

Focus on short-term investment for long term benefits

The piglet's early life is a short period which determines the pig's lifetime performance. During the first weeks of life, the piglet's gut is immature and very sensitive to environmental stress. Early life intervention with ideal feed guarantees optimal gut development and long-term benefits. The Wean Up programme developed by Wisium is a global brand adapted to the local market thanks to its local formulation approach combined with personalised on-farm service.

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Highly prolific genetics, associated with the demand to produce with less antibiotics and good animal welfare, have brought to nutrition a dimension that goes far beyond animal performance.

Between those challenges, a responsible nutritionist must consider most parameters related to sustainability in our industry. In the case of sow and piglet nutrition, some of the opportunities to be explored include focusing on improving colostrum quality, piglet uniformity, post-weaning intake for rapid gut development, and the acceleration of gut maturation for the best animal health and performance.

Fig. 1 demonstrates how highly

prolific sows, with a larger litter size, have variation of piglet weaning weight, and the effect of this dispersion on slaughter weight.

It is essential to understand dispersion of litter weight and its standard deviation to improve herd performance. Good nutrition and management should focus on herd uniformity which will impact on herd performance and profitability.

Precise piglet digestibility simultaneously improves performance and gut health

The first two weeks after weaning is the most difficult period in the piglet's life. The combination of stress with the sudden transition from milk to a dry diet represents a big challenge to the digestive system. The feed intake in the first 10 days is usually low and this is associated with a depression of villus height, changes and development in the digestive tract, and immune system depression.

For all these reasons, precise understanding of protein digestibility for the very early piglet phases is crucial. This requires digestibility studies that have been made specifically with post-weaning piglets.

Wisium developed a parameter for 'Piglet Digestible Protein' in order to specifically describe the Standard Ileal Digestibility (SID) protein level for the weaning piglet.

Several trials were conducted to

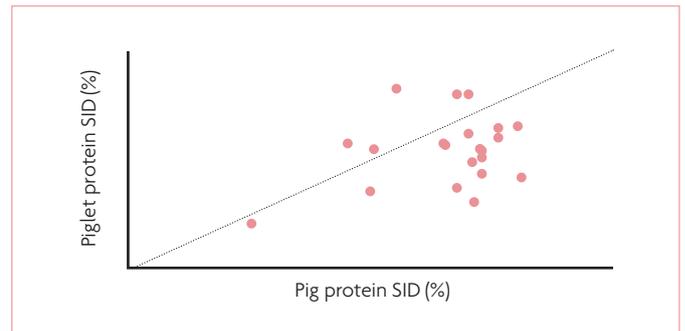


Fig. 2. The relationship between Wisium piglet SID and SID normally used for growing animals.

set different recommendations based on the quantity of digestible protein, quantity of indigestible protein, and the AA balance.

The Wisium matrix is under constant development and considers the main protein sources used in piglet diets. This tool confirmed that the digestibility of protein for post-weaning piglets does not have much to do with digestibility in the growing phase. As a result, the Wisium formulation team can precisely define requirements for optimal performance in a context of a high digestible diet and low protein content. The precise understanding of piglet SID offers another benefit which includes the possibility to formulate with more focus on gut health. This has become a priority under the context of antibiotic and ZnO reduction.

Higher levels of non-digestible

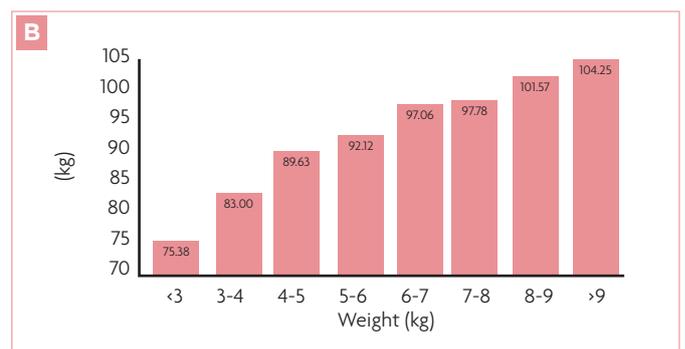
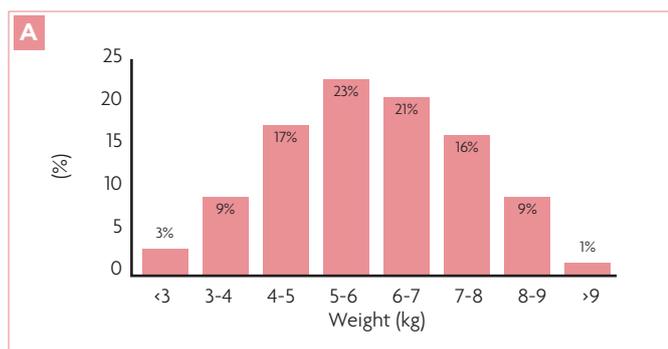
proteins in the large intestine have consequences on post-weaning diarrhoea. Some trials done by Wisium prove that the frequency of diarrhoea increases linearly when the level of indigestible protein increases. The matrix allows precise formulation with reduced inclusion of indigestible proteins in the large intestine. However, the Wisium formulation team advises that in case of low protein diets, it is also important to revise the relationship of proteins with all digestible amino acids.

For example, the level of digestible lysine may be reduced to avoid an excess of lysine that may need to be eliminated with consequences on high energy costs for the animal.

In Fig. 3, the diets were formulated with the Wisium piglet digestible protein matrix.

Continued on page 13

Fig. 1. Variation of piglet weaning weight from highly prolific sows with a large litter size, and the effect of this dispersion on slaughter weight. A) Piglet distribution at weaning. B) Pig distribution at 159 days old (Coma, 2017).



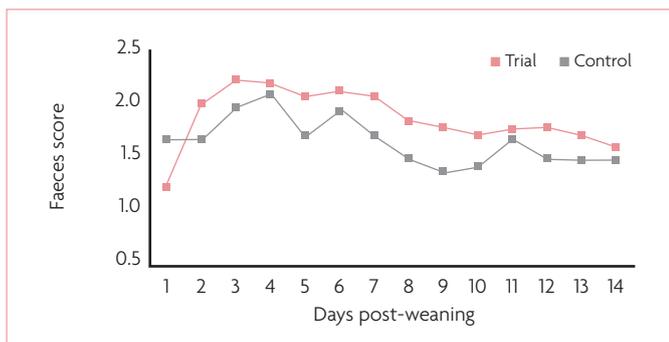


Fig. 3. The piglets treated with a restriction of non-digested protein responded with a lower level of scour in the first 14 days post-weaning.

Continued from page 11

The two groups of piglets were treated with the same level of crude protein but different levels of piglet non-digestible protein. The group treated with a restriction of non-digested protein responded with a lower level of scour and consequently a lower mortality in the first 14 days post-weaning.

Post-weaning nutrition programme

The Wean Up programme is based on a complete range of products dedicated to every stage of the piglet's life, respecting the characteristics and needs of global swine markets.

Wean Up is offered in some markets as a complete pre-starter feed and in other markets as a concentrate formula.

Regardless of the type of product, the Wean Up nutrition concept was created to ensure optimal piglet performance, focusing on four main concepts:

- Maximise feed intake and promote gut development.
- Guarantee digestive security and reduced mortality.
- Prepare the gut for the best animal growth.
- Optimise FCR and animal lifetime growth.

To support the success of the Wean Up line, Wisium has designed Sincro services, which involves a pack of nutrition and management tools designed to support the farmer to achieve better animal performance, health and herd profitability (Fig. 4).

Nutrition programme and objectives

The Sincro nutrition programme is based on three main pillars, which involves formulation support, quality control service, and field nutritional expertise, as described below:

● Formulation service:

The Wisium formulation service aims to identify the sources of variations

in farm performance according to expected quality criteria and nutritional expectations.

A frequent formula adaptation allows the customer to consider his last analytical results and update his matrix with his feed according to price, raw material quality and performance.

This allows the nutrition programme to be adapted to local raw materials and actual changes in production, for example, new production challenges, new additives and new plant investments.

● Quality control service:

Wisium quality control helps to ensure the quality of raw materials and finished products with specific analyses provided by their laboratory and quality controls.

Wisium experts can provide a complete update of quality control which will allow farmers to manage physical/chemical or biological substances – such as heavy metal, mycotoxins, E. coli, and salmonella.

	Control	Trial
No. piglets	208	208
No. dead first phase	2	4
First phase mortality (%)	0.96	1.92
No. dead second phase	2	3
Second phase mortality (%)	0.97	1.47
Post-weaning mortality (%)	1.92	3.37

Table 1. The piglets treated with a restriction of non-digested protein had a lower mortality in the first 14 days post-weaning.

A NIR technology solutions package can also be offered to obtain quick analysis directly on plant with a yearly maintenance (curves and device).

It also includes information on the reliability of your raw materials supplier, report and advice to optimise the customer formulation with industrial guidelines, such as particle size, mixing homogeneity and water analysis.

● Nutritional expertise:

Wisium nutritional expertise can support customers with high level technical solutions helping farmers to achieve their performance objectives.

Focused on customer service, nutritionists and a specialised zootechnical team can bring adapted solutions for each farm revising new formulas and feed range performance reviews, as well as formula audit support and performance monitoring, using several on farm digital apps.

Management programme and objectives

Sincro management support aims to adapt the Wean Up feeding programme to each farm's conditions for a better nutrition response. The first step of this programme is to set a detailed farm performance analysis to further identify key points for improvement and implement a consistent action plan.

The services are customised and include the use of several apps designed to be easily applied on-farm. The apps cover a series of topics that are directly related to the farm's needs including audits packs, on farm granulometric tests, hygiene and water quality analysis, environmental controls, piglet feed intake and farrowing guides, post-weaning and nursery management.

With the implementation of Sincro services, Wisium is providing complete nutrition and management tools for farm profitability and the best post-weaning performance. ■

Fig. 4. Sincro services offer support throughout the processing chain.

