

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

ARTHRITIS INDUCTION IN SUCKLING PIGLETS AND DIAGNOSIS BY THERMOGRAPHY IN THE POST WEANING PHASE

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Arthritis is a disease that can affect pigs still in the lactation stage. Contamination occurs mainly due to extremely rough floors, wet, compacted or slatted, but kept dirty, which potentiates bacterial contamination. The most affected areas are the joints, which appear inflamed, swollen and with local fever, causing discomfort to the animals, in addition to pain, inappetence and even death. With the increasing demand for animal welfare and due to the damages caused by the delay in the performance of arthritic piglets, it is relevant to create strategies for rapid diagnosis of joint inflammations in piglets, in order to mitigate the subsequent effects through prompt treatment. An experiment was conducted with 32 suckling piglets with initial age of 7 days (1.76 ± 0.28 kg BW) to evaluate the use of thermography during the post-weaning period (7 to 11 kg) as a tool for diagnosis of induced arthritis in suckling piglets. Animals were divided in two groups: Positive Protocol ($n = 16$), consisting of induction of arthritis by 0.1 mL intradermal injection Freund complete adjuvant (*Mycobacterium tuberculosis*) at 7, 14 and 21 days of age in the tarsal phalangeal joint of the right posterior limb; Control Protocol ($n = 16$), consisting of saline injection (0.9%). Piglets were weaned at 21 days of age (6.71 ± 1.40 kg BW), and then housed in a nursery room. During 15 days after weaning, at 3-days intervals, the live weight, volume of the right hind limb in the tarsal-phalangeal joint of the animals were measured and recorded, as well as the perimeter and diameter. The protocol used for arthritis induction in the lactation phase was effective to manifest the disease in the post-weaning phase. The surface temperature in the right hind limb of the piglets was recorded through thermographic images, and resulted ($P < 0.001$) in $33.94 \pm 4.03^\circ\text{C}$ for Positive Protocol, against $29.73 \pm 5.46^\circ\text{C}$ of the Control Protocol, representing a variation of 12.40% between both protocols. There were significant correlations between the surface temperature and the morphological parameters of the piglets' joint with induced arthritis after 6 days of post-weaning evaluation. The correlations were 0.667 ($P = 0.005$) for perimeter (cm kg^{-1} BW) and 0.694 ($P = 0.049$) for diameter (cm kg^{-1} BW), indicating a proportional relationship between surface temperature and allometric joint size. Real-time thermography presents high correlation with the morphological variables, representing an alternative tool for arthritis diagnose in post-weaning piglets.

Keywords: adjuvant, animal welfare, inflammation

Promoção e Realização:



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