
Less Salmonella in outdoor and organic herds

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A study surprisingly reveals a lower incidence of Salmonella bacteria in outdoor and organic pig herds than in conventional herds.

The risk of slaughter pigs having Salmonella bacteria in their intestines is lower if they have been raised in an outdoor or organic herd rather than in a conventional herd.

That is the conclusion of a study conducted by the National Food Institute at the Technical University of Denmark (DTU). The reason for the difference is yet to be explained.

Surprising results

"We are rather surprised that the incidence of Salmonella is lower in outdoor and organic herds than in conventional herds. We expected it to be the other way round," says Anne Wingstrand, a senior researcher at the National Food Institute, DTU.

What suggests that the incidence should be higher in outdoor and organic herds is that being outdoors brings them into contact with wild animals and birds that can be infected with Salmonella.

By contrast, conventional herds are always indoors, where cleaning and drying of the housing unit should make it harder for Salmonella to survive.

Seeking the decisive factor

So why is there a lower incidence of Salmonella in outdoor or organic pig herds?

"We don't know, but are trying to find out," says Wingstrand, adding that the results of this study, although not statistically significant, are supported by a study from the Faculty of Agricultural Sciences at Aarhus University.

Several factors which reduce the risk of Salmonella in pig herds are already known:

- Feed which results in low pH and high levels of organic acids in the digestive tract
- Batch operations and cleaning livestock units between each batch
- Avoidance of introducing infected pigs into the herd
- Limiting herd size

But these factors are insufficient to explain the differences seen in the study, so other factors are being considered.

Antibodies from the sow

One factor being examined is how long piglets stay with the sow.

"Sows produce antibodies against Salmonella, and can pass on these antibodies to their offspring via the milk," says the researcher.

"This makes piglets more resistant during suckling, while they slowly build their own immunity as they are weaned from the sow."

But if the piglets are taken away from the sow too early, or moved to a new herd with new bacteria, they may not be as robust in resisting infection.

Awaiting the answer

Further research is needed to find out why there is a lower incidence of Salmonella in outdoor and organic pig herds.

"When we know which factors are responsible, we hope to use the knowledge to prevent and control Salmonella in conventional pig herds, and of course to ensure that the incidence is kept low in outdoor and organic herds," says Wingstrand.

The new research is viewed with an open mind in conventional agriculture circles.

"We continually get ideas from research, and if organic farming can show us how to reduce the incidence of Salmonella, that is something we will look at," says the chairman of the Danish Pig Production Association, Henrik Mortensen.

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 [It is not yet known why Salmonella appears to occur more frequently in indoor pig herds than in outdoor or organic herds. \(Photo: Colourbox\)](#) [10]

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Fact box

The incidence of Salmonella was analysed in 226 herds of pigs (52 organic, 147 conventional and 27 non-organic outdoor).

Salmonella was found in the caecal contents of 10.7 percent of conventional pigs, 7.0 percent of organic pigs and 4.8 percent of non-organic outdoor pigs. The differences are not statistically significant.

The wide range of factors associated with various types of pig herd makes it difficult to identify which of the factors can explain the differences in Salmonella incidence.

Fact box

Factors which could play a possible role in the occurrence of Salmonella:

- Weaning i.e. how long the piglets are with the sow
 - Feeding with roughage
 - Change of feed
 - How old the pigs are at slaughter
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