

Start right with your piglet nutrition



Conference Report

“A good start is half the battle” can be said if we talk about piglet rearing. For this promising start, piglets must eat solid feed as soon as possible to be prepared for weaning. Dr. Jan Fledderus, Product Manager and Consultant at the S&C team at Schothorst Feed Research, shows some nutritional measures that can be taken to keep piglets healthy and facilitate the critical phase of weaning.

Higher number of low-birth-weight pigs in larger litters

Litter size affects piglet quality. Larger litter sizes from hyperprolific sows often result in higher within-litter variation in birth weights. This variability can lead to a higher proportion of low-birth-weight piglets, which are more susceptible to health issues and have lower survival rates. Additionally, low birthweight pigs have an increased risk of mortality, and an improvement in birth weight from 1kg to 1.8 kg can result in 10 kg more body weight at slaughter.

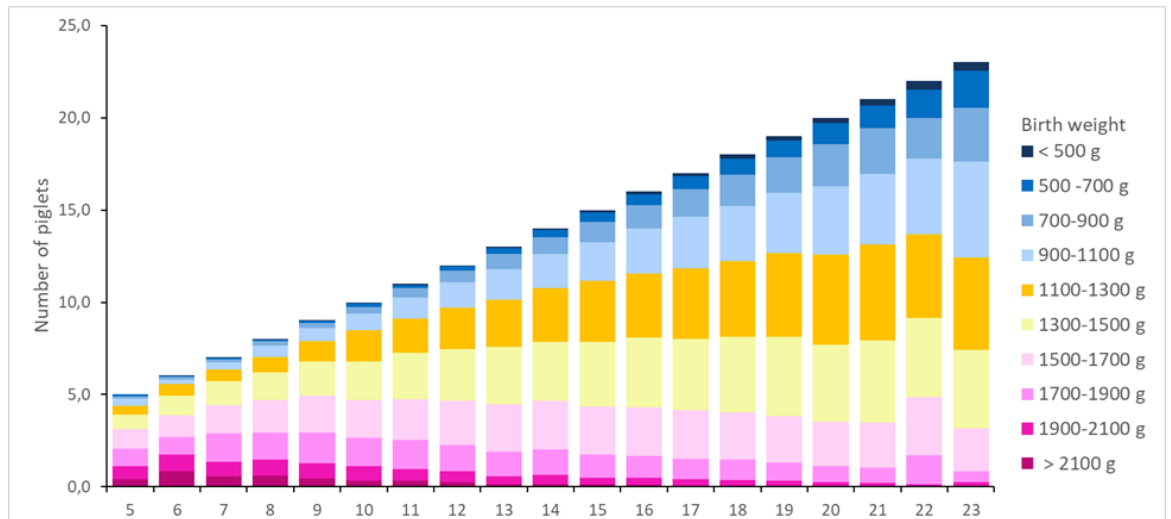


Figure 1: Effect of litter size on birth weight distribution (Schothorst Feed Research Data were collected from 2011 to 2020, based on 114,984 piglets born alive from 7,952 litters).

Implementing management practices for low-birth-weight pigs, such as split suckling, can significantly enhance nutrient intake, support immune function, and ultimately contribute to better survival rates and overall health for these vulnerable piglets.

Weaning age determines intake of creep feed

Pigs that consume creep feed before weaning restart faster to eat, have a higher feed intake, and less diarrhea after weaning. For instance, in a field trial, pigs that consumed feed 10 days before weaning had a 62% incidence of diarrhea, whereas in pigs that consumed feed only 3 days pre-weaning, diarrhea incidence increased to 86%.

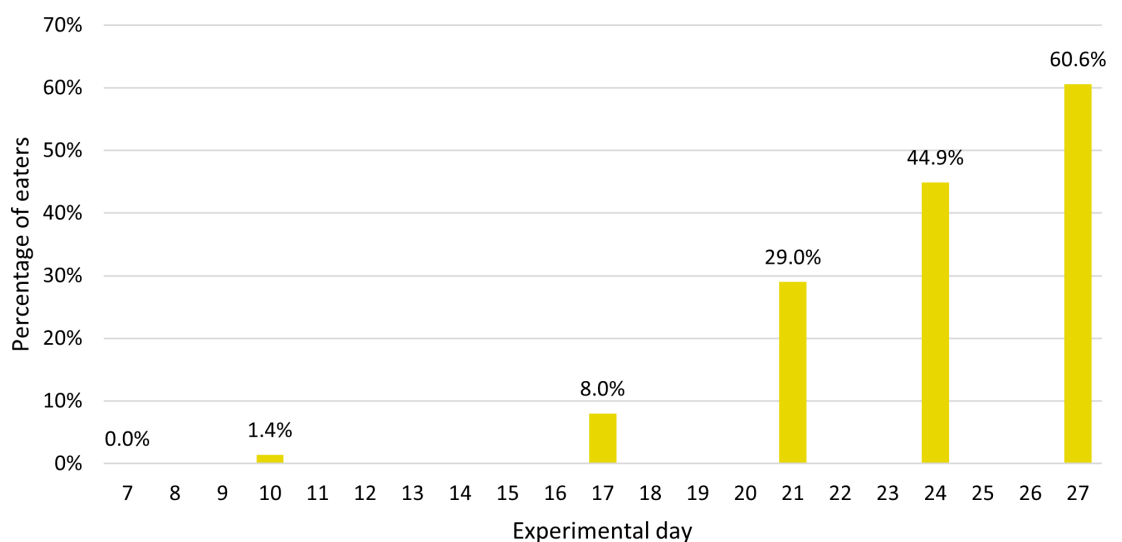


Figure 2: Influence of age on the percentage of pigs consuming creep feed

“As age is the most critical factor for a high percentage of pigs eating before weaning, there is a trend in the EU to increase the weaning age, where some farmers go to 35 days,” remarked Dr. Fledderus.

Furthermore, weaning age is positively correlated with weaning weight. Every day older at weaning improves post-weaning performance and reduces health problems.

Feed management

Creep feed for 7-10 days pre-weaning is essential, not to increase total feed intake, but to train the piglet to eat solid feed to avoid the 'post-weaning dip.' After about 15 days of age, piglets can consume more than is provided by milk alone. Dr. Fledderus strongly recommended creep feeding for at least one week before weaning. "Consuming feed before weaning will result in fewer problems with post-weaning diarrhea," he said.

In addition to creep feeding, a transition diet, from 7 days pre- and 7 days post-weaning, is advised. The composition or form of the transition diet should not be changed.

The key objective of post-weaning diets is to achieve a pH of 2-3.5 in the distal stomach. Pepsin, the primary enzyme responsible for protein digestion, is activated at a pH of around 2.0. Its activity declines significantly at a pH above 3.5, which can lead to poor protein digestion and nutrient absorption.

Fiber as a functional ingredient

Fiber was previously considered a nutritional burden or diluent, but now it is regarded as a functional ingredient. Including dietary fiber, mainly inert fiber such as rice or wheat brans, can increase the retention time of the digesta in the stomach. This extended retention allows for more prolonged contact between digestive enzymes and nutrients, facilitating improved digestion and absorption of proteins and other nutrients. Not only is pH reduced, but because more proteins are hydrolyzed to peptides, there is less undigested protein as a substrate for the growth of pathogenic bacteria and the production of toxic metabolites in the hindgut.

"Size of fiber particles also matters," said Dr. Fledderus. Coarse wheat bran particles (1,088 μm) have been shown to be more effective than finer particles (445 μm) in reducing *E. coli* levels in the gut. The larger particle size helps prevent *E. coli* from binding to the intestinal epithelium, allowing these bacteria to be excreted rather than colonizing the gut.

The understanding of dietary fiber's role in pig nutrition has evolved, with recent findings indicating that fiber can actually increase feed intake in piglets, contrary to earlier beliefs that it might decrease intake. High-fiber diets often increase feed intake as pigs compensate for lower energy density. This can help maintain growth rates when formulated correctly.

EW Nutrition's Swine Academy took place in Ho Chi Minh City and Bangkok in October 2024. Dr. Jan Fledderus, Product Manager and Consultant at the S&C team at Schothorst Feed Research, one of the founders of the Advanced Feed Package and with a strong focus on continuously improving the price/quality ratio of the diets for a competitive pig sector, was a reputable guest speaker in these events.