Optimising nutrition in breeder sows

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The improvement in the nutrient level of the sow should not only cover the quantity, but also the quality of the essential nutrients needed for the embryonic development of the litter and the immune integrity of the young piglets.

Tests carried out conclude that the diets used in sows have low levels of omega-3 fatty acids (EPA and DHA).

The initial foetal development is the phase of higher omega-3 requirements and the time when nutrients are essential for some tissue development (brain, eyes, enterocytes). At this time a shortfall puts embryo viability at risk.

Positive effect of omega-3

For several years, the use of omega-3 fatty acids in diets for breeding sows has been the subject of scientific research, which shows a positive effect in the litters of sows fed with diets enriched in omega-3 fatty acids.

Boudry et al (2012) showed that piglets from sows supplemented with 70g/day of fish oil from day 103 of gestation until partum, grew 4.2% or 5.8% quicker until weaning than piglets of sows supplemented with coconut oil or shark liver oil. The bigger growth in piglets could have been the consequence of the higher level of omega-3 fatty acids in the colostrum they received.

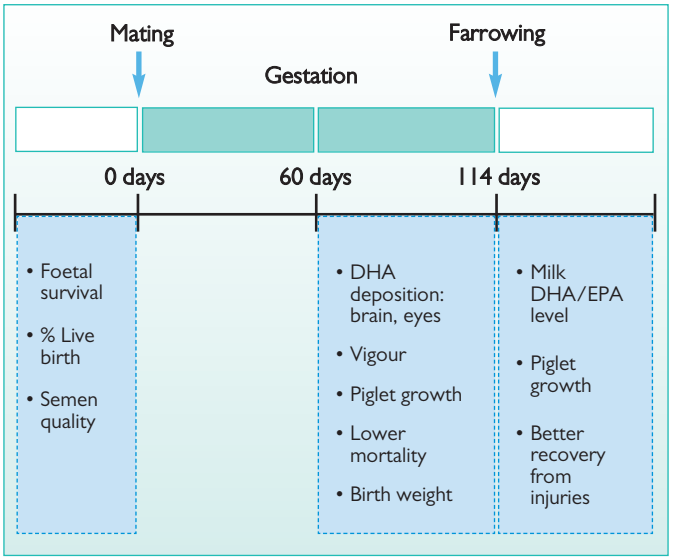

Fig. 1. Scheme of application of omega-3 fatty acid.

The positive effects of omega-3 supplementation of breeding sows changes according with the production period.

Fig. 1 shows the recommended inclusion periods.

As can be observed in Fig. 1, supplementation with EPA and DHA before pregnancy improves foetal survival, thereby increasing the number of live births.

The boar semen is rich in DHA, so supplementing boar diets with omega-3 fatty acids improves the semen quality.

During the second half of pregnancy the brain and eyes (tissues rich in DHA) develop, so supplementation during this period produces vigorous piglets and reduces piglet mortality by crushing.

During the last days of gestation the sow is starting to produce colostrum so supplementing the sow diet at this time puts omega-3 fatty acid into their colostrum.

This improves the growth of piglets and improves the litter weight at weaning.

Good supply of fish oil

One of the most important aspects is to supply a good source of fish oil as this provides omega-3 fatty acid (EPA and DHA). Fatmix from Novation contains a high fat level (65%), most of it as omega-3 fatty acids (30% EPA and DHA) stabilised with antioxidants and enriched with vitamin E. This helps to meet the nutritional requirements and improve the immune status of the animals. The inclusion of Fatmix, according with the omega 3 fatty acids need, can be quantified in:

- **Mating period:**
  + 6-7% life births.
  + 10% sperm viability.
- **Second half of gestation:**
  - 3% mortality.
  + 8% weight new born piglets.
- **Lactation:**
  + 5% lactating piglet growth.
  +13-15% piglet weaning weight.

All these improvements make the inclusion of Fatmix in breeder feeds highly profitable. ■

References are available from the author on request