, but can induce vomiting in up to 10% of individuals. Where vomiting is a problem, the product must be diluted with water or glycerol.

NADIS -A better understanding of disease control and prevention will improve the health and welfare of your stock, thereby increasing farm productivity and income. Discuss how health planning can improve the productivity of your farm with your veterinary surgeon.

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