

THE THREE P'S OF PIGLET NUTRITION: PREPARED, PRODUCTIVE AND PROFITABLE

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Weaning remains the single most disruptive and consequential event in a pig's life. Despite major advances in genetics, housing and health management, the fundamental biological challenge has not changed. At weaning, we are asking a very young animal, with an immature digestive system, to suddenly adapt to solid feed, new social pressures and a different microbial environment. Expecting a piglet to simply cope with this overnight is unrealistic.

FROM WEANING TO LIFETIME PERFORMANCE

Rather than viewing weaning as a single event to be managed, it is more useful to think in terms of three connected outcomes: prepared pigs, productive pigs, and profitable pigs.



Prepared



Productive



Profitable

Preparation determines how well pigs tolerate the weaning transition. Productivity reflects how consistently early nutrition is converted into intake, growth, and robustness. Profitability is the long-term result of these early biological advantages expressed throughout the production cycle. Each stage builds on the one before it.

GETTING PIGS PREPARED

For many years, industry efforts have focused largely on what happens after weaning. More recently, two complementary ideas have become increasingly difficult to ignore.

The first is the need to actively support the intestinal mucosa and its associated microbiota during the early nursery period.

WEANING IS NOT JUST A DIET CHANGE

When pigs are weaned at three to four weeks of age, the small intestine is still immature. Digestive enzyme production remains limited, and the gut-associated immune system has had minimal exposure to environmental challenges. Sow milk effectively compensates for these limitations because it is highly palatable, easily digested, and specifically adapted to the needs of the suckling pig. Once weaning occurs, this 'physiological safety net' disappears overnight.

Plant-based nursery diets introduce carbohydrates and proteins that are far more complex to digest and may contain anti-nutritional components that pass through the small intestine partially undigested. These nutrients do not simply disappear.

The second is the recognition that pigs must be conditioned to eat before weaning, rather than being expected to learn to eat afterward. True post-weaning success only occurs when these two concepts work together.

Instead, they become substrates for microbial fermentation, altering microbial balance in ways that can promote inflammation, diarrhoea, and reduced growth during one of the most critical periods of the pig's life.

At the same time, feed intake typically declines. Some pigs consume very little, or no feed at all, during the first hours, and sometimes days, post-weaning. This lack of intake accelerates villus atrophy, further reduces digestive capacity, and weakens intestinal barrier function precisely when the pig is least able to compensate.

Nutrition research is increasingly shifting from asking which microbes are present in the gut to understanding where they are located. Microbial populations closely associated with the intestinal mucosa, particularly in the small intestine, play a direct role in immune signalling, inflammatory regulation, and epithelial integrity.

Beneficial bacterial populations tend to support anti-inflammatory pathways, epithelial repair, and barrier stability.

In contrast, opportunistic or pathogenic bacteria are more likely to trigger immune activation and tissue damage. This has driven growing interest in nutritional tools such as prebiotics, probiotics, and postbiotics.

When applied correctly, these tools can help stabilise the microbial environment during the stressful post-weaning transition. However, they are not standalone solutions. Their effectiveness is closely linked to feed intake and nutrient digestibility.

GETTING PIGS PRODUCTIVE

A pig that does not eat cannot benefit from even the most advanced gut-health programme. This is where the concept of creating eaters becomes central.

Feeding behaviour is learned. Pigs that have already explored, consumed, and digested solid feed while still in the farrowing house are far better prepared for weaning than pigs that have only ever consumed milk. Creating eaters means deliberately exposing piglets to highly digestible, palatable diets during lactation. The goal is not to replace sow milk, but to teach pigs how to locate feed, how to consume it, and how to process nutrients before additional stress is introduced.

When pigs enter the nursery already conditioned to eat, several benefits become immediately apparent:

- **Faster time to first meal post-weaning**
- **Reduced intestinal disruption during dietary transition**
- **More consistent feed intake and improved group uniformity**
- **Early intake that supports intestinal structure and microbial stability during the most vulnerable period**

Post-weaning nutrition should therefore build on what has already been established, rather than attempting to rescue pigs after problems arise.

Highly digestible formulations, targeted enzyme inclusion, and strategic use of pre-, pro-, or postbiotics all support intestinal health—but their impact is far greater when pigs are already eating consistently.

In practice, this approach requires:

- **Early feed exposure in the farrowing house**
- **Use of creep and transition diets designed to encourage intake and digestion**
- **Maintenance of sensory continuity (aroma, texture, ingredient familiarity) across weaning**
- **Alignment of gut-health technologies with realistic intake patterns**

Nutrition and microbiology cannot be treated as separate disciplines. Feed formulation, feeding behaviour, and microbial ecology are tightly interconnected.

GETTING PIGS PROFITABLE

The nursery phase offers the greatest opportunity to influence lifetime feed efficiency and performance, not because pigs are fragile, but because their biological systems are still developing. What happens during these early weeks shapes digestive capacity, immune responsiveness, and growth potential long after weaning.

At P3NC, success is defined by outcomes. Our objective is for every piglet to achieve an average daily gain (ADG) exceeding 250 g during the first week post-weaning, with a target of 300 g per day. We aim for zero fasting piglets after weaning, recognising that early eaters consistently achieve a lifetime growth advantage.

Ultimately, success is measured when pigs are loaded onto the truck for slaughter. Key performance indicators include lifetime ADG, margin over feed cost, and total pork produced per sow, metrics that reflect the economic return of decisions made during the earliest stages of the pig's life.

Weaning will always be a challenge. However, when it is no longer treated as a single moment in time, but rather as a process that requires preparation well in advance, through both the creation of eaters and the support of intestinal health, the focus shifts from managing problems to preventing them.

That shift is not optional. It is essential for efficient, resilient, and sustainable pig production.