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# Zinc-oxide supplemented feed is less palatable to piglets, despite health benefits

Posted on October 24, 2008

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Weaner piglets prefer zinc oxide-free feed because the palatability of feed is reduced by adding the mineral. These were just two of the findings of a trial, carried out by scientists at the University of Leeds, to test the hypothesis that weaned piglets would avoid a diet high in zinc oxide (ZnO) when given the choice, and to investigate the resultant performance and choice feeding behaviour of individual piglets in the immediate post weaning period.

"A nominal amount was still eaten in our trial, suggesting the piglets consumed a small amount in 'continuous sampling behaviour', albeit insufficient to benefit the piglet," Fiona Reynolds told delegates at this year's British Society of Animal Science annual conference.

ZnO is frequently added to nursery piglet diets at pharmacological levels to combat scouring and to improve performance of weaned piglets. "It is anecdotally recognised in the pig industry that piglets do not like the taste of zinc although increased feed intake is frequently reported," added Miss Reynolds.

The study involved 60 piglets which were weaned at 7.8kg and 27.8 days of age into eight mixed sex groups of seven or eight piglets per pen. Groups were balanced for litter origin, weaning weight and sex, and housed in fully slatted weaner pens. Piglet feeding behaviour was constantly recorded by a multi-spaced feed intake recording system.

Each pen of pigs was offered ad-lib access to two different foods, each in two troughs per pen. Feeding time – in minutes – was recorded for each individual at each trough. Foods (16.2MJ DE, 1.6g lysine/kg) differed only in the level of ZnO supplementation – unsupplemented or supplemented at a rate of 3.1g/kg.

The unsupplemented feed contained a basal level of zinc (100ppm). Piglets were weighed at weaning and at day seven and 13 thereafter. The experiment ran for 13 days. Piglets were then categorised by weaning weight into three categories: small, less than 7.0 kg; medium, more than 7.1kg but less than 8.0kg; and large, more than 8.1 kg.

"And we saw that, on a pen basis, groups of piglets showed significant preference for the unsupplemented food in both week one and two post weaning," said Miss Reynolds. "Average piglet gain was low, at 0.039kg and 0.272kg per day in week one and two respectively.

"When feeding behaviour data were examined on an individual basis, the effect of weaning weight and gender on proportion of time spent eating each food did not influence diet choice."

Miss Reynolds said that ZnO has proven positive effects on piglet health and performance post weaning, although the newly weaned piglet would have no prior experience of such.

"The proportion of time spent eating the supplemented food was not influenced by weaning weight or gender. And, ironically, diet selection by piglets on this experiment is associated with poor performance and incidence of scour, highlighting the importance of ZnO on the health and performance of the weaned animal," she added.

Presented to the British Society of Animal Science Annual Meeting, March 31 to April 2, 2008, Scarborough, UK. Reynolds F, Forbes M, Slade R and Miller H: "The effect of offering two feeds, with or without pharmacological levels of zinc oxide, on the individual feeding behaviour and performance of weaned piglets." Proceedings of the British Society of Animal Science, pp89

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