WELFARE & NUTRITION

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SWINE INFLAMMATION AND NECROSIS SYNDROME (SINS)

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Introduction

Tail lesions in pigs can occur in the field without any interactions with other pigs and in combination with inflammation and necrosis of the ears, coronary bands, soles, heels and claws. This joint occurrence of symptoms has led to the introduction of swine inflammation and necrosis syndrome (SINS) as a new syndrome in swine, at the ECPHM congress in Dublin in 2016. Two years later, we report about details of the syndrome which have been compiled in eight studies including around 25,000 pigs of different ages and from different herds.

Material & Methods

We developed a system to clinically score degrees of inflammation and necrosis at the tail base, tail tip, ears, teats, heels, coronary bands, soles and claws. These findings were completed by histopathological and transcriptomic results including tail, ear, claw, liver and gut samples. Genetic effects were also included.

Results

Inflammation and necrosis were significantly correlated between the investigated body parts, although their degree of involvement was modified by environmental conditions, e.g. ears were more involved in cases with heat stress. SINS was found in piglets directly after birth. Aberrations of the different body parts were associated with inflammation and metabolism of gut and liver. Significant effects of genetics, sow's condition and environment were determined. They could be part of a successful solution of the problem.

Discussion & Conclusion

The onset of symptoms within the first days of life, their combined appearance (tail vs. feet) and progress, their shared improvement during the second week of life, a common genetic basis and associations with inflammation and metabolism of gut and liver argue for common intrinsic effects that can be influenced but not exclusively triggered by tail biting, floor condition and technopathies. Consideration of SINS will play a crucial role on the way to improve animal welfare in pigs.